

Pneumatic Piping Equipment

Fittings

General Purposes
Special Environments



Speed Controllers with One-touch Fitting

General Purposes
Special Environments
Low Speed Control
With Special Function
Tool Operation Type



Tubing

General Purposes
Special Environments



Blow Guns

Blow Guns Nozzles

Silencers



CAT.E51H

INDEX Piping Equipment

Fittings

Oval Type Release Button

One-touch fittings
KQ2 p. 44

Oval Type Release Button

Face seal One-touch fittings
KQ2 p. 55

Oval Type Release Button

Uni One-touch fittings
KQ2 p. 60

Round Type Release Button

One-touch fittings
KQ2 p. 65

One-touch fittings manifold
KM p. 98

Insert fittings
KF p. 101

Miniature fittings
M p. 105

Self-align fittings
H, DL, L, LL p. 110

Multi-connector
DM p. 123

Multi-connector with One-touch fittings
DMK p. 125

Rectangular multi-connector
KDM p. 127

Piping module
KB p. 129

Stainless steel One-touch fittings
KQ2-G p. 149

Stainless steel One-touch fittings
KG p. 156

Stainless steel 316 insert fittings
KFG2 p. 163

Miniature fittings
MS p. 166

Fluoropolymer fittings/Flare type
LQ3 p. 193

Fluoropolymer bore through connector
LQHB p. 204

Speed Controllers with One-touch Fitting

Push-lock type Elbow/Universal type
AS p. 213

Push-lock type/Face seal Elbow type
AS p. 215

Push-lock type With Uni One-touch fitting
AS p. 217

Elbow/Universal type
AS□□□1F p. 219

All metal exterior Elbow type
AS-X737 p. 231

Metal body Elbow type
AS□□□1F p. 233

Plug-in type
AS□□□□P p. 235

Push-lock type In-line type
AS□2F p. 237

Dual speed controller
ASD□30F p. 242

With residual pressure release valve Elbow/Universal type
AS□□□1FE p. 243

Push-lock type Stainless steel
AS-FG p. 245

Stainless steel
AS□□□1FG p. 247

Stainless steel Dual speed controller
ASD□30FG p. 254

Clean speed controller with One-touch fitting
AS-FPQ/FPQ p. 255

Low speed operation Elbow/Universal type
AS□□□1FM p. 257

Low speed operation In-line type
AS□1FM p. 259

Tamper proof Elbow/Universal type
AS□□□1F-T p. 265

Tamper proof In-line type
AS□1F-T p. 267

Tamper proof Dual speed controller
ASD□30F-T p. 268

With pilot check valve
ASP□30F p. 269

Related Products

Holder for speed controller
TMH p. 278

Residual pressure release valve with One-touch fittings
KE□ p. 276

Multi-holder
TMA p. 278

Metering valve with silencer
ASN2 p. 277

Tubing

Nylon tubing
T p. 283

Soft nylon tubing
TS p. 285

Polyurethane tubing
TU p. 287

Polyurethane flat tubing Multi-core, Multi-color specification
TU p. 289

Wear resistant flat tubing Multi-core, Multi-color specification
TUZ p. 301

Polyurethane coil tubing
TCU p. 303

Polyurethane flat tubing
TFU p. 304

FR soft nylon tubing
TRS p. 305

Antistatic tubing
TA□ p. 315

Fluoropolymer tubing
TL/TIL p. 317

Fluoropolymer tubing (PFA)
TLM/TILM p. 321

FEP tubing (Fluoropolymer)
TH/TH p. 325

Related Products

Double layer tube stripper
TKS p. 308

Multi-tube holder
TM p. 336

Tube cutter
TK p. 336

Tube releasing tool
TG p. 337

Blow Guns

Blow gun
VMG p. 339

Nozzles for blowing
KN p. 341

Round Type Release Button

Face seal One-touch fittings

KQ2 p. 78**Round Type Release Button**

Uni One-touch fittings

KQ2 p. 86

Metal One-touch fittings

KQB2 p. 91

Rotary One-touch fittings

KS/KX p. 96

Self-seal fittings

KC p. 113

S couplers

KK p. 116

S couplers

KKH p. 119

S couplers

KK130 p. 121

FR One-touch fittings

KR-W2 p. 134

FR One-touch fittings manifold

KRM p. 139

Antistatic One-touch fittings

KA p. 141

Stainless steel 316 One-touch fittings

KQG2 p. 144

S couplers stainless steel type

KKA p. 169

Clean One-touch fittings

KP p. 172

Clean One-touch fittings

KPQ/KPG p. 175

Fluoropolymer fittings

LQ1 p. 173

With Uni One-touch fitting

AS□□□1F-U p. 223With indicator/Push-lock type
Elbow/Universal type*AS-FS* p. 225With indicator/Uni thread type/Push-lock type
With One-touch fitting*AS-FS* p. 227

Flame resistant/Elbow type

AS□□□1F-W2 p. 229

In-line type

AS□2F p. 238With indicator/Push-lock type
In-line type*AS□2FS* p. 239

Panel mount type

AS□1F-3 p. 240

In-line

Centralized piping type Made to Order
AS-DPP00092/00093 p. 241With indicator/Push-lock type
Stainless steel*AS-FSG* p. 249Push-lock type
Stainless steel/In-line type*AS□2FG* p. 251Stainless steel
In-line type*AS□1FG* p. 252With indicator/Push-lock type
Stainless steel/In-line type*AS□2FSG* p. 253Low speed operation
Dual speed controller*ASD□30FM* p. 260Adjustable by flat head screwdriver
Elbow/Universal type*AS□□□1F-D* p. 261Adjustable by flat head screwdriver
In-line type*AS□1F-D* p. 263Dual speed controller
adjustable by flat head screwdriver*ASD□30F-D* p. 264Speed exhaust
controller*ASV* p. 270Push-lock type
Air saving speed controller*AS-R/AS-Q* p. 271

Air saving valve

ASR/ASQ p. 273

Quick exhaust valve

AQ□F p. 276

Bushing type check valve

AKH/AKB p. 277Made to Order Check valve*INA/XTO* p. 278Made to Order Restrictor*AS-X214/X21* p. 275

Soft polyurethane tubing

TUS p. 293Soft polyurethane flat tubing
Multi-core, Multi-color specification*TUS* p. 295

Hard polyurethane tubing

TUH p. 297

Wear resistant tubing

TUZ p. 299

FR double layer tubing

TRB p. 307

FR double layer polyurethane tubing

TRBU p. 309

FR three-layer polyurethane tubing

TRTU p. 311

2-layer soft fluoropolymer tubing

TQ p. 313

Soft fluoropolymer tubing (Modified PTFE)

TD/TID p. 329

Polyolefin tubing

TPH p. 331

Soft polyolefin tubing

TPS p. 333

Moisture control tube

IDK p. 335

Tube stand & Tube reel

TB/TBR p. 337

Silencers

Compact resin type/Male thread

AN05 to 40 p. 343

Compact resin type/One-touch fitting connection

AN10 to 30-C p. 343

Metal body type

AN□00 p. 344

Metal case type

25□□ p. 344

BC sintered body type

AN1□□-□ p. 345

High noise reduction type

AN□02 p. 345

40 dB (A): High noise reduction type

ANA1 p. 346

38 dB (A): High noise reduction type

ANB1 p. 346

Fittings

General Purposes

Oval Type Release Button

One-touch Fittings

KQ2

Applicable tubing O.D.: $\phi 3.2$ to $\phi 6$

p. 44



Face Seal One-touch Fittings

KQ2

Applicable tubing O.D.: $\phi 3.2$ to $\phi 6$

p. 55

Face seal



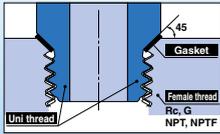
Uni One-touch Fittings

KQ2

Applicable tubing O.D.: $\phi 4$, $\phi 6$

p. 60

Uni thread



Round Type Release Button

One-touch Fittings

KQ2

Applicable tubing O.D.: $\phi 2$ to $\phi 16$

p. 65



Face Seal One-touch Fittings

KQ2

Applicable tubing O.D.: $\phi 3.2$ to $\phi 16$

p. 78

Face seal



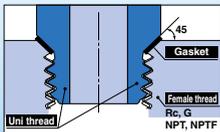
Uni One-touch Fittings

KQ2

Applicable tubing O.D.: $\phi 4$ to $\phi 16$

p. 86

Uni thread



Metal One-touch Fittings

KQB2

Heat Resistant

Spatter Proof

p. 91

Brass



Rotary One-touch Fittings

KS/KX

Rotation

p. 96



One-touch Fittings Manifold

KM

p. 98



Insert Fittings

KF

Heat Resistant

p. 101



Resin sleeve

Brass sleeve

Miniature Fittings

M

p. 105

Miniature

For $\phi 2$ tube



Self-align Fittings

H, DL, L, LL

Spatter Proof

p. 110

Applicable for use on soft copper steel pipe



Sleeve

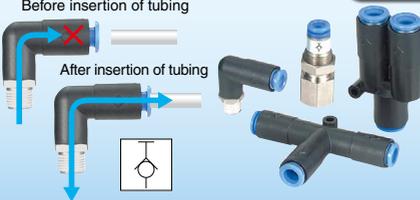
Self-seal Fittings

KC

p. 113

Before insertion of tubing

After insertion of tubing



S Couplers

KK

p. 116

With sleeve lock (Except for KK2)



Fittings

General Purposes

S Couplers

KKH

p. 119



S Couplers

KK130

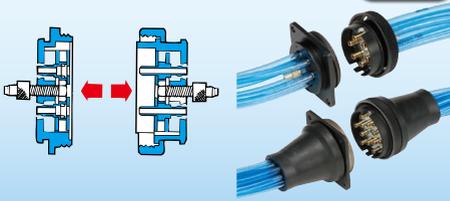
p. 121



Multi-connector

DM

p. 123



Multi-connector with One-touch Fittings

DMK

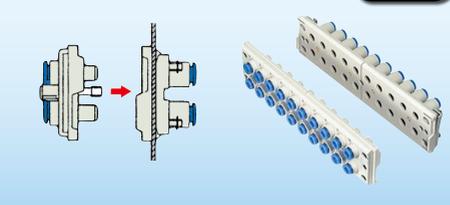
p. 125



Rectangular Multi-connector

KDM

p. 127



Piping Module

KB

p. 129

One-touch connection and release



Special Environments

Spatter Proof

FR One-touch Fittings

KR-W2

Flame resistant



p. 134

FR One-touch Fittings Manifold

KRM

Flame resistant



p. 139

Corrosion Resistant

Stainless Steel 316 One-touch Fittings

KQG2

Stainless steel 316

Heat Resistant



p. 144

Stainless Steel One-touch Fittings

KQ2-G

Stainless steel 303



p. 149

Stainless Steel One-touch Fittings

KG

Stainless steel 303



p. 156

Stainless Steel 316 Insert Fittings

KFG2

Stainless steel 316

Heat Resistant



p. 163

Stainless Steel Miniature Fittings

MS

Stainless steel 316



p. 166

S Couplers

KKA

Stainless steel 304

Heat Resistant



p. 169

Fittings

Special Environments

Antistatic Measures

Antistatic One-touch Fittings

KA

Spatter Proof

p. 141

Antistatic

Flame resistant



Heat Resistant

Fluoropolymer Fittings

LQ1

p. 178

New PFA

Corrosion Resistant

Clean



Fluoropolymer Fittings

LQ3

p. 193

New PFA

Corrosion Resistant

Clean



Fluoropolymer Bore Through Connector

LQHB

p. 204

New PFA

Corrosion Resistant

Clean



Clean room

Clean

Clean One-touch Fittings

KP

p. 172

Clean room blowing/
washing lines



Clean One-touch Fittings

KPQ/KPG

p. 175

Drive system
air piping



Clean room

Clean

Clean Series: One-touch Fittings

10-KQ2

Oval type: p. 54

Round type: p. 77



Clean Series: Insert Fittings

10-KF

p. 104



Clean Series: Miniature Fittings

10-M/MS

p. 109, 168



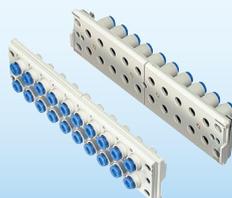
10-M

10-MS

Clean Series: Rectangular Multi-connector

10-KDM

p. 128



Clean Series: Stainless Steel

10-KQ2-G

p. 155



Clean Series: Stainless Steel

10-KG

p. 162



Air Saving

S Couplers

KK130

p. 121



Speed Controllers with One-touch Fitting

General Purposes

Elbow/Universal Type

Push-lock type **p. 213**

AS□□□1F-A

Elbow Type

Push-lock type Face seal **p. 215**

AS□2□1F-PA

Face seal

With Uni One-touch Fitting

Push-lock type **p. 217**

AS□□□1F-U□-A

Uni thread

45
Gasket
Female thread
Rc, G
NPT, NPTF

Elbow/Universal Type

AS□□□1F **p. 219**

With Uni One-touch Fitting

AS□□□1F-U□ **p. 223**

Uni thread

45
Gasket
Female thread
Rc, G
NPT, NPTF

With Indicator/Elbow/Universal Type

Push-lock type **p. 225**

AS□□□1FS

With Indicator/Uni Thread Type/With One-touch Fitting

Push-lock type **p. 227**

AS□2□1FS-U□

Uni thread

45
Gasket
Female thread
Rc, G
NPT, NPTF

Plug-in Type

AS□□□0P **p. 235**

In-line Type

Push-lock type **p. 237**

AS□2F-A

In-line Type

AS□2F **p. 238**

With Indicator/In-line Type

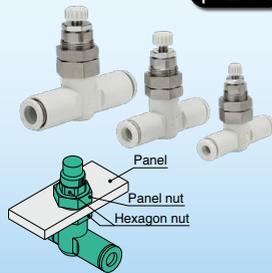
Push-lock type **p. 239**

AS□2FS

In-line/Panel Mount Type

AS□1F-3

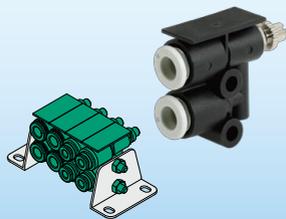
p. 240



Centralized Piping Type

AS-DPP00092/00093

Made to order p. 241



Dual Speed Controller

ASD□30F

p. 242

Lurch prevention/Control
of single acting cylinder



Low Speed Operation

Elbow/Universal Type

AS□□□1FM

p. 257

Low speed control
at 10 to 50 mm/s



In-line Type

AS□1FM

p. 259



Dual Type

ASD□30FM

p. 260

Low speed control of
small bore cylinders



Special Environments

Spatter Proof

Flame Resistant Elbow Type

AS□2□1F-W2

p. 229

Flame resistant resin



All Metal Exterior Elbow Type

AS-X737

p. 231



With One-touch Fitting/Elbow Type (Metal body)

AS□2□1-F

p. 233

Metal body, Flame
resistant resin (fittings)



Speed Controllers with One-touch Fitting

Special Environments

Stainless steel 303

Corrosion
Resistant

Elbow/Universal Type

Push-lock type

AS□□□1FG-A

p. 245



Elbow/Universal Type

AS□□□1FG

p. 247



With Indicator/Elbow/Universal Type

Push-lock type

AS□□□1FSG

p. 249



In-line Type

Push-lock type

AS□2FG-A

p. 251



In-line Type

AS□1FG

p. 252



With Indicator/In-line Type

Push-lock type

AS□2FSG

p. 253



Dual Type

ASD□30FG

p. 254

Lurch Prevention



Clean

Clean Speed Controller

AS□□1FPQ/FPG

p. 255

Clean room



Clean Series

10-AS

Clean room



		Elbow	Universal	In-line
General purposes: Push-lock type	10-AS□□□1F-A	p. 214, 216	p. 214	
General purposes	10-AS□□□1F	p. 221	p. 221	
General purposes: With indicator/Push-lock type	10-AS□□□1FS	p. 226	p. 226	
Dual	10-ASD□30F		p. 242	
Stainless steel: Push-lock type	10-AS-FG	p. 246	p. 246	
Stainless steel	10-AS□□□1FG	p. 248	p. 248	p. 252
Stainless steel: With indicator/Push-lock type	10-AS-FSG	p. 250	p. 250	
Stainless steel: Dual	10-ASD-FG		p. 254	
Low speed operation	10-AS-FM	p. 258	p. 258	p. 259
Low speed operation: Dual	10-ASD-FM		p. 260	

Speed Controllers with One-touch Fitting

With Special Function

Residual Pressure Exhaust

Elbow/Universal Type

AS□□□1FE

p. 243

Residual pressure exhaust



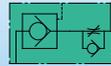
Drop Prevention

Speed Controller with Pilot Check Valve

ASP□30F

p. 269

Drop prevention, Emergency stop



Quick Exhaust

Speed Exhaust Controller

ASV

Spatter Proof^{*1}

p. 270

High-speed cylinder operation

*1 ASV310F/410F/510F



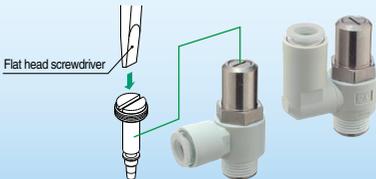
Tool Operation Type

Elbow/Universal Type

AS□□□1F-D

p. 261

Screwdriver operation type



In-line Type

AS□1F-D

p. 263



Dual Type

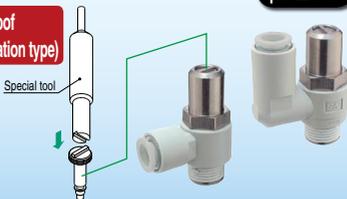
ASD□30F-D

p. 264

Lurch Prevention



Tool Operation Type

Elbow/Universal Type	In-line Type	Dual Type
<p>AS□□□1F-T p. 265</p> <p>Tamper proof (Special tool operation type)</p> <p>Special tool</p> 	<p>AS□1F-T p. 267</p> 	<p>ASD□30F-T p. 268</p> <p>Lurch Prevention</p> 

Air Saving

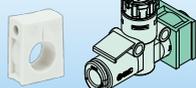
Air Saving Speed Controller
AS-R/AS-Q p. 271



Air Saving Valve
ASR/ASQ p. 273



Related Products

<p>Residual Pressure Release Valve with One-touch Fittings KE□ p. 276</p> 	<p>Quick Exhaust Valve AQ□F p. 276</p> 	<p>Metering Valve with Silencer ASN2 p. 277</p> 	<p>Check Valve with One-touch Fittings AKH/AKB p. 277</p> 
<p>Check Valve INA/XTO p. 278 Body material: Brass/Stainless steel</p> 	<p>Restrictor AS-X214/X21 p. 275</p> 	<p>Holder TMH p. 278 For securing a speed controller/In-line type</p> 	<p>Multi-holder TMA p. 278 For securing the KE series or KQ2L/T/H</p> 

Tubing

General Purposes

Polyurethane Tubing

TU

29 color variations

p. 287



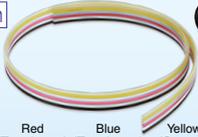
Black (Opaque)	White (Opaque)	Red (Translucent)	Blue (Translucent)	Yellow (Opaque)	Green (Opaque)	Clear (Material color)	Orange (Opaque)	Solid blue (Opaque)	Clear blue (Translucent)
Medium blue (Opaque)	Brown (Opaque)	Solid green (Opaque)	Clear green (Translucent)	Neon green (Opaque)	Dark green (Opaque)	Gray (Opaque)	Light gray (Opaque)	Neon pink (Opaque)	Solid purple (Opaque)
Clear purple (Translucent)	Solid red (Opaque)	Clear red (Translucent)	Silver (Opaque)	Solid yellow (Opaque)	Clear yellow (Translucent)	Neon yellow (Opaque)	Clear orange (Translucent)	Neon orange (Opaque)	

Polyurethane Flat Tubing

Multi-core, Multi-color Specification

TU

p. 289



Black (Opaque)	White (Opaque)	Red (Translucent)	Blue (Translucent)	Yellow (Opaque)	Green (Opaque)
Clear (Material color)	Orange*1 (Opaque)				

*1 Excluding ø2

Nylon Tubing

T

p. 283



Black (Opaque)	White (Material color)	Red (Opaque)	Blue (Opaque)	Yellow (Opaque)	Green (Opaque)
----------------	------------------------	--------------	---------------	-----------------	----------------

Soft Nylon Tubing

TS

p. 285



Black (Opaque)	White (Material color)	Red (Opaque)	Blue (Opaque)	Yellow (Opaque)	Green (Opaque)
----------------	------------------------	--------------	---------------	-----------------	----------------

Soft Polyurethane Tubing

TUS

p. 293

Extremely flexible tubing



Black (Opaque)	White (Opaque)	Red (Opaque)	Blue (Opaque)	Yellow (Opaque)	Green (Opaque)
Translucent (Material color)	Yellow brown (Opaque)				

Soft Polyurethane Flat Tubing

Multi-core, Multi-color Specification

TUS p. 295



 Black (Opaque)	 White (Opaque)	 Red (Opaque)	 Blue (Opaque)	 Yellow (Opaque)	 Green (Opaque)
 Translucent (Material color)	 Yellow brown (Opaque)				

Hard Polyurethane Tubing

TUH p. 297



 Black (Opaque)	 Blue (Translucent)	 Translucent (Material color)	 White (Opaque)
---	---	---	---

Wear Resistant Tubing

TUZ p. 299



 Black	 White	 Red	 Blue	 Yellow	 Green
--	---	---	--	--	---

Wear Resistant Flat Tubing

Multi-core, Multi-color Specification

TUZ p. 301



 Black	 White	 Red	 Blue	 Yellow	 Green
---	---	---	--	--	--

Polyurethane Coil Tubing

TCU p. 303

Coil




 Black (Opaque)	 White (Opaque)	 Red (Translucent)	 Blue (Translucent)	 Yellow (Opaque)	 Green (Opaque)
 Orange (Opaque)	 Clear (Material color)				

* Colors other than black are available as made-to-order specifications.

Polyurethane Flat Tubing

TFU p. 304

Flat




 Black (Opaque)	 White (Opaque)	 Red (Translucent)	 Blue (Translucent)	 Yellow (Opaque)	 Green (Opaque)
 Orange (Opaque)	 Clear (Material color)				

* Colors other than black are available as made-to-order specifications.

Tubing

Special Environments

Spatter Proof

FR Soft Nylon Tubing
TRS
Flame resistant
 p. 305



Black (Opaque) White (Material color) Red (Opaque) Blue (Opaque) Green (Opaque)



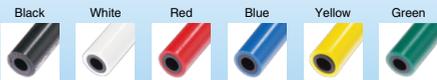
FR Double Layer Tubing
TRB/TRBU
Flame resistant
 p. 307, 309



Outer layer Inner tubing

Sectional view of FR double layer tubing

Black White Red Blue Yellow Green



FR Three-layer Polyurethane Tubing
TRTU
Flame resistant
 p. 311

Outer layer: Flame resistant polyolefin

Three-layer design

Middle layer: Aluminum laminated film

Inner tube: Polyurethane



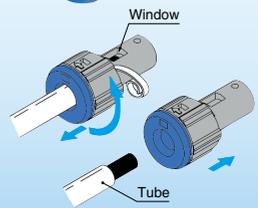
Black White Red Blue Yellow Green



Double Layer Tube Stripper
TKS
 A tool for stripping off outer tube layers
 p. 308



Window



Tube

Heat Resistant

Fluoropolymer Tubing
TL/TIL
Super PFA
 p. 317
 Corrosion Resistant
 Clean



Translucent



Fluoropolymer Tubing
TLM/TILM
PFA
 p. 321
 Corrosion Resistant



Black (Opaque) Red (Translucent) Blue (Translucent) Translucent (Material color)



Heat Resistant

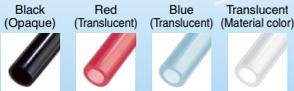
FEP Tubing (Fluoropolymer)

TH/TIH

FEP

p. 325

Corrosion Resistant



Soft Fluoropolymer Tubing

TD/TID

Modified PTFE

p. 329

Corrosion Resistant



2-layer Soft Fluoropolymer Tubing

TQ

**Special fluoropolymer (Inner layer)
Special nylon resin (Outer layer)**

p. 313

Corrosion Resistant



Antistatic Measures

Antistatic Tubing

TAS/TAU

Antistatic measures

p. 315, 316



* Colors other than black are available as made-to-order specifications.

Tubing

Special Environments

Clean

Clean Series
10-TU
Clean room p. 288



 Black (Opaque)	 White (Opaque)	 Red (Translucent)	 Blue (Translucent)	 Yellow (Opaque)	 Green (Opaque)
 Orange (Opaque)	 Clear (Material color)				

Clean Series
10-TCU/10-TFU
Clean room p. 304

10-TFU



10-TCU p. 303



Black



Clean Tubing
TPH/TPS
Polyolefin p. 331, 333



 Black	 White	 Red	 Blue	 Yellow	 Green
---	--	--	---	---	--

Fluoropolymer Tubing
TL/TIL p. 317

Super PFA

Corrosion Resistant

Heat Resistant



Translucent



Condensation Prevention

Moisture Control Tube
IDK p. 335

Linear shape **Coil shape**




Related Products

Multi-tube Holder

TM



p. 336

Tube Cutter

TK



p. 336

Tube Releasing Tool

TG



p. 337

Tube Stand

TB



p. 337

Tube Reel

TBR



p. 337

Blow Guns/Silencers

Blow Gun

VMG



p. 339

Air Saving

Nozzles for Blowing

KN



p. 341

Compact Resin Type/Male Thread

AN05 to 40



p. 343

Compact Resin Type/One-touch Fitting Connection

AN10 to 30-C



p. 343

Metal Body Type

AN□00



p. 344

Metal Case Type

25□□



p. 344

BC Sintered Body Type

AN101-01/AN110-01/
AN120-M5/AN120-M3



p. 345

High Noise Reduction Type

AN□02



p. 345

High Noise Reduction Type

ANA1



p. 346

High Noise Reduction Type

ANB1



p. 346

Piping Equipment Applications/Themes List

Applications/ Themes	Clean Low particulate generation	Corrosion Resistant Stainless steel Fluoropolymer	Heat Resistant Metal Fluoropolymer	Antistatic Measures Antistatic	Low Speed Control 10 to 50 mm/s	Residual Pressure Exhaust Residual pressure release	Drop Prevention Pilot check	
Fittings	<p>For blowing</p> <ul style="list-style-type: none"> •KP (p. 172) <p>Drive system air piping</p> <ul style="list-style-type: none"> •KPG/KPG (p. 175) •LQ1 (p. 178) •LQ3 (p. 193) •LQHB (p. 204) <p>Clean series</p> <ul style="list-style-type: none"> •10-series (p. 8) 	<ul style="list-style-type: none"> •KQG2 (p. 144) •KQ2-G (p. 149) •KG (p. 156) •KFG2 (p. 163) •MS (p. 166) •KKA (p. 169) •LQ1 (p. 178) •LQ3 (p. 193) •LQHB (p. 204) 	<ul style="list-style-type: none"> •KQB2 (p. 91) •KF (p. 101) (Brass sleeve) •KQG2 (p. 144) •KFG2 (p. 163) •KKA (p. 169) •LQ1 (p. 178) •LQ3 (p. 193) •LQHB (p. 204) 	<ul style="list-style-type: none"> •KA (p. 141) 				
Speed Controllers with One-touch Fitting	<p>Clean speed controllers</p> <ul style="list-style-type: none"> •AS-FPQ/FPQ (p. 255) <p>Clean series</p> <ul style="list-style-type: none"> •10-series (p. 12) 	<ul style="list-style-type: none"> •AS-FG (From p. 245) (Elbow/Universal/In-line) •AS-FSG (p. 249, 253) (Elbow/Universal/In-line) •ASD-FG (p. 254) (Dual) 		<ul style="list-style-type: none"> •AS-F-X260 (p. 224) 	<ul style="list-style-type: none"> •AS-FM (From p. 257) (Elbow/Universal/In-line) •ASD-FM (p. 260) (Dual) 	<ul style="list-style-type: none"> •AS-FE (p. 243) (Elbow/Universal) 	<ul style="list-style-type: none"> •ASP-F (p. 269) 	
Tubing	<ul style="list-style-type: none"> •TL/TIL (p. 317) <p>Clean series</p> <ul style="list-style-type: none"> •10-series (p. 19) <p>Clean tubing</p> <ul style="list-style-type: none"> •TPH/TPS (p. 331, 333) (Polyolefin) 	<ul style="list-style-type: none"> •TL/TIL (p. 317) •TLM/TILM (p. 321) •TH/TH (p. 325) •TD/TID (p. 329) •TQ (p. 313) 	<ul style="list-style-type: none"> •TL/TIL (p. 317) •TLM/TILM (p. 321) •TH/TH (p. 325) •TD/TID (p. 329) •TQ (p. 313) 	<ul style="list-style-type: none"> •TAS (p. 315) •TAU (p. 316) 				
Others		<p>Check valve</p> <ul style="list-style-type: none"> •INA (p. 278) (Stainless steel) 	<p>Check valve</p> <ul style="list-style-type: none"> •XTO (p. 278) 			<p>Residual pressure release valve</p> <ul style="list-style-type: none"> •KE□ (p. 276) (With One-touch fitting) 	<p>Check valve</p> <ul style="list-style-type: none"> •AKH/AKB (p. 277) (With One-touch fitting) 	

Lurch Prevention Meter-in/Meter-out control	Spatter Proof Flame resistant resin Metal	Quick Exhaust Quick exhaust	Air Saving Reduced air consumption Reduced pressure loss	Condensation Prevention	Oil Free	
					No lubricant	Vaseline applied
	<ul style="list-style-type: none"> •KQB2 (p. 91) •H, DL, L, LL (p. 110) •KR-W2 (p. 134) •KRM (p. 139) (Manifold) •KA (p. 141) 		<ul style="list-style-type: none"> •KK130 (p. 121) (S couplers) 		Grease-free <ul style="list-style-type: none"> •KQB2 (p. 91) •KF (p. 101) (Insert) •M (p. 105) (Miniature) (Excluding M-5UN) •H, DL, L, LL (p. 110) (Self-align) •KQG2 (p. 144) •MS (p. 166) (Miniature/Stainless steel) (Excluding MS-5UN) •KKA (p. 169) •KP (p. 172) (Clean fitting) •LQ1 (p. 178) •LQ3 (p. 193) Made to order*1 <ul style="list-style-type: none"> •X17 (p. 33, 34) (Fluorine coating) •X29 (p. 33, 34) (Fluorine coating + Electroless nickel plating) 	Made to order*1 <ul style="list-style-type: none"> •X12 (p. 33, 34) (Vaseline)
Dual speed controller <ul style="list-style-type: none"> •ASD-F (p. 242) •ASD-FG (p. 254) (Stainless steel) •ASD-F-D (p. 264) (Flat head screwdriver operation) •ASD-F-T (p. 268) (Tamper proof) 	<ul style="list-style-type: none"> •AS-F (p. 233) (With One-touch fitting/Metal body) •AS-X737 (p. 231) (All metal exterior speed controller with One-touch fitting) •AS-F-W2 (p. 229) (Flame resistant/Elbow type) •ASV310F 410F/510F (p. 270) (Speed exhaust controller) 	Speed exhaust controller <ul style="list-style-type: none"> •ASV-F (p. 270) 	<ul style="list-style-type: none"> •AS-R (p. 271) (Air saving speed controller) •ASR (p. 273) (Air saving valve) 			Made to order*1 <ul style="list-style-type: none"> •X12 (p. 35, 36) (Vaseline)
	<ul style="list-style-type: none"> •TRS (p. 305) •TRB/ TRBU (p. 307, 309) (Double layer) •TRTU (p. 311) (Three-layer) 			<ul style="list-style-type: none"> •IDK (p. 335) (Moisture control tube) 		
		Quick exhaust valve <ul style="list-style-type: none"> •AQ-F (p. 276) (With One-touch fitting) 	<ul style="list-style-type: none"> •VMG (p. 339) (Blow gun) 			

*1 For models applicable to made-to-order, refer to "Made to Order."

Piping Equipment **Applications and Themes**

Low particulate generating type designed for use in clean rooms

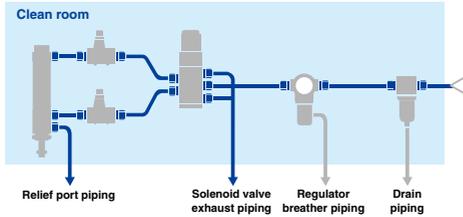
Clean



Clean Series (10-series)

- Double packaging · Metal: With nickel plating
- Fluorine-based grease

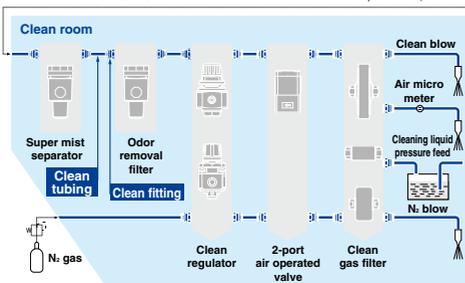
Drive air piping system



Clean One-touch Fittings and Tubing

- Completely oil-free · Liquid-contact areas are non-metallic
- Double packaging

Clean blowing system



Clean series (10-series)

Speed controller with One-touch fitting



10-AS p. 12

Polyurethane tubing



10-TU
10-TCU
10-TFU p. 19

One-touch fittings



10-KQ2 p. 54 (Oval type)
p. 77 (Round type)

Insert fittings



10-KF p. 104

Miniature fittings



10-M p. 109
10-MS p. 168

Rectangular multi-connector



10-KDM p. 128

One-touch



10-KQ2-G p. 155

One-touch



10-KG p. 162

Clean One-touch fittings and tubing

Clean One-touch fittings



KP p. 172

Clean One-touch fittings



KPQ
KPG p. 175

Polyolefin tubing



TPH p. 331
TPS p. 333

Clean speed controllers

Clean speed controller



AS-FPQ
AS-FPG p. 255

Fluoropolymer Fittings



LQ1 p. 178

Fittings



LQ3 p. 193

Bore through connector



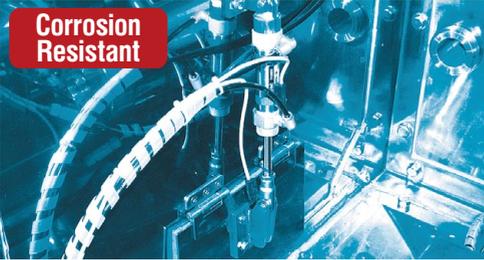
LQHB p. 204

Tube (Super PFA)



TL/TIL p. 317

Stainless steel/Fluoropolymer specification with corrosion resistance



Corrosion Resistant

- **Metal parts**
Stainless steel 316 (MS, KQG2, KFG2)
Stainless steel 304 (KKA)
Stainless steel 303 (KQ2-G, KG, AS-FG, AS-FSG, ASD-FG)
- Prevents rust, discoloration and the generation of copper ions.
- **Applications:** Food processing equipment, CRT production lines, etc.

- **Related products**
Stainless steel cylinder
· CJ5/CG5 series



· **Made to Order**

Symbol	Stainless steel parts
XB12	External stainless steel cylinder
XC6	Piston rod, Rod end nut
XC7	Tie-rod, Tie-rod nut, Cushion valve
XC27	Split pins for double clevis pin, Double knuckle joint pin

■ **Tubing**

Fluoropolymer (Super PFA) **TL/TIL** p. 317

Fluoropolymer (PFA) **TLM/TILM** p. 321

FEP **TH/THI** p. 325

Soft fluoropolymer **TD/TID** p. 329

2-layer soft fluoropolymer tubing **TQ** p. 313

■ **Fittings**

One-touch  **KQG2** p. 144

One-touch  **KQ2-G** p. 149

One-touch  **KG** p. 156

Insert fittings  **KFG2** p. 163

Miniature  **MS** p. 166

S couplers  **KKA** p. 169

Fluoropolymer  **LQ1** p. 178

Fluoropolymer  **LQ3** p. 193

Bore through connector  **LQHB** p. 204

■ **Speed controllers with One-touch fitting**

Elbow/Universal, Push-lock type  **AS-FG-A** p. 245

Elbow/Universal type  **AS-FG** p. 247

With indicator, Elbow/Universal, Push-lock type  **AS-FSG** p. 249

In-line, Push-lock type  **AS□2FG** p. 251

In-line  **AS□1FG** p. 252

In-line, With indicator, Push-lock type  **AS□2FSG** p. 253

Dual  **ASD□30FG** p. 254

■ **Check valve**

Stainless steel  **INA** p. 278

Metal or fluoropolymer specification



Heat Resistant

- **Operating temperature (Max.)/Material**
- KQB2** :150°C/Brass, Stainless steel 304, Stainless steel 316, Special FKM
- KF** :150°C/Brass
- KQG2** :150°C/Stainless steel 316, Special FKM
- KFG2** :260°C*1/Stainless steel 316
- KKA** :150°C/Stainless steel 304, Fluororubber
- LQ1** :150°C/New PFA
- LQ3** :200°C/New PFA
- TH/TIH**:200°C/FEP
- TL/TIL** :260°C/Super PFA
- TLM/TILM**:260°C/PFA
- TD/TID**:260°C/Modified PTFE
- TQ** :100°C (Air, Inert gas): Special fluoropolymer (Inner layer)/Special nylon resin (Outer layer)
:70°C (Water, Solvent): Special fluoropolymer (Inner layer)/Special nylon resin (Outer layer)

■ Fittings

Metal One-touch  **KQB2** p. 91

Brass sleeve Insert  **KF** p. 101

Stainless steel One-touch  **KQG2** p. 144

Stainless steel Insert  **KFG2** p. 163

S couplers  **KKA** p. 169

Fluoropolymer  **LQ1** p. 178

Fluoropolymer  **LQ3** p. 193

Bore through connector  **LQHB** p. 204

■ Check valve

 **XTO** p. 278

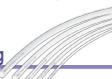
■ Tubing

Fluoropolymer (Super PFA)  **TL/TIL** p. 317

Fluoropolymer (PFA)  **TLM/TILM** p. 321

FEP  **TH/TIH** p. 325

Soft fluoropolymer  **TD/TID** p. 329

2-layer soft fluoropolymer tubing  **TQ** p. 313

Prevents charge of static electricity

Antistatic Measures



- **Conductive resin is used.**
- **Surface resistance: 10^4 to $10^7 \Omega$**
- **Applications: Semiconductor manufacturing, etc.**
- **Uni thread construction that does not require sealant enables grounding.**

■ **One-touch fittings**

Antistatic KA p. 141



■ **Speed controller with One-touch fitting**

Elbow AS□2□1F-X260 p. 224



■ **Tubing**

Antistatic TAS TAU p. 315



p. 316

Suitable for controlling the speed of low speed cylinders

Low Speed Control



- **Effective area of controlled flow: 1/10 (Compared to standard type)**
- **Needle rotations: 10 to 20 turns**
- **The dual type speed controller is suitable for cylinders with a small bore size.**

■ **Related products**


CJ2X-Z


CQSX


CM2X-Z

Model	Minimum operating piston speed
CJ2X-Z	1 mm/s
CUX	10, 16: 1 mm/s, 20, 25, 32: 0.5 mm/s
CQSX	12, 16: 1 mm/s, 20, 25: 0.5 mm/s
CQ2X	0.5 mm/s
CM2X-Z	0.5 mm/s

■ **Speed controllers with One-touch fitting**

Low speed operation: Elbow type AS□2□1FM p. 257



Low speed operation: Universal type AS□3□1FM p. 257



Low speed operation: In-line type AS□0□1FM p. 259

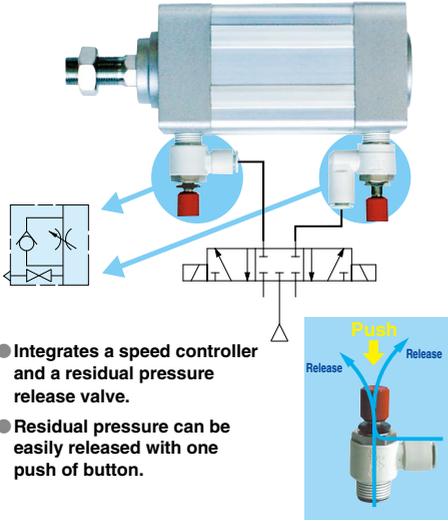


Low speed operation: Dual type ASD□30FM p. 260



Prevents accidents caused by residual pressure

Residual Pressure Exhaust



- Integrates a speed controller and a residual pressure release valve.
- Residual pressure can be easily released with one push of button.

Speed controllers with One-touch fitting

With residual pressure release valve:
Elbow type **AS□2□1FE** p. 243

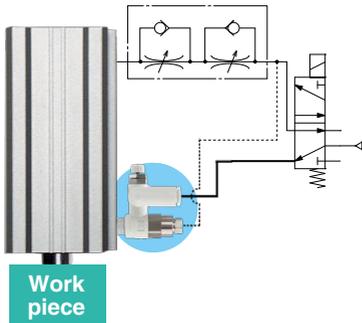
With residual pressure release valve:
Universal type **AS□3□1FE** p. 243

Related products

Residual pressure release valve with One-touch fittings **KE□** p. 276

Drop prevention and emergency stops are possible.

Drop Prevention



- Pilot check valve and speed controller are combined.

Speed controllers with One-touch fitting

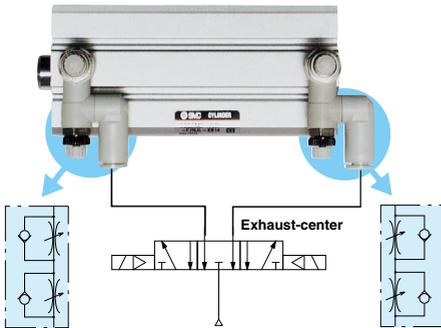
With pilot check valve **ASP□30F** p. 269

Related products

Check valve with One-touch fittings **AKH/ AKB** p. 277

Prevents sudden extensions with meter-in/meter-out control.

Lurch Prevention



- Two flow control valves and check valves have been integrated.
- Other applications: Speed control of single acting cylinders

■ Speed controllers with One-touch fitting



Can be used in environments exposed to spot welding spatter

Spatter Proof



- Flame resistant (Equivalent to UL-94 Standard V-0)

Outer layer

TRB: PVC (Equivalent to UL-94 Standard V-0)
TRBU: Polyolefin (Equivalent to UL-94 Standard V-0)

- Double-layer tubing

Inner tubing

TRB: Nylon 12
TRBU: Polyurethane



- Application: Spot welding

- Three-layer tubing

Three-layer design

Outer layer Flame-resistant polyolefin (Equivalent to UL-94 Standard V-0)

Middle layer Aluminum-laminated film

Inner tube Polyurethane



Fittings

Metal One-touch  **KQB2** p. 91

Self-align  **H, DL, L, LL** p. 110

FR One-touch  **KR-W2** p. 134

Manifold  **KRM** p. 139

Antistatic  **KA** p. 141

Speed controllers with One-touch fitting

Elbow  **AS□2□1F-W2** p. 229

Metal body  **AS□2□1-F** p. 233

All metal exterior  **AS-X737** p. 231

Speed exhaust controller  **ASV** p. 270

Tubing

FR soft nylon tubing  **TRS** p. 305

FR double layer tubing  **TRB TRBU** p. 307 p. 309

FR three-layer polyurethane tubing  **TRTU** p. 311

Related products

Double layer tube stripper  **TKS** p. 308

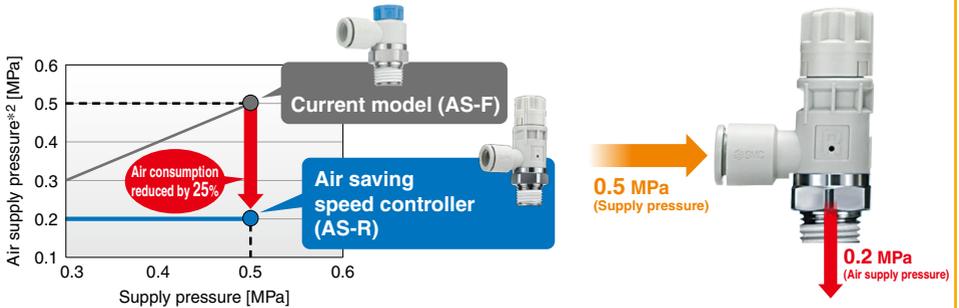
Saves energy by reducing air consumption and pressure loss

Air Saving

Air Saving

25*1 % reduction in air consumption

By reducing the pressure on the return stroke to 0.2 MPa, air consumption can be reduced.



*1 The air consumption reduction rate indicates the rate for one cycle of the cylinder.

*2 Cylinder pressure of return stroke side

Air saving speed controller

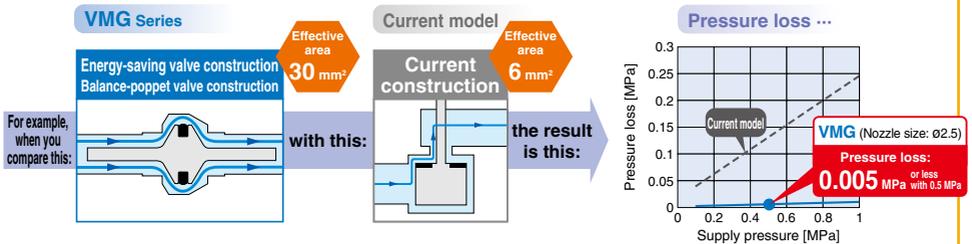
With pressure reduction function



AS-R

p. 271

By allowing the fluid to flow in a straighter line, “pressure loss can be reduced”.



Blow gun



VMG

p. 339

S couplers



KK130

p. 121

Piping Equipment **Applications and Themes**

Fittings

Specifications															
		One-touch	Face seal One-touch	Uni One-touch	One-touch	Face seal One-touch	Uni One-touch	Metal One-touch	Rotary (Standard)	Rotary (High speed)	Manifold	Insert	Miniature	Self-align	Self-seal
		p. 54	p. 55	p. 64	p. 77	p. 78	p. 90	p. 91	p. 96	p. 96	p. 100	p. 104	p. 106	p. 112	p. 113
		KQ2	KQ2	KQ2	KQ2	KQ2	KQ2	KQB2	KS	KX	KM	KF	M	H, DL, LL	KC
X17	Grease-free, Rubber material: NBR (Fluorine coating)	*9 X17		*9 X17	*9 X17		*9 X17				X17	Standard	*1 Standard	Standard	
X29	Grease-free, Rubber material: NBR (Fluorine coating), Copper-free (Electroless nickel plating)	*9 X29		*9 X29	*9 X29		*9 X29				X29				
X39	Grease-free, Rubber material: NBR (Fluorine coating), Clean	*9 X39		*9 X39	*9 X39		*9 X39								
X94	Grease-free, Rubber material: FKM (Fluorine coating)	*9 X94			*9 X94			Standard			X94				
X2	Copper-free (Electroless nickel plating)	*11 Standard	*11 Standard	*11 Standard	*11 Standard	*11 Standard	*11 Standard	Standard	Standard	Standard	X2	X2	*3 Standard	X2	Standard
X12	Lubricant: White vaseline	X12		X12	X12		X12				X12				
X34	Rubber material: FKM	*9 X34			*9 X34						X34				
*10 X35	Body color: Black	*10 X35		*10 X35	*10 X35		*10 X35								
*4 X41	With fixed throttle	*4 X41		*4 X41	*4 X41		*4 X41								
X83	Gasket material: Stainless steel 304, NBR														
*7 X226	Gasket material: Stainless steel 304, FKM												X226		
*8 X112	Gasket material: Stainless steel 316, Special FKM												X112		
*9 X70	Liquid-contact areas: Plated with fluorine-contained material														
X53	With sealant tape														
X193	Grease-free, Rubber material: EPDM (Fluorine coating), Gasket material: Stainless steel 316, Special FKM*5														
10-	Clean series	10-		10-	10-		10-					10-	10-		

*1 Excluding M-5UN *2 Excluding MS-5UN *3 X2 is only compatible with M-5E, M-5ER, and M-5M.

*4 Only compatible with male connector and male elbow. Please consult with SMC separately for the available fixed throttle diameters.

*5 M5 thread *6 Only compatible with products with threads *7 Only compatible with M3 thread *8 Only compatible with M5 thread *9 Please consult with SMC.

	 S couplers p. 116	 S couplers p. 119	 Multi-connector p. 124	 Multi-connector p. 125	 Rectangular multi-connector p. 128	 Piping module p. 129	 Flame resistant p. 138	 Antistatic p. 141	 Stainless steel 316 One-touch p. 144	 Stainless steel One-touch p. 155	 Stainless steel One-touch p. 162	 Stainless steel 316 insert p. 163	 Stainless steel miniature p. 168	 Stainless steel S couplers p. 169	 Clean (For blowing) p. 174	 Clean/Brass (Electroless nickel plating) p. 177	 Clean (Stainless steel 304) p. 177	Symbol
	KK	KKH	DM	DMK	KDM	KB	KR-W2	KA	KQG2	KQ2-G	KG	KFG2	MS	KKA	KP	KPQ	KPG	
					X17					X17	X17		*2 Standard					X17
																		X29
					X39						X39							X39
									Standard		X94	Standard		Standard				X94
	Standard	Standard	X2	Standard	Standard	Standard	X2	Standard								Standard		X2
		Standard			X12					X12	X12							X12
											X34							X34
																		*10 X35
																		*4 X41
													X83					X83
																		*7 X226
													X112					*8 X112
														*9 X70				X70
															X53	X53	X53	X53
																	*6 X193	X193
					10-					10-	10-		10-		Standard	Standard	Standard	10-

*10 The following models are not available as made to order: Hexagon socket head male connector/KQ2S, Bulkhead union/KQ2E, Bulkhead connector/KQ2E, Nipple/KQ2N, Reducer nipple/KQ2N, Male connector/KQ2H, Female connector/KQ2F, Color cap/KQ2C, and Plug/KQ2P.

*11 Compatible with products without threads as standard, and compatible with products with threads with "N."

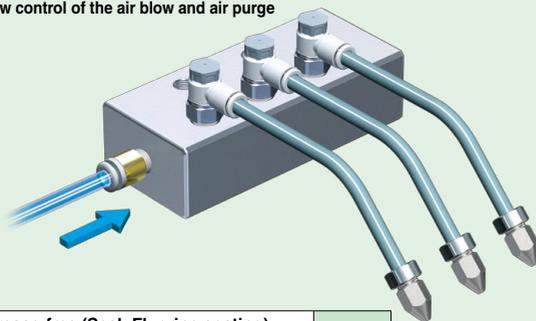
Piping Equipment **Applications and Themes**

Speed Controllers with One-touch Fitting

Specifications												
		AS-F	AS-F	AS-FS	AS-F	AS-F	AS-F-3	ASD-F	AS-F	AS-FE	AS-FG	AS-FG
		p. 214	p. 221	p. 226	p. 234	p. 238	p. 240	p. 242	p. 224	p. 244	p. 246	p. 248
X12	Lubricant: White vaseline	X12	X12	X12	X12	X12	X12	X12		X12	X12	X12
X21	Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve)	X21	X21	X21	X21	X21	X21			X21	X21	X21
X214	Restrictor (Without check valve)	X214	X214	X214	X214	X214	X214			X214	X214	X214
X250	Fixed throttle (No needle function)		X250									
X260	Antistatic								X260			
10-	Clean series	10-	10-	10-		10-		10-			10-	10-

Application Example for Restrictors

- Flow control of the air blow and air purge



Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve)	-X21
Restrictor (Without check valve)	-X214

Applicable Series

	Push-lock type Elbow type/Universal type AS From p. 214
	Elbow type/Universal type AS p. 221
	With indicator/Push-lock type AS-FS p. 226
	In-line type AS p. 238
	In-line/Panel mount type AS-3 p. 240

 Stainless steel With indicator/Push-lock type Elbow/Universal p. 250	 Stainless steel In-line p. 252	 Stainless steel Dual p. 254	 Clean p. 255	 Clean p. 255	 Low speed operation p. 258 p. 259	 Low speed operation Dual type p. 260	 Adjustable by flat head screwdriver p. 262	 Adjustable by flat head screwdriver Dual type p. 264	 Tamper proof p. 266 p. 267	 Tamper proof Dual type p. 268	 With pilot check valve p. 269	 Speed exhaust p. 270	Symbol
AS-FSG	AS-FG	ASD-FG	AS-FPQ	AS-FPG	AS-FM	ASD-FM	AS-F-D	ASD-F-D	AS-F-T	ASD-F-T	ASP	ASV	
X12	X12	X12			X12	X12	X12	X12	X12	X12	X12	X12	X12
					X21		X21		X21				X21
					X214		X214		X214				X214
													X250
													X260
10-	10-	10-	Standard	Standard	10-	10-							10-



Metal body/Elbow type
AS
p. 234



With residual pressure release valve
AS-FE
p. 244



Stainless steel Push-lock type
Elbow type/Universal type
AS-FG
p. 246



Stainless steel
AS-FG
p. 248, 252



Stainless steel With indicator/Push-lock type
AS-FSG
p. 250



For low speed operation
AS-FM
From p. 258



Adjustable by flat head screwdriver
AS-D
From p. 262



Tamper proof
AS-T
From p. 266

Piping Equipment **Made to Order**

Tubing

Specifications													
		Nylon	Soft nylon	Polyurethane	Soft polyurethane	Wear resistant	Polyurethane coil	Polyurethane flat	Antistatic polyurethane	Fluoropolymer	FEP (Fluoropolymer)	Polyolefin	Soft polyolefin
		p. 284	p. 286	From p. 288	p. 295	p. 300 p. 301	p. 303	p. 304	p. 316	p. 317	p. 326	p. 331	p. 333
		T	TS	TU	TUS	TUZ	TCU	TFU	TAU	TL/ TIL	TH/ TIH	TPH	TPS
X3	Reel	X3	X3	X3				X3					
*1 X217	Compatible with food sanitation law			X217									
X4	Change of color (10 m roll)							X4					
X4	No. of cores (10 m roll, each color)							X4					
X6	Change of coil turns, Change of color						X6						
X100	Change of color, Surface resistance 10 ⁹ Ω								X100				
10-	Clean			10-			10-	10-		Standard		Standard	Standard
*1 X64	Reinforced corrugated cardboard specification longer length reel	X64									X64		
X73	Flat type (Multi-core, Multi-color specification)					X73							
X169 to X172 X204	Multi-core, Multi-color specification			X169 to X172, X204									
*1 X192	Coil 2 cores, Multi-color							X192					
*1 X193	Coil 3 cores, Multi-color							X193					
*1 X198	Coil 2 cores, Multi-color Straight part length selection type							X198					
*1 X199	Coil 3 cores, Multi-color Straight part length selection type							X199					
*1 X214	Complies with FDA (Food and Drug Administration)			X214									

*1 Please consult with SMC.



Fittings

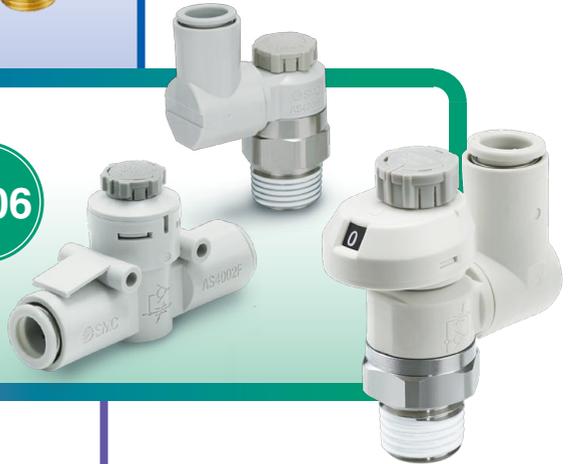
p. 39

- General Purposes
- Special Environments

Speed Controllers with One-touch Fitting

p. 206

- General Purposes
- Special Environments
- Low Speed Control
- With Special Function
- Tool Operation Type



Tubing

p. 280

- General Purposes
- Special Environments



Blow Guns

p. 338

- Blow Guns
- Nozzles

Silencers



Fittings

General Purpose Fittings Series

 Oval Type Release Button	Applicable tubing material	Applicable tubing O.D. [mm]	Applicable fluid: Temperature [°C]	Page
<p>One-touch IN/OUT connection. Possible to use in vacuum to -100 kPa</p> <p>One-touch Fittings KQ2 Series</p>  <p>Applicable tubing—Metric size</p>	FEP PFA Nylon Soft nylon Polyurethane	M3 M5 M6 1/8 1/4 3/8 1/2 Unions ø2 ø3.2 ø4 ø6 ø8 ø10 ø12 ø16	Air: -5 to 60 Water: 0 to 40	44
<p>One-touch IN/OUT connection. Possible to use in vacuum to -100 kPa</p> <p>Face Seal One-touch Fittings KQ2 Series</p>  <p>Applicable tubing—Metric size</p>	FEP PFA Nylon Soft nylon Polyurethane	M3 M5 M6 1/8 1/4 3/8 1/2 Unions ø2 ø3.2 ø4 ø6 ø8 ø10 ø12 ø16	Air: -5 to 60 Water: 0 to 40	55
<p>New-stand male thread for piping that reduces the screw-in time by 1/3.</p> <p>Uni One-touch Fittings KQ2 Series</p>  <p>Applicable tubing—Metric size</p>	FEP PFA Nylon Soft nylon Polyurethane	1/8 1/4 3/8 ø2 ø3.2 ø4 ø6 ø8 ø10 ø12 ø16	Air: -5 to 60 Water: 0 to 40	60

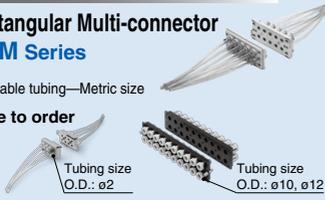
 Round Type Release Button	Applicable tubing material	Applicable tubing O.D. [mm]	Applicable fluid: Temperature [°C]	Page
<p>One-touch IN/OUT connection. Possible to use in vacuum to -100 kPa</p> <p>One-touch Fittings KQ2 Series</p>  <p>Applicable tubing—Metric size</p>	FEP PFA Nylon Soft nylon Polyurethane	M3 M5 M6 1/8 1/4 3/8 1/2 Unions ø2 ø3.2 ø4 ø6 ø8 ø10 ø12 ø16	Air: -5 to 60 Water: 0 to 40	65
<p>One-touch IN/OUT connection. Possible to use in vacuum to -100 kPa</p> <p>Face Seal One-touch Fittings KQ2 Series</p>  <p>Applicable tubing—Metric size</p>	FEP PFA Nylon Soft nylon Polyurethane	M3 M5 M6 1/8 1/4 3/8 1/2 Unions ø2 ø3.2 ø4 ø6 ø8 ø10 ø12 ø16	Air: -5 to 60 Water: 0 to 40	78
<p>New-stand male thread for piping that reduces the screw-in time by 1/3.</p> <p>Uni One-touch Fittings KQ2 Series</p>  <p>Applicable tubing—Metric size</p>	FEP PFA Nylon Soft nylon Polyurethane	1/8 1/4 3/8 1/2 ø2 ø3.2 ø4 ø6 ø8 ø10 ø12 ø16	Air: -5 to 60 Water: 0 to 40	86

	Applicable tubing material	Applicable tubing O.D. [mm]	Applicable fluid: Temperature [°C]	Page
<p>Body material: Brass (nickel plated), Stainless steel 316 Release button: Stainless steel 304</p> <p>Metal One-touch Fittings KQB2 Series</p>  <p>Applicable tubing—Metric size</p>	<ul style="list-style-type: none"> FEP PFA Nylon Soft nylon Polyurethane Polyolefin 	<p>ø2 ø3.2 ø4 ø6 ø8 ø10 ø12 ø16</p> <p>M5 1/8 1/4 3/8 1/2 Unions</p>	<p>Air, Water: -5 to 150</p>	91
<p>Low-torque rotation type</p> <p>Rotary One-touch Fittings KS Series/Standard KX Series/High speed</p>  <p>Applicable tubing—Metric size</p>	<ul style="list-style-type: none"> FEP PFA Nylon Soft nylon Polyurethane 	<p>M5 M6 1/8 1/4 3/8 1/2</p>	<p>Air: -5 to 60</p>	96
<p>One-touch connection and release Compact manifold piping possible</p> <p>One-touch Fittings Manifold KM Series</p>  <p>Applicable tubing—Metric size</p>	<ul style="list-style-type: none"> FEP PFA Nylon Soft nylon Polyurethane 	<p>1/4 3/8 ø8 ø10 ø12</p>	<p>Air: -5 to 60 Water: 0 to 40</p>	98
<p>Possible to use in vacuum to 1.0 MPa</p> <p>Insert Fittings KF Series</p>  <p>Applicable tubing—Metric size</p>	<ul style="list-style-type: none"> Nylon Soft nylon Polyurethane Polyolefin Soft polyolefin Soft polyurethane Hard polyurethane (high pressure) FEP Super PFA Modified PTFE 	<p>1/8 1/4 3/8 1/2 Unions</p>	<p>Air (Resin sleeve): -5 to 60 (Brass sleeve): -5 to 150 Water (Resin sleeve): 0 to 60 Steam (Brass sleeve): -5 to 150</p>	101
<p>Compact and non-tool connection</p> <p>Miniature Fittings M Series</p>  <p>Applicable tubing—Metric size</p>	<ul style="list-style-type: none"> FEP Modified PTFE Nylon Soft nylon Polyurethane Super PFA 	<p>M3 M5 1/8</p>	<p>Air: -5 to 60 Water: 0 to 40</p>	105
<p>Applicable for use on soft copper steel pipe</p> <p>Self-align Fittings H/DL/L/LL Series</p>  <p>Applicable tubing—Metric size</p>	<ul style="list-style-type: none"> Nylon Soft nylon Soft copper (C1220T-0) 	<p>1/8 1/4 3/8 1/2 Unions</p>	<p>Air</p>	110
<p>One-touch connection and release Built-in self-seal mechanism</p> <p>Self-seal Fittings KC Series</p>  <p>Applicable tubing—Metric size</p>	<ul style="list-style-type: none"> Nylon Soft nylon Polyurethane 	<p>M5 1/8 1/4 3/8 1/2 Unions</p>	<p>Air: -5 to 60</p>	113
<p>Compact with large flow rate</p> <p>S Couplers KK Series</p> 	<ul style="list-style-type: none"> Male thread type Female thread type Nut fitting type One-touch fitting type 	<p>R Fc</p> <p>Applicable hose I.D./O.D. 5 x 8 6 x 9 8.5 x 10 8 x 12 8.5 x 12.5 11 x 16</p> <p>ø3.2 ø4 ø6 ø8 ø10 ø12 ø16</p>	<p>Air: -5 to 60 Water: 0 to 40</p>	116

Oval Type
KQ2
Round Type
KQ2
KQB2
KS/KX
KM
KF
M
H/DL/L/LL
KC
KK
KKH
KK 130
DM
DMK
KDM
KB
KR -W2
KRM
KA
KQ2
KQ2-G
KG
KFG2
MS
KKA
KP
KPQ/KPG
LQ1
LQ3
LQHB

Fittings

General Purpose Fittings Series

	Applicable tubing material	Applicable tubing O.D. [mm]	Applicable fluid: Temperature [°C]	Page
<p>Super high impact PBT</p> <p>S Couplers KKH Series</p> 	Male thread type	R	Air: -5 to 60 Water: 0 to 40	119
	Female thread type	Rc		
	Nut fitting type	Applicable hose I.D./O.D. 5 x 8 6 x 9 6.5 x 10 8 x 12 8.5 x 12.5		
		Applicable tubing O.D. [mm] 1/8 1/4 3/8 1/2		
<p>Manufactured by RECTUS AG</p> <p>S Couplers KK130 Series</p> 	Male thread type	R	Air: -20 to 80 One-touch fitting type Air: -5 to 60	121
	Female thread type	Rc		
	Barb fitting type	Applicable hose size (inch) 1/4" 1/4" 3/8" 1/2"		
	Nut fitting type	Applicable hose I.D./O.D. 5 x 8 6 x 9 6.5 x 10 8 x 12 8.5 x 12.5 11 x 16		
	One-touch fitting type	Applicable tubing O.D. [mm] ø6 ø8 ø10 ø12		
		Applicable tubing O.D. [mm] 1/8 1/4 3/8 1/2		
<p>One-touch installation and removal of multi-tubes</p> <p>Multi-connector DM Series</p> <p>Applicable tubing—Metric size</p> 	Nylon	6 tubes	Air: -5 to 60	123
	Soft nylon	12 tubes		
	Polyurethane	12 tubes		
<p>One-touch installation and removal of multi-tubes</p> <p>Multi-connector with One-touch fittings DMK Series</p> <p>Applicable tubing—Metric size</p> 	Nylon	6 tubes	Air: -5 to 60	125
	Soft nylon	12 tubes		
	Polyurethane	12 tubes		
<p>One-touch installation and removal of multi-tubes</p> <p>Rectangular Multi-connector KDM Series</p> <p>Applicable tubing—Metric size</p> <p>Made to order</p>  <p>Tubing size O.D.: ø2</p> <p>Tubing size O.D.: ø10, ø12</p>	FEP	6 tubes	Air: -5 to 60	127
	PFA	10 tubes		
	Nylon	20 tubes		
	Soft nylon	20 tubes		
	Polyurethane	20 tubes		
<p>Centralized distribution of supply air</p> <p>Piping Module KB Series</p> <p>Applicable tubing—Metric size</p> 	FEP		Air: -5 to 60	129
	PFA			
	Nylon			
	Soft nylon			
	Polyurethane			

● Made to order

Fittings Series for Special Environments

Applicable tubing material	Applicable tubing O.D. [mm]						Applicable fluid: Temperature [°C]	Page
	ø3.2	ø4	ø6	ø8	ø10	ø12		
<p>For use where weld spatter is generated. Flame resistant material UL-94 standard V-0</p> <p>FR One-touch Fittings KR-W2 Series</p>  <p>Applicable tubing—Metric size</p>	FR soft nylon	1/8		•	•	•		<p>Air: -5 to 60</p> <p>Water: 0 to 60</p> <p>134</p>
	FR double layer	1/4		•	•	•		
		3/8		•	•	•		
		1/2		•	•	•		
	Unions			•	•	•		
<p>For use where weld spatter is generated. Flame resistant material UL-94 standard V-0</p> <p>FR One-touch Fittings Manifold KRM Series</p>  <p>Applicable tubing—Metric size</p>	FR soft nylon	1/4		•			<p>Air: -5 to 60</p> <p>Water: 0 to 60</p> <p>139</p>	
	FR double layer	3/8		•				
		ø10		•				
		ø12		•				
<p>For preventing static electricity</p> <p>Antistatic One-touch Fittings KA Series</p> 	Antistatic soft nylon	M5	•	•	•		<p>Air: 0 to 40</p> <p>141</p>	
	Antistatic polyurethane	M6	•	•	•			
		1/8	•	•	•			
		1/4	•	•	•			
		3/8	•	•	•			
	Unions	1/2	•	•	•			
<p>All stainless steel 316 except seal parts</p> <p>Stainless Steel 316 One-touch Fittings KQG2 Series</p>  <p>Applicable tubing—Metric size</p>	FEP	M5	•	•	•		<p>Air, Water, Steam: -5 to 150</p> <p>144</p>	
	PFA	1/8	•	•	•			
	Nylon	1/4	•	•	•			
	Soft nylon	3/8	•	•	•			
	Polyurethane	1/2	•	•	•			
	Polyolefin	Unions	•	•	•			
			•	•	•			
<p>For use in corrosive environments Stainless series</p> <p>Stainless Steel One-touch Fittings KQ2-G Series</p>  <p>Applicable tubing—Metric size</p>	FEP	M5	•	•	•		<p>Air: -5 to 60</p> <p>Water: 0 to 40</p> <p>149</p>	
	PFA	1/8	•	•	•			
	Nylon	1/4	•	•	•			
	Soft nylon	3/8	•	•	•			
	Polyurethane	1/2	•	•	•			
	Unions		•	•	•			
<p>For use in corrosive environments Stainless series</p> <p>Stainless Steel One-touch Fittings KG Series</p>  <p>Applicable tubing—Metric size</p>	FEP	M5	•	•	•		<p>Air: -5 to 60</p> <p>Water: 0 to 40</p> <p>156</p>	
	PFA	1/8	•	•	•			
	Nylon	1/4	•	•	•			
	Soft nylon	3/8	•	•	•			
	Polyurethane	1/2	•	•	•			
	Unions		•	•	•			
<p>Certified to meet current Food Sanitation Law standards.</p> <p>Stainless Steel 316 Insert Fittings KFG2 Series</p>  <p>Applicable tubing—Metric size</p>	FEP	1/8	•	•	•		<p>Air, Water, Steam: -65 to 260</p> <p>(Swivel elbow and with sealant types: -5 to 150°C)</p> <p>163</p>	
	PFA	1/4	•	•	•			
	Modified PTFE	3/8	•	•	•			
	2-layer soft fluoropolymer	1/2	•	•	•			
	Nylon	Unions	•	•	•			
	Soft nylon		•	•	•			
	Polyurethane		•	•	•			

Oval Type	KQ2
Round Type	KR-W2
	KQ2
	KQB2
	KS/KX
	KM
	KF
	M
	H/DL/L/L
	KC
	KK
	KKH
	KK130
	DM
	DMK
	KDM
	KB
	KR-W2
	KRM
	KA
	KQG2
	KQ2-G
	KG
	KFG2
	MS
	KKA
	KP
	KPQ/KPG
	LQ1
	LQ3
	LQHB

Fittings

Fittings Series for Special Environments

Applicable tubing material	Applicable tubing O.D. [mm]						Applicable fluid: Temperature [°C]	Page
	ø3.2	ø4	ø6	ø8	ø10	ø12		
For use in corrosive environments Stainless steel 316 Miniature Fittings MS Series Applicable tubing—Metric size							Air: -5 to 60 Water: 0 to 40	166
Nylon Soft nylon Polyurethane FEP Modified PTFE Super PFA	M5	•	•	•	•	•	•	

Plug	Applicable tubing O.D. [mm]						Applicable fluid: Temperature [°C]	Page
	1/8	1/4	3/8	1/2	3/4	1		
Applicable for use on soft copper steel pipe S Couplers/Stainless Steel Type KKA Series							Air, Water: -5 to 150	169
Male thread type Female thread type Socket Male thread type Female thread type	R	•	•	•	•	•	•	•
	Rc	•	•	•	•	•	•	•
	R	•	•	•	•	•	•	•
	Rc	•	•	•	•	•	•	•

Applicable tubing material	Applicable tubing O.D. [mm]						Applicable fluid: Temperature [°C]	Page
	ø3.2	ø4	ø6	ø8	ø10	ø12		
For use in clean room blowing Clean One-touch Fittings KP Series							Air, Nitrogen Deionized water: -20 to 80	172
Polyolefin Soft polyolefin PFA Polyurethane	1/8	•	•	•	•	•	•	
	1/4	•	•	•	•	•	•	
	3/8	•	•	•	•	•	•	
	1/2	•	•	•	•	•	•	
Unions	•	•	•	•	•	•	•	

Applicable tubing material	Applicable tubing O.D. [mm]						Applicable fluid: Temperature [°C]	Page
	ø3.2	ø4	ø6	ø8	ø10	ø12		
For driving air piping in clean room Clean One-touch Fittings KPQ/KPG Series							Air: -5 to 60	175
Polyurethane PFA	M5	•	•	•	•	•	•	
	1/8	•	•	•	•	•	•	
	1/4	•	•	•	•	•	•	
	3/8	•	•	•	•	•	•	
	1/2	•	•	•	•	•	•	
Unions	•	•	•	•	•	•	•	

Applicable tubing material	Tubing O.D.														Applicable fluid: Temperature [°C]	Page	
	Metric size [mm]							Inch size [inch]									
	ø3	ø4	ø6	ø8	ø10	ø12	ø19	ø25	ø18"	ø18"	ø14"	ø38"	ø12"	ø34"			ø1"
Material: NEW PFA Fluoropolymer Fittings LQ1 Series															Air, Water (Deionized water), Chemical liquids, etc.*1: 0 to 200	178	
Fluoropolymer tubing	1/8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1/4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	3/8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1/2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	3/4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Unions	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Applicable tubing material	Tubing O.D.														Applicable fluid: Temperature [°C]	Page	
	Metric size [mm]							Inch size [inch]									
	ø3	ø4	ø6	ø8	ø10	ø12	ø19	ø25	ø18"	ø18"	ø14"	ø38"	ø12"	ø34"			ø1"
Material: NEW PFA Fluoropolymer Fittings Flare Type LQ3 Series															Air, Water (Deionized water), Chemical liquids, etc.*1: 0 to 150 (Nut material PVDF) 0 to 200 (Nut material PFA)	193	
Fluoropolymer tubing	1/8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1/4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	3/8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1/2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	3/4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1 1/4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1 1/2"	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Unions	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Applicable tubing material	Tubing O.D.														Applicable fluid: Temperature [°C]	Page	
	Metric size [mm]							Inch size [inch]									
	ø3	ø4	ø6	ø8	ø10	ø12	ø19	ø25	ø18"	ø18"	ø14"	ø38"	ø12"	ø34"			ø1"
Material: NEW PFA Fluoropolymer Bore Through Connector LQHB Series															Air, Water (Deionized water), Chemical liquids, etc.*1: 0 to 200*1	204	
Fluoropolymer tubing	1/8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1/4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	3/8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1/2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	3/4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	1	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Unions	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

*1 For details, refer to the Web Catalog.

KQ2 Series

Applicable tubing O.D.: Metric Size

Connection thread: M, R, Rc

One-touch IN/OUT connection.
Possible to use in vacuum to
-100 kPa

Applicable Tubing

Tubing material	FEP, PFA, Nylon, Soft nylon, Polyurethane
Tubing O.D.	ø3.2, ø4, ø6

Specifications

Fluid		Air, Water*1
Operating pressure range*2		-100 kPa to 1 MPa
Proof pressure (at 23°C)		3 MPa
Ambient and fluid temperatures		-5 to 60°C, Water: 0 to 40°C (No freezing)
Thread	Mounting section	JIS B0203 (Taper thread for piping) JIS B0205 (Metric coarse thread)
	Nut section	JIS B0205 (Metric fine thread)
Sealant on the threads		With sealant or none

*1 The surge pressure must be under the maximum operating pressure.

*2 Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.



Guide

Chuck

Suitable for use with nylon and urethane. Large retaining force

The chuck provides secure retention and the collet increases the holding force on the tube.

Seal

Can be used for a wide range of pressures from a low vacuum up to a pressure of 1 MPa.

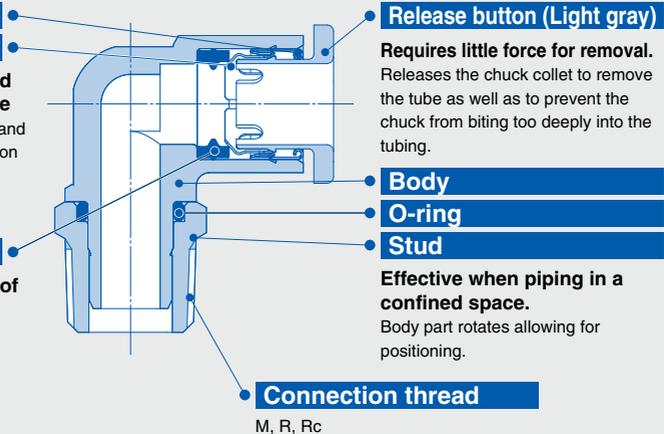
The use of a special profile ensures sealing and reduces resistance when the tube is inserted.

Guide

Chuck

Body

* Fittings without thread portion, and with all resin body material are copper free specification.



Release button (Light gray)

Requires little force for removal.

Releases the chuck collet to remove the tube as well as to prevent the chuck from biting too deeply into the tubing.

Body

O-ring

Stud

Effective when piping in a confined space.

Body part rotates allowing for positioning.

Connection thread

M, R, Rc

Release button (Light gray)

Seal

For inch size, refer to the [Web Catalog](#).

Oval Type

	
KQ2H Male connector  p. 46	
KQ2S Hexagon socket head male connector  p. 46	
KQ2L Male elbow  p. 46	
KQ2K 45° male elbow  p. 46	KQ2Y Male run tee  p. 47
KQ2W Extended male elbow  p. 47	KQ2VD Double universal male elbow  p. 48
KQ2V Universal male elbow  p. 47	KQ2VT Triple universal male elbow  p. 48
KQ2VS Hexagon socket head universal male elbow  p. 47	KQ2D Male delta union  p. 48
KQ2T Male branch tee  p. 47	

	
KQ2H Straight union  p. 49	KQ2T Different diameter tee  p. 49
KQ2E Bulkhead union  p. 49	KQ2T Different diameter tee  p. 49
KQ2L Union elbow  p. 49	KQ2D Delta union  p. 50
KQ2LE Bulkhead male elbow  p. 49	KQ2TW Cross  p. 50
KQ2J Union tee  p. 49	KQ2TX Different diameter cross  p. 50
KQ2H Different diameter straight  p. 49	KQ2TY Different diameter cross  p. 50

	
KQ2F Female connector  p. 52	KQ2LF Female elbow  p. 52
KQ2E Bulkhead connector  p. 52	KQ2VF Universal female elbow  p. 52

Accessories	
KQ2P Plug  p. 53	KQ2N Adapter  p. 53
KQ2N Nipple  p. 53	KQ2C Tube cap  p. 53
KQ2N Reducer nipple  p. 53	KQ2C Color cap  p. 53

	
KQ2L Plug-in elbow  p. 51	KQ2R Plug-in reducer  p. 51
KQ2W Extended plug-in elbow  p. 51	KQ2L Reducer elbow  p. 51

The following models do not support oval type release buttons. Refer to the round type (from page 65).

Branch universal female elbow KQ2ZF p. 75	Branch male elbow KQ2LU p. 70	Branch universal male elbow KQ2Z p. 70	Double branch universal male elbow KQ2ZD p. 70	Triple branch universal male elbow KQ2ZT p. 70
Branch union elbow KQ2LU p. 73	Double branch "Y" KQ2UD p. 71	Different diameter double union "Y" KQ2UD p. 73	Different diameter plug-in "Y" KQ2X p. 74	Double plug-in "Y" KQ2XD p. 74
Union "Y" KQ2U p. 72	Different diameter union "Y" KQ2U p. 73	Plug-in "Y" KQ2U p. 74	Branch "Y" KQ2U p. 69	

⚠ Box wrenches and socket wrenches may interfere with oval type release buttons. Refer to page 350 for details.

Oval Type

Tubing



Female thread hole

One-touch Fittings

KQ2 Series

Male connector

KQ2H

Use to pipe a female thread in the same direction.
Most general model.

	Applicable tubing O.D. [mm]	Connection thread R	Model
 <M>	ø3.2	M3 x 0.5	KQ2H23-M3G1
		M5 x 0.8	KQ2H23-M5□1
		1/8	KQ2H23-01□S1
		1/4	KQ2H23-02□S1
 <R>	ø4	M3 x 0.5	KQ2H04-M3G1
		M5 x 0.8	KQ2H04-M5□1
		M6 x 1.0	KQ2H04-M6□1
		1/8	KQ2H04-01□S1
	ø6	1/4	KQ2H04-02□S1
		M5 x 0.8	KQ2H06-M5□1
		M6 x 1.0	KQ2H06-M6□1
		1/8	KQ2H06-01□S1
		1/4	KQ2H06-02□S1
		3/8	KQ2H06-03□S1

□: A (Brass), N (Brass + Electroless nickel plating)

Male elbow

KQ2L

Use to pipe a female thread at right angles.
Most general model.

	Applicable tubing O.D. [mm]	Connection thread	Model
 <M>	ø3.2	M3 x 0.5	KQ2L23-M3G1
		M5 x 0.8	KQ2L23-M5□1
		1/8	KQ2L23-01□S1
		1/4	KQ2L23-02□S1
 <R>	ø4	M3 x 0.5	KQ2L04-M3G1
		M5 x 0.8	KQ2L04-M5□1
		M6 x 1.0	KQ2L04-M6□1
		1/8	KQ2L04-01□S1
		1/4	KQ2L04-02□S1
	ø6	M5 x 0.8	KQ2L06-M5□1
		M6 x 1.0	KQ2L06-M6□1
		1/8	KQ2L06-01□S1
		1/4	KQ2L06-02□S1
		3/8	KQ2L06-03□S1

□: A (Brass), N (Brass + Electroless nickel plating)

Hexagon socket head male connector

KQ2S

Internal hexagon socket allows tightening with a hexagon wrench in confined spaces.

	Applicable tubing O.D. [mm]	Connection thread R	Model
 <M>	ø3.2	M3 x 0.5	KQ2S23-M3G1
		M5 x 0.8	KQ2S23-M5□1
 <R>	ø4	M3 x 0.5	KQ2S04-M3G1
		M5 x 0.8	KQ2S04-M5□1
		M6 x 1.0	KQ2S04-M6□1
	ø6	1/8	KQ2S04-01□S1
		M5 x 0.8	KQ2S06-M5□1
		M6 x 1.0	KQ2S06-M6□1
		1/8	KQ2S06-01□S1
		1/4	KQ2S06-02□S1

□: A (Brass), N (Brass + Electroless nickel plating)

45° male elbow

KQ2K

Use to pipe a female thread at a 45° angle. Its direction is in-between that of the male connector and male elbow.

	Applicable tubing O.D. [mm]	Connection thread R	Model
 <M>	ø4	M5 x 0.8	KQ2K04-M5□1
		M6 x 1.0	KQ2K04-M6□1
		1/8	KQ2K04-01□S1
 <R>	ø6	1/4	KQ2K04-02□S1
		M5 x 0.8	KQ2K06-M5□1
		M6 x 1.0	KQ2K06-M6□1
		1/8	KQ2K06-01□S1
		1/4	KQ2K06-02□S1
		3/8	KQ2K06-03□S1

□: A (Brass), N (Brass + Electroless nickel plating)

Oval Type

Tubing   Female thread hole

One-touch Fittings

KQ2 Series

Extended male elbow

KQ2W

Basically, it is used together with a male elbow. Its extended height allows for multi-leveled piping and prevents interference among fittings.

Applicable tubing O.D. [mm]	Connection thread R	Model
ø3.2	M3 x 0.5	KQ2W23-M3G1
	M5 x 0.8	KQ2W23-M5□1
	1/8	KQ2W23-01□S1
	1/4	KQ2W23-02□S1
ø4	M3 x 0.5	KQ2W04-M3G1
	M5 x 0.8	KQ2W04-M5□1
	1/8	KQ2W04-01□S1
	1/4	KQ2W04-02□S1
ø6	M5 x 0.8	KQ2W06-M5□1
	1/8	KQ2W06-01□S1
	1/4	KQ2W06-02□S1
	3/8	KQ2W06-03□S1

□: A (Brass), N (Brass + Electroless nickel plating)

Male branch tee

KQ2T

Use to branch a female thread at both 90° angles.

Applicable tubing O.D. [mm]	Connection thread R	Model
ø3.2	M3 x 0.5	KQ2T23-M3G1
	M5 x 0.8	KQ2T23-M5□1
	1/8	KQ2T23-01□S1
	1/4	KQ2T23-02□S1
ø4	M3 x 0.5	KQ2T04-M3G1
	M5 x 0.8	KQ2T04-M5□1
	M6 x 1.0	KQ2T04-M6□1
	1/8	KQ2T04-01□S1
ø6	1/4	KQ2T04-02□S1
	M5 x 0.8	KQ2T06-M5□1
	M6 x 1.0	KQ2T06-M6□1
	1/8	KQ2T06-01□S1
ø6	1/4	KQ2T06-02□S1
	3/8	KQ2T06-03□S1

□: A (Brass), N (Brass + Electroless nickel plating)

Universal male elbow

KQ2V

Hexagon head of the body allows tightening with a box wrench in confined spaces.

Applicable tubing O.D. [mm]	Connection thread R	Model
ø4	M5 x 0.8	KQ2V04-M5□1
	1/8	KQ2V04-01□S1
ø6	M5 x 0.8	KQ2V06-M5□1
	1/8	KQ2V06-01□S1
	1/4	KQ2V06-02□S1

□: A (Brass), N (Brass + Electroless nickel plating)

Male run tee

KQ2Y

Use to branch a female thread in the same direction and at a 90° angle.

Applicable tubing O.D. [mm]	Connection thread R	Model
ø3.2	M3 x 0.5	KQ2Y23-M3G1
	M5 x 0.8	KQ2Y23-M5□1
	1/8	KQ2Y23-01□S1
	1/4	KQ2Y23-02□S1
ø4	M3 x 0.5	KQ2Y04-M3G1
	M5 x 0.8	KQ2Y04-M5□1
	M6 x 1.0	KQ2Y04-M6□1
	1/8	KQ2Y04-01□S1
ø6	1/4	KQ2Y04-02□S1
	M5 x 0.8	KQ2Y06-M5□1
	M6 x 1.0	KQ2Y06-M6□1
	1/8	KQ2Y06-01□S1
ø6	1/4	KQ2Y06-02□S1
	3/8	KQ2Y06-03□S1

□: A (Brass), N (Brass + Electroless nickel plating)

Hexagon socket head universal male elbow

KQ2VS

Hexagon socket on the top allows tightening with a hexagon wrench in confined spaces.

Applicable tubing O.D. [mm]	Connection thread R	Model
ø4	M5 x 0.8	KQ2VS04-M5□1
	1/8	KQ2VS04-01□S1
ø6	M5 x 0.8	KQ2VS06-M5□1
	1/8	KQ2VS06-01□S1
	1/4	KQ2VS06-02□S1

□: A (Brass), N (Brass + Electroless nickel plating)

Oval Type

Tubing



Female thread hole

One-touch Fittings

KQ2 Series

Double universal male elbow

KQ2VD

Use to two-branch a female thread at right angles.
Two individual parts rotate 360°.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	R1/8	KQ2VD04-01□S1
	R1/4	KQ2VD04-02□S1
	R3/8	KQ2VD04-03□S1
ø6	R1/8	KQ2VD06-01□S1
	R1/4	KQ2VD06-02□S1
	R3/8	KQ2VD06-03□S1

□: A (Brass), N (Brass + Electroless nickel plating)

Triple universal male elbow

KQ2VT

Use to three-branch a female thread at right angles.
Three individual parts rotate 360°.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	R1/8	KQ2VT04-01□S1
	R1/4	KQ2VT04-02□S1
	R3/8	KQ2VT04-03□S1
ø6	R1/8	KQ2VT06-01□S1
	R1/4	KQ2VT06-02□S1
	R3/8	KQ2VT06-03□S1

□: A (Brass), N (Brass + Electroless nickel plating)

Male delta union

KQ2D

Use to branch a female thread at two right angles.

Applicable tubing O.D. [mm]	Connection thread R	Model
ø4	M5 x 0.8	KQ2D04-M5□1
	M6 x 1.0	KQ2D04-M6□1
	1/8	KQ2D04-01□S1
	1/4	KQ2D04-02□S1
ø6	M5 x 0.8	KQ2D06-M5□1
	M6 x 1.0	KQ2D06-M6□1
	1/8	KQ2D06-01□S1
	3/8	KQ2D06-03□S1

□: A (Brass), N (Brass + Electroless nickel plating)

Oval Type

Tubing  Tubing

One-touch Fittings *KQ2 Series*

Straight union

KQ2H

Use to connect tubing in the same direction.

	Applicable tubing O.D. [mm]	Model
	ø3.2	KQ2H23-00A1
	ø4	KQ2H04-00A1
	ø6	KQ2H06-00A1

Union tee

KQ2T

Use to branch tubing at both 90° angles.

	Applicable tubing O.D. [mm]	Model
	ø3.2	KQ2T23-00A1
	ø4	KQ2T04-00A1
	ø6	KQ2T06-00A1

Bulkhead union

KQ2E

Use to connect tubing through a panel, etc.

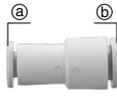
	Applicable tubing O.D. [mm]	Model
	ø3.2	KQ2E23-00□1
	ø4	KQ2E04-00□1
	ø6	KQ2E06-00□1

□: A (Brass), N (Brass + Electroless nickel plating)

Different diameter straight

KQ2H

Use to connect tubing of different sizes.

	Applicable tubing O.D. [mm]		Model
	(a)	(b)	
	ø2	ø3.2	KQ2H02-23A1
	ø2	ø4	KQ2H02-04A1
	ø3.2	ø4	KQ2H23-04A1
	ø3.2	ø6	KQ2H23-06A1
	ø4	ø6	KQ2H04-06A1
	ø6	ø8	KQ2H06-08A1

Union elbow

KQ2L

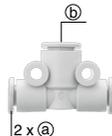
Use to connect tubing at right angles.

	Applicable tubing O.D. [mm]	Model
	ø3.2	KQ2L23-00A1
	ø4	KQ2L04-00A1
	ø6	KQ2L06-00A1

Different diameter tee

KQ2T

Use to connect tubing of reduced size for branching at both 90° angles.

	Applicable tubing O.D. [mm]		Model
	(a)	(b)	
	ø3.2	ø4	KQ2T23-04A1
	ø4	ø6	KQ2T04-06A1
	ø6	ø8	KQ2T06-08A1

Bulkhead male elbow

KQ2LE

Use to connect tubing through a panel, etc. and to change the tube direction by 90°.

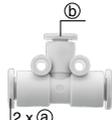
	Applicable tubing O.D. [mm]	Model
	ø4	KQ2LE04-00□1
	ø6	KQ2LE06-00□1

□: A (Brass), N (Brass + Electroless nickel plating)

Different diameter tee

KQ2T

Use to connect tubing of reduced size for branching at a 90° angle from two pipes running in the same direction.

	Applicable tubing O.D. [mm]		Model
	(a)	(b)	
	ø6	ø4	KQ2T06-04A1
	ø8	ø6	KQ2T08-06A1

Oval Type

Tubing  Tubing

One-touch Fittings *KQ2 Series*

Delta union

KQ2D

Use to branch tubing at three right angles.

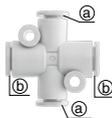


Applicable tubing O.D. [mm]	Model
ø4	KQ2D04-00A1
ø6	KQ2D06-00A1

Different diameter cross

KQ2TX

Use to four-branch a line and connect tubing of reduced size at both 90° angles.



Applicable tubing O.D. [mm]		Model
a	b	
ø6	ø8	KQ2TX06-08A1

Cross

KQ2TW

Use to four-branch a line.



Applicable tubing O.D. [mm]	Model
ø4	KQ2TW04-00A1
ø6	KQ2TW06-00A1

Different diameter cross

KQ2TY

Use to connect tubing of reduced size for branching in three directions.



Applicable tubing O.D. [mm]		Model
a	b	
ø6	ø8	KQ2TY06-08A1

Oval Type

Tubing   One-touch fittings

One-touch Fittings

KQ2 Series

Plug-in elbow

KQ2L

Use to change the tube direction of One-touch fittings by 90°.



Applicable tubing O.D. [mm]	Applicable fitting size	Model
ø3.2	ø3.2	KQ2L23-99A1
ø4	ø4	KQ2L04-99A1
ø6	ø6	KQ2L06-99A1

Plug-in reducer

KQ2R

Use to change size of One-touch fittings.

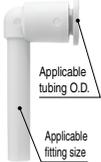


Applicable tubing O.D. [mm]	Applicable fitting size	Model
ø3.2	ø4	KQ2R23-04A1
	ø6	KQ2R23-06A1
ø4	ø6	KQ2R04-06A1
	ø8	KQ2R04-08A1
	ø10	KQ2R04-10A1
ø6	ø4	KQ2R06-04A1
	ø8	KQ2R06-08A1
	ø10	KQ2R06-10A1
	ø12	KQ2R06-12A1

Extended plug-in elbow

KQ2W

Use to change the tube direction of One-touch fittings by 90°. Multi-levelled piping is also possible with the plug-in elbow.



Applicable tubing O.D. [mm]	Applicable fitting size	Model
ø3.2	ø3.2	KQ2W23-99A1
ø4	ø4	KQ2W04-99A1
ø6	ø6	KQ2W06-99A1

Reducer elbow

KQ2L

Use to change the tube direction of One-touch fittings by 90° and connect tubing of reduced size.



Applicable tubing O.D. [mm]	Applicable fitting size	Model
ø3.2	ø4	KQ2L23-04A1
	ø6	KQ2L23-06A1
ø4	ø6	KQ2L04-06A1
	ø8	KQ2L04-08A1
ø6	ø8	KQ2L06-08A1
	ø10	KQ2L06-10A1

Oval Type

Tubing  Male thread

One-touch Fittings *KQ2 Series*

Female connector **KQ2F**

Use to pipe a male thread of a pressure gauge, etc.

Applicable tubing O.D. [mm]	Connection thread	Model
ø3.2	M3 x 0.5	KQ2F23-M3 □1
	M5 x 0.8	KQ2F23-M5 □1
ø4	M3 x 0.5	KQ2F04-M3 □1
	M5 x 0.8	KQ2F04-M5 □1
	Rc1/8	KQ2F04-01 □1
	Rc1/4	KQ2F04-02 □1
ø6	M5 x 0.8	KQ2F06-M5 □1
	Rc1/8	KQ2F06-01 □1
	Rc1/4	KQ2F06-02 □1
	Rc3/8	KQ2F06-03 □1



□: A (Brass), N (Brass + Electroless nickel plating)

Female elbow **KQ2LF**

Use to pipe a male thread at right angles.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	M5 x 0.8	KQ2LF04-M5 □1
	M6 x 1.0	KQ2LF04-M6 □1
	Rc1/8	KQ2LF04-01 □1
ø6	Rc1/4	KQ2LF04-02 □1
	M5 x 0.8	KQ2LF06-M5 □1
	M6 x 1.0	KQ2LF06-M6 □1
	Rc1/8	KQ2LF06-01 □1
	Rc1/4	KQ2LF06-02 □1
	Rc3/8	KQ2LF06-03 □1



□: A (Brass), N (Brass + Electroless nickel plating)

Bulkhead connector **KQ2E**

Use to connect a male thread and tubing through a panel, etc.

Applicable tubing O.D. [mm]	Connection thread Rc	Model
ø3.2	1/4	KQ2E23-02 □1
ø4	1/8	KQ2E04-01 □1
	1/4	KQ2E04-02 □1
	1/8	KQ2E06-01 □1
ø6	1/4	KQ2E06-02 □1
	3/8	KQ2E06-03 □1



□: A (Brass), N (Brass + Electroless nickel plating)

Universal female elbow **KQ2VF**

Use to branch a male or female thread in the same direction and at a 90° angle. Multiple connections possible.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	M5 x 0.8	KQ2VF04-M5 □1
	R, Rc1/8	KQ2VF04-01 □S1
	ø6	M5 x 0.8
R, Rc1/8		KQ2VF06-01 □S1
R, Rc1/4		KQ2VF06-02 □S1



□: A (Brass), N (Brass + Electroless nickel plating)

Oval Type

KQ2

Round Type

KQ2

KQ2

KQB2

KS/KX

KM

KF

M

H/DL

L/L

KC

KK

KKH

KK

130

DM

DMK

KDM

KB

KR

-W2

KRM

KA

KQ2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/KPG

LQ1

LQ3

LQHB

Oval Type

Accessories

One-touch Fittings

KQ2 Series

Plug

KQ2P

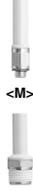
Use to plug unused One-touch fittings.

	Applicable fitting size	Model
	ø2	KJP-02
	ø3.2	KQ2P-23
	ø4	KQ2P-04
	ø6	KQ2P-06
	ø8	KQ2P-08
	ø10	KQ2P-10
	ø12	KQ2P-12
	ø16	KQ2P-16

Adapter

KQ2N

Use to connect One-touch fittings and R female threads.

	Applicable fitting size	Connection thread	Model
	ø4	M5 x 0.8	KQ2N04-M5□
		R1/8	KQ2N04-01□S
	ø6	M5 x 0.8	KQ2N06-M5□
		R1/8	KQ2N06-01□S
	ø8	R1/4	KQ2N08-02□S
		R1/4	KQ2N08-02□S
	ø10	R3/8	KQ2N08-03□S
		R3/8	KQ2N10-03□S

□: A (Brass), N (Brass + Electroless nickel plating)

Nipple

KQ2N

Use to connect One-touch fittings.

	Applicable fitting size	Model
	ø4	KQ2N04-99
	ø6	KQ2N06-99
	ø8	KQ2N08-99
	ø10	KQ2N10-99
	ø12	KQ2N12-99
	ø16	KQ2N16-99

Tube cap

KQ2C

Use to plug unused tubing.

	Applicable tubing O.D. [mm]	Model
	ø4	KQ2C04-00A1
	ø6	KQ2C06-00A1

Reducer nipple

KQ2N

Use to connect One-touch fittings of different sizes.

	Applicable fitting size		Model
	(a)	(b)	
	ø4	ø6	KQ2N04-06
	ø6	ø8	KQ2N06-08
	ø8	ø10	KQ2N08-10
	ø10	ø12	KQ2N10-12
	ø12	ø16	KQ2N12-16

Color cap

KQ2C

Mount onto the release button and use different colors for piping according to applications.

	Applicable tubing O.D. [mm]	Model
	ø3.2	KQ2C-23□B
	ø4	KQ2C-04□B
	ø6	KQ2C-06□B

□: B (Black), R (Red), YR (Orange), BR (Brown), Y (Yellow), G (Green), CB (Sky blue), GR (Gray), W (White), BU (Blue)



Made to Order

1 Made to Order

Symbol	Specifications
X12	Lubricant: White vaseline Release button color: White
X35 *1	Body color: Black Release button color: Light gray
X41	With fixed orifice*2

*1 The following models are not available as made to order: Hexagon socket head male connector/KQ2S, Bulkhead union/KQ2E, Bulkhead connector/KQ2E, Nipple/KQ2N, Reducer nipple/KQ2N, Male connector/KQ2H, Female connector/KQ2F, Color cap/KQ2C, and Plug/KQ2P.

*2 Please contact SMC for availability.

The following made-to-order products will be provided based on previous models (KQ2 series). Please contact SMC separately.

Symbol	Specifications
X17	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue
X29	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue Copper-free (With electroless nickel plating)
X34	Rubber material: FKM
X39	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue Clean (Copper-free, air blow, double packaging, resin body: white)
X94	Grease-free Rubber material: FKM (With fluorine coating) Release button color: Light blue

2 Clean Series

Please consult with SMC separately for applicable models.

Symbol	Specifications
10-	Brass parts: With electroless nickel plating Lubricant: Fluorine grease Air blow in a clean room Double packaging Resin body, Release button color: White

Example) **10-KQ2H06-02NS1** (With thread)

10-KQ2H06-00A1 (Without thread)

Spare Parts

Description	Part no.	Applicable thread
Gasket	M-3G2	M3
	M-5G2	M5
	M-6G	M6

Brass

Description	Part no.	Applicable model
Pipe nut	KQ04-P01A	KQ2E23-00A1, KQ2E04-00A1, KQ2E23-02A1
		KQ2E04-01A1, KQ2E04-02A1, KQ2LE04-00A1
	KQ06-P01A	KQ2E06-00A1, KQ2E06-01A1, KQ2E06-02A1
		KQ2E06-03A1, KQ2LE06-00A1

Brass + Electroless nickel plating

Description	Part no.	Applicable model
Pipe nut	KQ04-P01N	KQ2E23-00N1, KQ2E04-00N1, KQ2E23-02N1
		KQ2E04-01N1, KQ2E04-02N1, KQ2LE04-00N1
	KQ06-P01N	KQ2E06-00N1, KQ2E06-01N1, KQ2E06-02N1
		KQ2E06-03N1, KQ2LE06-00N1

Oval Type

KQ2

Round Type

KQ2

KQB2

KS/
KX

KM

KF

M

H/DL
L/LL

KC

KK

KKH

KK
130

DM

DMK

KDM

KB

KR
-W2

KRM

KA

KQG2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/
KPG

LQ1

LQ3

LQHB

KQ2 Series

Applicable tubing O.D.: Metric Size

Connection thread: R, Rc

One-touch IN/OUT connection.
Possible to use in vacuum to
-100 kPa.



Applicable Tubing

Tubing material	FEP, PFA, Nylon, Soft nylon, Polyurethane
Tubing O.D.	ø3.2, ø4, ø6

Specifications

Fluid		Air, Water*1
Operating pressure range*2		-100 kPa to 1 MPa
Proof pressure (at 23°C)		3 MPa
Ambient and fluid temperatures		-5 to 60°C, Water: 0 to 40°C (No freezing)
Thread	Mounting section	JIS B0203 (Taper thread for piping) JIS B0205 (Metric coarse thread)
	Nut section	JIS B0205 (Metric fine thread)
Sealant on the threads		Seal ring

*1 The surge pressure must be under the maximum operating pressure.

*2 Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

Guide

Chuck

Suitable for use with nylon and urethane. Large retaining force

The chuck provides secure retention and the collet increases the holding force on the tube.

Seal

Can be used for a wide range of pressures from a low vacuum up to a pressure of 1 MPa.

The use of a special profile ensures sealing and reduces resistance when the tube is inserted.

Face seal method

Seal ring

Piping installability is improved by changing to the face seal structure.

Face seal



Release button

Requires little force for removal.

Releases the chuck collet to remove the tube as well as to prevent the chuck from biting too deeply into the tubing.

Body

O-ring

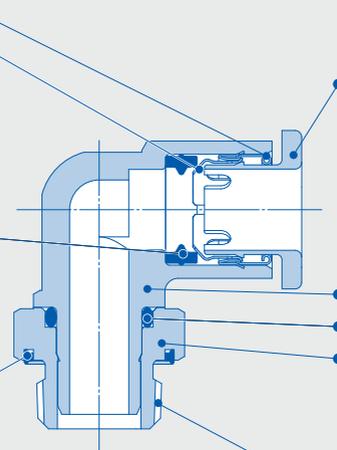
Stud

Effective when piping in a confined space.

Body part rotates allowing for positioning.

Connection thread

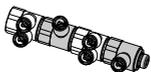
R, Rc



For inch size, refer to the [Web Catalog](#).

Oval Type

Tubing  Female thread hole		
KQ2H Male connector  p. 57	KQ2W Extended male elbow  p. 57	KQ2Y Male run tee  p. 58
KQ2S Hexagon socket head male connector  p. 57	KQ2V Universal male elbow  p. 57	KQ2VD Double universal male elbow  p. 58
KQ2L Male elbow  p. 57	KQ2VS Hexagon socket head universal male elbow  p. 58	KQ2VT Triple universal male elbow  p. 58
KQ2K 45° male elbow  p. 57	KQ2T Male branch tee  p. 58	KQ2D Male delta union  p. 58

Tubing  Male thread	
KQ2VF Universal female elbow  p. 59	Use to branch a male or female thread in the same direction and at a 90° angle. Multiple connections possible. 

The following models do not support oval type release buttons. Refer to the round type (from page 78).

Branch universal female elbow KQ2ZF p. 85	Branch male elbow KQ2LU p. 83	Branch universal male elbow KQ2Z p. 83	Double branch universal male elbow KQ2ZD p. 83	Triple branch universal male elbow KQ2ZT p. 83
Double branch "Y" KQ2UD p. 84	Branch "Y" KQ2U p. 82			

⚠ Box wrenches and socket wrenches may interfere with oval type release buttons. Refer to page 350 for details.

Oval Type
KQ2
Round Type
KQ2
KQB2
KS/KX
KM
KF
M
H/DL/L/L
KC
KK
KKH
KK130
DM
DMK
KDM
KB
KR-W2
KRM
KA
KQG2
KQ2-G
KG
KFG2
MS
KKA
KP
KPQ/KPG
LQ1
LQ3
LQHB

Oval Type

Tubing



Female thread hole

Face Seal One-touch Fittings

KQ2 Series

Male connector

KQ2H

Use to pipe a female thread in the same direction.
Most general model.



Applicable tubing O.D. [mm]	Connection thread R	Model
ø3.2	1/8	KQ2H23-01□P1
	1/4	KQ2H23-02□P1
ø4	1/8	KQ2H04-01□P1
	1/4	KQ2H04-02□P1
ø6	1/8	KQ2H06-01□P1
	1/4	KQ2H06-02□P1
	3/8	KQ2H06-03□P1

□: A (Brass), N (Brass + Electroless nickel plating)

45° male elbow

KQ2K

Use to pipe a female thread at a 45° angle. Its direction is in-between that of the male connector and male elbow.



Applicable tubing O.D. [mm]	Connection thread R	Model
ø4	1/8	KQ2K04-01□P1
	1/4	KQ2K04-02□P1
ø6	1/8	KQ2K06-01□P1
	1/4	KQ2K06-02□P1
	3/8	KQ2K06-03□P1

□: A (Brass), N (Brass + Electroless nickel plating)

Hexagon socket head male connector

KQ2S

Internal hexagon socket allows tightening with a hexagon wrench in confined spaces.



Applicable tubing O.D. [mm]	Connection thread R	Model
ø4	1/8	KQ2S04-01□P1
	1/4	KQ2S04-02□P1
ø6	1/8	KQ2S06-01□P1
	1/4	KQ2S06-02□P1

□: A (Brass), N (Brass + Electroless nickel plating)

Extended male elbow

KQ2W

Basically, it is used together with a male elbow. Its extended height allows for multi-leveled piping and prevents interference among fittings.



Applicable tubing O.D. [mm]	Connection thread R	Model
ø3.2	1/8	KQ2W23-01□P1
	1/4	KQ2W23-02□P1
ø4	1/8	KQ2W04-01□P1
	1/4	KQ2W04-02□P1
ø6	1/8	KQ2W06-01□P1
	1/4	KQ2W06-02□P1
	3/8	KQ2W06-03□P1

□: A (Brass), N (Brass + Electroless nickel plating)

Male elbow

KQ2L

Use to pipe a female thread at right angles.
Most general model.



Applicable tubing O.D. [mm]	Connection thread R	Model
ø3.2	1/8	KQ2L23-01□P1
	1/4	KQ2L23-02□P1
ø4	1/8	KQ2L04-01□P1
	1/4	KQ2L04-02□P1
ø6	1/8	KQ2L06-01□P1
	1/4	KQ2L06-02□P1
	3/8	KQ2L06-03□P1

□: A (Brass), N (Brass + Electroless nickel plating)

Universal male elbow

KQ2V

Hexagon head of the body allows tightening with a box wrench in confined spaces.



Applicable tubing O.D. [mm]	Connection thread R	Model
ø4	1/8	KQ2V04-01□P1
	1/4	KQ2V04-02□P1
ø6	1/8	KQ2V06-01□P1
	1/4	KQ2V06-02□P1

□: A (Brass), N (Brass + Electroless nickel plating)

Oval Type

Tubing



Female thread hole

Face Seal One-touch Fittings

KQ2 Series

Hexagon socket head universal male elbow

KQ2VS

Hexagon socket on the top allows tightening with a hexagon wrench in confined spaces.



Applicable tubing O.D. [mm]	Connection thread R	Model
ø4	1/8	KQ2VS04-01□P1
	1/8	KQ2VS06-01□P1
	1/4	KQ2VS06-02□P1

□: A (Brass), N (Brass + Electroless nickel plating)

Double universal male elbow

KQ2VD

Use to two-branch a female thread at right angles. Two individual parts rotate 360°.



Applicable tubing O.D. [mm]	Connection thread R	Model
ø4	1/8	KQ2VD04-01□P1
	1/4	KQ2VD04-02□P1
	3/8	KQ2VD04-03□P1
ø6	1/8	KQ2VD06-01□P1
	1/4	KQ2VD06-02□P1
	3/8	KQ2VD06-03□P1

□: A (Brass), N (Brass + Electroless nickel plating)

Male branch tee

KQ2T

Use to branch a female thread at both 90° angles.



Applicable tubing O.D. [mm]	Connection thread R	Model
ø3.2	1/8	KQ2T23-01□P1
	1/4	KQ2T23-02□P1
ø4	1/8	KQ2T04-01□P1
	1/4	KQ2T04-02□P1
ø6	1/8	KQ2T06-01□P1
	1/4	KQ2T06-02□P1
	3/8	KQ2T06-03□P1

□: A (Brass), N (Brass + Electroless nickel plating)

Triple universal male elbow

KQ2VT

Use to three-branch a female thread at right angles. Three individual parts rotate 360°.



Applicable tubing O.D. [mm]	Connection thread R	Model
ø4	1/8	KQ2VT04-01□P1
	1/4	KQ2VT04-02□P1
	3/8	KQ2VT04-03□P1
ø6	1/8	KQ2VT06-01□P1
	1/4	KQ2VT06-02□P1
	3/8	KQ2VT06-03□P1

□: A (Brass), N (Brass + Electroless nickel plating)

Male run tee

KQ2Y

Use to branch a female thread in the same direction and at a 90° angle.



Applicable tubing O.D. [mm]	Connection thread R	Model
ø3.2	1/8	KQ2Y23-01□P1
	1/4	KQ2Y23-02□P1
ø4	1/8	KQ2Y04-01□P1
	1/4	KQ2Y04-02□P1
ø6	1/8	KQ2Y06-01□P1
	1/4	KQ2Y06-02□P1
	3/8	KQ2Y06-03□P1

□: A (Brass), N (Brass + Electroless nickel plating)

Male delta union

KQ2D

Use to branch a female thread at two right angles.



Applicable tubing O.D. [mm]	Connection thread R	Model
ø4	1/8	KQ2D04-01□P1
	1/4	KQ2D04-02□P1
ø6	1/8	KQ2D06-01□P1
	1/4	KQ2D06-02□P1
	3/8	KQ2D06-03□P1

□: A (Brass), N (Brass + Electroless nickel plating)

Oval Type

Tubing   Male thread

Face Seal One-touch Fittings

KQ2 Series

Universal female elbow

KQ2VF

Use to branch a male or female thread in the same direction and at a 90° angle. Multiple connections possible.



Applicable tubing O.D. [mm]	Connection thread R, Rc	Model
ø4	1/8	KQ2VF04-01□P1
	1/8	KQ2VF06-01□P1
ø6	1/4	KQ2VF06-02□P1

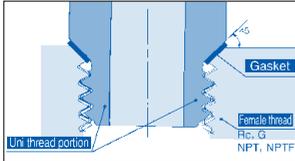
□: A (Brass), N (Brass + Electroless nickel plating)

KQ2 Series

Applicable tubing O.D.: Metric Size

Connection thread: Rc, G, NPT, NPTF

New-stand male thread for piping that reduces the screw-in time by 1/3.



Uni thread ridge shape

A gasket made of a stainless sheet covered with laminated NBR on both sides is seated on the chamfer of a female thread for a perfect sealing construction irrespective of the difference in thread diameters due to the difference in the types of female threads, variation in tolerance, or difference in the size of chamfer. (It is applicable to any female thread with an ordinary chamfer.)

A ridge shape has been created as a Uni thread for common applications for Rc, G, NPT and NPTF.

Drastically cuts piping work-hours with the gasket seal method.



Applicable Tubing

Tubing material	FEP, PFA, Nylon, Soft nylon, Polyurethane
Tubing O.D.	ø4, ø6

Specifications

Fluid	Air, Water*1
Operating pressure range*2	-100 kPa to 1 MPa
Proof pressure (at 23°C)	3 MPa
Ambient and fluid temperatures	-5 to 60°C, Water: 0 to 40°C (No freezing)

*1 The surge pressure must be under the maximum operating pressure.

*2 Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

Guide

Chuck

Suitable for use with nylon and urethane. Large retaining force

The chuck provides secure retention and the collet increases the holding force on the tube.

Seal

Can be used for a wide range of pressures from a low vacuum up to a pressure of 1 MPa.

The use of a special profile ensures sealing and reduces resistance when the tube is inserted.

Gasket

Release button (Light gray)

Requires little force for removal.

Releases the chuck collet to remove the tube as well as to prevent the chuck from biting too deeply into the tubing.

Body

O-ring

Stud

Effective when piping in a confined space.

The body and the threaded portion can rotate (for positioning to some extent).

Uni thread

For inch size, refer to the [Web Catalog](#).

Oval Type

Tubing  Female thread hole		
<p>KQ2H</p> <p>Male connector</p>  <p>p. 62</p>	<p>KQ2Y</p> <p>Male run tee</p>  <p>p. 62</p>	<p>KQ2K</p> <p>45° male elbow</p>  <p>p. 63</p>
<p>KQ2L</p> <p>Male elbow</p>  <p>p. 62</p>	<p>KQ2W</p> <p>Extended male elbow</p>  <p>p. 62</p>	<p>KQ2V</p> <p>Universal male elbow</p>  <p>p. 63</p>
<p>KQ2T</p> <p>Male branch tee</p>  <p>p. 62</p>	<p>KQ2S</p> <p>Hexagon socket head male connector</p>  <p>p. 62</p>	

This model does not support oval type release buttons. Refer to the round type (from page 86).

Branch "Y"
KQ2U p. 89

⚠ Box wrenches and socket wrenches may interfere with oval type release buttons. Refer to page 350 for details.

Oval Type

Tubing



Female thread hole

Uni One-touch Fittings

KQ2 Series

Male connector

KQ2H

Use to pipe a female thread in the same direction.
Most general model.

Applicable tubing O.D. [mm]	Connection thread Uni	Model
1/4	KQ2H04-U02□1	
	1/8	KQ2H06-U01□1
	1/4	KQ2H06-U02□1
	3/8	KQ2H06-U03□1

□: A (Brass), N (Brass + Electroless nickel plating)

Male run tee

KQ2Y

Use to branch a female thread in the same direction and at a 90° angle.

Applicable tubing O.D. [mm]	Connection thread Uni	Model
1/4	KQ2Y04-U02□1	
	1/8	KQ2Y06-U01□1
	1/4	KQ2Y06-U02□1
	3/8	KQ2Y06-U03□1

□: A (Brass), N (Brass + Electroless nickel plating)

Male elbow

KQ2L

Use to pipe a female thread at right angles.
Most general model.

Applicable tubing O.D. [mm]	Connection thread Uni	Model
1/4	KQ2L04-U02□1	
	1/8	KQ2L06-U01□1
	1/4	KQ2L06-U02□1
	3/8	KQ2L06-U03□1

□: A (Brass), N (Brass + Electroless nickel plating)

Extended male elbow

KQ2W

Basically, it is used together with a male elbow.
Its extended height allows for multi-leveled piping and prevents interference among fittings.

Applicable tubing O.D. [mm]	Connection thread Uni	Model
1/4	KQ2W04-U02□1	
	1/8	KQ2W06-U01□1
	1/4	KQ2W06-U02□1
	3/8	KQ2W06-U03□1

□: A (Brass), N (Brass + Electroless nickel plating)

Male branch tee

KQ2T

Use to branch a female thread at both 90° angles.

Applicable tubing O.D. [mm]	Connection thread Uni	Model
1/4	KQ2T04-U02□1	
	1/8	KQ2T06-U01□1
	1/4	KQ2T06-U02□1
	3/8	KQ2T06-U03□1

□: A (Brass), N (Brass + Electroless nickel plating)

Hexagon socket head male connector

KQ2S

Internal hexagon socket allows tightening with a hexagon wrench in confined spaces.

Applicable tubing O.D. [mm]	Connection thread Uni	Model
1/4	KQ2S04-U02□1	
	1/8	KQ2S06-U01□1
	1/4	KQ2S06-U02□1

□: A (Brass), N (Brass + Electroless nickel plating)

Oval Type

Tubing   Female thread hole

Uni One-touch Fittings

KQ2 Series

45° male elbow

KQ2K

Use to pipe a female thread at a 45° angle. Its direction is in-between that of the male connector and male elbow.

	Applicable tubing O.D. [mm]	Connection thread Uni	Model
	ø4		1/8
1/4			KQ2K04-U02□1
ø6		1/8	KQ2K06-U01□1
		1/4	KQ2K06-U02□1
		3/8	KQ2K06-U03□1

□: A (Brass), N (Brass + Electroless nickel plating)

Universal male elbow

KQ2V

Hexagon head of the body allows tightening with a box wrench in confined spaces.

	Applicable tubing O.D. [mm]	Connection thread Uni	Model
	ø4		1/8
1/8			KQ2V06-U01□1
ø6		1/4	KQ2V06-U02□1

□: A (Brass), N (Brass + Electroless nickel plating)



Made to Order

1 Made to Order

Symbol	Specifications
X12	Lubricant: White vaseline Release button color: White
X35 *1	Body color: Black Release button color: Light gray
X41	With fixed orifice*2

*1 The following models are not available as made to order: Hexagon socket head male connector/KQ2S and Male connector/KQ2H.

*2 Please contact SMC for availability.

The following made-to-order products will be provided based on previous models (KQ2 series). Please contact SMC separately.

Symbol	Specifications
X17	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue
X29	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue Copper-free (With electroless nickel plating)
X39	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue Clean (Copper-free, air blow, double packaging, resin body: white)

2 Clean Series

Please consult with SMC separately for applicable models.

Symbol	Specifications
10-	Brass parts: With electroless nickel plating Lubricant: Fluorine grease Air blow in a clean room Double packaging Resin body, Release button color: White

Example) **10-KQ2H06-U01N1**

Spare Parts

Description	Part no.	Applicable thread
Gasket	KQG-U01	Uni1/8
	KQG-U02	Uni1/4
	KQG-U03	Uni3/8

Oval Type

KQ2

Round Type

KQ2

KQB2

KS/KX

KM

KF

M

H/DL

L/LL

KC

KK

KKH

KK

130

DM

DMK

KDM

KB

KR

-W2

KRM

KA

KQG2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/

KPG

LQ1

LQ3

LQHB

KQ2 Series

Applicable tubing O.D.: **Metric Size**

Connection thread: **M, R, Rc**

One-touch IN/OUT connection.
Possible to use in vacuum to
-100 kPa



Applicable Tubing

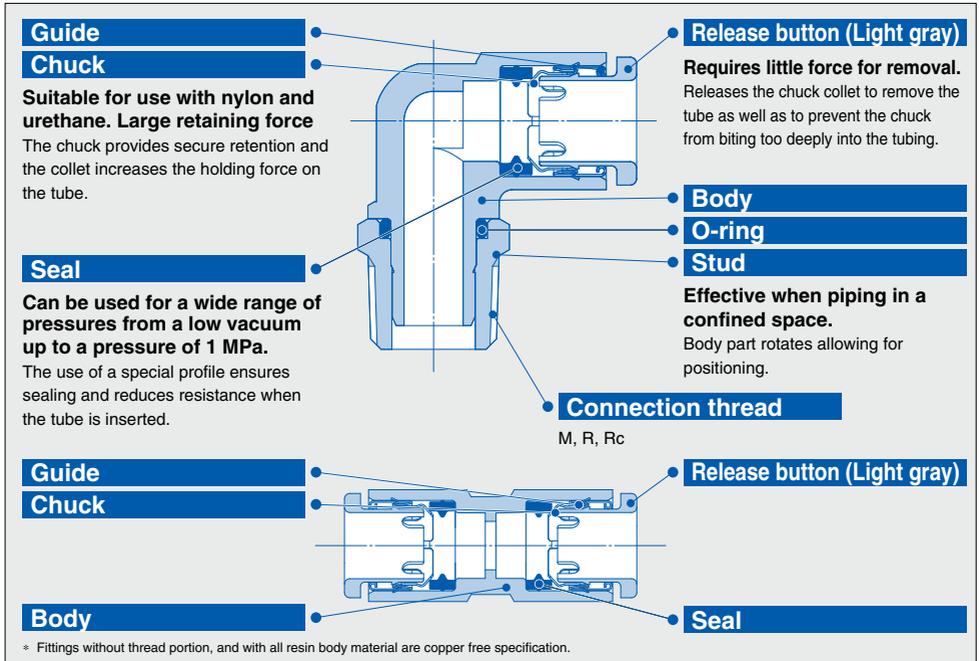
Tubing material	FEP, PFA, Nylon, Soft nylon, Polyurethane
Tubing O.D.	ø2, ø3.2, ø4, ø6, ø8, ø10, ø12, ø16

Specifications

Fluid	Air, Water*1	
Operating pressure range*2	-100 kPa to 1 MPa	
Proof pressure (at 23°C)	3 MPa	
Ambient and fluid temperatures	-5 to 60°C, Water: 0 to 40°C (No freezing)	
Thread	Mounting section	JIS B0203 (Taper thread for piping) JIS B0205 (Metric coarse thread)
	Nut section	JIS B0205 (Metric fine thread)
Sealant on the threads	With sealant or none	

*1 The surge pressure must be under the maximum operating pressure.

*2 Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.



For inch size, refer to the **Web Catalog**.

Round Type

Tubing  Female thread hole	
KQ2H Male connector  p. 67	
KQ2S Hexagon socket head male connector  p. 67	
KQ2L Male elbow  p. 67	
KQ2K 45° male elbow  p. 67	KQ2VT Triple universal male elbow  p. 69
KQ2W Extended male elbow  p. 68	KQ2LU Branch male elbow  p. 70
KQ2V Universal male elbow  p. 68	KQ2Z Branch universal male elbow  p. 70
KQ2VS Hexagon socket head universal male elbow  p. 68	KQ2ZD Double branch universal male elbow  p. 70
KQ2T Male branch tee  p. 68	KQ2ZT Triple branch universal male elbow  p. 70
KQ2Y Male run tee  p. 69	KQ2UD Double branch "Y"  p. 71
KQ2U Branch "Y"  p. 69	KQ2D Male delta union  p. 71
KQ2VD Double universal male elbow  p. 69	

Tubing  Tubing	
KQ2H Straight union  p. 72	KQ2T Different diameter tee  p. 73
KQ2E Bulkhead union  p. 72	KQ2U Different diameter union "Y"  p. 73
KQ2L Union elbow  p. 72	KQ2UD Different diameter double union "Y"  p. 73
KQ2LE Bulkhead male elbow  p. 72	KQ2LU Branch union elbow  p. 73
KQ2T Union tee  p. 72	KQ2D Delta union  p. 73
KQ2U Union "Y"  p. 72	KQ2TW Cross  p. 73
KQ2H Different diameter straight  p. 72	KQ2TX Different diameter cross  p. 73
KQ2T Different diameter tee  p. 73	KQ2TY Different diameter cross  p. 73

Tubing  Male thread	
KQ2F Female connector  p. 75	KQ2VF Universal female elbow  p. 75
KQ2E Bulkhead connector  p. 75	KQ2ZF Branch universal female elbow  p. 75
KQ2LF Female elbow  p. 75	

Accessories	
KQ2P Plug  p. 76	KQ2N Adapter  p. 76
KQ2N Nipple  p. 76	KQ2C Tube cap  p. 76
KQ2N Reducer nipple  p. 76	KQ2C Color cap  p. 76

Tubing  One-touch fittings	
KQ2L Plug-in elbow  p. 74	KQ2U Plug-in "Y"  p. 74
KQ2W Extended plug-in elbow  p. 74	KQ2X Different diameter plug-in "Y"  p. 74
KQ2R Plug-in reducer  p. 74	KQ2XD Double plug-in "Y"  p. 74
KQ2L Reducer elbow  p. 74	

Oval Type

KQ2

Round Type

KQ2

KQB2

KS/KX

KM

KF

M

H/DL

L/L

KC

KK

KKH

KK 130

DM

DMK

KDM

KB

KR -W2

KRM

KA

KQ2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/KPG

LQ1

LQ3

LQHB

Round Type



One-touch Fittings **KQ2 Series**

Male connector

KQ2H

Use to pipe a female thread in the same direction.
Most general model.



<M>



<R>

Applicable tubing O.D. [mm]	Connection thread R	Model
ø2	M3 x 0.5	KQ2H02-M3G
	M5 x 0.8	KQ2H02-M5□
ø3.2	M3 x 0.5	KQ2H23-M3G
	M5 x 0.8	KQ2H23-M5□
	1/8	KQ2H23-01□S
	1/4	KQ2H23-02□S
ø4	M3 x 0.5	KQ2H04-M3G
	M5 x 0.8	KQ2H04-M5□
	M6 x 1.0	KQ2H04-M6□
	1/8	KQ2H04-01□S
	1/4	KQ2H04-02□S
ø6	M5 x 0.8	KQ2H06-M5□
	M6 x 1.0	KQ2H06-M6□
	1/8	KQ2H06-01□S
	1/4	KQ2H06-02□S
ø8	3/8	KQ2H06-03□S
	1/8	KQ2H08-01□S
	1/4	KQ2H08-02□S
	3/8	KQ2H08-03□S
ø10	1/8	KQ2H10-01□S
	1/4	KQ2H10-02□S
	3/8	KQ2H10-03□S
	1/2	KQ2H10-04□S
ø12	1/4	KQ2H12-02□S
	3/8	KQ2H12-03□S
	1/2	KQ2H12-04□S
	1/4	KQ2H16-02□S
ø16	3/8	KQ2H16-03□S
	1/2	KQ2H16-04□S

□: A (Brass), N (Brass + Electroless nickel plating)

Male elbow

KQ2L

Use to pipe a female thread at right angles.
Most general model.



<M>



<R>

Applicable tubing O.D. [mm]	Connection thread R	Model
ø2	M3 x 0.5	KQ2L02-M3G
	M5 x 0.8	KQ2L02-M5□
ø3.2	M3 x 0.5	KQ2L23-M3G
	M5 x 0.8	KQ2L23-M5□
	1/8	KQ2L23-01□S
	1/4	KQ2L23-02□S
ø4	M3 x 0.5	KQ2L04-M3G
	M5 x 0.8	KQ2L04-M5□
	M6 x 1.0	KQ2L04-M6□
	1/8	KQ2L04-01□S
	1/4	KQ2L04-02□S
ø6	M5 x 0.8	KQ2L06-M5□
	M6 x 1.0	KQ2L06-M6□
	1/8	KQ2L06-01□S
	1/4	KQ2L06-02□S
ø8	3/8	KQ2L06-03□S
	1/8	KQ2L08-01□S
	1/4	KQ2L08-02□S
	3/8	KQ2L08-03□S
ø10	1/8	KQ2L08-01□S ^{*1}
	1/4	KQ2L08-02□S
	3/8	KQ2L08-03□S
	1/2	KQ2L10-01□S
ø12	1/4	KQ2L10-02□S
	3/8	KQ2L10-03□S
	1/2	KQ2L10-04□S
	1/4	KQ2L12-02□S
ø16	3/8	KQ2L12-03□S
	1/2	KQ2L12-04□S
	1/4	KQ2L16-02□S
	3/8	KQ2L16-03□S
	1/2	KQ2L16-04□S

□: A (Brass), N (Brass + Electroless nickel plating)
*1 Refer to page 77 for details.

Hexagon socket head male connector

KQ2S

Internal hexagon socket allows tightening with a hexagon wrench in confined spaces.



<M>



<R>

Applicable tubing O.D. [mm]	Connection thread R	Model
ø2	M3 x 0.5	KQ2S02-M3G
	M5 x 0.8	KQ2S23-M3G
ø3.2	M5 x 0.8	KQ2S23-M5□
	M3 x 0.5	KQ2S04-M3G
	M5 x 0.8	KQ2S04-M5□
	M6 x 1.0	KQ2S04-M6□
ø4	1/8	KQ2S04-01□S
	M5 x 0.8	KQ2S06-M5□
	M6 x 1.0	KQ2S06-M6□
	1/8	KQ2S06-01□S
ø6	1/4	KQ2S06-02□S
	1/8	KQ2S08-01□S
	1/4	KQ2S08-02□S
	3/8	KQ2S08-03□S
ø8	1/8	KQ2S10-01□S
	1/4	KQ2S10-02□S
	3/8	KQ2S10-03□S
	1/2	KQ2S10-04□S
ø10	1/4	KQ2S12-02□S
	3/8	KQ2S12-03□S
	1/2	KQ2S12-04□S
	1/4	KQ2S16-02□S
ø16	3/8	KQ2S16-03□S
	1/2	KQ2S16-04□S

□: A (Brass), N (Brass + Electroless nickel plating)

45° male elbow

KQ2K

Use to pipe a female thread at a 45° angle. Its direction is in-between that of the male connector and male elbow.



<M>



<R>

Applicable tubing O.D. [mm]	Connection thread R	Model
ø4	M5 x 0.8	KQ2K04-M5□
	M6 x 1.0	KQ2K04-M6□
	1/8	KQ2K04-01□S
	1/4	KQ2K04-02□S
ø6	M5 x 0.8	KQ2K06-M5□
	M6 x 1.0	KQ2K06-M6□
	1/8	KQ2K06-01□S
	1/4	KQ2K06-02□S
ø8	3/8	KQ2K06-03□S
	1/8	KQ2K08-01□S
	1/4	KQ2K08-02□S
	3/8	KQ2K08-03□S
ø10	1/8	KQ2K10-01□S
	1/4	KQ2K10-02□S
	3/8	KQ2K10-03□S
	1/2	KQ2K10-04□S
ø12	1/4	KQ2K12-02□S
	3/8	KQ2K12-03□S
	1/2	KQ2K12-04□S
	1/4	KQ2K16-02□S
ø16	3/8	KQ2K16-03□S
	1/2	KQ2K16-04□S

□: A (Brass), N (Brass + Electroless nickel plating)
*1 Refer to page 77 for details.

Round Type

Tubing  Female thread hole

One-touch Fittings **KQ2 Series**

Fittings

Extended male elbow

KQ2W

Basically, it is used together with a male elbow. Its extended height allows for multi-leveled piping and prevents interference among fittings.

Applicable tubing O.D. [mm]	Connection thread R	Model
ø2	M3 x 0.5	KQ2W02-M3G
	M5 x 0.8	KQ2W02-M5□
ø3.2	M3 x 0.5	KQ2W23-M3G
	M5 x 0.8	KQ2W23-M5□
	1/8	KQ2W23-01□S
	1/4	KQ2W23-02□S
ø4	M3 x 0.5	KQ2W04-M3G
	M5 x 0.8	KQ2W04-M5□
	1/8	KQ2W04-01□S
	1/4	KQ2W04-02□S
ø6	M5 x 0.8	KQ2W06-M5□
	1/8	KQ2W06-01□S
	1/4	KQ2W06-02□S
	3/8	KQ2W06-03□S
ø8	1/8	KQ2W08-01□S
	1/4	KQ2W08-01□QS*1
	3/8	KQ2W08-02□S
	1/2	KQ2W08-03□S
ø10	1/4	KQ2W10-02□S
	3/8	KQ2W10-03□S
	1/2	KQ2W10-04□S
	3/8	KQ2W12-02□S
ø12	3/8	KQ2W12-03□S
	1/2	KQ2W12-04□S
ø16	1/4	KQ2W16-02□S
	3/8	KQ2W16-03□S
	1/2	KQ2W16-04□S

□: A (Brass), N (Brass + Electroless nickel plating)
*1 Refer to page 77 for details.

Hexagon socket head universal male elbow

KQ2VS

Hexagon socket on the top allows tightening with a hexagon wrench in confined spaces.

Applicable tubing O.D. [mm]	Connection thread R	Model
ø4	M5 x 0.8	KQ2VS04-M5□
	1/8	KQ2VS04-01□S
ø6	M5 x 0.8	KQ2VS06-M5□
	1/8	KQ2VS06-01□S
ø8	1/4	KQ2VS08-02□S
	1/8	KQ2VS08-01□S
ø10	1/4	KQ2VS10-02□S
	3/8	KQ2VS10-03□S
ø12	3/8	KQ2VS12-03□S
	1/2	KQ2VS12-04□S

□: A (Brass), N (Brass + Electroless nickel plating)

Male branch tee

KQ2T

Use to branch a female thread at both 90° angles.

Applicable tubing O.D. [mm]	Connection thread R	Model
ø2	M3 x 0.5	KQ2T02-M3G
	M5 x 0.8	KQ2T02-M5□
ø3.2	M3 x 0.5	KQ2T23-M3G
	M5 x 0.8	KQ2T23-M5□
	1/8	KQ2T23-01□S
	1/4	KQ2T23-02□S
ø4	M3 x 0.5	KQ2T04-M3G
	M5 x 0.8	KQ2T04-M5□
	M6 x 1.0	KQ2T04-M6□
	1/8	KQ2T04-01□S
ø6	1/4	KQ2T04-02□S
	M5 x 0.8	KQ2T06-M5□
	M6 x 1.0	KQ2T06-M6□
	1/8	KQ2T06-01□S
ø8	1/4	KQ2T06-02□S
	3/8	KQ2T06-03□S
	1/8	KQ2T08-01□S
	1/4	KQ2T08-01□QS*1
ø10	1/4	KQ2T08-02□S
	3/8	KQ2T08-03□S
	1/8	KQ2T10-01□S
	1/4	KQ2T10-02□S
ø12	3/8	KQ2T10-03□S
	1/2	KQ2T10-04□S
	1/4	KQ2T12-02□S
	3/8	KQ2T12-03□S
ø16	1/2	KQ2T12-04□S
	1/4	KQ2T16-02□S
	3/8	KQ2T16-03□S
	1/2	KQ2T16-04□S

□: A (Brass), N (Brass + Electroless nickel plating)
*1 Refer to page 77 for details.

Universal male elbow

KQ2V

Hexagon head of the body allows tightening with a box wrench in confined spaces.

Applicable tubing O.D. [mm]	Connection thread R	Model
ø4	M5 x 0.8	KQ2V04-M5□
	1/8	KQ2V04-01□S
ø6	M5 x 0.8	KQ2V06-M5□
	1/8	KQ2V06-01□S
	1/4	KQ2V06-02□S
ø8	1/8	KQ2V08-01□S
	1/4	KQ2V08-02□S
	3/8	KQ2V08-03□S
ø10	1/4	KQ2V10-02□S
	3/8	KQ2V10-03□S
ø12	3/8	KQ2V12-03□S
	1/2	KQ2V12-04□S
ø16	3/8	KQ2V16-03□S
	1/2	KQ2V16-04□S

□: A (Brass), N (Brass + Electroless nickel plating)

Oval Type

KQ2

Round Type

KQ2

Round Type



One-touch Fittings

KQ2 Series

Male run tee

KQ2Y

Use to branch a female thread in the same direction and at a 90° angle.



<M>



<R>

Applicable tubing O.D. [mm]	Connection thread R	Model
ø2	M3 x 0.5	KQ2Y02-M3G
	M5 x 0.8	KQ2Y02-M5□
ø3.2	M3 x 0.5	KQ2Y23-M3G
	M5 x 0.8	KQ2Y23-M5□
	1/8	KQ2Y23-01□S
	1/4	KQ2Y23-02□S
ø4	M3 x 0.5	KQ2Y04-M3G
	M5 x 0.8	KQ2Y04-M5□
	M6 x 1.0	KQ2Y04-M6□
	1/8	KQ2Y04-01□S
ø6	1/4	KQ2Y04-02□S
	M5 x 0.8	KQ2Y06-M5□
	M6 x 1.0	KQ2Y06-M6□
	1/8	KQ2Y06-01□S
ø8	1/4	KQ2Y06-02□S
	3/8	KQ2Y06-03□S
	1/8	KQ2Y08-01□S
	1/4	KQ2Y08-01□QS*1
ø10	1/4	KQ2Y08-02□S
	3/8	KQ2Y08-03□S
	1/8	KQ2Y10-01□S
	1/4	KQ2Y10-02□S
ø12	3/8	KQ2Y10-03□S
	1/2	KQ2Y10-04□S
	1/4	KQ2Y12-02□S
	3/8	KQ2Y12-03□S
ø16	1/2	KQ2Y12-04□S
	1/4	KQ2Y16-02□S
	3/8	KQ2Y16-03□S
	1/2	KQ2Y16-04□S

□: A (Brass), N (Brass + Electroless nickel plating)
*1 Refer to page 77 for details.

Branch "Y"

KQ2U

Use to branch a female thread in the same direction.



<M>



<R>

Applicable tubing O.D. [mm]	Connection thread R	Model
ø3.2	M5 x 0.8	KQ2U23-M5□
	1/8	KQ2U23-01□S
	1/4	KQ2U23-02□S
ø4	M5 x 0.8	KQ2U04-M5□
	M6 x 1.0	KQ2U04-M6□
	1/8	KQ2U04-01□S
	1/4	KQ2U04-02□S
ø6	M5 x 0.8	KQ2U06-M5□
	M6 x 1.0	KQ2U06-M6□
	1/8	KQ2U06-01□S
	1/4	KQ2U06-02□S
ø8	3/8	KQ2U06-03□S
	1/8	KQ2U08-01□S
	1/4	KQ2U08-02□S
	3/8	KQ2U08-03□S
ø10	1/4	KQ2U10-02□S
	3/8	KQ2U10-03□S
	1/2	KQ2U10-04□S
ø12	1/4	KQ2U12-02□S
	3/8	KQ2U12-03□S
	1/2	KQ2U12-04□S
ø16	1/4	KQ2U16-02□S
	3/8	KQ2U16-03□S
	1/2	KQ2U16-04□S

□: A (Brass), N (Brass + Electroless nickel plating)

Double universal male elbow

KQ2VD

Use to two-branch a female thread at right angles. Two individual parts rotate 360°.



Applicable tubing O.D. [mm]	Connection thread	Model
ø4	R1/8	KQ2VD04-01□S
	R1/4	KQ2VD04-02□S
	R3/8	KQ2VD04-03□S
ø6	R1/8	KQ2VD06-01□S
	R1/4	KQ2VD06-02□S
	R3/8	KQ2VD06-03□S
ø8	R1/8	KQ2VD08-01□S
	R1/4	KQ2VD08-02□S
	R3/8	KQ2VD08-03□S
ø10	R1/2	KQ2VD08-04□S
	R1/4	KQ2VD10-02□S
	R3/8	KQ2VD10-03□S
	R1/2	KQ2VD10-04□S
ø12	R1/4	KQ2VD12-02□S
	R3/8	KQ2VD12-03□S
	R1/2	KQ2VD12-04□S
	R1/2	KQ2VD12-04□S

□: A (Brass), N (Brass + Electroless nickel plating)

Triple universal male elbow

KQ2VT

Use to three-branch a female thread at right angles. Three individual parts rotate 360°.



Applicable tubing O.D. [mm]	Connection thread	Model
ø4	R1/8	KQ2VT04-01□S
	R1/4	KQ2VT04-02□S
	R3/8	KQ2VT04-03□S
ø6	R1/8	KQ2VT06-01□S
	R1/4	KQ2VT06-02□S
	R3/8	KQ2VT06-03□S
ø8	R1/8	KQ2VT08-01□S
	R1/4	KQ2VT08-02□S
	R3/8	KQ2VT08-03□S
ø10	R1/2	KQ2VT08-04□S
	R1/4	KQ2VT10-02□S
	R3/8	KQ2VT10-03□S
	R1/2	KQ2VT10-04□S
ø12	R1/4	KQ2VT12-02□S
	R3/8	KQ2VT12-03□S
	R1/2	KQ2VT12-04□S
	R1/2	KQ2VT12-04□S

□: A (Brass), N (Brass + Electroless nickel plating)

Round Type



One-touch Fittings **KQ2 Series**

Branch male elbow

KQ2LU

Use to two-branch a female thread at right angles.

Applicable tubing O.D. [mm]	Connection thread R	Model
ø4	M5 x 0.8	KQ2LU04-M5□
	M6 x 1.0	KQ2LU04-M6□
	1/8	KQ2LU04-01□S
	1/4	KQ2LU04-02□S
ø6	M5 x 0.8	KQ2LU06-M5□
	M6 x 1.0	KQ2LU06-M6□
	1/8	KQ2LU06-01□S
	1/4	KQ2LU06-02□S
ø8	3/8	KQ2LU06-03□S
	1/8	KQ2LU08-01□S
	1/4	KQ2LU08-02□S
ø10	3/8	KQ2LU08-03□S
	1/4	KQ2LU10-02□S
	3/8	KQ2LU10-03□S
ø12	1/2	KQ2LU10-04□S
	1/4	KQ2LU12-02□S
	3/8	KQ2LU12-03□S
	1/2	KQ2LU12-04□S

□: A (Brass), N (Brass + Electroless nickel plating)

Double branch universal male elbow

KQ2ZD

Use to four-branch a female thread at right angles.
Two individual parts rotate 360°.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	R1/8	KQ2ZD04-01□S
	R1/4	KQ2ZD04-02□S
	R3/8	KQ2ZD04-03□S
ø6	R1/8	KQ2ZD06-01□S
	R1/4	KQ2ZD06-02□S
	R3/8	KQ2ZD06-03□S
ø8	R1/8	KQ2ZD08-01□S
	R1/4	KQ2ZD08-02□S
	R3/8	KQ2ZD08-03□S
ø10	R1/2	KQ2ZD08-04□S
	R1/4	KQ2ZD10-02□S
	R3/8	KQ2ZD10-03□S
ø12	R1/2	KQ2ZD10-04□S
	R1/4	KQ2ZD12-02□S
	R3/8	KQ2ZD12-03□S
	R1/2	KQ2ZD12-04□S

□: A (Brass), N (Brass + Electroless nickel plating)

Branch universal male elbow

KQ2Z

Hexagon head of the body allows tightening with a box wrench. Use for branch connections.

Applicable tubing O.D. [mm]	Connection thread R	Model
ø4	M5 x 0.8	KQ2Z04-M5□
	1/8	KQ2Z04-01□S
ø6	1/8	KQ2Z06-01□S
	1/4	KQ2Z06-02□S
	3/8	KQ2Z06-03□S
ø8	1/8	KQ2Z08-01□S
	1/4	KQ2Z08-02□S
	3/8	KQ2Z08-03□S
ø10	1/4	KQ2Z10-02□S
	3/8	KQ2Z10-03□S
ø12	3/8	KQ2Z12-03□S
	1/2	KQ2Z12-04□S

□: A (Brass), N (Brass + Electroless nickel plating)

Triple branch universal male elbow

KQ2ZT

Use to six-branch a female thread at right angles.
Three individual parts rotate 360°.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	R1/8	KQ2ZT04-01□S
	R1/4	KQ2ZT04-02□S
	R3/8	KQ2ZT04-03□S
ø6	R1/8	KQ2ZT06-01□S
	R1/4	KQ2ZT06-02□S
	R3/8	KQ2ZT06-03□S
ø8	R1/8	KQ2ZT08-01□S
	R1/4	KQ2ZT08-02□S
	R3/8	KQ2ZT08-03□S
ø10	R1/2	KQ2ZT08-04□S
	R1/4	KQ2ZT10-02□S
	R3/8	KQ2ZT10-03□S
ø12	R1/2	KQ2ZT10-04□S
	R1/4	KQ2ZT12-02□S
	R3/8	KQ2ZT12-03□S
	R1/2	KQ2ZT12-04□S

□: A (Brass), N (Brass + Electroless nickel plating)

Round Type

Tubing  Female thread hole

One-touch Fittings *KQ2 Series*

Double branch "Y"

KQ2UD

Use to four-branch a female thread in the same direction.

	Applicable tubing O.D. [mm]	Connection thread	Model
	ø4		R1/8
R1/4			KQ2UD04-02□S
ø6		R1/8	KQ2UD06-01□S
		R1/4	KQ2UD06-02□S

□: A (Brass), N (Brass + Electroless nickel plating)

Male delta union

KQ2D

Use to branch a female thread at two right angles.

	Applicable tubing O.D. [mm]	Connection thread	Model
		R	
<M>	ø4	M5 x 0.8	KQ2D04-M5□
		M6 x 1.0	KQ2D04-M6□
		1/8	KQ2D04-01□S
		1/4	KQ2D04-02□S
<M>	ø6	M5 x 0.8	KQ2D06-M5□
		M6 x 1.0	KQ2D06-M6□
		1/8	KQ2D06-01□S
		1/4	KQ2D06-02□S
<M>	ø6	3/8	KQ2D06-03□S
		1/8	KQ2D08-01□S
		1/4	KQ2D08-02□S
<M>	ø8	3/8	KQ2D08-03□S
		1/4	KQ2D10-02□S
		3/8	KQ2D10-03□S
<M>	ø10	1/2	KQ2D10-04□S
		1/4	KQ2D12-02□S
		3/8	KQ2D12-03□S
<M>	ø12	3/8	KQ2D12-03□S
		1/2	KQ2D12-04□S

□: A (Brass), N (Brass + Electroless nickel plating)

Round Type

Tubing  Tubing

One-touch Fittings *KQ2 Series*

Straight union

KQ2H

Use to connect tubing in the same direction.

Applicable tubing O.D. [mm]	Model
ø2	KQ2H02-00A
ø3.2	KQ2H23-00A
ø4	KQ2H04-00A
ø6	KQ2H06-00A
ø8	KQ2H08-00A
ø10	KQ2H10-00A
ø12	KQ2H12-00A
ø16	KQ2H16-00A

Bulkhead male elbow

KQ2LE

Use to connect tubing through a panel, etc. and to change the tube direction by 90°.

Applicable tubing O.D. [mm]	Model
ø4	KQ2LE04-00□
ø6	KQ2LE06-00□
ø8	KQ2LE08-00□
ø10	KQ2LE10-00□
ø12	KQ2LE12-00□

□: A (Brass), N (Brass + Electroless nickel plating)

Bulkhead union

KQ2E

Use to connect tubing through a panel, etc.

Applicable tubing O.D. [mm]	Model
ø3.2	KQ2E23-00□
ø4	KQ2E04-00□
ø6	KQ2E06-00□
ø8	KQ2E08-00□
ø10	KQ2E10-00□
ø12	KQ2E12-00□
ø16	KQ2E16-00□

□: A (Brass), N (Brass + Electroless nickel plating)

Union tee

KQ2T

Use to branch tubing at both 90° angles.

Applicable tubing O.D. [mm]	Model
ø2	KQ2T02-00A
ø3.2	KQ2T23-00A
ø4	KQ2T04-00A
ø6	KQ2T06-00A
ø8	KQ2T08-00A
ø10	KQ2T10-00A
ø12	KQ2T12-00A
ø16	KQ2T16-00A

Union elbow

KQ2L

Use to connect tubing at right angles.

Applicable tubing O.D. [mm]	Model
ø3.2	KQ2L23-00A
ø4	KQ2L04-00A
ø6	KQ2L06-00A
ø8	KQ2L08-00A
ø10	KQ2L10-00A
ø12	KQ2L12-00A
ø16	KQ2L16-00A

Union "Y"

KQ2U

Use to branch tubing in the same direction.

Applicable tubing O.D. [mm]	Model
ø2	KQ2U02-00A
ø3.2	KQ2U23-00A
ø4	KQ2U04-00A
ø6	KQ2U06-00A
ø8	KQ2U08-00A
ø10	KQ2U10-00A
ø12	KQ2U12-00A
ø16	KQ2U16-00A

Different diameter straight

KQ2H

Use to connect tubing of different sizes.

Applicable tubing O.D. [mm]		Model
(a)	(b)	
ø2	ø3.2	KQ2H02-23A
ø2	ø4	KQ2H02-04A
ø3.2	ø4	KQ2H23-04A
ø3.2	ø6	KQ2H23-06A
ø4	ø6	KQ2H04-06A
ø6	ø8	KQ2H06-08A
ø8	ø10	KQ2H08-10A
ø10	ø12	KQ2H10-12A
ø12	ø16	KQ2H12-16A

Round Type

Tubing  Tubing

One-touch Fittings *KQ2 Series*

Different diameter tee

KQ2T

Use to connect tubing of reduced size for branching at both 90° angles.



Applicable tubing O.D. [mm]		Model
(a)	(b)	
ø3.2	ø4	KQ2T23-04A
ø4	ø6	KQ2T04-06A
ø6	ø8	KQ2T06-08A
ø8	ø10	KQ2T08-10A
ø10	ø12	KQ2T10-12A
ø12	ø16	KQ2T12-16A

Branch union elbow

KQ2LU

Use to branch tubing at right angles.



Applicable tubing O.D. [mm]	Model
ø4	KQ2LU04-00A
ø6	KQ2LU06-00A
ø8	KQ2LU08-00A
ø10	KQ2LU10-00A
ø12	KQ2LU12-00A

Different diameter tee

KQ2T

Use to connect tubing of reduced size for branching at a 90° angle from two pipes running in the same direction.



Applicable tubing O.D. [mm]		Model
(a)	(b)	
ø6	ø4	KQ2T06-04A
ø8	ø6	KQ2T08-06A
ø10	ø8	KQ2T10-08A
ø12	ø10	KQ2T12-10A

Delta union

KQ2D

Use to branch tubing at three right angles.



Applicable tubing O.D. [mm]	Model
ø4	KQ2D04-00A
ø6	KQ2D06-00A
ø8	KQ2D08-00A
ø10	KQ2D10-00A
ø12	KQ2D12-00A

Different diameter union "Y"

KQ2U

Use to connect tubing of reduced size for branching in the same direction.



Applicable tubing O.D. [mm]		Model
(a)	(b)	
ø2	ø3.2	KQ2U02-23A
ø2	ø4	KQ2U02-04A
ø3.2	ø4	KQ2U23-04A
ø4	ø6	KQ2U04-06A
ø6	ø8	KQ2U06-08A
ø8	ø10	KQ2U08-10A
ø10	ø12	KQ2U10-12A
ø12	ø16	KQ2U12-16A

Cross

KQ2TW

Use to four-branch a line.



Applicable tubing O.D. [mm]	Model
ø4	KQ2TW04-00A
ø6	KQ2TW06-00A
ø8	KQ2TW08-00A
ø10	KQ2TW10-00A
ø12	KQ2TW12-00A

Different diameter double union "Y"

KQ2UD

Use to connect tubing of reduced size for four-branching in the same direction.

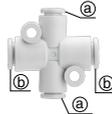


Applicable tubing O.D. [mm]		Model
(a)	(b)	
ø4	ø6	KQ2UD04-06A
ø6	ø8	KQ2UD06-08A

Different diameter cross

KQ2TX

Use to four-branch a line and connect tubing of reduced size at both 90° angles.



Applicable tubing O.D. [mm]		Model
(a)	(b)	
ø6	ø8	KQ2TX06-08A
ø8	ø10	KQ2TX08-10A
ø10	ø12	KQ2TX10-12A

Different diameter cross

KQ2TY

Use to connect tubing of reduced size for branching in three directions.



Applicable tubing O.D. [mm]		Model
(a)	(b)	
ø6	ø8	KQ2TY06-08A
ø8	ø10	KQ2TY08-10A
ø10	ø12	KQ2TY10-12A

Round Type

Tubing  One-touch fittings

One-touch Fittings **KQ2 Series**

Plug-in elbow

KQ2L

Use to change the tube direction of One-touch fittings by 90°.



Applicable tubing O.D. [mm]	Applicable fitting size	Model
ø3.2	ø3.2	KQ2L23-99A
ø4	ø4	KQ2L04-99A
ø6	ø6	KQ2L06-99A
ø8	ø8	KQ2L08-99A
ø10	ø10	KQ2L10-99A
ø12	ø12	KQ2L12-99A
ø16	ø16	KQ2L16-99A

Reducer elbow

KQ2L

Use to change the tube direction of One-touch fittings by 90° and connect tubing of reduced size.



Applicable tubing O.D. [mm]	Applicable fitting size	Model
ø3.2	ø4	KQ2L23-04A
	ø6	KQ2L23-06A
ø4	ø6	KQ2L04-06A
	ø8	KQ2L04-08A
ø6	ø8	KQ2L06-08A
	ø10	KQ2L06-10A
ø8	ø10	KQ2L08-10A
	ø12	KQ2L08-12A
ø10	ø12	KQ2L10-12A
	ø16	KQ2L12-16A

Extended plug-in elbow

KQ2W

Use to change the tube direction of One-touch fittings by 90°. Multi-levelled piping is also possible with the plug-in elbow.

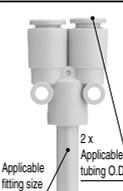


Applicable tubing O.D. [mm]	Applicable fitting size	Model
ø3.2	ø3.2	KQ2W23-99A
ø4	ø4	KQ2W04-99A
ø6	ø6	KQ2W06-99A
ø8	ø8	KQ2W08-99A
ø10	ø10	KQ2W10-99A
ø12	ø12	KQ2W12-99A

Plug-in “Y”

KQ2U

Use to branch One-touch fittings in the same direction.



Applicable tubing O.D. [mm]	Applicable fitting size	Model
ø3.2	ø3.2	KQ2U23-99A
ø4	ø4	KQ2U04-99A
ø6	ø6	KQ2U06-99A
ø8	ø8	KQ2U08-99A
ø10	ø10	KQ2U10-99A
ø12	ø12	KQ2U12-99A
ø16	ø16	KQ2U16-99A

Plug-in reducer

KQ2R

Use to change size of One-touch fittings.

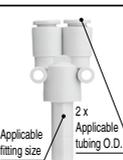


Applicable tubing O.D. [mm]	Applicable fitting size	Model
ø2	ø4	KQ2R02-04A
	ø6	KQ2R23-04A
ø3.2	ø6	KQ2R23-06A
	ø8	KQ2R04-06A
ø4	ø8	KQ2R04-08A
	ø10	KQ2R04-10A
	ø4	KQ2R06-04A
ø6	ø8	KQ2R06-08A
	ø10	KQ2R06-10A
	ø12	KQ2R06-12A
ø8	ø10	KQ2R08-10A
	ø12	KQ2R08-12A
ø10	ø12	KQ2R10-12A
	ø16	KQ2R10-16A
ø12	ø16	KQ2R12-16A

Different diameter plug-in “Y”

KQ2X

Use to branch One-touch fittings and connect tubing of reduced size in the same direction.



Applicable tubing O.D. [mm]	Applicable fitting size	Model
ø3.2	ø4	KQ2X23-04A
ø4	ø6	KQ2X04-06A
ø6	ø8	KQ2X06-08A
ø8	ø10	KQ2X08-10A
ø10	ø12	KQ2X10-12A

Double plug-in “Y”

KQ2XD

Use to four-branch One-touch fittings and connect tubing of reduced size in the same direction.



Applicable tubing O.D. [mm]	Applicable fitting size	Model
ø4	ø6	KQ2XD04-06A
ø6	ø8	KQ2XD06-08A

Round Type

Tubing  Male thread

One-touch Fittings **KQ2 Series**

Female connector

KQ2F

Use to pipe a male thread of a pressure gauge, etc.

Applicable tubing O.D. [mm]	Connection thread	Model
ø3.2	M3 x 0.5	KQ2F23-M3□
	M5 x 0.8	KQ2F23-M5□
ø4	M3 x 0.5	KQ2F04-M3□
	M5 x 0.8	KQ2F04-M5□
ø4	Rc1/8	KQ2F04-01□
	Rc1/4	KQ2F04-02□
	M5 x 0.8	KQ2F06-M5□
	Rc1/8	KQ2F06-01□
ø6	Rc1/4	KQ2F06-02□
	Rc3/8	KQ2F06-03□
	Rc1/8	KQ2F08-01□
ø8	Rc1/4	KQ2F08-02□
	Rc3/8	KQ2F08-03□
ø10	Rc1/4	KQ2F10-02□
	Rc3/8	KQ2F10-03□
ø12	Rc1/4	KQ2F12-02□
	Rc3/8	KQ2F12-03□
ø16	Rc1/2	KQ2F12-04□
	Rc3/8	KQ2F16-03□
ø16	Rc1/2	KQ2F16-04□



□: A (Brass), N (Brass + Electroless nickel plating)

Female elbow

KQ2LF

Use to pipe a male thread at right angles.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	M5 x 0.8	KQ2LF04-M5□
	M6 x 1.0	KQ2LF04-M6□
	Rc1/8	KQ2LF04-01□
ø4	Rc1/4	KQ2LF04-02□
	M5 x 0.8	KQ2LF06-M5□
ø6	M6 x 1.0	KQ2LF06-M6□
	Rc1/8	KQ2LF06-01□
	Rc1/4	KQ2LF06-02□
ø6	Rc3/8	KQ2LF06-03□
	Rc1/8	KQ2LF08-01□
	Rc1/4	KQ2LF08-02□
ø8	Rc3/8	KQ2LF08-03□
	Rc1/4	KQ2LF10-02□
ø10	Rc3/8	KQ2LF10-03□
	Rc1/2	KQ2LF10-04□
ø12	Rc1/4	KQ2LF12-02□
	Rc3/8	KQ2LF12-03□
ø12	Rc1/2	KQ2LF12-04□



□: A (Brass), N (Brass + Electroless nickel plating)
*1 Refer to page 77 for details.

Bulkhead connector

KQ2E

Use to connect a male thread and tubing through a panel, etc.

Applicable tubing O.D. [mm]	Connection thread Rc	Model
ø3.2	1/4	KQ2E23-02□
	1/8	KQ2E04-01□
ø4	1/4	KQ2E04-02□
	1/8	KQ2E06-01□
ø6	1/4	KQ2E06-02□
	3/8	KQ2E06-03□
	1/8	KQ2E08-01□
ø8	1/4	KQ2E08-02□
	3/8	KQ2E08-03□
ø10	1/4	KQ2E10-02□
	3/8	KQ2E10-03□
ø12	3/8	KQ2E12-03□
	1/2	KQ2E12-04□
ø16	3/8	KQ2E16-03□
	1/2	KQ2E16-04□



□: A (Brass), N (Brass + Electroless nickel plating)

Universal female elbow

KQ2VF

Use to branch a male or female thread in the same direction and at a 90° angle. Multiple connections possible.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	M5 x 0.8	KQ2VF04-M5□
	R, Rc1/8	KQ2VF04-01□S
ø6	M5 x 0.8	KQ2VF06-M5□
	R, Rc1/8	KQ2VF06-01□S
ø6	R, Rc1/4	KQ2VF06-02□S
	R, Rc1/8	KQ2VF08-01□S
ø8	R, Rc1/4	KQ2VF08-02□S
	R, Rc3/8	KQ2VF08-03□S
ø10	R, Rc1/4	KQ2VF10-02□S
	R, Rc3/8	KQ2VF10-03□S
ø12	R, Rc3/8	KQ2VF12-03□S
	R, Rc1/2	KQ2VF12-04□S



□: A (Brass), N (Brass + Electroless nickel plating)

Branch universal female elbow

KQ2ZF

Use to two-branch a male or female thread in the same direction and at a 90° angle. Multiple connections possible.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	M5 x 0.8	KQ2ZF04-M5□
	R, Rc1/8	KQ2ZF04-01□S
ø6	R, Rc1/8	KQ2ZF06-01□S
	R, Rc1/4	KQ2ZF06-02□S
ø8	R, Rc1/8	KQ2ZF08-01□S
	R, Rc1/4	KQ2ZF08-02□S
ø10	R, Rc1/4	KQ2ZF10-02□S
	R, Rc3/8	KQ2ZF10-03□S
ø12	R, Rc3/8	KQ2ZF12-03□S
	R, Rc1/2	KQ2ZF12-04□S



□: A (Brass), N (Brass + Electroless nickel plating)

Round Type

Accessories

One-touch Fittings *KQ2 Series*

Plug

KQ2P

Use to plug unused One-touch fittings.

Applicable fitting size	Model	
	Model	Model
ø2	KJP-02	
ø3.2	KQ2P-23	
ø4	KQ2P-04	
ø6	KQ2P-06	
ø8	KQ2P-08	
ø10	KQ2P-10	
ø12	KQ2P-12	
ø16	KQ2P-16	

Tube cap

KQ2C

Use to plug unused tubing.

Applicable tubing O.D. [mm]	Model	
	Model	Model
ø4	KQ2C04-00A	
ø6	KQ2C06-00A	
ø8	KQ2C08-00A	
ø10	KQ2C10-00A	
ø12	KQ2C12-00A	
ø16	KQ2C16-00A	

Nipple

KQ2N

Use to connect One-touch fittings.

Applicable fitting size	Model	
	Model	Model
ø4	KQ2N04-99	
ø6	KQ2N06-99	
ø8	KQ2N08-99	
ø10	KQ2N10-99	
ø12	KQ2N12-99	
ø16	KQ2N16-99	

Color cap

KQ2C

Mount onto the release button and use different colors for piping according to applications.

Applicable tubing O.D. [mm]	Model	Note
ø2	KQ2C-02□A	Applicable for products with enlarged outside diameter of release button
ø3.2	KQ2C-23□A	
ø4	KQ2C-04□A	
ø6	KQ2C-06□A	
ø8	KQ2C-08□B	
ø10	KQ2C-10□B	
ø12	KQ2C-12□B	
ø16	KQ2C-16□B	

□: B (Black), R (Red), YR (Orange), BR (Brown), Y (Yellow), G (Green), CB (Sky blue), GR (Gray), W (White), BU (Blue)



In order to improve operability, the outside diameter of the release button has been enlarged for the new KQ2 series. Therefore, the usable color caps will differ between pre-change and post-change products. Refer to page 354 for details.

Reducer nipple

KQ2N

Use to connect One-touch fittings of different sizes.

Applicable fitting size	Model	
	(a)	(b)
ø4	ø6	KQ2N04-06
ø6	ø8	KQ2N06-08
ø8	ø10	KQ2N08-10
ø10	ø12	KQ2N10-12
ø12	ø16	KQ2N12-16

Adapter

KQ2N

Use to connect One-touch fittings and R female threads.

Applicable fitting size	Connection thread	Model	
		Model	Model
ø4	M5 x 0.8	KQ2N04-M5□	
	R1/8	KQ2N04-01□S	
ø6	M5 x 0.8	KQ2N06-M5□	
	R1/8	KQ2N06-01□S	
	R1/4	KQ2N06-02□S	
ø8	R1/4	KQ2N08-02□S	
	R3/8	KQ2N08-03□S	
ø10	R3/8	KQ2N10-03□S	

□: A (Brass), N (Brass + Electroless nickel plating)



Made to Order

1 Made to Order

Symbol	Specifications
X12	Lubricant: White vaseline, Release button color: White
X35*1	Body color: Black, Release button color: Light gray
X41	With fixed orifice*2
KQ2□08-01□□	Effective area is interchangeable with the current product (KQ series). Applicable model: Male elbow, 45° male elbow, Female elbow, Extended male elbow, Male branch tee, Male run tee
	Applicable tubing O.D./Port size: ø8/R1/8 Thread material/Surface treatment: Brass, Brass + Electroless nickel plating Example) KQ2L08-01AQS

- *1 The following models are not available as made to order:
Hexagon socket head male connector/KQ2S, Bulkhead union/KQ2E, Bulkhead connector/KQ2E, Nipple/KQ2N, Reducer nipple/KQ2N, Male connector/KQ2H, Female connector/KQ2F, Color cap/KQ2C, and Plug/KQ2P.
- *2 Please contact SMC for availability.

The following made-to-order products will be provided based on previous models (KQ2 series). Please contact SMC separately.

Symbol	Specifications
X17	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue
X29	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue Copper-free (With electroless nickel plating)
X34	Rubber material: FKM
X39	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue Clean (Copper-free, air blow, double packaging, resin body: white)
X94	Grease-free Rubber material: FKM (With fluorine coating) Release button color: Light blue

2 Clean Series

Symbol	Specifications
10-	Brass parts: With electroless nickel plating Lubricant: Fluorine grease Air blow in a clean room Double packaging Resin body, Release button color: White

- Example) **10-KQ2H06-02NS** (With thread)
10-KQ2H06-00A (Without thread)

Spare Parts

Description	Part no.	Applicable thread
Gasket	M-3G2	M3
	M-5G2	M5
	M-6G	M6

Brass

Description	Part no.	Applicable model
Pipe nut	KQ02-P01AJ	KQ2E02-00AJ
	KQ23-P01AJ	KQ2E23-00AJ
	KQ04-P01AJ	KQ2E04-00AJ
	KQ06-P01AJ	KQ2E06-00AJ
	KQ04-P01A	KQ2E23-00A, KQ2E04-00A, KQ2E23-02A
		KQ2E04-01A, KQ2E04-02A, KQ2LE04-00A
	KQ06-P01A	KQ2E06-00A, KQ2E06-01A, KQ2E06-02A
		KQ2E06-03A, KQ2LE06-00A
	KQ08-P01A	KQ2E08-00A, KQ2E08-01A, KQ2E08-02A
		KQ2E08-03A, KQ2LE08-00A
	KQ10-P01A	KQ2E10-00A, KQ2E10-02A, KQ2E10-03A
		KQ2LE10-00A
KQ12-P01A	KQ2E12-00A, KQ2E12-03A, KQ2E12-04A	
	KQ2LE12-00A	
KQ16-P01A	KQ2E16-00A	
	KQ2E16-03A, KQ2E16-04A	

Brass + Electroless nickel plating

Description	Part no.	Applicable model
Pipe nut	KQ02-P01NJ	KQ2E02-00NJ
	KQ23-P01NJ	KQ2E23-00NJ
	KQ04-P01NJ	KQ2E04-00NJ
	KQ06-P01NJ	KQ2E06-00NJ
	KQ04-P01N	KQ2E23-00N, KQ2E04-00N, KQ2E23-02N
		KQ2E04-01N, KQ2E04-02N, KQ2LE04-00N
	KQ06-P01N	KQ2E06-00N, KQ2E06-01N, KQ2E06-02N
		KQ2E06-03N, KQ2LE06-00N
	KQ08-P01N	KQ2E08-00N, KQ2E08-01N, KQ2E08-02N
		KQ2E08-03N, KQ2LE08-00N
	KQ10-P01N	KQ2E10-00N, KQ2E10-02N, KQ2E10-03N
		KQ2LE10-00N
KQ12-P01N	KQ2E12-00N, KQ2E12-03N, KQ2E12-04N	
	KQ2LE12-00N	
KQ16-P01N	KQ2E16-00N	
	KQ2E16-03N, KQ2E16-04N	

Color cap

Applicable tubing O.D. [mm]	Model	Note
ø8	KQ2C-08□A	Applicable for products before enlargement of outside diameter of release button
ø10	KQ2C-10□A	
ø12	KQ2C-12□A	
ø16	KQ2C-16□A	

□: B (Black), R (Red), YR (Orange), BR (Brown), Y (Yellow), G (Green), CB (Sky blue), GR (Gray), W (White), BU (Blue)



KQ2 Series

Applicable tubing O.D.: Metric Size

Connection thread: R, Rc

One-touch IN/OUT connection.
Possible to use in vacuum to
-100 kPa

Drastically reduces screw-in
time with the face seal method.



Applicable Tubing

Tubing material	FEP, PFA, Nylon, Soft nylon, Polyurethane
Tubing O.D.	ø3.2, ø4, ø6, ø8, ø10, ø12, ø16

Specifications

Fluid		Air, Water*1
Operating pressure range*2		-100 kPa to 1 MPa
Proof pressure (at 23°C)		3 MPa
Ambient and fluid temperatures		-5 to 60°C, Water: 0 to 40°C (No freezing)
Thread	Mounting section	JIS B0203 (Taper thread for piping) JIS B0205 (Metric coarse thread)
	Nut section	JIS B0205 (Metric fine thread)
Sealant on the threads		Seal ring

*1 The surge pressure must be under the maximum operating pressure.

*2 Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

Guide

Chuck

Suitable for use with nylon and urethane. Large retaining force

The chuck provides secure retention and the collet increases the holding force on the tube.

Seal

Can be used for a wide range of pressures from a low vacuum up to a pressure of 1 MPa.

The use of a special profile ensures sealing and reduces resistance when the tube is inserted.

Face seal method

Seal ring

Piping installability is improved by changing to the face seal structure.

Face seal



Release button

Requires little force for removal.

Releases the chuck collet to remove the tube as well as to prevent the chuck from biting too deeply into the tubing.

Body

O-ring

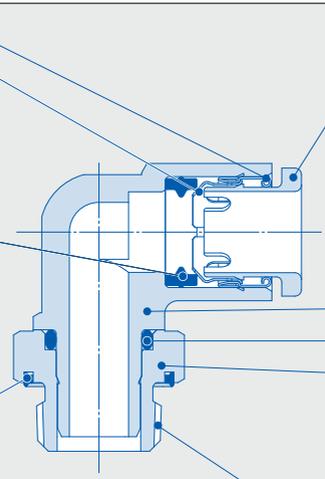
Stud

Effective when piping in a confined space.

Body part rotates allowing for positioning.

Connection thread

R, Rc



For inch size, refer to the [Web Catalog](#).

Round Type

Tubing Female thread hole		
<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2H</div> <p>Male connector</p> <p style="text-align: right; font-size: small;">p. 80</p>	<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2VS</div> <p>Hexagon socket head universal male elbow</p> <p style="text-align: right; font-size: small;">p. 81</p>	<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2LU</div> <p>Branch male elbow</p> <p style="text-align: right; font-size: small;">p. 83</p>
<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2S</div> <p>Hexagon socket head male connector</p> <p style="text-align: right; font-size: small;">p. 80</p>	<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2T</div> <p>Male branch tee</p> <p style="text-align: right; font-size: small;">p. 81</p>	<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2Z</div> <p>Branch universal male elbow</p> <p style="text-align: right; font-size: small;">p. 83</p>
<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2L</div> <p>Male elbow</p> <p style="text-align: right; font-size: small;">p. 80</p>	<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2Y</div> <p>Male run tee</p> <p style="text-align: right; font-size: small;">p. 82</p>	<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2ZD</div> <p>Double branch universal male elbow</p> <p style="text-align: right; font-size: small;">p. 83</p>
<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2K</div> <p>45° male elbow</p> <p style="text-align: right; font-size: small;">p. 80</p>	<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2U</div> <p>Branch "Y"</p> <p style="text-align: right; font-size: small;">p. 82</p>	<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2ZT</div> <p>Triple branch universal male elbow</p> <p style="text-align: right; font-size: small;">p. 83</p>
<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2W</div> <p>Extended male elbow</p> <p style="text-align: right; font-size: small;">p. 81</p>	<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2VD</div> <p>Double universal male elbow</p> <p style="text-align: right; font-size: small;">p. 82</p>	<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2UD</div> <p>Double branch "Y"</p> <p style="text-align: right; font-size: small;">p. 84</p>
<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2V</div> <p>Universal male elbow</p> <p style="text-align: right; font-size: small;">p. 81</p>	<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2VT</div> <p>Triple universal male elbow</p> <p style="text-align: right; font-size: small;">p. 82</p>	<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2D</div> <p>Male delta union</p> <p style="text-align: right; font-size: small;">p. 84</p>

Tubing Male thread	
<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2VF</div> <p>Universal female elbow</p> <p style="text-align: right; font-size: small;">p. 85</p>	<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2ZF</div> <p>Branch universal female elbow</p> <p style="text-align: right; font-size: small;">p. 85</p>
<p>Use to branch a male or female thread in the same direction and at a 90° angle. Multiple connections possible.</p>	

Accessories	
<div style="background-color: #e6f2ff; padding: 2px; font-weight: bold; margin-bottom: 5px;">KQ2N</div> <p>Adapter</p> <p style="text-align: right; font-size: small;">p. 85</p>	

Round Type

Tubing  Female thread hole

Face Seal One-touch Fittings

KQ2 Series

Male connector

KQ2H

Use to pipe a female thread in the same direction.
Most general model.



Applicable tubing O.D. [mm]	Connection thread	Model
ø3.2	R1/8	KQ2H23-01□P
	R1/4	KQ2H23-02□P
ø4	R1/8	KQ2H04-01□P
	R1/4	KQ2H04-02□P
ø6	R1/8	KQ2H06-01□P
	R1/4	KQ2H06-02□P
	R3/8	KQ2H06-03□P
ø8	R1/8	KQ2H08-01□P
	R1/4	KQ2H08-02□P
	R3/8	KQ2H08-03□P
ø10	R1/8	KQ2H10-01□P
	R1/4	KQ2H10-02□P
	R3/8	KQ2H10-03□P
	R1/2	KQ2H10-04□P
ø12	R1/4	KQ2H12-02□P
	R3/8	KQ2H12-03□P
	R1/2	KQ2H12-04□P
ø16	R1/4	KQ2H16-02□P
	R3/8	KQ2H16-03□P
	R1/2	KQ2H16-04□P

□: A (Brass), N (Brass + Electroless nickel plating)

Male elbow

KQ2L

Use to pipe a female thread at right angles.
Most general model.



Applicable tubing O.D. [mm]	Connection thread	Model
ø3.2	R1/8	KQ2L23-01□P
	R1/4	KQ2L23-02□P
ø4	R1/8	KQ2L04-01□P
	R1/4	KQ2L04-02□P
ø6	R1/8	KQ2L06-01□P
	R1/4	KQ2L06-02□P
	R3/8	KQ2L06-03□P
ø8	R1/8	KQ2L08-01□P
	R1/4	KQ2L08-02□P
	R3/8	KQ2L08-03□P
ø10	R1/8	KQ2L10-01□P
	R1/4	KQ2L10-02□P
	R3/8	KQ2L10-03□P
	R1/2	KQ2L10-04□P
ø12	R1/4	KQ2L12-02□P
	R3/8	KQ2L12-03□P
	R1/2	KQ2L12-04□P
ø16	R1/4	KQ2L16-02□P
	R3/8	KQ2L16-03□P
	R1/2	KQ2L16-04□P

□: A (Brass), N (Brass + Electroless nickel plating)

Hexagon socket head male connector

KQ2S

Internal hexagon socket allows tightening with a hexagon wrench in confined spaces.



Applicable tubing O.D. [mm]	Connection thread	Model
ø4	R1/8	KQ2S04-01□P
	R1/8	KQ2S06-01□P
ø6	R1/4	KQ2S06-02□P
	R1/8	KQ2S08-01□P
ø8	R1/4	KQ2S08-02□P
	R3/8	KQ2S08-03□P
ø10	R1/8	KQ2S10-01□P
	R1/4	KQ2S10-02□P
	R3/8	KQ2S10-03□P
ø12	R1/2	KQ2S10-04□P
	R1/4	KQ2S12-02□P
ø12	R3/8	KQ2S12-03□P
	R1/2	KQ2S12-04□P
ø16	R1/4	KQ2S16-02□P
	R3/8	KQ2S16-03□P
	R1/2	KQ2S16-04□P

□: A (Brass), N (Brass + Electroless nickel plating)

45° male elbow

KQ2K

Use to pipe a female thread at a 45° angle. Its direction is in-between that of the male connector and male elbow.



Applicable tubing O.D. [mm]	Connection thread	Model
ø4	R1/8	KQ2K04-01□P
	R1/4	KQ2K04-02□P
ø6	R1/8	KQ2K06-01□P
	R1/4	KQ2K06-02□P
	R3/8	KQ2K06-03□P
ø8	R1/8	KQ2K08-01□P
	R1/4	KQ2K08-02□P
	R3/8	KQ2K08-03□P
ø10	R1/8	KQ2K10-01□P
	R1/4	KQ2K10-02□P
	R3/8	KQ2K10-03□P
	R1/2	KQ2K10-04□P
ø12	R1/4	KQ2K12-02□P
	R3/8	KQ2K12-03□P
	R1/2	KQ2K12-04□P
ø16	R1/4	KQ2K16-02□P
	R3/8	KQ2K16-03□P
	R1/2	KQ2K16-04□P

□: A (Brass), N (Brass + Electroless nickel plating)

Round Type



Face Seal One-touch Fittings

KQ2 Series

Extended male elbow

KQ2W

Basically, it is used together with a male elbow. Its extended height allows for multi-leveled piping and prevents interference among fittings.



Applicable tubing O.D. [mm]	Connection thread	Model
ø3.2	R1/8	KQ2W23-01□P
	R1/4	KQ2W23-02□P
ø4	R1/8	KQ2W04-01□P
	R1/4	KQ2W04-02□P
ø6	R1/8	KQ2W06-01□P
	R1/4	KQ2W06-02□P
ø8	R3/8	KQ2W06-03□P
	R1/8	KQ2W08-01□P
	R1/4	KQ2W08-02□P
ø10	R3/8	KQ2W08-03□P
	R1/4	KQ2W10-02□P
	R3/8	KQ2W10-03□P
ø12	R1/2	KQ2W10-04□P
	R1/4	KQ2W12-02□P
	R3/8	KQ2W12-03□P
ø16	R1/2	KQ2W12-04□P
	R3/8	KQ2W16-03□P
	R1/2	KQ2W16-04□P

□: A (Brass), N (Brass + Electroless nickel plating)

Hexagon socket head universal male elbow

KQ2VS

Hexagon socket on the top allows tightening with a hexagon wrench in confined spaces.



Applicable tubing O.D. [mm]	Connection thread	Model
ø4	R1/8	KQ2VS04-01□P
	R1/4	KQ2VS06-01□P
ø6	R1/8	KQ2VS06-02□P
	R1/4	KQ2VS08-01□P
ø8	R1/8	KQ2VS08-02□P
	R1/4	KQ2VS08-03□P
	R3/8	KQ2VS08-03□P
ø10	R1/4	KQ2VS10-02□P
	R3/8	KQ2VS10-03□P
ø12	R3/8	KQ2VS12-03□P
	R1/2	KQ2VS12-04□P

□: A (Brass), N (Brass + Electroless nickel plating)

Male branch tee

KQ2T

Use to branch a female thread at both 90° angles.



Applicable tubing O.D. [mm]	Connection thread	Model
ø3.2	R1/8	KQ2T23-01□P
	R1/4	KQ2T23-02□P
ø4	R1/8	KQ2T04-01□P
	R1/4	KQ2T04-02□P
ø6	R1/8	KQ2T06-01□P
	R1/4	KQ2T06-02□P
	R3/8	KQ2T06-03□P
ø8	R1/8	KQ2T08-01□P
	R1/4	KQ2T08-02□P
	R3/8	KQ2T08-03□P
ø10	R1/8	KQ2T10-01□P
	R1/4	KQ2T10-02□P
	R3/8	KQ2T10-03□P
ø12	R1/2	KQ2T10-04□P
	R1/4	KQ2T12-02□P
	R3/8	KQ2T12-03□P
ø16	R1/2	KQ2T12-04□P
	R1/4	KQ2T16-02□P
	R3/8	KQ2T16-03□P
	R1/2	KQ2T16-04□P

□: A (Brass), N (Brass + Electroless nickel plating)

Universal male elbow

KQ2V

Hexagon head of the body allows tightening with a box wrench in confined spaces.



Applicable tubing O.D. [mm]	Connection thread	Model
ø4	R1/8	KQ2V04-01□P
	R1/4	KQ2V06-01□P
ø6	R1/8	KQ2V06-02□P
	R1/4	KQ2V08-01□P
ø8	R1/4	KQ2V08-02□P
	R3/8	KQ2V08-03□P
	R1/4	KQ2V10-02□P
ø10	R3/8	KQ2V10-03□P
	R1/4	KQ2V12-04□P
	R3/8	KQ2V12-03□P
ø12	R1/2	KQ2V12-04□P
	R3/8	KQ2V16-03□P
	R1/2	KQ2V16-04□P

□: A (Brass), N (Brass + Electroless nickel plating)

Round Type

Tubing



Female thread hole

Face Seal One-touch Fittings

KQ2 Series

Male run tee

KQ2Y

Use to branch a female thread in the same direction and at a 90° angle.

Applicable tubing O.D. [mm]	Connection thread	Model
ø3.2	R1/8	KQ2Y23-01□P
	R1/4	KQ2Y23-02□P
ø4	R1/8	KQ2Y04-01□P
	R1/4	KQ2Y04-02□P
ø6	R1/8	KQ2Y06-01□P
	R1/4	KQ2Y06-02□P
	R3/8	KQ2Y06-03□P
ø8	R1/8	KQ2Y08-01□P
	R1/4	KQ2Y08-02□P
	R3/8	KQ2Y08-03□P
ø10	R1/8	KQ2Y10-01□P
	R1/4	KQ2Y10-02□P
	R3/8	KQ2Y10-03□P
	R1/2	KQ2Y10-04□P
ø12	R1/4	KQ2Y12-02□P
	R3/8	KQ2Y12-03□P
	R1/2	KQ2Y12-04□P
ø16	R1/4	KQ2Y16-02□P
	R3/8	KQ2Y16-03□P
	R1/2	KQ2Y16-04□P



□: A (Brass), N (Brass + Electroless nickel plating)

Branch "Y"

KQ2U

Use to branch a female thread in the same direction.

Applicable tubing O.D. [mm]	Connection thread	Model
ø3.2	R1/8	KQ2U23-01□P
	R1/4	KQ2U23-02□P
ø4	R1/8	KQ2U04-01□P
	R1/4	KQ2U04-02□P
ø6	R1/8	KQ2U06-01□P
	R1/4	KQ2U06-02□P
	R3/8	KQ2U06-03□P
ø8	R1/8	KQ2U08-01□P
	R1/4	KQ2U08-02□P
	R3/8	KQ2U08-03□P
ø10	R1/4	KQ2U10-02□P
	R3/8	KQ2U10-03□P
	R1/2	KQ2U10-04□P
ø12	R1/4	KQ2U12-02□P
	R3/8	KQ2U12-03□P
	R1/2	KQ2U12-04□P
ø16	R1/4	KQ2U16-02□P
	R3/8	KQ2U16-03□P
	R1/2	KQ2U16-04□P



□: A (Brass), N (Brass + Electroless nickel plating)

Double universal male elbow

KQ2VD

Use to two-branch a female thread at right angles. Two individual parts rotate 360°.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	R1/8	KQ2VD04-01□P
	R1/4	KQ2VD04-02□P
	R3/8	KQ2VD04-03□P
ø6	R1/8	KQ2VD06-01□P
	R1/4	KQ2VD06-02□P
	R3/8	KQ2VD06-03□P
ø8	R1/8	KQ2VD08-01□P
	R1/4	KQ2VD08-02□P
	R3/8	KQ2VD08-03□P
ø10	R1/2	KQ2VD08-04□P
	R1/4	KQ2VD10-02□P
	R3/8	KQ2VD10-03□P
ø12	R1/2	KQ2VD10-04□P
	R1/4	KQ2VD12-02□P
	R3/8	KQ2VD12-03□P
	R1/2	KQ2VD12-04□P



□: A (Brass), N (Brass + Electroless nickel plating)

Triple universal male elbow

KQ2VT

Use to three-branch a female thread at right angles. Three individual parts rotate 360°.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	R1/8	KQ2VT04-01□P
	R1/4	KQ2VT04-02□P
	R3/8	KQ2VT04-03□P
ø6	R1/8	KQ2VT06-01□P
	R1/4	KQ2VT06-02□P
	R3/8	KQ2VT06-03□P
ø8	R1/8	KQ2VT08-01□P
	R1/4	KQ2VT08-02□P
	R3/8	KQ2VT08-03□P
ø10	R1/2	KQ2VT08-04□P
	R1/4	KQ2VT10-02□P
	R3/8	KQ2VT10-03□P
ø12	R1/2	KQ2VT10-04□P
	R1/4	KQ2VT12-02□P
	R3/8	KQ2VT12-03□P
	R1/2	KQ2VT12-04□P



□: A (Brass), N (Brass + Electroless nickel plating)

Round Type



Face Seal One-touch Fittings

KQ2 Series

Branch male elbow

KQ2LU

Use to two-branch a female thread at right angles.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	R1/8	KQ2LU04-01□P
	R1/4	KQ2LU04-02□P
ø6	R1/8	KQ2LU06-01□P
	R1/4	KQ2LU06-02□P
	R3/8	KQ2LU06-03□P
ø8	R1/8	KQ2LU08-01□P
	R1/4	KQ2LU08-02□P
	R3/8	KQ2LU08-03□P
ø10	R1/4	KQ2LU10-02□P
	R3/8	KQ2LU10-03□P
	R1/2	KQ2LU10-04□P
ø12	R1/4	KQ2LU12-02□P
	R3/8	KQ2LU12-03□P
	R1/2	KQ2LU12-04□P



□: A (Brass), N (Brass + Electroless nickel plating)

Double branch universal male elbow

KQ2ZD

Use to four-branch a female thread at right angles.
Two individual parts rotate 360°.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	R1/8	KQ2ZD04-01□P
	R1/4	KQ2ZD04-02□P
	R3/8	KQ2ZD04-03□P
ø6	R1/8	KQ2ZD06-01□P
	R1/4	KQ2ZD06-02□P
	R3/8	KQ2ZD06-03□P
ø8	R1/8	KQ2ZD08-01□P
	R1/4	KQ2ZD08-02□P
	R3/8	KQ2ZD08-03□P
	R1/2	KQ2ZD08-04□P
ø10	R1/4	KQ2ZD10-02□P
	R3/8	KQ2ZD10-03□P
	R1/2	KQ2ZD10-04□P
ø12	R1/4	KQ2ZD12-02□P
	R3/8	KQ2ZD12-03□P
	R1/2	KQ2ZD12-04□P



□: A (Brass), N (Brass + Electroless nickel plating)

Branch universal male elbow

KQ2Z

Hexagon head of the body allows tightening with a box wrench. Use for branch connections.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	R1/8	KQ2Z04-01□P
	R1/4	KQ2Z06-01□P
ø6	R1/4	KQ2Z06-02□P
	R3/8	KQ2Z06-03□P
	R1/8	KQ2Z08-01□P
ø8	R1/4	KQ2Z08-02□P
	R3/8	KQ2Z08-03□P
	R1/4	KQ2Z10-02□P
ø10	R3/8	KQ2Z10-03□P
	R3/8	KQ2Z12-03□P
ø12	R1/2	KQ2Z12-04□P



□: A (Brass), N (Brass + Electroless nickel plating)

Triple branch universal male elbow

KQ2ZT

Use to six-branch a female thread at right angles.
Three individual parts rotate 360°.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	R1/8	KQ2ZT04-01□P
	R1/4	KQ2ZT04-02□P
	R3/8	KQ2ZT04-03□P
ø6	R1/8	KQ2ZT06-01□P
	R1/4	KQ2ZT06-02□P
	R3/8	KQ2ZT06-03□P
ø8	R1/8	KQ2ZT08-01□P
	R1/4	KQ2ZT08-02□P
	R3/8	KQ2ZT08-03□P
ø10	R1/2	KQ2ZT08-04□P
	R1/4	KQ2ZT10-02□P
	R3/8	KQ2ZT10-03□P
ø12	R1/2	KQ2ZT10-04□P
	R1/4	KQ2ZT12-02□P
	R3/8	KQ2ZT12-03□P
ø12	R1/2	KQ2ZT12-04□P



□: A (Brass), N (Brass + Electroless nickel plating)

Round Type

Tubing   Female thread hole

Face Seal One-touch Fittings

KQ2 Series

Double branch "Y"

KQ2UD

Use to four-branch a female thread in the same direction.



Applicable tubing O.D. [mm]	Connection thread	Model
ø4	R1/8	KQ2UD04-01□P
	R1/4	KQ2UD04-02□P
ø6	R1/8	KQ2UD06-01□P
	R1/4	KQ2UD06-02□P

□: A (Brass), N (Brass + Electroless nickel plating)

Male delta union

KQ2D

Use to branch a female thread at two right angles.



Applicable tubing O.D. [mm]	Connection thread	Model
ø4	R1/8	KQ2D04-01□P
	R1/4	KQ2D04-02□P
ø6	R1/8	KQ2D06-01□P
	R1/4	KQ2D06-02□P
	R3/8	KQ2D06-03□P
ø8	R1/8	KQ2D08-01□P
	R1/4	KQ2D08-02□P
	R3/8	KQ2D08-03□P
ø10	R1/4	KQ2D10-02□P
	R3/8	KQ2D10-03□P
	R1/2	KQ2D10-04□P
ø12	R1/4	KQ2D12-02□P
	R3/8	KQ2D12-03□P
	R1/2	KQ2D12-04□P

□: A (Brass), N (Brass + Electroless nickel plating)

Round Type

Tubing   Male thread

Face Seal One-touch Fittings

KQ2 Series

Universal female elbow

KQ2VF

Use to branch a male or female thread in the same direction and at a 90° angle. Multiple connections possible.

Connection thread Rc	Applicable tubing O.D. [mm]	Connection thread	Model
		ø4	R, Rc1/8
R, Rc1/8			KQ2VF06-01□P
	ø6	R, Rc1/4	KQ2VF06-02□P
		R, Rc1/8	KQ2VF08-01□P
	ø8	R, Rc1/4	KQ2VF08-02□P
		R, Rc3/8	KQ2VF08-03□P
	ø10	R, Rc1/4	KQ2VF10-02□P
		R, Rc3/8	KQ2VF10-03□P
	ø12	R, Rc3/8	KQ2VF12-03□P
		R, Rc1/2	KQ2VF12-04□P

□: A (Brass), N (Brass + Electroless nickel plating)

Branch universal female elbow

KQ2ZF

Use to two-branch a male or female thread in the same direction and at a 90° angle. Multiple connections possible.

Connection thread	Applicable tubing O.D. [mm]	Model	
		ø4	R, Rc1/8 KQ2ZF04-01□P
ø6		R, Rc1/8	KQ2ZF06-01□P
	R, Rc1/4	KQ2ZF06-02□P	
	ø8	R, Rc1/8	KQ2ZF08-01□P
		R, Rc1/4	KQ2ZF08-02□P
	ø10	R, Rc1/4	KQ2ZF10-02□P
		R, Rc3/8	KQ2ZF10-03□P
	ø12	R, Rc3/8	KQ2ZF12-03□P
		R, Rc1/2	KQ2ZF12-04□P

□: A (Brass), N (Brass + Electroless nickel plating)

Round Type

Accessories

Face Seal One-touch Fittings

KQ2 Series

Adapter

KQ2N

Use to connect One-touch fittings and R female threads.

Applicable fitting size	Connection thread	Model
		
R1/8 KQ2N06-01□P		
	ø6	R1/4 KQ2N06-02□P
		R1/4 KQ2N08-02□P
	ø8	R3/8 KQ2N08-03□P
		R3/8 KQ2N10-03□P

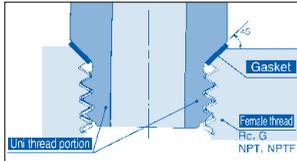
□: A (Brass), N (Brass + Electroless nickel plating)

KQ2 Series

Applicable tubing O.D.: Metric Size

Connection thread: Rc, G, NPT, NPTF

New-stand male thread for piping that reduces the screw-in time by 1/3.



Uni thread ridge shape

A gasket made of a stainless sheet covered with laminated NBR on both sides is seated on the chamfer of a female thread for a perfect sealing construction irrespective of the difference in thread diameters due to the difference in the types of female threads, variation in tolerance, or difference in the size of chamfer. (It is applicable to any female thread with an ordinary chamfer.)

A ridge shape has been created as a Uni thread for common applications for Rc, G, NPT and NPTF.

Drastically cuts piping work-hours with the gasket seal method.



Applicable Tubing

Tubing material	FEP, PFA, Nylon, Soft nylon, Polyurethane
Tubing O.D.	ø4, ø6, ø8, ø10, ø12, ø16

Specifications

Fluid	Air, Water*1
Operating pressure range*2	-100 kPa to 1 MPa
Proof pressure (23°C)	3 MPa
Ambient and fluid temperatures	-5 to 60°C, Water: 0 to 40°C (No freezing)

*1 The surge pressure must be under the maximum operating pressure.

*2 Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

Guide Chuck

Suitable for use with nylon and urethane. Large retaining force

The chuck provides secure retention and the collet increases the holding force on the tube.

Seal

Can be used for a wide range of pressures from a low vacuum up to a pressure of 1 MPa.

The use of a special profile ensures sealing and reduces resistance when the tube is inserted.

Gasket

Release button (Light gray)

Requires little force for removal.

Releases the chuck collet to remove the tube as well as to prevent the chuck from biting too deeply into the tubing.

Body

O-ring

Stud

Effective when piping in a confined space.

The body and the threaded portion can rotate (for positioning to some extent).

For inch size, refer to the [Web Catalog](#).

Round Type

Tubing Female thread hole		
<div style="background-color: #0056b3; color: white; padding: 2px 5px; font-weight: bold;">KQ2H</div> <div style="margin-top: 10px;"> </div> <p>Male connector</p> <p style="text-align: right; font-size: small;">p. 88</p>	<div style="background-color: #0056b3; color: white; padding: 2px 5px; font-weight: bold;">KQ2Y</div> <div style="margin-top: 10px;"> </div> <p>Male run tee</p> <p style="text-align: right; font-size: small;">p. 88</p>	<div style="background-color: #0056b3; color: white; padding: 2px 5px; font-weight: bold;">KQ2S</div> <div style="margin-top: 10px;"> </div> <p>Hexagon socket head male connector</p> <p style="text-align: right; font-size: small;">p. 89</p>
<div style="background-color: #0056b3; color: white; padding: 2px 5px; font-weight: bold;">KQ2L</div> <div style="margin-top: 10px;"> </div> <p>Male elbow</p> <p style="text-align: right; font-size: small;">p. 88</p>	<div style="background-color: #0056b3; color: white; padding: 2px 5px; font-weight: bold;">KQ2U</div> <div style="margin-top: 10px;"> </div> <p>Branch "Y"</p> <p style="text-align: right; font-size: small;">p. 89</p>	<div style="background-color: #0056b3; color: white; padding: 2px 5px; font-weight: bold;">KQ2K</div> <div style="margin-top: 10px;"> </div> <p>45° male elbow</p> <p style="text-align: right; font-size: small;">p. 89</p>
<div style="background-color: #0056b3; color: white; padding: 2px 5px; font-weight: bold;">KQ2T</div> <div style="margin-top: 10px;"> </div> <p>Male branch tee</p> <p style="text-align: right; font-size: small;">p. 88</p>	<div style="background-color: #0056b3; color: white; padding: 2px 5px; font-weight: bold;">KQ2W</div> <div style="margin-top: 10px;"> </div> <p>Extended male elbow</p> <p style="text-align: right; font-size: small;">p. 89</p>	<div style="background-color: #0056b3; color: white; padding: 2px 5px; font-weight: bold;">KQ2V</div> <div style="margin-top: 10px;"> </div> <p>Universal male elbow</p> <p style="text-align: right; font-size: small;">p. 89</p>

Round Type

Tubing



Female thread hole

Uni One-touch Fittings

KQ2 Series

Male connector

KQ2H

Use to pipe a female thread in the same direction.
Most general model.

Applicable tubing O.D. [mm]	Connection thread Uni	Model
ø4	1/8	KQ2H04-U01□
	1/4	KQ2H04-U02□
ø6	1/8	KQ2H06-U01□
	1/4	KQ2H06-U02□
	3/8	KQ2H06-U03□
ø8	1/8	KQ2H08-U01□
	1/4	KQ2H08-U02□
	3/8	KQ2H08-U03□
ø10	1/8	KQ2H10-U01□
	1/4	KQ2H10-U02□
	3/8	KQ2H10-U03□
	1/2	KQ2H10-U04□
ø12	1/4	KQ2H12-U02□
	3/8	KQ2H12-U03□
	1/2	KQ2H12-U04□
ø16	3/8	KQ2H16-U03□
	1/2	KQ2H16-U04□



□: A (Brass), N (Brass + Electroless nickel plating)

Male branch tee

KQ2T

Use to branch a female thread at both 90° angles.

Applicable tubing O.D. [mm]	Connection thread Uni	Model
ø4	1/8	KQ2T04-U01□
	1/4	KQ2T04-U02□
ø6	1/8	KQ2T06-U01□
	1/4	KQ2T06-U02□
	3/8	KQ2T06-U03□
		KQ2T08-U01□
ø8	1/8	KQ2T08-U01□Q*1
	1/4	KQ2T08-U02□
	3/8	KQ2T08-U03□
ø10	1/8	KQ2T10-U01□
	1/4	KQ2T10-U02□
	3/8	KQ2T10-U03□
	1/2	KQ2T10-U04□
ø12	1/4	KQ2T12-U02□
	3/8	KQ2T12-U03□
	1/2	KQ2T12-U04□
ø16	3/8	KQ2T16-U03□
	1/2	KQ2T16-U04□



□: A (Brass), N (Brass + Electroless nickel plating)
*1 Refer to page 90 for details.

Male elbow

KQ2L

Use to pipe a female thread at right angles.
Most general model.

Applicable tubing O.D. [mm]	Connection thread Uni	Model
ø4	1/8	KQ2L04-U01□
	1/4	KQ2L04-U02□
ø6	1/8	KQ2L06-U01□
	1/4	KQ2L06-U02□
	3/8	KQ2L06-U03□
ø8		KQ2L08-U01□
		KQ2L08-U01□Q*1
	1/4	KQ2L08-U02□
	3/8	KQ2L08-U03□
ø10	1/8	KQ2L10-U01□
	1/4	KQ2L10-U02□
	3/8	KQ2L10-U03□
	1/2	KQ2L10-U04□
ø12	1/4	KQ2L12-U02□
	3/8	KQ2L12-U03□
	1/2	KQ2L12-U04□
ø16	3/8	KQ2L16-U03□
	1/2	KQ2L16-U04□



□: A (Brass), N (Brass + Electroless nickel plating)
*1 Refer to page 90 for details.

Male run tee

KQ2Y

Use to branch a female thread in the same direction and at a 90° angle.

Applicable tubing O.D. [mm]	Connection thread Uni	Model
ø4	1/8	KQ2Y04-U01□
	1/4	KQ2Y04-U02□
ø6	1/8	KQ2Y06-U01□
	1/4	KQ2Y06-U02□
	3/8	KQ2Y06-U03□
		KQ2Y08-U01□
ø8	1/8	KQ2Y08-U01□Q*1
	1/4	KQ2Y08-U02□
	3/8	KQ2Y08-U03□
ø10	1/8	KQ2Y10-U01□
	1/4	KQ2Y10-U02□
	3/8	KQ2Y10-U03□
	1/2	KQ2Y10-U04□
ø12	1/4	KQ2Y12-U02□
	3/8	KQ2Y12-U03□
	1/2	KQ2Y12-U04□
ø16	3/8	KQ2Y16-U03□
	1/2	KQ2Y16-U04□



□: A (Brass), N (Brass + Electroless nickel plating)
*1 Refer to page 90 for details.

Round Type

Tubing  Female thread hole

Uni One-touch Fittings **KQ2 Series**

Branch "Y"

KQ2U

Use to branch a female thread in the same direction.

Applicable tubing O.D. [mm]	Connection thread Uni	Model
ø4	1/8	KQ2U04-U01□
	1/4	KQ2U04-U02□
ø6	1/8	KQ2U06-U01□
	1/4	KQ2U06-U02□
	3/8	KQ2U06-U03□
ø8	1/8	KQ2U08-U01□
	1/4	KQ2U08-U02□
ø10	3/8	KQ2U08-U03□
	1/4	KQ2U10-U02□
	3/8	KQ2U10-U03□
ø12	1/2	KQ2U10-U04□
	1/4	KQ2U12-U02□
	3/8	KQ2U12-U03□
	1/2	KQ2U12-U04□



□: A (Brass), N (Brass + Electroless nickel plating)

Hexagon socket head male connector

KQ2S

Internal hexagon socket allows tightening with a hexagon wrench in confined spaces.

Applicable tubing O.D. [mm]	Connection thread Uni	Model
ø4	1/8	KQ2S04-U01□
	1/8	KQ2S06-U01□
ø6	1/4	KQ2S06-U02□
	1/8	KQ2S08-U01□
ø8	1/4	KQ2S08-U02□
	3/8	KQ2S08-U03□
	1/8	KQ2S10-U01□
ø10	1/4	KQ2S10-U02□
	3/8	KQ2S10-U03□
	1/2	KQ2S10-U04□
ø12	1/4	KQ2S12-U02□
	3/8	KQ2S12-U03□
	1/2	KQ2S12-U04□



□: A (Brass), N (Brass + Electroless nickel plating)

Extended male elbow

KQ2W

Basically, it is used together with a male elbow. Its extended height allows for multi-leveled piping and prevents interference among fittings.

Applicable tubing O.D. [mm]	Connection thread Uni	Model
ø4	1/8	KQ2W04-U01□
	1/4	KQ2W04-U02□
ø6	1/8	KQ2W06-U01□
	1/4	KQ2W06-U02□
	3/8	KQ2W06-U03□
ø8		KQ2W08-U01□
	1/8	KQ2W08-U01□Q*1
	1/4	KQ2W08-U02□
ø10	3/8	KQ2W08-U03□
	1/4	KQ2W10-U02□
	3/8	KQ2W10-U03□
ø12	1/2	KQ2W10-U04□
	1/4	KQ2W12-U02□
	3/8	KQ2W12-U03□
	1/2	KQ2W12-U04□



□: A (Brass), N (Brass + Electroless nickel plating)
*1 Refer to page 90 for details.

45° male elbow

KQ2K

Use to pipe a female thread at a 45° angle. Its direction is in-between that of the male connector and male elbow.

Applicable tubing O.D. [mm]	Connection thread Uni	Model
ø4	1/8	KQ2K04-U01□
	1/4	KQ2K04-U02□
ø6	1/8	KQ2K06-U01□
	1/4	KQ2K06-U02□
	3/8	KQ2K06-U03□
ø8		KQ2K08-U01□
	1/8	KQ2K08-U01□Q*1
	1/4	KQ2K08-U02□
ø10	3/8	KQ2K08-U03□
	1/8	KQ2K10-U01□
	1/4	KQ2K10-U02□
ø12	3/8	KQ2K10-U03□
	1/2	KQ2K10-U04□
	1/4	KQ2K12-U02□
	3/8	KQ2K12-U03□
	1/2	KQ2K12-U04□



□: A (Brass), N (Brass + Electroless nickel plating)
*1 Refer to page 90 for details.

Universal male elbow

KQ2V

Hexagon head of the body allows tightening with a box wrench in confined spaces.

Applicable tubing O.D. [mm]	Connection thread Uni	Model
ø4	1/8	KQ2V04-U01□
	1/8	KQ2V06-U01□
ø6	1/4	KQ2V06-U02□
	1/8	KQ2V08-U01□
ø8	1/4	KQ2V08-U02□
	3/8	KQ2V08-U03□
ø10	1/4	KQ2V10-U02□
	3/8	KQ2V10-U03□
ø12	3/8	KQ2V12-U03□
	1/2	KQ2V12-U04□



□: A (Brass), N (Brass + Electroless nickel plating)



Made to Order

1 Made to Order

Symbol	Specifications
X12	Lubricant: White vaseline Release button color: White
X35 *1	Body color: Black Release button color: Light gray
X41	With fixed orifice*2
KQ2□08-U01□Q	Effective area is interchangeable with the current product (KQ series). Applicable model: Male elbow 45° male elbow Extended male elbow Male branch tee Male run tee Applicable tubing O.D./Port size: ø8/Uni1/8 Thread material/Surface treatment: Brass, Brass + Electroless nickel plating Example) KQ2L08-U01AQ

*1 The following models are not available as made to order: Hexagon socket head male connector/KQ2S and Male connector/KQ2H.

*2 Please contact SMC for availability.

The following made-to-order products will be provided based on previous models (KQ2 series). Please contact SMC separately.

Symbol	Specifications
X17	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue
X29	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue Copper-free (With electroless nickel plating)
X39	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue Clean (Copper-free, air blow, double packaging, resin body: white)

2 Clean Series

Symbol	Specifications
10-	Brass parts: With electroless nickel plating Lubricant: Fluorine grease Air blow in a clean room Double packaging Resin body, Release button color: White

Example) **10-KQ2H06-U01N**

Spare Parts

Description	Part no.	Applicable thread
Gasket	KQG-U01	Uni1/8
	KQG-U02	Uni1/4
	KQG-U03	Uni3/8
	KQG-U04	Uni1/2

Oval Type

KQ2

Round Type

KQ2

KQB2

KS/KX

KM

KF

M

H/DL

L/LL

KC

KK

KKH

KK130

DM

DMK

KDM

KB

KR-W2

KRM

KA

KQG2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/KPG

LQ1

LQ3

LQHB

Metal One-touch Fittings

KQB2 Series

Applicable tubing O.D.: **Metric Size**

Connection thread: **M5, R, Rc**

**Heat
Resistant**

Spatter Proof

Fluid temperature: **-5 to 150°C**
Grease-free

Applicable tubing material:

- FEP • PFA • Nylon
- Soft nylon
- Polyurethane
- Polyolefin

Electroless nickel plated
(Brass parts)



Applicable Tubing

Tubing material	FEP, PFA, Nylon, Soft nylon, Polyurethane, Polyolefin
Tubing O.D.	ø3.2, ø4, ø6, ø8, ø10, ø12, ø16

Specifications

Fluid	Air, Water
Operating pressure range*1	-100 kPa to 1 MPa*2
Proof pressure	3.0 MPa
Ambient and fluid temperatures*3	-5 to 150°C (No freezing)*2
Lubricant	Grease-free specification
Seal on the threads	With sealant

*1 Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

*2 Check the operating pressure range and operating temperature range of the tubing.

*3 It is recommended that you use the inner sleeve in the following conditions. (Except ø3.2)

• When using in an environment where the fluid temperature changes drastically.

• When using at a high temperature.

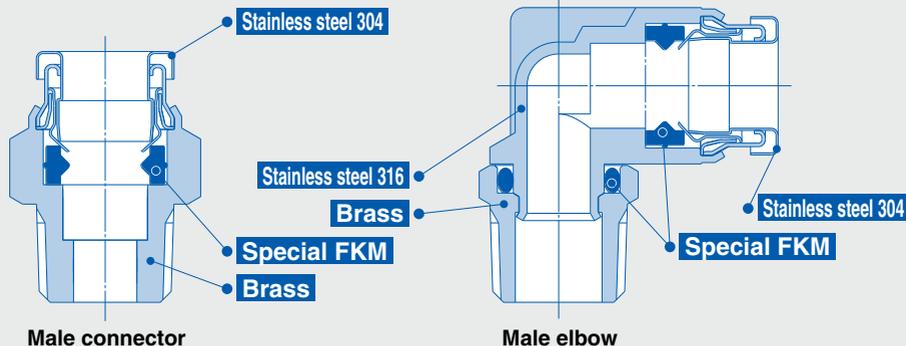
* **Temperature Condition of Mounting the Inner Sleeve**

Tubing	Temperature
FEP tubing/TH series	80°C or more
PFA tubing/TL series	120°C or more

Cross Reference Table of the Inner Sleeve

Tubing O.D.	Tubing material			Applicable inner sleeve	
	TUS (Soft polyurethane)	TH/TH (FEP)	TL/TL (PFA)	Part no.	Length [mm]
ø4	—	TH0402	—	TJ-0402	18
	TUS0425	TH0425	—	TJ-0425	18
	—	—	TL0403	TJ-0403	18
ø6	TUS0604	TH0604	TL0604	TJ-0604	19
	TUS0805	—	—	TJ-0805	20.5
ø8	—	TH0806	TL0806	TJ-0806	20.5
	TUS1065	—	—	TJ-1065	23
ø10	—	TH1075	—	TJ-1075	23
	—	TH1008	TL1008	TJ-1008	24
	TUS1208	—	—	TJ-1208	24
ø12	—	TH1209	—	TJ-1209	24
	—	TH1210	TL1210	TJ-1210	24
	—	—	—	—	—

* C2700 + Electroless nickel plating is used for the TJ series.



Male connector

KQB2H

Applicable tubing O.D. [mm]	Connection thread R, M	Model
ø3.2	M5 x 0.8	KQB2H23-M5
	1/8	KQB2H23-01S
	1/4	KQB2H23-02S
ø4	M5 x 0.8	KQB2H04-M5
	1/8	KQB2H04-01S
	1/4	KQB2H04-02S
ø6	M5 x 0.8	KQB2H06-M5
	1/8	KQB2H06-01S
	1/4	KQB2H06-02S
	3/8	KQB2H06-03S
ø8	1/8	KQB2H08-01S
	1/4	KQB2H08-02S
	3/8	KQB2H08-03S
ø10	1/8	KQB2H10-01S
	1/4	KQB2H10-02S
	3/8	KQB2H10-03S
	1/2	KQB2H10-04S
ø12	1/4	KQB2H12-02S
	3/8	KQB2H12-03S
	1/2	KQB2H12-04S
ø16	3/8	KQB2H16-03S
	1/2	KQB2H16-04S



Straight union

KQB2H

Applicable tubing O.D. [mm]	Model
ø3.2	KQB2H23-00
ø4	KQB2H04-00
ø6	KQB2H06-00
ø8	KQB2H08-00
ø10	KQB2H10-00
ø12	KQB2H12-00
ø16	KQB2H16-00



Male elbow

KQB2L

Applicable tubing O.D. [mm]	Connection thread R, M	Model
ø3.2	M5 x 0.8	KQB2L23-M5
	1/8	KQB2L23-01S
	1/4	KQB2L23-02S
ø4	M5 x 0.8	KQB2L04-M5
	1/8	KQB2L04-01S
	1/4	KQB2L04-02S
ø6	M5 x 0.8	KQB2L06-M5
	1/8	KQB2L06-01S
	1/4	KQB2L06-02S
	3/8	KQB2L06-03S
ø8	1/8	KQB2L08-01S
	1/4	KQB2L08-02S
	3/8	KQB2L08-03S
ø10	1/8	KQB2L10-01S
	1/4	KQB2L10-02S
	3/8	KQB2L10-03S
	1/2	KQB2L10-04S
ø12	1/4	KQB2L12-02S
	3/8	KQB2L12-03S
ø16	1/2	KQB2L12-04S
	3/8	KQB2L16-03S
	1/2	KQB2L16-04S



Hexagon socket head male connector

KQB2S

Applicable tubing O.D. [mm]	Connection thread R, M	Model
ø3.2	M5 x 0.8	KQB2S23-M5
	1/8	KQB2S04-M5
ø4	M5 x 0.8	KQB2S04-M5
	1/8	KQB2S04-01S
ø6	M5 x 0.8	KQB2S06-M5
	1/8	KQB2S06-01S
	1/4	KQB2S06-02S
ø8	1/8	KQB2S08-01S
	1/4	KQB2S08-02S
	3/8	KQB2S08-03S
ø10	1/8	KQB2S10-01S
	1/4	KQB2S10-02S
	3/8	KQB2S10-03S
	1/2	KQB2S10-04S
ø12	1/4	KQB2S12-02S
	3/8	KQB2S12-03S
	1/2	KQB2S12-04S
ø16	3/8	KQB2S16-03S
	1/2	KQB2S16-04S



Oval Type

KQ2

Round Type

KQ2

KQ2

KQB2

KS/KX

KM

KF

M

H/DL
L/LL

KC

KK

KKH

KK
130

DM

DMK

KDM

KB

KR
-W2

KRM

KA

KQ2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/
KPG

LQ1

LQ3

LQHB

Metal One-touch Fittings *KQB2 Series*

Male branch tee

KQB2T



Applicable tubing O.D. [mm]	Connection thread R, M	Model
ø3.2	M5 x 0.8	KQB2T23-M5
	1/8	KQB2T23-01S
	1/4	KQB2T23-02S
ø4	M5 x 0.8	KQB2T04-M5
	1/8	KQB2T04-01S
	1/4	KQB2T04-02S
ø6	M5 x 0.8	KQB2T06-M5
	1/8	KQB2T06-01S
	1/4	KQB2T06-02S
	3/8	KQB2T06-03S
ø8	1/8	KQB2T08-01S
	1/4	KQB2T08-02S
	3/8	KQB2T08-03S
ø10	1/8	KQB2T10-01S
	1/4	KQB2T10-02S
	3/8	KQB2T10-03S
	1/2	KQB2T10-04S
ø12	1/4	KQB2T12-02S
	3/8	KQB2T12-03S
	1/2	KQB2T12-04S
ø16	3/8	KQB2T16-03S
	1/2	KQB2T16-04S

Union tee

KQB2T



Applicable tubing O.D. [mm]	Model
ø3.2	KQB2T23-00
ø4	KQB2T04-00
ø6	KQB2T06-00
ø8	KQB2T08-00
ø10	KQB2T10-00
ø12	KQB2T12-00
ø16	KQB2T16-00

Union "Y"

KQB2U



Applicable tubing O.D. [mm]	Model
ø3.2	KQB2U23-00
ø4	KQB2U04-00
ø6	KQB2U06-00
ø8	KQB2U08-00
ø10	KQB2U10-00
ø12	KQB2U12-00
ø16	KQB2U16-00

Union elbow

KQB2L



Applicable tubing O.D. [mm]	Model
ø3.2	KQB2L23-00
ø4	KQB2L04-00
ø6	KQB2L06-00
ø8	KQB2L08-00
ø10	KQB2L10-00
ø12	KQB2L12-00
ø16	KQB2L16-00

Different diameter tee

KQB2T



Applicable tubing O.D. [mm]		Model
(a)	(b)	
ø3.2	ø4	KQB2T23-04
ø4	ø6	KQB2T04-06
ø6	ø8	KQB2T06-08
ø8	ø10	KQB2T08-10
ø10	ø12	KQB2T10-12
ø12	ø16	KQB2T12-16

Bulkhead union

KQB2E



Applicable tubing O.D. [mm]	Model
ø3.2	KQB2E23-00
ø4	KQB2E04-00
ø6	KQB2E06-00
ø8	KQB2E08-00
ø10	KQB2E10-00
ø12	KQB2E12-00
ø16	KQB2E16-00

Plug-in reducer

KQB2R



Applicable tubing O.D. [mm]	Applicable fitting size	Model
ø3.2	ø4	KQB2R23-04
ø4	ø6	KQB2R04-06
ø6	ø8	KQB2R06-08
ø8	ø10	KQB2R08-10
ø10	ø12	KQB2R10-12
ø12	ø16	KQB2R12-16

Different diameter straight **KQB2H**



Applicable tubing O.D. [mm]		Model
(a)	(b)	
ø3.2	ø4	KQB2H23-04
ø4	ø6	KQB2H04-06
ø6	ø8	KQB2H06-08
ø8	ø10	KQB2H08-10
ø10	ø12	KQB2H10-12
ø12	ø16	KQB2H12-16

Different diameter union "Y" **KQB2U**



Applicable tubing O.D. [mm]		Model
(a)	(b)	
ø3.2	ø4	KQB2U23-04
ø4	ø6	KQB2U04-06
ø6	ø8	KQB2U06-08
ø8	ø10	KQB2U08-10
ø10	ø12	KQB2U10-12
ø12	ø16	KQB2U12-16

Bulkhead connector **KQB2E**



Applicable tubing O.D. [mm]	Connection thread Rc	Model
ø3.2	1/4	KQB2E23-02
	1/8	KQB2E04-01
ø4	1/4	KQB2E04-02
	1/8	KQB2E06-01
ø6	1/4	KQB2E06-02
	3/8	KQB2E06-03
	1/8	KQB2E08-01
ø8	1/4	KQB2E08-02
	3/8	KQB2E08-03
	1/4	KQB2E10-02
ø10	3/8	KQB2E10-03
	3/8	KQB2E12-03
ø12	1/2	KQB2E12-04
	3/8	KQB2E16-03
ø16	1/2	KQB2E16-04

Extended male elbow **KQB2W**



Applicable tubing O.D. [mm]	Connection thread R, M	Model
ø3.2	M5 x 0.8	KQB2W23-M5
	1/8	KQB2W23-01S
	1/4	KQB2W23-02S
ø4	M5 x 0.8	KQB2W04-M5
	1/8	KQB2W04-01S
	1/4	KQB2W04-02S
ø6	M5 x 0.8	KQB2W06-M5
	1/8	KQB2W06-01S
	1/4	KQB2W06-02S
	3/8	KQB2W06-03S
	1/8	KQB2W08-01S
ø8	1/4	KQB2W08-02S
	3/8	KQB2W08-03S
	1/4	KQB2W10-02S
ø10	3/8	KQB2W10-03S
	1/2	KQB2W10-04S
	1/4	KQB2W12-02S
ø12	3/8	KQB2W12-03S
	1/2	KQB2W12-04S
	3/8	KQB2W16-03S
ø16	1/2	KQB2W16-04S

Female connector **KQB2F**



Applicable tubing O.D. [mm]	Connection thread Rc	Model
ø3.2	1/8	KQB2F23-01
	1/8	KQB2F04-01
ø4	1/4	KQB2F04-02
	1/8	KQB2F06-01
ø6	1/4	KQB2F06-02
	3/8	KQB2F06-03
	1/8	KQB2F08-01
ø8	1/4	KQB2F08-02
	3/8	KQB2F08-03
	1/4	KQB2F10-02
ø10	3/8	KQB2F10-03
	1/4	KQB2F12-02
ø12	3/8	KQB2F12-03
	1/2	KQB2F12-04
	3/8	KQB2F16-03
ø16	1/2	KQB2F16-04

- Oval Type
- KQ2
- Round Type
- KQ2
- KQB2**
- KS/KX
- KM
- KF
- M
- H/DL/LLL
- KC
- KK
- KKH
- KK130
- DM
- DMK
- KDM
- KB
- KR-W2
- KRM
- KA
- KQG2
- KQ2-G
- KG
- KFG2
- MS
- KKA
- KP
- KPO/KPG
- LQ1
- LQ3
- LQHB

Plug

KQB2P



Applicable fitting size	Model
ø3.2	KQB2P-23
ø4	KQB2P-04
ø6	KQB2P-06
ø8	KQB2P-08
ø10	KQB2P-10
ø12	KQB2P-12
ø16	KQB2P-16

Related Equipment

Spatter cover



Applicable tubing O.D.	Model
6	KQB2-06C-X1124
8	KQB2-08C-X1124
10	KQB2-10C-X1124

- * Applicable tubing: FR soft nylon, FR double layer, FR three-layer
- * Cannot be used for union "Y" (KQB2U) 2-port side.
- * Since the spatter cover is designed for multi-layer (double layer, three-layer) tubing, sufficient effects cannot be obtained in foreign matter flow-in or followability for single-layer tubing.
- * The cover can be attached regardless of the single-layer/multi-layer tubing.

Spare Parts

Description	Tubing O.D.	Part no.	Material
Gasket	—	M-5G3	Stainless steel 316, Special FKM
Bulkhead nut	ø3.2	KQB223-P01	C3604 (Electroless nickel plating)
	ø4		
	ø6		
	ø8		
	ø10		
	ø12		
	ø16		

Rotary One-touch Fittings

KS/KX Series

Applicable tubing O.D.: Metric Size

Connection thread: M, R

Low torque rotation type rotary One-touch fittings

Applicable to use for oscillating and rotating sections in robots. Copper-free specifications (With electroless nickel plating)

Sealant is standard.



Male elbow

Male connector

Applicable Tubing

Tubing material*1	FEP, PFA, Nylon, Soft nylon, Polyurethane
Tubing O.D.	ø4, ø6, ø8, ø10, ø12

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing.

Specifications

Fluid	Air
Operating pressure range*2	-100 kPa to 1 MPa
Proof pressure	3 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Thread	JIS B0203 (Taper thread for piping) JIS B0205 (Metric coarse thread)

*2 Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage. Also, when using in a vacuum, grease may enter the inside due to the nature of its construction.

Rotating Torque/Allowable Number of Rotations

Applicable tubing O.D.	ø4	ø6	ø8	ø10	ø12	
Rotating torque N-m*3	0.006	0.012	0.014	0.020	0.022	
Allowable number of rotations s ⁻¹ *4	KS series	8.4	8.4	6.7	5	4.2
	KX series	25	20	20	16.7	16.7

*3 Rotating torque under pressure 0.5 MPa

*4 Number of rotations per second

Slide bearing

Smooth operation and longer life from an oil containing slide bearing.

Rotary seal

A special rotary seal minimizes friction while providing an excellent seal.

Holder

Standard nickel plating allows copper-free applications.

Ball bearing

A ball bearing ensures low torque rotation.

Stud

With electroless nickel plating
With thread sealant (R thread only)

Cassette

KS series: Blue
KX series: Light gray
The male connector is equipped with a "tube rotation prevention mechanism."

KS Series (Standard)

KX Series (High speed)

Scraper

Prevents chips from intruding into bearing parts.

Rotary seal

X ring shape minimizes friction while providing an excellent seal. Seal is fire and shock proof fluorine rubber. Proves against high friction heat in high speed rotation and longer life.

Ball bearing

A ball bearing ensures low torque rotation. Stainless steel 440C improves corrosion resistance.

* Other parts' specifications are the same as those of the KS series.

For inch size, refer to the **Web Catalog**. (Inch size is not available for the KX series.)

Male connector

KSH

Use to pipe a female thread in the same direction.
Most general model.

Applicable tubing O.D. [mm]	Connection thread	Model
4	M5 x 0.8	KSH04-M5
	M6 x 1.0	-M6
	R1/8	-01S
6	M5 x 0.8	KSH06-M5
	M6 x 1.0	-M6
	R1/8	-01S
8	R1/4	-02S
	R1/8	KSH08-01S
	R1/4	-02S
10	R3/8	-03S
	R1/4	KSH10-02S
	R3/8	-03S
12	R1/2	-04S
	R3/8	KSH12-03S
	R1/2	-04S



<M5, M6>

<R>

Male elbow

KSL

Use to pipe a female thread at right angles.
Most general model.

Applicable tubing O.D. [mm]	Connection thread	Model
4	M5 x 0.8	KSL04-M5
	M6 x 1.0	-M6
	R1/8	-01S
6	M5 x 0.8	KSL06-M5
	M6 x 1.0	-M6
	R1/8	-01S
8	R1/4	-02S
	R1/8	KSL08-01S
	R1/4	-02S
10	R3/8	-03S
	R1/4	KSL10-02S
	R3/8	-03S
12	R1/2	-04S
	R3/8	KSL12-03S
	R1/2	-04S



<M5, M6>

<R>

* Refer to page 355 for applicable color caps.

Male connector

KXH

Use to pipe a female thread in the same direction.
Most general model.

Applicable tubing O.D. [mm]	Connection thread	Model
4	M5 x 0.8	KXH04-M5
	M6 x 1.0	-M6
	R1/8	-01S
6	M5 x 0.8	KXH06-M5
	M6 x 1.0	-M6
	R1/8	-01S
8	R1/4	-02S
	R1/8	KXH08-01S
	R1/4	-02S
10	R3/8	-03S
	R1/4	KXH10-02S
	R3/8	-03S
12	R1/2	-04S
	R3/8	KXH12-03S
	R1/2	-04S



<M5, M6>

<R>

Male elbow

KXL

Use to pipe a female thread at right angles.
Most general model.

Applicable tubing O.D. [mm]	Connection thread	Model
4	M5 x 0.8	KXL04-M5
	M6 x 1.0	-M6
	R1/8	-01S
6	M5 x 0.8	KXL06-M5
	M6 x 1.0	-M6
	R1/8	-01S
8	R1/4	-02S
	R1/8	KXL08-01S
	R1/4	-02S
10	R3/8	-03S
	R1/4	KXL10-02S
	R3/8	-03S
12	R1/2	-04S
	R3/8	KXL12-03S
	R1/2	-04S



<M5, M6>

<R>

* Refer to page 355 for applicable color caps.

One-touch Fittings Manifold

KM Series

Applicable tubing O.D.: Metric Size

Connection thread: R, Rc

Compact piping possible.
Manifold piping possible.
Many varieties (40 types) are available.
One-touch fittings give the most efficient operation.



Applicable Tubing

Tubing material	FEP, PFA, Nylon, Soft nylon, Polyurethane
Tubing O.D.	ø4, ø6, ø8, ø10, ø12

Specifications

Model	KM11	KM12	KM13	KM14	KM15	KM16
Fluid	Air, Water*1					
Operating pressure range	-100 kPa to 1 MPa					
Proof pressure	3 MPa					
Ambient and fluid temperatures	-5 to 60°C, Water: 0 to 40°C (No freezing)					
Thread	—	JIS B0203 (Taper thread for piping)	—	JIS B0203 (Taper thread for piping)	—	—
Accessory	None	Hexagon socket head blank plug with seal: 1 pc.	None	None	None	None

*1 The surge pressure must be under the maximum operating pressure.

Model

Model	Porting		No. of Port A	Port B size	Port A size		
	Port A	Port B			ø4	ø6	ø8
KM11	One-touch fitting	One-touch fitting	6, 10	ø8	●		
				ø10		●	
				ø12			●
KM12	One-touch fitting	Rc female thread	6, 10	Rc1/4	●	●	
				Rc3/8			●
KM13	One-touch fitting	One-touch fitting	3	ø6	●		
				ø8	●	●	
				ø10		●	●
KM14	One-touch fitting	One-touch fitting R male thread	3	ø6, R1/8	●		
				ø6, R1/4	●		
				ø6, R3/8	●		
				ø8, R1/8	●	●	
				ø8, R1/4	●	●	
				ø8, R3/8	●	●	
				ø10, R1/4		●	●
				ø10, R3/8		●	●
KM15	One-touch fitting	One-touch fitting Rod	3	ø6	●		
				ø8	●	●	
				ø10		●	●
KM16	One-touch fitting	One-touch fitting	3	ø4	●		
				ø6	●	●	

For inch size, refer to the [Web Catalog](#).

KM11



Applicable tubing O.D. [mm]		No. of Port A	Model
(A)	(B)		
4	8	6	KM11-04-08-6
	8	10	-10
6	10	6	KM11-06-10-6
	10	10	-10
8	12	6	KM11-08-12-6
	12	10	-10

KM12



Applicable tubing O.D. (A) [mm]	Connection thread	No. of Port A	Model
4	Rc1/4	6	KM12-04-02-6
		10	-10
6	Rc1/4	6	KM12-06-02-6
		10	-10
8	Rc3/8	6	KM12-08-03-6
		10	-10

KM13



Applicable tubing O.D. [mm]		No. of Port A	Model
(A)	(B)		
4	6	3	KM13-04-06-3
	8	3	-08-3
6	8	3	KM13-06-08-3
	10	3	-10-3
8	10	3	KM13-08-10-3

KM14



Applicable tubing O.D. [mm]		Connection thread	No. of Port A	Model
(A)	(B)			
4	6	R1/8	3	KM14-04-06-01S-3
		R1/4	3	-02S-3
		R3/8	3	-03S-3
4	8	R1/8	3	KM14-04-08-01S-3
		R1/4	3	-02S-3
		R3/8	3	-03S-3
6	8	R1/8	3	KM14-06-08-01S-3
		R1/4	3	-02S-3
		R3/8	3	-03S-3
6	10	R1/4	3	KM14-06-10-02S-3
		R3/8	3	-03S-3
		R1/2	3	-04S-3
8	10	R1/4	3	KM14-08-10-02S-3
		R3/8	3	-03S-3
		R1/2	3	-04S-3

KM15



Applicable tubing O.D. [mm]		Applicable fitting size	No. of Port A	Model
(A)	(B)			
4	6	6	3	KM15-04-06-3
	8	8	3	-08-3
6	8	8	3	KM15-06-08-3
	10	10	3	-10-3
8	10	10	3	KM15-08-10-3

KM16



Applicable tubing O.D. [mm]		No. of Port A	Model
(A)	(B)		
4	4	3	KM16-04-04-3
4	6	3	KM16-04-06-3
6	6	3	KM16-06-06-3

* Refer to page 355 for applicable color caps.



Made to Order

1 Grease-free Specifications

Symbol	Specifications
X17	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue
X29	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue Copper-free (With electroless nickel plating)
X94	Grease-free Rubber material: FKM (With fluorine coating) Release button color: Light blue

Suffix "-X17" to the end of part number.
Example) **KM11-04-08-10-X17**

2 Other Specifications

Symbol	Specifications
X2	Copper-free (With electroless nickel plating)
X12	Lubricant: White vaseline Release button color: White
X34	Rubber material: FKM

Suffix "-X2" to the end of part number.
Example) **KM12-04-02-6-X2**

Oval Type

KQ2

Round Type

KQ2

KQB2

KS/
KX

KM

KF

M

H/DL
L/LL

KC

KK

KKH

KK
130

DM

DMK

KDM

KB

KR
-W2

KRM

KA

KQG2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/
KPG

LQ1

LQ3

LQHB

Insert Fittings

KF Series

Applicable tubing O.D.: **Metric Size**

Connection thread: **R**

Heat Resistant
(Brass sleeve)

Material /Body, Union nut: **Brass**

Sleeve: **Resin or Brass**

Maximum operating temperature:

150°C
(Brass sleeve)

60°C
(Resin sleeve)

Applicable tubing material:

FEP, Super PFA, Modified PTFE,
Nylon, Soft nylon, Polyurethane,
Polyolefin, Soft polyolefin,
Soft polyurethane,
Hard polyurethane (High pressure)

Can be used with steam. (For brass sleeve)

Grease-free

Applicable Tubing

Series	Tubing material	Tubing O.D. x I.D. [mm]							
		ø4/ø2.5	ø6/ø4	ø8/ø5	ø8/ø6	ø10/ø6.5	ø10/ø7.5	ø12/ø8	ø12/ø9
T	Nylon	●	●	—	●	—	●	—	●
TS	Soft nylon	●	●	—	●	—	●	—	●
TU	Polyurethane	●	●	—	●	—	●	—	●
TPH	Polyolefin	●	●	—	●	—	●	—	●
TPS	Soft polyolefin	●	●	●	—	●	—	●	—
TH	FEP	●	●	—	●	—	●	—	●
TL	Super PFA	—	●	—	●	—	—	—	—
TD	Modified PTFE	●	●	—	●	—	●	—	●
TUS	Soft polyurethane	●	●	●	—	●	—	●	—
TUH	Hard polyurethane (High pressure)	●	●	●	—	●	—	●	—

Specifications

Sleeve material	Nylon	Brass
Fluid	Air, Water*2	Air, Steam*2
Ambient and fluid temperatures	-5 to 60°C (No freezing) Water: 0 to 60°C (No freezing)	-5 to 150°C (No freezing)
Operating pressure range*1	-101.3 kPa to 1 MPa	
Proof pressure	7 MPa (at 60°C)	
Lubricant	Grease-free	
Seal on the threads	None or with sealant	

*1 Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

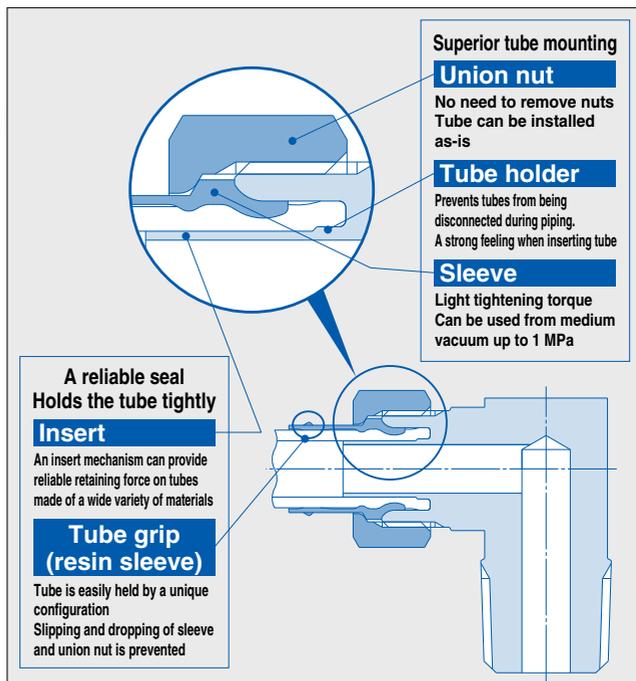
*2 Swivel type is not compatible with water and steam.



Resin sleeve



Brass sleeve



Male connector

KFH

Use to pipe a female thread in the same direction.
Most general model.

Applicable tubing size (mm)		Connection thread	Model	
O.D.	I.D.		Resin sleeve	Brass sleeve
ø4	ø2.5	R1/8	KFH04-01S	KFH04B-01S
		R1/4	-02S	-02S
ø6	ø4	R1/8	KFH06-01S	KFH06B-01S
		R1/4	-02S	-02S
		R3/8	-03S	-03S
ø8	ø5	R1/8	KFH08U-01S	—
		R1/4	-02S	—
		R3/8	-03S	—
ø8	ø6	R1/8	KFH08N-01S	KFH08B-01S
		R1/4	-02S	-02S
		R3/8	-03S	-03S
ø10	ø6.5	R1/4	KFH10U-02S	—
		R3/8	-03S	—
		R1/2	-04S	—
ø10	ø7.5	R1/4	KFH10N-02S	KFH10B-02S
		R3/8	-03S	-03S
		R1/2	-04S	-04S
ø12	ø8	R1/4	KFH12U-02S	—
		R3/8	-03S	—
		R1/2	-04S	—
ø12	ø9	R1/4	KFH12N-02S	KFH12B-02S
		R3/8	-03S	-03S
		R1/2	-04S	-04S



Branch tee

KFT

Use to branch a female thread at both 90° angles.

Applicable tubing size (mm)		Connection thread	Model	
O.D.	I.D.		Resin sleeve	Brass sleeve
ø4	ø2.5	R1/8	KFT04-01S	KFT04B-01S
		R1/4	-02S	-02S
ø6	ø4	R1/8	KFT06-01S	KFT06B-01S
		R1/4	-02S	-02S
		R3/8	-03S	-03S
ø8	ø5	R1/8	KFT08U-01S	—
		R1/4	-02S	—
		R3/8	-03S	—
ø8	ø6	R1/8	KFT08N-01S	KFT08B-01S
		R1/4	-02S	-02S
		R3/8	-03S	-03S
ø10	ø6.5	R1/4	KFT10U-02S	—
		R3/8	-03S	—
		R1/2	-04S	—
ø10	ø7.5	R1/4	KFT10N-02S	KFT10B-02S
		R3/8	-03S	-03S
		R1/2	-04S	-04S
ø12	ø8	R1/4	KFT12U-02S	—
		R3/8	-03S	—
		R1/2	-04S	—
ø12	ø9	R1/4	KFT12N-02S	KFT12B-02S
		R3/8	-03S	-03S
		R1/2	-04S	-04S



Male elbow

KFL

Use to pipe a female thread at right angles.
Most general model.

Applicable tubing size (mm)		Connection thread	Model	
O.D.	I.D.		Resin sleeve	Brass sleeve
ø4	ø2.5	R1/8	KFL04-01S	KFL04B-01S
		R1/4	-02S	-02S
ø6	ø4	R1/8	KFL06-01S	KFL06B-01S
		R1/4	-02S	-02S
		R3/8	-03S	-03S
ø8	ø5	R1/8	KFL08U-01S	—
		R1/4	-02S	—
		R3/8	-03S	—
ø8	ø6	R1/8	KFL08N-01S	KFL08B-01S
		R1/4	-02S	-02S
		R3/8	-03S	-03S
ø10	ø6.5	R1/4	KFL10U-02S	—
		R3/8	-03S	—
		R1/2	-04S	—
ø10	ø7.5	R1/4	KFL10N-02S	KFL10B-02S
		R3/8	-03S	-03S
		R1/2	-04S	-04S
ø12	ø8	R1/4	KFL12U-02S	—
		R3/8	-03S	—
		R1/2	-04S	—
ø12	ø9	R1/4	KFL12N-02S	KFL12B-02S
		R3/8	-03S	-03S
		R1/2	-04S	-04S



Male run tee

KFY

Use to branch a female thread in the same direction and at a 90° angle.

Applicable tubing size (mm)		Connection thread	Model	
O.D.	I.D.		Resin sleeve	Brass sleeve
ø4	ø2.5	R1/8	KFY04-01S	KFY04B-01S
		R1/4	-02S	-02S
ø6	ø4	R1/8	KFY06-01S	KFY06B-01S
		R1/4	-02S	-02S
		R3/8	-03S	-03S
ø8	ø5	R1/8	KFY08U-01S	—
		R1/4	-02S	—
		R3/8	-03S	—
ø8	ø6	R1/8	KFY08N-01S	KFY08B-01S
		R1/4	-02S	-02S
		R3/8	-03S	-03S
ø10	ø6.5	R1/4	KFY10U-02S	—
		R3/8	-03S	—
		R1/2	-04S	—
ø10	ø7.5	R1/4	KFY10N-02S	KFY10B-02S
		R3/8	-03S	-03S
		R1/2	-04S	-04S
ø12	ø8	R1/4	KFY12U-02S	—
		R3/8	-03S	—
		R1/2	-04S	—
ø12	ø9	R1/4	KFY12N-02S	KFY12B-02S
		R3/8	-03S	-03S
		R1/2	-04S	-04S



Swivel elbow

KFV

Use to pipe a female thread at right angles.
Swiveled at any direction.

	Applicable tubing size (mm)		Connection thread	Model	
	O.D.	I.D.		Resin sleeve	Brass sleeve
 [Resin sleeve]	ø4	ø2.5	R1/8	KFV04-01S	KFV04B-01S
			R1/4	-02S	-02S
	ø6	ø4	R1/8	KFV06-01S	KFV06B-01S
			R1/4	-02S	-02S
			R3/8	-03S	-03S
	ø8	ø5	R1/8	KFV08U-01S	—
R1/4			-02S	-02S	
R3/8			-03S	—	
ø6	ø6	R1/8	KFV08N-01S	KFV08B-01S	
		R1/4	-02S	-02S	
		R3/8	-03S	-03S	
ø10	ø6.5	R1/4	KFV10U-02S	—	
		R3/8	-03S	—	
		R1/2	-04S	—	
	ø7.5	R1/4	KFV10N-02S	KFV10B-02S	
		R3/8	-03S	-03S	
		R1/2	-04S	-04S	
ø8	ø8	R1/4	KFV12U-02S	—	
		R3/8	-03S	—	
		R1/2	-04S	—	
ø12	ø9	R1/4	KFV12N-02S	KFV12B-02S	
		R3/8	-03S	-03S	
		R1/2	-04S	-04S	

Straight union

KFH

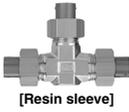
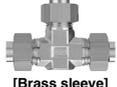
Use to connect tubing in the same direction.

	Applicable tubing size (mm)		Model	
	O.D.	I.D.	Resin sleeve	Brass sleeve
 [Resin sleeve]	ø4	ø2.5	KFH04-00	KFH04B-00
			ø6	ø4
	 [Brass sleeve]	ø8	ø5	KFH08U-00
ø6				KFH08N-00
ø10		ø7.5	ø6.5	KFH10U-00
	ø7.5		KFH10N-00	KFH10B-00
	ø8		KFH12U-00	—
ø12	ø9	ø8	KFH12N-00	KFH12B-00
		ø9	KFH12N-00	KFH12B-00

Tee union

KFT

Use to branch tubing at both 90° angles.

	Applicable tubing size (mm)		Model	
	O.D.	I.D.	Resin sleeve	Brass sleeve
 [Resin sleeve]	ø4	ø2.5	KFT04-00	KFT04B-00
			ø6	ø4
	 [Brass sleeve]	ø8	ø5	KFT08U-00
ø6				KFT08N-00
ø10		ø7.5	ø6.5	KFT10U-00
	ø7.5		KFT10N-00	KFT10B-00
	ø8		KFT12U-00	—
ø12	ø9	ø8	KFT12N-00	KFT12B-00
		ø9	KFT12N-00	KFT12B-00

Swivel long elbow

KFW

Use to pipe a female thread at right angles.
Swiveled at any direction. Solid piece moves fittings up from workpiece.

	Applicable tubing size (mm)		Connection thread	Model	
	O.D.	I.D.		Resin sleeve	Brass sleeve
 [Resin sleeve]	ø4	ø2.5	R1/8	KFW04-01S	KFW04B-01S
			R1/4	-02S	-02S
	ø6	ø4	R1/8	KFW06-01S	KFW06B-01S
			R1/4	-02S	-02S
			R3/8	-03S	-03S
	ø8	ø5	R1/8	KFW08U-01S	—
R1/4			-02S	—	
R3/8			-03S	—	
ø6	ø6	R1/8	KFW08N-01S	KFW08B-01S	
		R1/4	-02S	-02S	
		R3/8	-03S	-03S	
ø10	ø6.5	R1/4	KFW10U-02S	—	
		R3/8	-03S	—	
		R1/2	-04S	—	
	ø7.5	R1/4	KFW10N-02S	KFW10B-02S	
		R3/8	-03S	-03S	
		R1/2	-04S	-04S	
ø8	ø8	R1/4	KFW12U-02S	—	
		R3/8	-03S	—	
		R1/2	-04S	—	
ø12	ø9	R1/4	KFW12N-02S	KFW12B-02S	
		R3/8	-03S	-03S	
		R1/2	-04S	-04S	

Bulkhead union

KFE

Use to connect tubing through a panel, etc.

	Applicable tubing size (mm)		Model	
	O.D.	I.D.	Resin sleeve	Brass sleeve
 [Resin sleeve]	ø4	ø2.5	KFE04-00	KFE04B-00
			ø6	ø4
	 [Brass sleeve]	ø8	ø5	KFE08U-00
ø6				KFE08N-00
ø10		ø7.5	ø6.5	KFE10U-00
	ø7.5		KFE10N-00	KFE10B-00
	ø8		KFE12U-00	—
ø12	ø9	ø8	KFE12N-00	KFE12B-00
		ø9	KFE12N-00	KFE12B-00

Female union

KFF

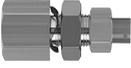
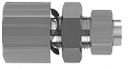
Use to pipe a male thread of a pressure gauge, etc.

	Applicable tubing size [mm]		Connection thread	Model	
	O.D.	I.D.		Resin sleeve	Brass sleeve
 [Resin sleeve]	ø4	ø2.5	Rc1/4	KFF04-02	KFF04B-02
			Rc1/4	KFF06-02	KFF06B-02
			Rc3/8	-03	-03
 [Brass sleeve]	ø6	ø4	Rc1/4	KFF08U-02	—
			Rc1/4	KFF08N-02	KFF08B-02
			Rc1/4	KFF10U-02	—
	ø8	ø6	Rc1/4	KFF10N-02	KFF10B-02
			Rc1/4	KFF12U-02	—
			Rc1/4	KFF12N-02	KFF12B-02

Bulkhead connector

KFE

Use to connect a male thread and tubing through a panel, etc.

	Applicable tubing size [mm]		Connection thread	Model	
	O.D.	I.D.		Resin sleeve	Brass sleeve
 [Resin sleeve]	ø6	ø4	Rc1/4	KFE06-02	KFE06B-02
			Rc3/8	KFE08N-03	KFE08B-03
			Rc3/8	KFE10U-03	—
 [Brass sleeve]	ø8	ø6	Rc3/8	KFE10N-03	KFE10B-03
			Rc3/8	KFE12U-03	—
			Rc3/8	KFE12N-03	KFE12B-03

Plug

KFP

Use to plug unused fittings.

	Applicable fitting [mm]	Model
	ø4	KFP-04
	ø6	KFP-06
	ø8	KFP-08
	ø10	KFP-10
	ø12	KFP-12

Elbow connector

KFV

	Applicable tubing size [mm]		Model		
	O.D.	I.D.			
	ø4	ø2.5	KFV-04		
			ø6	ø4	KFV-06
			ø8	ø5	KFV-08U
	ø6	ø4	KFV-08N		
			ø10	ø6.5	KFV-10U
			ø7.5	KFV-10N	
	ø8	ø6	KFV-12U		
			ø12	ø8	KFV-12U
			ø9	KFV-12N	

Long elbow connector

KFW

	Applicable tubing size [mm]		Model		
	O.D.	I.D.			
	ø4	ø2.5	KFW-04		
			ø6	ø4	KFW-06
			ø8	ø5	KFW-08U
	ø6	ø4	KFW-08N		
			ø10	ø6.5	KFW-10U
			ø7.5	KFW-10N	
	ø8	ø6	KFW-12U		
			ø12	ø8	KFW-12U
			ø9	KFW-12N	

Sleeve

KFS

	Applicable fitting [mm]	Model
 [Resin sleeve]	ø6	KFSB-04
		KFSB-06
 [Brass sleeve]	ø8	KFS-08
		KFSB-08
	ø10	KFS-10
		KFSB-10
	ø12	KFS-12
		KFSB-12

Union nut

KFN

	Applicable fitting [mm]	Model
	ø6	KFN-06
		KFN-08
	ø8	KFN-10
		KFN-12



Made to Order

1 Copper-free (With electroless nickel plating)

Symbol	Specifications
X2	Copper-free (With electroless nickel plating)

Suffix "-X2" to the end of part number.

Example) KFH06-01S-X2

2 Clean Series

Symbol	Specifications
10-	Brass parts: With electroless nickel plating Double packaging

Miniature Fittings

M Series

Applicable tubing O.D.: Metric Size

Connection thread: M3, M5, R1/8

Compact piping space

Hose nipple tubing connection/disconnection is simple while keeping a large retaining force.

Line up various types

For air connection in confined areas.

Accepts many types of plastic tubing

Hose nipple and hose elbow accepts nylon, soft nylon, and polyurethane tubing.

Fittings for $\phi 2$ tubing are now available as a series.

Applicable tubing O.D.

: $\phi 2$



Applicable tubing O.D.

: $\phi 3.18, \phi 4, \phi 6$



Specifications

• Applicable tubing O.D.: $\phi 2$

Tubing material	Polyurethane
Applicable tubing (O.D./I.D.)	$\phi 2/\phi 1.2$
Fluid	Air, Water* ¹
Max. operating pressure	1 MPa* ²
Ambient and fluid temperatures	-5 to 60°C, Water: 0 to 40°C (No freezing)
Port size	M3, M5, $\phi 3.2, \phi 4$
Thread	JIS B0205 (Metric coarse thread)

*1 The surge pressure must be under the maximum operating pressure.

*2 Apply the maximum operating pressure to the tube during the tube connection.

• Applicable tubing O.D.: $\phi 3.18, \phi 4, \phi 6$

Applicable tubing material	Nylon	Soft nylon	Polyurethane	Super PFA* ¹	FEP* ²	Modified PTFE* ³
Applicable tubing O.D./I.D.	M3	—	$\phi 4/\phi 2.5$	$\phi 3.18/\phi 2$ $\phi 4/\phi 2.5$	—	—
	M5, R1/8	$\phi 4/\phi 2.5$ $\phi 6/\phi 4$	$\phi 3.18/\phi 2.18$	$\phi 4/\phi 2.5$ $\phi 6/\phi 4$	$\phi 3.18/\phi 2$ $\phi 4/\phi 2.5$ $\phi 6/\phi 4$	$\phi 4/\phi 2.5$ $\phi 6/\phi 4$
Fluid	Air, Water* ⁴					
Max. operating pressure (at 20°C)	1.5 MPa	1 MPa	0.8 MPa	1 MPa	1.5 MPa	1.4 MPa
Ambient and fluid temperatures	-5 to 60°C, Water: 0 to 40°C (No freezing)					
Port size	M3, M5, R1/8			M5, R1/8		
Thread	JIS B0205 (Metric coarse thread) JIS B0203 (Taper thread for piping)					

*1, *2, *3 Compatible only with hose nipple type.

*4 Barb fitting, barb elbow, barb elbow (H) are not compatible with water.

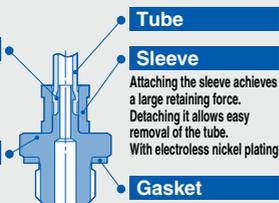
Barb fitting: $\phi 2$

Barb

Configuration for easy insertion into the tube
Holds the tube tightly

Body

With electroless nickel plating



Tube

Sleeve

Attaching the sleeve achieves a large retaining force. Detaching it allows easy removal of the tube.

With electroless nickel plating

Gasket

Low clamping torque
Firm sealing

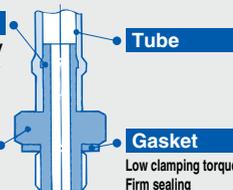
Barb fitting: $\phi 3.18, \phi 4, \phi 6$

Barb

Configuration for easy insertion into the tube
Holds the tube tightly

Body

With electroless nickel plating



Tube

Gasket

Low clamping torque
Firm sealing

Hose nipple: $\phi 3.18, \phi 4, \phi 6$

Barb

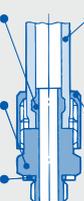
Configuration for easy insertion into the tube
Holds the tube tightly

Body

With electroless nickel plating

Gasket

Low clamping torque
Firm sealing



Tube

Applicable for nylon, soft nylon, and polyurethane tubing.

Cap nut

Certainly hold the tube by manual clamping
Easy removal of tube by loosening
With electroless nickel plating

Applicable tubing O.D.: $\varnothing 2$

Port size: **M3, M5**

Barb fitting



Applicable tubing O.D./I.D. [mm]	Connection thread	Model
$\varnothing 2 \times \varnothing 1.2$	M3 x 0.5	M-3AU-2
	M5 x 0.8	M-5AU-2

Barb One-touch



Applicable tubing [mm]		Model
a) (O.D./I.D.)	b) (O.D.)	
$\varnothing 2 \times \varnothing 1.2$	$\varnothing 3.2$	M-32F-2
	$\varnothing 4$	M-04F-2

Barb elbow



Applicable tubing O.D./I.D. [mm]	Connection thread	Model
$\varnothing 2 \times \varnothing 1.2$	M3 x 0.5	M-3ALU-2
	M5 x 0.8	M-5ALHU-2

Plug-in reducer



Applicable tubing O.D./I.D. [mm]	Fitting size	Model
$\varnothing 2 \times \varnothing 1.2$	$\varnothing 3.2$	M-32R-2
	$\varnothing 4$	M-04R-2



Made to Order

1 Gasket Material Modification

Symbol	Specifications	
X226	Gasket material: Stainless steel 304, FKM	
	Applicable thread	Gasket part no.
	M3	M3G-DPH00489
X112	Gasket material: Stainless steel 316, Special FKM	
	Applicable thread	Gasket part no.
	M5	M-5G3

Spare Parts

Description	Part no.	Applicable thread	Material
Gasket	IN-233-706	M3	Stainless steel 304, NBR
	M-5G2	M5	Stainless steel 304, NBR
	M-5G3		Stainless steel 316, Special FKM
Sleeve	M-5-2-P02	—	C3604 (With electroless nickel plating)

- Oval Type
- KQ2
- Round Type
- KQ2
- KQB2
- KS/KX
- KM
- KF
- M**
- H/DL
- L/LL
- KC
- KK
- KKH
- KK 130
- DM
- DMK
- KDM
- KB
- KR -W2
- KRM
- KA
- KQG2
- KQ2-G
- KG
- KFG2
- MS
- KKA
- KP
- KPQ/KPG
- LQ1
- LQ3
- LQHB

Applicable tubing O.D.: $\varnothing 3.18$, $\varnothing 4$, $\varnothing 6$

Port size: M3

Description	Note	Model	Application	
Barb fitting for soft tubing 	$\varnothing 3.18/2.18 \times M3$	M-3AU-3	For soft nylon tubing	
	$\varnothing 3.18/2 \times M3$		For polyurethane tubing	
	$\varnothing 4/2.5 \times M3$	M-3AU-4	For soft nylon and polyurethane tubing	
Barb elbow for soft tubing 	$\varnothing 3.18/2.18 \times M3$	M-3ALU-3	Body rotates at 360° around the stud axis	For soft nylon tubing
	$\varnothing 3.18/2 \times M3$			For polyurethane tubing
	$\varnothing 4/2.5 \times M3$	M-3ALU-4	For soft nylon and polyurethane tubing	
Universal elbow 	M3 female x M3 male	M-3UL	Body rotates at 360° around the stud axis	
Universal tee 	M3 female x M3 female x M3 male	M-3UT	Body rotates at 360° around the stud axis	
Nipple 	M3 male x M3 male	M-3N	Fitting to workpiece and fitting to fitting connection	
Plug 		M-3P	Use to plug unused M3 port	
Gasket 		M-3G2	Seal on the M3 threads	

Port size: M5

Description	Note	Model	Application	
Barb fitting for nylon tubing 	$\varnothing 4/2.5 \times M5$	M-5AN-4	For nylon tubing	
	$\varnothing 6/4 \times M5$	M-5AN-6		
Barb fitting for soft tubing 	$\varnothing 3.18/2.18 \times M5$	M-5AU-3	For soft nylon tubing	
	$\varnothing 3.18/2 \times M5$		For polyurethane tubing	
	$\varnothing 4/2.5 \times M5$	M-5AU-4	For soft nylon and polyurethane tubing	
	$\varnothing 6/4 \times M5$	M-5AU-6		
Barb elbow for nylon tubing 	$\varnothing 4/2.5 \times M5$	M-5ALN-4	<ul style="list-style-type: none"> For nylon tubing Body rotates at 360° around the stud axis 	
	$\varnothing 6/4 \times M5$	M-5ALN-6		
Barb elbow for soft tubing 	$\varnothing 3.18/2.18 \times M5$	M-5ALU-3	Body rotates at 360° around the stud axis	For soft nylon tubing
	$\varnothing 3.18/2 \times M5$			For polyurethane tubing
	$\varnothing 4/2.5 \times M5$	M-5ALU-4		For soft nylon and polyurethane tubing
	$\varnothing 6/4 \times M5$	M-5ALU-6		
Barb elbow (H) for nylon tubing 	$\varnothing 4/2.5 \times M5$	M-5ALHN-4	<ul style="list-style-type: none"> For nylon tubing Body rotates at 360° around the stud axis 	
	$\varnothing 6/4 \times M5$	M-5ALHN-6		
Barb elbow (H) for soft tubing 	$\varnothing 3.18/2.18 \times M5$	M-5ALHU-3	Body rotates at 360° around the stud axis	For soft nylon tubing
	$\varnothing 3.18/2 \times M5$			For polyurethane tubing
	$\varnothing 4/2.5 \times M5$	M-5ALHU-4		For soft nylon and polyurethane tubing
	$\varnothing 6/4 \times M5$	M-5ALHU-6		

Applicable tubing O.D.: $\varnothing 3.18, \varnothing 4, \varnothing 6$

Port size: M5

Description	Note	Model	Application
 Hose nipple	$\varnothing 4/2.5 \times M5$	M-5H-4	For nylon, soft nylon, and polyurethane tubing
	$\varnothing 6/4 \times M5$	M-5H-6	
 Hose elbow	$\varnothing 4/2.5 \times M5$	M-5HL-4	<ul style="list-style-type: none"> For nylon, soft nylon, and polyurethane tubing
	$\varnothing 6/4 \times M5$	M-5HL-6	
 Hose elbow (H)	$\varnothing 4/2.5 \times M5$	M-5HLH-4	<ul style="list-style-type: none"> Body rotates at 360° around the stud axis
	$\varnothing 6/4 \times M5$	M-5HLH-6	
 Elbow	M5 female x M5 female	M-5L	One-sided 90° elbow
 Tee	M5 female x M5 female x M5 female	M-5T	Both sides allow 90° connection
 Universal elbow	M5 female x M5 male	M-5UL	Body rotates at 360° around the stud axis
 Universal tee	M5 female x M5 female x M5 male	M-5UT	Body rotates at 360° around the stud axis
 Extension fitting	M5 male x M5 female	M-5J	Solid piece moves fitting up from workpiece
 Nipple	M5 male x M5 male	M-5N	Fitting to workpiece and fitting to fitting connection
 Universal nipple	M5 male x M5 male PAT.	M-5UN	Body rotates at 360° around the stud axis
 Bulkhead union	M5 x M5 female - female	M-5E	Panel-mount connection
 Bulkhead reducer	Rc1/8 x M5 female	M-5ER	Reduction from Rc 1/8 to M5 including panel or bracket mounting
 Manifold	Rc1/8 x M5 female (9 stations)	M-5M	For reducing Rc 1/8 female to be diverted to up to 9, M5 stations, including panel or bracket mounting

Description	Note	Model	Application
 Bushing	R1/8 x M5 female	M-5B	For reducing R 1/8 female to M5.
	R1/4 x M5 female	M-5B1	For reducing R 1/4 female to M5.
 Plug		M-5P	Use to plug unused M5 port.
 Gasket	Material: Stainless steel, NBR	M-5G2	Seal on the M5 threads
 Gasket (H)	Material: Nylon 66, GF30%	M-5GH	M-5AL□-6 M-5ALH□-6 M-5HL-4, 6 M-5HLH-4, 6

Port size: R1/8

Description	Note	Model	Application
 Barb fitting for nylon tubing	$\varnothing 4/2.5 \times R1/8$	M-01AN-4	For nylon tubing
	$\varnothing 6/4 \times R1/8$	M-01AN-6	
 Barb fitting for soft tubing	$\varnothing 4/2.5 \times R1/8$	M-01AU-4	For soft nylon and polyurethane tubing
	$\varnothing 6/4 \times R1/8$	M-01AU-6	
 Hose nipple	$\varnothing 4/2.5 \times R1/8$	M-01H-4	For nylon, soft nylon, and polyurethane tubing
	$\varnothing 6/4 \times R1/8$	M-01H-6	



Made to Order

1 Gasket Material Modification

Symbol	Specifications	
X83	Gasket material: Stainless steel 304, NBR	
	Applicable thread	Gasket part no.
	M3	M-3G2
	M5*1	M-5G2
X226	Gasket material: Stainless steel 304, FKM	
	Applicable thread	Gasket part no.
	M3	M3G-DPH00489
X112	Gasket material: Stainless steel 316, Special FKM	
	Applicable thread	Gasket part no.
	M5	M-5G3

*1 Compatible with only models using M-5GH.

2 Clean Series

Symbol	Specifications
10-	Lubricant: Fluorine grease (Only M-5UN) Double packaging

Example) 10-M-5AN-4

Spare Parts

Description	Part no.	Applicable thread	Material	Applicable model
Gasket	M-3G	M3	PVC	—
	M-3G2		Stainless steel 304, NBR	—
	M-5G1	M5	PVC	—
	M-5G2		Stainless steel 304, NBR	—
	M-5G3		Stainless steel 316, Special FKM	—
	M-5GH		Nylon 66, GF30%	M-5AL□-6, M-5ALH□-6 M-5HL-4, 6, M-5HLH4, 6
	M-6G		M6	Stainless steel 304, NBR
M-10/32G	10-32UNF		KQ2 series 10-32UNF	
Cap nut	M-5-4-P01	—	C3604 (With electroless nickel plating)	M-01H-4, M-5H-4 M-5HL-4, M-5HLH-4
	M-5-6-P01	—	C3604 (With electroless nickel plating)	M-01H-6, M-5H-6 M-5HL-6, M-5HLH-6

Self-align Fittings

H/DL/L/LL Series

Applicable tubing O.D.: **Metric Size**

Connection thread: **R, Rc**

Spatter Proof

Flared ridge ferrule

Prevents accidental loss of ferrule when inserting tubing into the fitting body.

Hardened ridge ferrule

Prevents breakage of ferrule when tightening nut.

Flared I.D.

Provides low flow resistance inside the fitting.

Wide variety of types and sizes

Ten types and five tube O.D's provide a wide range of fittings that will fit any application.



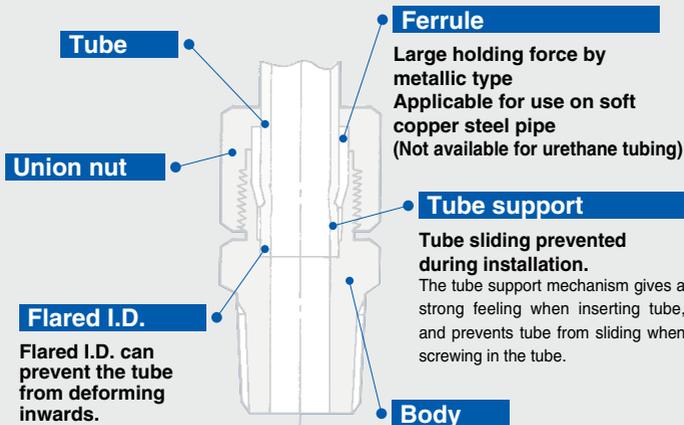
Specifications

Applicable tubing material		Nylon, Soft nylon, Soft copper steel pipe (C1220T-0)
Applicable tubing O.D.		ø4, ø6, ø8, ø10, ø12
Maximum operating pressure		1 MPa
Proof pressure		10 MPa
Fluid		Air
Thread	Mounting section	JIS B0203 (Taper thread for piping)
	Nut section	JIS B0205 (Metric fine thread)
Seal on the threads*1		None or with sealant

*1 Male elbow, Male branch tee, Male run tee with sealant is manufactured upon receipt of order. Suffix "S" to the end of part number if w/ sealant is desired.

Principal Parts Material

Body	C3604, C3771BE
Nut	C3604
Ferrule	C2700



Self-align Fittings *H/DL/L/LL Series*

Male connector

H

Use to pipe a female thread in the same direction.
Most general model.



Applicable tubing O.D. [mm]	Connection thread	Model
4	R1/8	H04-01
	R1/4	-02
6	R1/8	H06-01
	R1/4	-02
8	R3/8	-03
	R1/8	H08-01
8	R1/4	-02
	R3/8	-03
10	R1/4	H10-02
	R3/8	-03
	R1/2	-04
12	R1/4	H12-02
	R3/8	-03
	R1/2	-04

Female connector

DHF

Use to pipe a male thread of a pressure gauge, etc.



Applicable tubing O.D. [mm]	Connection thread	Model
4	Rc1/4	DHF04-02
	Rc1/4	DHF06-02
6	Rc3/8	-03
	Rc1/4	DHF08-02
10	Rc1/4	DHF10-02
12	Rc1/4	DHF12-02

Male elbow

DL

Use to pipe a female thread at right angles.
Most general model.



Applicable tubing O.D. [mm]	Connection thread	Model
4	R1/8	DL04-01
	R1/4	-02
6	R1/8	DL06-01
	R1/4	-02
6	R3/8	-03
	R1/8	DL08-01
8	R1/4	-02
	R3/8	-03
10	R1/4	DL10-02
	R3/8	-03
	R1/2	-04
12	R1/4	DL12-02
	R3/8	-03
	R1/2	-04

Male branch tee

DT

Use to branch a female thread at both 90° angles.



Applicable tubing O.D. [mm]	Connection thread	Model
4	R1/8	DT04-01
	R1/4	-02
6	R1/8	DT06-01
	R1/4	-02
6	R3/8	-03
	R1/8	DT08-01
8	R1/4	-02
	R3/8	-03
10	R1/4	DT10-02
	R3/8	-03
	R1/2	-04
12	R1/4	DT12-02
	R3/8	-03
	R1/2	-04

Union tee

DT

Use to branch tubing at both 90° angles.



Applicable tubing O.D. [mm]	Model
4	DT04-00
6	DT06-00
8	DT08-00
10	DT10-00
12	DT12-00

Male run tee

DY

Use to branch a female thread in the same direction and at a 90° angle.



Applicable tubing O.D. [mm]	Connection thread	Model
4	R1/8	DY04-01
	R1/4	-02
6	R1/8	DY06-01
	R1/4	-02
6	R3/8	-03
	R1/8	DY08-01
8	R1/4	-02
	R3/8	-03
10	R1/4	DY10-02
	R3/8	-03
	R1/2	-04
12	R1/4	DY12-02
	R3/8	-03
	R1/2	-04

Bulkhead union **DE**

Use to connect tubing through a panel, etc.

Applicable tubing O.D. [mm]	Model
4	DE04-00
6	DE06-00
8	DE08-00
10	DE10-00
12	DE12-00

Bulkhead connector **DEF**

Use to connect a male thread and tubing through a panel, etc.

Applicable tubing O.D. [mm]	Connection thread	Model
6	Rc1/4	DEF06-02
8	Rc3/8	DEF08-03
10	Rc3/8	DEF10-03
12	Rc3/8	DEF12-03

Plug **DP**

Use to plug unused fittings.

Applicable fitting size	Model
ø4	DP-04
ø6	DP-06
ø8	DP-08
ø10	DP-10
ø12	DP-12

Swivel elbow **L**

Use to pipe a female thread at right angles. Swiveled at any direction.

Applicable tubing O.D. [mm]	Connection thread	Model
4	R1/8	L04-01
	R1/4	-02
6	R1/8	L06-01
	R1/4	-02
	R3/8	-03
8	R1/8	L08-01
	R1/4	-02
	R3/8	-03
10	R1/4	L10-02
	R3/8	-03
	R1/2	-04
12	R1/4	L12-02
	R3/8	-03
	R1/2	-04

Swivel extended elbow **LL**

Use to pipe a female thread at right angles. Swiveled at any direction. Solid piece moves fittings up from workpiece.

Applicable tubing O.D. [mm]	Connection thread	Model
4	R1/8	LL04-01
	R1/4	-02
6	R1/8	LL06-01
	R3/8	-03
	R1/4	-02
8	R1/8	LL08-01
	R3/8	-03
	R1/4	-02
10	R1/4	LL10-02
	R3/8	-03
	R1/2	-04
12	R1/4	LL12-02
	R3/8	-03
	R1/2	-04



Made to Order

1 Copper-free (With electroless nickel plating)

Symbol	Specifications
X2	Copper-free (With electroless nickel plating)

Suffix "-X2" to the end of part number.
Example) H04-01-X2

Oval Type

KQ2

Round Type

KQ2

KQB2

KS/KX

KM

KF

M

H/DL/L/L

KC

KK

KKH

KK130

DM

DMK

KDM

KB

KR-W2

KRM

KA

KQG2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/KPG

LQ1

LQ3

LQHB

Self-seal Fittings

KC Series

Applicable tubing O.D.: **Metric Size**

Connection thread: **M, R, Rc**

One-touch fitting (built-in self-seal mechanism) to prevent air exhaust when removing tube.

Best for multiple use areas when pressure cannot be shut down. 10 types are available.

Copper-free applications

(With electroless nickel plated).

Sealant is standard.



Applicable Tubing

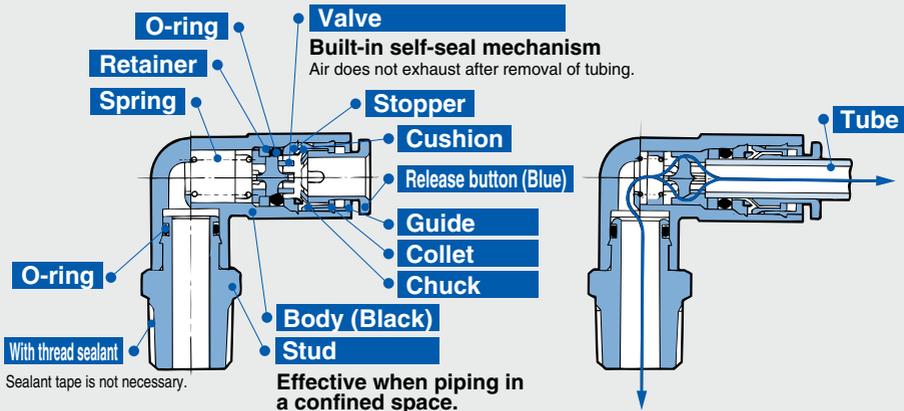
Tubing material	Nylon, Soft nylon, Polyurethane
Tubing O.D.	ø4, ø6, ø8, ø10, ø12

Specifications

Fluid	Air	
Maximum operating pressure	1 MPa	
Proof pressure	3 MPa	
Ambient and fluid temperatures	-5 to 60°C (No freezing)	
Thread	Mounting section	JIS B0203 (Taper thread for piping) JIS B0205 (Metric coarse thread)
	Nut section	JIS B0205 (Metric fine thread)
Seal on the threads (Standard)	With thread seal	
Copper-free (Standard)	Brass parts are all electroless nickel plated.	

Before insertion of tubing

After insertion of tubing



Effective when piping in a confined space.

- The body and the threaded portion can rotate (for positioning to some extent).
- With electroless nickel plating
- With thread sealant

Male connector **KCH**

Use to pipe a female thread in the same direction.

Applicable tubing O.D. [mm]	Connection thread	Model
4	M5 x 0.8	KCH04-M5
	R1/8	-01S
6	M5 x 0.8	KCH06-M5
	R1/8	-01S
	R1/4	-02S
8	R1/8	KCH08-01S
	R1/4	-02S
	R3/8	-03S
10	R1/4	KCH10-02S
	R3/8	-03S
	R3/8	KCH12-03S
12	R1/2	-04S

Bulkhead union **KCE**

Use to connect tubing through a panel, etc.
One of two ports has a self-seal function.

Applicable tubing O.D. [mm]	Model
4	KCE04-00
6	KCE06-00
8	KCE08-00
10	KCE10-00
12	KCE12-00

Union tee **KCT**

Use to branch tubing at both 90° angles.

Applicable tubing O.D. [mm]	Model
4	KCT04-00
6	KCT06-00
8	KCT08-00
10	KCT10-00
12	KCT12-00

Male elbow **KCL**

Use to pipe a female thread at right angles.

Applicable tubing O.D. [mm]	Connection thread	Model
4	M5 x 0.8	KCL04-M5
	R1/8	-01S
6	M5 x 0.8	KCL06-M5
	R1/8	-01S
	R1/4	-02S
8	R1/8	KCL08-01S
	R1/4	-02S
	R3/8	-03S
10	R1/4	KCL10-02S
	R3/8	-03S
	R3/8	KCL12-03S
12	R1/2	-04S

Union "Y" **KCU**

Use to branch tubing in the same direction.
2 branched ports has a self-seal function.

Applicable tubing O.D. [mm]	Model
4	KCU04-00
6	KCU06-00
8	KCU08-00
10	KCU10-00
12	KCU12-00

Straight union **KCH**

Use to connect tubing in the same direction.
One of two ports has a self-seal function.

Applicable tubing O.D. [mm]	Model
4	KCH04-00
6	KCH06-00
8	KCH08-00
10	KCH10-00
12	KCH12-00

Check adapter **KCJ**

Use to add the self-seal mechanism to the usual One-touch fittings KQ series.

Applicable tubing O.D. [mm]	Model
4	KCJ04-99
6	KCJ06-99
8	KCJ08-99
10	KCJ10-99
12	KCJ12-99

* Refer to page 355 for applicable color caps.

Oval Type

KQ2

Round Type

KQ2

KQB2

KS/KX

KM

KF

M

H/D
L/L

KC

KK

KKH

KK
130

DM

DMK

KDM

KB

KR
-W2

KRM

KA

KQ2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/
KPG

LQ1

LQ3

LQHB

Straight plug for frequent use

KCH

It can save tube cutting labor in the case of frequent tube installation and removal.

Use to connect a self-seal fitting and a tube in the same direction.



Applicable tubing O.D. [mm]	Model
4	KCH04-99
6	KCH06-99
8	KCH08-99
10	KCH10-99
12	KCH12-99

Bulkhead connector

KCE

Use to connect a male thread and tubing through a panel, etc.



Applicable tubing O.D. [mm]	Connection thread	Model
4	Rc1/4	KCE04-02
6	Rc1/4	KCE06-02
8	Rc3/8	KCE08-03
10	Rc3/8	KCE10-03
12	Rc3/8	KCE12-03

Elbow plug for frequent use

KCL

It can save tube cutting labor in the case of frequent tube installation and removal.

Use to connect a self-seal fitting and a tube at the right angles to a self-seal fitting.



Applicable tubing O.D. [mm]	Model
4	KCL04-99
6	KCL06-99
8	KCL08-99
10	KCL10-99
12	KCL12-99

* Refer to page 355 for applicable color caps.

S Couplers

KK Series

Connection type: R, Rc, One-touch fitting,

Nut fitting

Large effective area
Light weight
One-touch fitting type standardized

Four types from $\phi 3.2$ to $\phi 16$ added to series.

Flow is possible from the plug side or socket side.

Fluids: Air and Water

One-touch connection

Simple connection with one hand simplifies work.

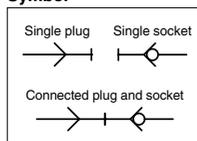
Sleeve lock mechanism

Prevents accidents caused by unexpected separation.

* Except for M5 type (KK2 series).



Symbol



Specifications

Fluid	Air, Water
Operating pressure range*1	KK2 : -100 kPa to 1 MPa KK3 : -90 kPa to 1 MPa KK4, 6 : 0 to 1 MPa
Proof pressure	1.5 MPa
Ambient and fluid temperatures	Air: -5 to 60°C Water: 5 to 40°C (No freezing)
Plating, Sealant	With electroless nickel plating (copper-free application), With male thread sealant

*1 Do not use the S couplers with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

Performance

Plug and socket connection	One-touch connection and release
Check valve	Socket: Built-in check valve (standard)
Sleeve lock mechanism*2	Manual locking type (standard)

*2 The KK2 series is not provided with lock mechanism.

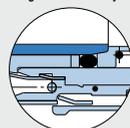
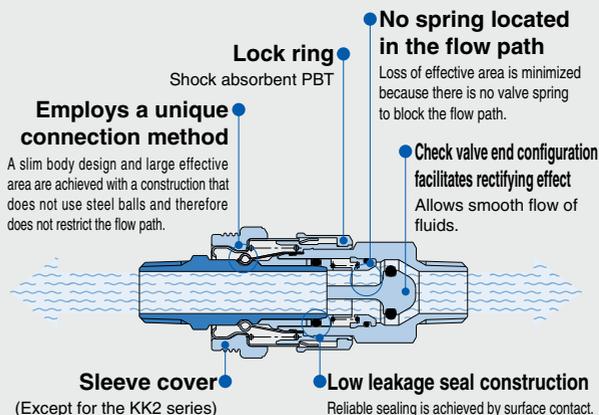
Series	Plug no.	Socket no.	Effective area [mm] ² *3	Weight [g] ⁴
KK2 series	KK2P-M5M	KK2S-M5M	3.8	6.1
KK3 series	KK3P-01MS	KK3S-01MS	20	20.1
KK4 series	KK4P-02MS	KK4S-02MS	39	44.1
KK6 series	KK6P-04MS	KK6S-04MS	82	90.1

*3 Values when plug and socket are connected. *4 Values for socket only.

The pulling strength for the plugs and sockets has been improved.

Twice as strong as the current models

We standardized the product with a sleeve cover. Changing the lock ring material to a shock absorbent PBT further improved the shock absorbent performance.



Plug (P)

Male thread type

	Body size	Port size	Model
	M5	M5 x 0.8	KK2P-M5M
		R1/8	-01MS
		R1/8	KK3P-01MS
	1/8	R1/4	-02MS
		R3/8	-03MS
		R1/8	KK4P-01MS
		R1/4	-02MS
	1/4	R3/8	-03MS
		R1/2	-04MS
		R3/8	KK6P-03MS
		R1/2	-04MS
	1/2	R3/4	-06MS

Female thread type

	Body size	Port size	Model
	M5	M5 x 0.8	KK2P-M5F
		Rc1/8	KK3P-01F
		Rc1/4	-02F
	1/8	Rc3/8	-03F
		Rc1/4	KK4P-02F
		Rc3/8	-03F
	1/4	Rc3/8	KK6P-03F
		Rc1/2	-04F

Nut fitting type (for fiber reinforced urethane hose)

	Body size	Applicable hose I.D./O.D. [mm]	Model	
	1/8	5/8	KK3P-50N	
		6/9	-60N	
		6.5/10	-65N	
		1/4	5/8	KK4P-50N
			6/9	-60N
			6.5/10	-65N
8/12			-80N	
	1/2	8.5/12.5	-85N	
		8/12	KK6P-80N	
		8.5/12.5	-85N	
	1/2	11/16	-110N	

Socket (S)

Male thread type

	Body size	Port size	Model
	M5	M5 x 0.8	KK2S-M5M
		R1/8	-01MS
		R1/8	KK3S-01MS
	1/8	R1/4	-02MS
		R3/8	-03MS
		R1/8	KK4S-01MS
		R1/4	-02MS
	1/4	R3/8	-03MS
		R1/2	-04MS
		R3/8	KK6S-03MS
		R1/2	-04MS
	1/2	R3/4	-06MS

Female thread type

	Body size	Port size	Model
	M5	M5 x 0.8	KK2S-M5F
		Rc1/8	KK3S-01F
		Rc1/4	-02F
	1/8	Rc3/8	-03F
		Rc1/4	KK4S-02F
		Rc3/8	-03F
	1/4	Rc3/8	KK6S-03F
		Rc1/2	-04F

Nut fitting type (for fiber reinforced urethane hose)

	Body size	Applicable hose I.D./O.D. [mm]	Model
	1/8	5/8	KK3S-50N
		6/9	-60N
		6.5/10	-65N
	1/4	5/8	KK4S-50N
		6/9	-60N
		6.5/10	-65N
		8/12	-80N
	1/2	8.5/12.5	-85N
		8/12	KK6S-80N
		8.5/12.5	-85N
	1/2	11/16	-110N

Plug (P)

Straight type with One-touch fitting

Body size	Applicable tubing O.D. [mm]	Model
M5	3.2	KK2P-23H
	4	-04H
	6	-06H
1/8	4	KK3P-04H
	6	-06H
	8	-08H
	10	-10H
1/4	6	KK4P-06H
	8	-08H
	10	-10H
	12	-12H
1/2	12	KK6P-12H
	16	-16H



Socket (S)

Straight type with One-touch fitting

Body size	Applicable tubing O.D. [mm]	Model
M5	3.2	KK2S-23H
	4	-04H
	6	-06H
1/8	4	KK3S-04H
	6	-06H
	8	-08H
	10	-10H
1/4	6	KK4S-06H
	8	-08H
	10	-10H
	12	-12H
1/2	12	KK6S-12H
	16	-16H



Elbow type with One-touch fitting

Body size	Applicable tubing O.D. [mm]	Model
M5	3.2	KK2P-23L
	4	-04L
	6	-06L
1/8	4	KK3P-04L
	6	-06L
	8	-08L
	10	-10L
1/4	6	KK4P-06L
	8	-08L
	10	-10L
	12	-12L
1/2	12	KK6P-12L
	16	-16L



Elbow type with One-touch fitting

Body size	Applicable tubing O.D. [mm]	Model
M5	3.2	KK2S-23L
	4	-04L
	6	-06L
1/8	4	KK3S-04L
	6	-06L
	8	-08L
	10	-10L
1/4	6	KK4S-06L
	8	-08L
	10	-10L
	12	-12L
1/2	12	KK6S-12L
	16	-16L



Bulkhead type with One-touch fitting

Body size	Applicable tubing O.D. [mm]	Model
M5	3.2	KK2P-23E
	4	-04E
	6	-06E
1/8	4	KK3P-04E
	6	-06E
	8	-08E
	10	-10E
1/4	6	KK4P-06E
	8	-08E
	10	-10E
	12	-12E
1/2	12	KK6P-12E
	16	-16E



Bulkhead type with One-touch fitting

Body size	Applicable tubing O.D. [mm]	Model
M5	3.2	KK2S-23E
	4	-04E
	6	-06E
1/8	4	KK3S-04E
	6	-06E
	8	-08E
	10	-10E
1/4	6	KK4S-06E
	8	-08E
	10	-10E
	12	-12E
1/2	12	KK6S-12E
	16	-16E



* Refer to page 355 for applicable color caps.

S Couplers

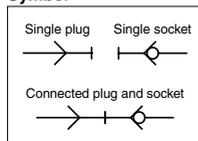
KKH Series

Connection type: R, Rc, Nut fitting

Able to absorb drop impact (equivalent to impact energy of 0.5 J). The pulling strength for the plugs and sockets has been improved. Twice as strong as the current models. Same effective sectional area as that of the KK series



Symbol



Specifications

Fluid	Air, Water
Operating pressure range*1	KKH3: -90 kPa to 1 MPa KKH4: 0 to 1 MPa
Proof pressure	1.5 MPa
Ambient and fluid temperatures	Air: -5 to 60°C Water: 5 to 40°C (No freezing)
Plating, Sealant	With electroless nickel plating (copper-free application), With male thread sealant
Connection plug	KK series plug

*1 Do not use the S couplers with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

Performance

Plug and socket connection	One-touch connection and release
Check valve	Socket: Built-in check valve (standard)
Sleeve lock mechanism	None

Effective Area

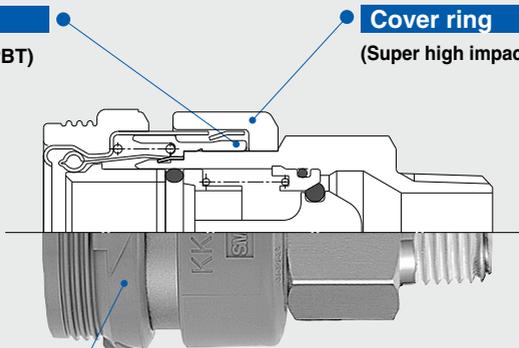
Body size	Plug	Socket	Effective area [mm ²]
1/8	KK3P-01MS	KKH3S-01MS	20
1/4	KK4P-02MS	KKH4S-02MS	39

As the internal parts are the same as those for the standard product, the flow rate is equivalent to that of the standard product.

Spacer
(High impact PBT)

Cover ring
(Super high impact PBT)

Sleeve cover
(Rubber)



Plug (P)

Male thread type

	Body size	Port size	Model
	1/8	R1/8	KK3P-01MS
		R1/4	-02MS
		R3/8	-03MS
	1/4	R1/8	KK4P-01MS
		R1/4	-02MS
		R3/8	-03MS
		R1/2	-04MS

Female thread type

	Body size	Port size	Model
	1/8	Rc1/8	KK3P-01F
		Rc1/4	-02F
		Rc3/8	-03F
	1/4	Rc1/4	KK4P-02F
		Rc3/8	-03F

Nut fitting type (for fiber reinforced urethane hose)

	Body size	Applicable hose I.D./O.D. [mm]	Model
	1/8	5/8	KK3P-50N
		6/9	-60N
		6.5/10	-65N
	1/4	5/8	KK4P-50N
		6/9	-60N
		6.5/10	-65N
		8/12	-80N
		8.5/12.5	-85N

The KKH series are only available as sockets.
The KK series should be used as plugs.

Socket (S)

Male thread type

	Body size	Port size	Model
	1/8	R1/8	KKH3S-01MS
		R1/4	-02MS
		R3/8	-03MS
	1/4	R1/8	KKH4S-01MS
		R1/4	-02MS
		R3/8	-03MS
		R1/2	-04MS

Female thread type

	Body size	Port size	Model
	1/8	Rc1/8	KKH3S-01F
		Rc1/4	-02F
		Rc3/8	-03F
	1/4	Rc1/4	KKH4S-02F
		Rc3/8	-03F

Nut fitting type (for fiber reinforced urethane hose)

	Body size	Applicable hose I.D./O.D. [mm]	Model
	1/8	5/8	KKH3S-50N
		6/9	-60N
		6.5/10	-65N
	1/4	5/8	KKH4S-50N
		6/9	-60N
		6.5/10	-65N
		8/12	-80N
		8.5/12.5	-85N

Oval Type

KQ2

Round Type

KQ2

KQB2

KS/KX

KM

KF

M

H/DL
L/L

KC

KK

KKH

KK
130

DM

DMK

KDM

KB

KR
-W2

KRM

KA

KQ2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/
KPG

LQ1

LQ3

LQHB

S Couplers

KK130 Series

Connection type: R, Rc, Barb fitting,

Nut fitting, One-touch fitting

Energy saving by pressure loss reduction

C factor increased by 34%

(Thread R1/4 type, compared to the current model*1)

Plug insertion force reduced by 22% (20 N)

(Compared to the current model*1 at 0.5 MPa)

Lightweight reduced by 14% (12 g)

(Compared to the current model*1)

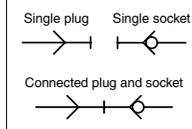
One-touch fitting provided type is standardized.

With lock mechanism (Semi-standard)

*1 Current model: KK13 series



Symbol



Specifications

Fluid	Air*1
Operating pressure range	0 to 1.5 MPa
Proof pressure	One-touch fitting type: 0 to 1 MPa 2 MPa
Ambient and fluid temperatures	-20 to 80°C (No freezing)
Plating	One-touch fitting type: -5 to 60°C (No freezing)
Sealant	Sleeve: With electroless nickel plating Other external metal parts: Zinc chromated
	Male thread with sealant

*1 Cannot be used for water.

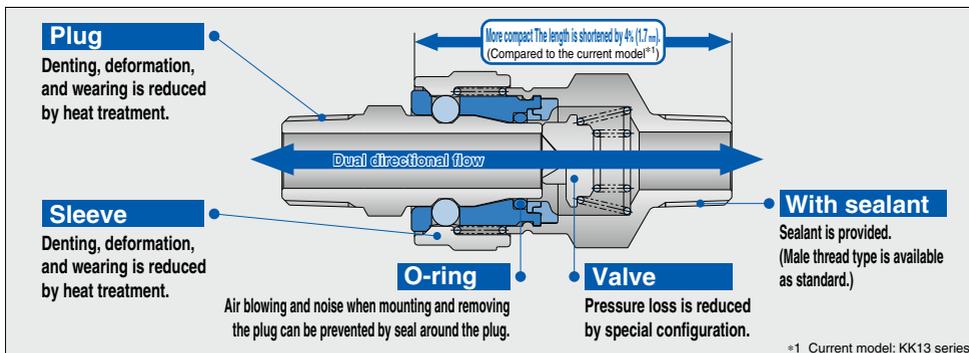
Performance

Plug and socket connection	Sleeve slide detachable type
Check valve	Socket: Built-in check valve
Flow direction	Dual directional
Sleeve lock mechanism	Manual locking type (with detent) Semi-standard

Flow Rate Characteristics [Representative Value]

Connection type			Sonic conductance C[dm ² /(s·bar)]	Critical pressure b	Flow coefficient Cv	Effective area S[mm ²]
Type	Symbol	Connection				
Male thread	-01MS	R1/8	4.2	0.4	1.2	21
	-02MS	R1/4	7.0	0.4	1.9	35
	-03MS	R3/8	7.0	0.5	2.1	35
	-04MS	R1/2	7.0	0.5	2.1	35
Female thread	-01F	Rc1/8	6.0	0.5	1.8	30
	-02F	Rc1/4	7.0	0.5	2.1	35
	-03F	Rc3/8	7.0	0.5	2.1	35
	-04F	Rc1/2	7.0	0.5	2.1	35
With barb fitting	-07B	6 (1/4")	2.0	0.4	0.5	10
	-09B	8 (1/4")	3.0	0.4	0.8	15
	-11B	10 (3/8")	6.0	0.5	1.8	30
	-13B	12 (1/2")	7.0	0.5	2.1	35
With nut fitting	-50N	5/8	2.0	0.4	0.5	10
	-60N	6/9	3.5	0.4	1.0	18
	-65N	6.5/10	4.2	0.4	1.2	21
	-80N	8/12	7.0	0.4	1.9	35
	-85N	8.5/12.5	7.0	0.4	1.9	35
	-110N	11/16	7.0	0.5	2.1	35
With One-touch fitting	-06H	ø6	2.0	0.4	0.5	10
	-08H	ø8	4.4	0.5	1.3	22
	-10H	ø10	7.0	0.5	1.8	35
	-12H	ø12	7.0	0.5	2.1	35

* The figures are representative values when the same type of plug and socket are connected.



*1 Current model: KK13 series

Plug (P)

Male thread type

	Port size	Model
	R1/8	KK130P-01MS
	R1/4	-02MS
	R3/8	-03MS
	R1/2	-04MS

* With sealant

Female thread type

	Port size	Model
	Rc1/8	KK130P-01F
	Rc1/4	-02F
	Rc3/8	-03F
	Rc1/2	-04F

Barb fitting type (for rubber hose)

	Hose nominal	Model
	6 (1/4")	KK130P-07B
	8 (1/4")	-09B
	9 (3/8")	-11B
	12 (1/2")	-13B

* The figures in () indicate the internal diameter of the applicable hose.

Nut fitting type (for fiber reinforced urethane hose)

	Applicable hose I.D./O.D. [mm]	Model
	5/8	KK130P-50N
	6/9	-60N
	6.5/10	-65N
	8/12	-80N
	8.5/12.5	-85N
	11/16	-110N

One-touch fitting type

	Applicable tubing O.D.	Model
	Metric size [mm]	
	6	KK130P-06H
	8	-08H
	10	-10H
	12	-12H

Socket (S, L)

*1 Model with the sleeve lock mechanism is KK130L.

Male thread type

	Port size	Model*1
	R1/8	KK130S(L)-01MS
	R1/4	-02MS
	R3/8	-03MS
	R1/2	-04MS

* With sealant

Female thread type

	Port size	Model*1
	Rc1/8	KK130S(L)-01F
	Rc1/4	-02F
	Rc3/8	-03F
	Rc1/2	-04F

Barb fitting type (for rubber hose)

	Hose nominal	Model*1
	6 (1/4")	KK130S(L)-07B
	8 (1/4")	-09B
	9 (3/8")	-11B
	12 (1/2")	-13B

* The figures in () indicate the internal diameter of the applicable hose.

Nut fitting type (for fiber reinforced urethane hose)

	Applicable hose I.D./O.D. [mm]	Model*1
	5/8	KK130S(L)-50N
	6/9	-60N
	6.5/10	-65N
	8/12	-80N
	8.5/12.5	-85N
	11/16	-110N

One-touch fitting type

	Applicable tubing O.D.	Model*1
	Metric size [mm]	
	6	KK130S(L)-06H
	8	-08H
	10	-10H
	12	-12H

Multi-connector

DM Series

Applicable tubing O.D.: **Metric Size**

Connecting tube: **6, 12**

One-touch installation and removal

Employs the unique built-in keying mechanism which provides one-touch installation and removal capability even in hard to see locations. In addition, it prevents installation mistakes when reconnecting.

Installation processes are reduced considerably.

As compared with the use of many bulkhead unions, this installation is very easy and installation time is reduced considerably.

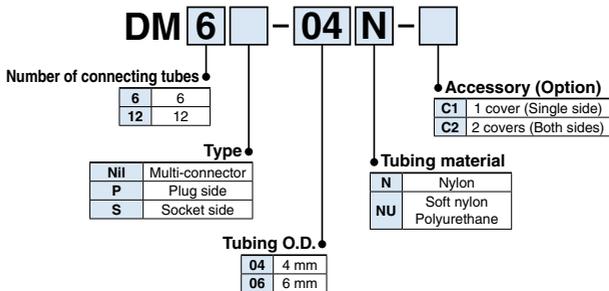
Reliable tube retaining force

This construction mechanism enables clamping and unclamping of every tube in use by one operation and can provide a reliable tube retaining force.

No. of connecting tubes

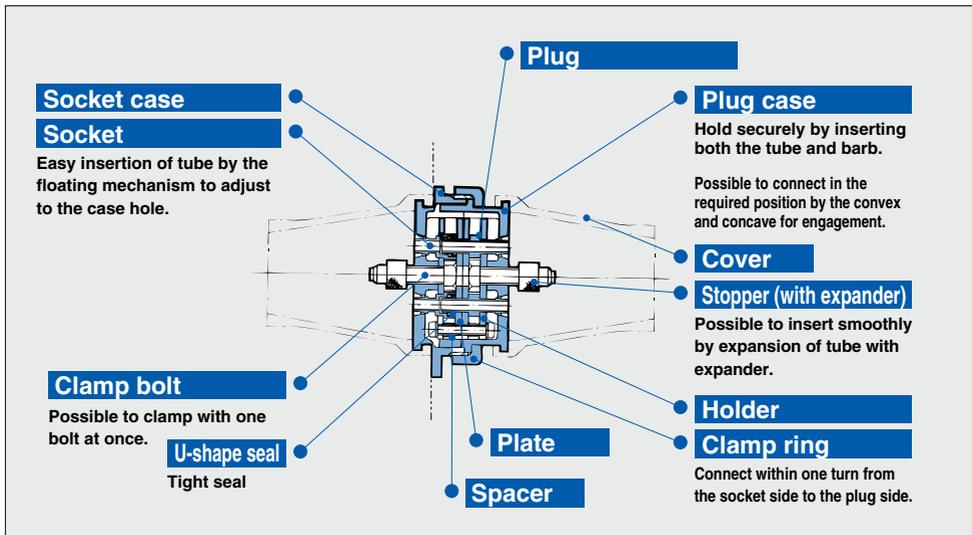
2 types: 6 tubes & 12 tubes

How to Order



Specifications

Fluid	Air
Maximum operating pressure range	0 to 1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)



DM6



Number of connecting tubes	Applicable tubing O.D. [mm]	Model			Applicable tubing		
		Multi-connector	Plug side	Socket side	Nylon	Soft nylon	Polyurethane
6	4	DM6-04N	DM6P-04N	DM6S-04N	T0425	—	—
		-04NU	-04NU	-04NU	T0403	TS0425	TU0425
	6	-06N	-06N	-06N	T0604	—	—
-06NU		-06NU	-06NU	T0645	TS0604	TU0604	

DM12



Number of connecting tubes	Applicable tubing O.D. [mm]	Model			Applicable tubing		
		Multi-connector	Plug side	Socket side	Nylon	Soft nylon	Polyurethane
12	4	DM12-04N	DM12P-04N	DM12S-04N	T0425	—	—
		-04NU	-04NU	-04NU	T0403	TS0425	TU0425
	6	-06N	-06N	-06N	T0604	—	—
-06NU		-06NU	-06NU	T0645	TS0604	TU0604	



Made to Order

1 Metal: Brass/Electroless Nickel Plated

Symbol	Specifications
X2	Metal: Brass/Electroless nickel plated

Suffix "X2" to the end of part number.

Example) **DM6-04N-X2**

Spare Parts

Description	Part no.	Number of connecting tubes
Cover	DM-C-6	6
	DM-C-12	12
Clamp ring	DM6-P01	6
	DM12-P01	12

Multi-connector with One-touch Fittings

DMK Series

Applicable tubing O.D.: **Metric Size**

Connecting tube: **6, 12**

Built-in One-touch fittings

Applicable to nylon, soft nylon, and polyurethane tubes.

Saves installation time

Unlike the use of multiple bulkhead unions for panel, DMK series with built-in One-touch fittings significantly reduces the piping time.

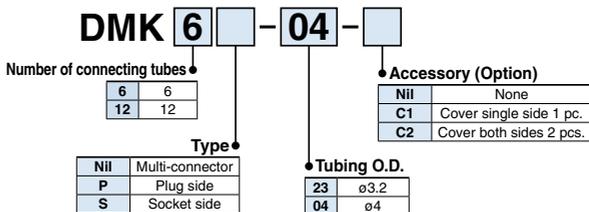
Secure tube connection

Tubes are easily and securely connected to the multi-connector with built-in One-touch fittings.

No. of connecting tubes

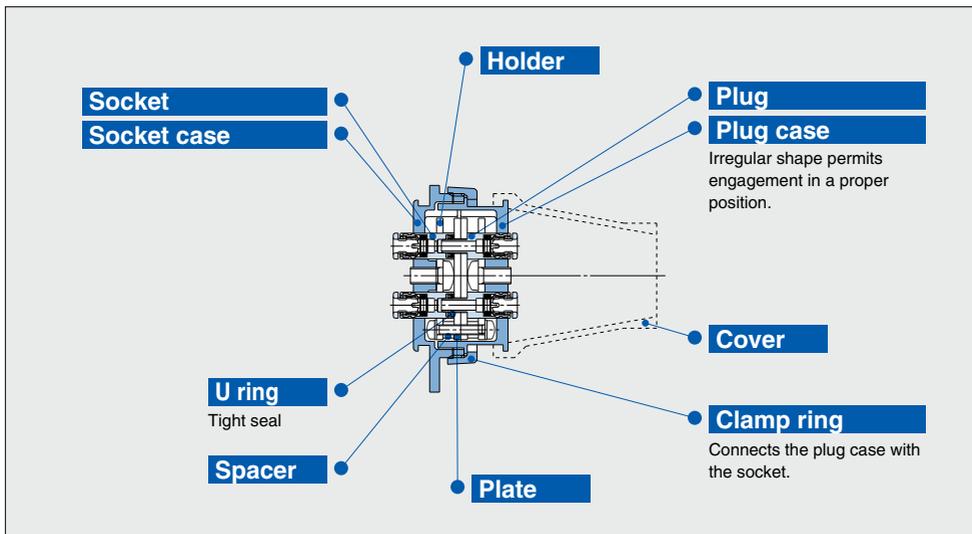
2 types: 6 tubes & 12 tubes

How to Order



Specifications

Applicable tubing material	Nylon, Soft nylon, Polyurethane
Applicable tubing O.D. [mm]	ø3.2, ø4
Fluid	Air
Maximum operating pressure range	0 to 1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)



DMK6



Number of connecting tubes	Applicable tubing O.D. [mm]	Model		
		Multi-connector	Plug side	Socket side
6	3.2	DMK6-23	DMK6P-23	DMK6S-23
	4	DMK6-04	DMK6P-04	DMK6S-04

Oval Type

KQ2

Round Type

KQ2

KQB2

KS/KX

KM

KF

DMK12



Number of connecting tubes	Applicable tubing O.D. [mm]	Model		
		Multi-connector	Plug side	Socket side
12	3.2	DMK12-23	DMK12P-23	DMK12S-23
	4	DMK12-04	DMK12P-04	DMK12S-04

* Refer to page 355 for applicable color caps.

M

H/DL
L/LL

KC

KK

KKH

KK 130

DM

Spare Parts

Description	Part no.	Number of connecting tubes
Cover	DMK-C-6	6
	DMK-C-12	12
Clamp ring	DMK6-P01	6
	DMK12-P01	12

DMK

KDM

KB

KR
-W2

KRM

KA

KQ2

KQ2-G

KG

KFG2

MS

KKA

KP

KPO/
KPG

LQ1

LQ3

LQHB

Rectangular Multi-connector

KDM Series

Applicable tubing O.D.: **Metric Size**

Connecting tube: **10, 20**

Substantial reduction in mounting space

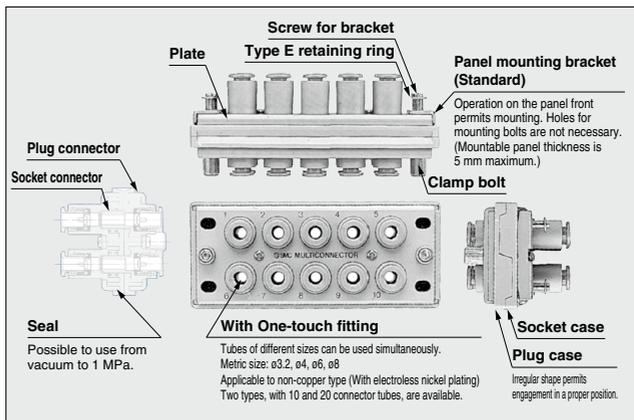
In comparison with a model requiring many union joints for panels and partitions, this model needs only a small space.

One-touch connection/disconnection of connector

Multiple pipes can be connected/disconnected in one-touch operation without connection error. Thus man-hours for connection/disconnection are cut down substantially.

One-touch tube connection

One-touch fittings substantially cuts down man-hours for piping.



For inch size, refer to the [Web Catalog](#).

Applicable Tubing

Tubing material	FEP, PFA, Nylon, Soft nylon, Polyurethane
Tubing O.D.	ø3.2, ø4, ø6, ø8

Specifications

Fluid	Air
Operating pressure range*1	-100 kPa to 1 MPa
Proof pressure	1.5 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)

*1 Please avoid using in a vacuum holding application such as a leak tester, since there is leakage.

KDM10			
Number of connecting tubes	Applicable tubing O.D. [mm]	Model	
		10	3.2
	4		-06
	6		-08
	8		-08

KDM20			
Number of connecting tubes	Applicable tubing O.D. [mm]	Model	
		20	3.2
	4		-06
	6		-08
	8		-08

* Refer to page 355 for applicable color caps.



Made to Order

- Oval Type
- KQ2
- Round Type
- KQ2
- KQB2
- KS/KX
- KM
- KF
- M
- H/DL
- L/L
- KC
- KK
- KKH
- KK 130
- DM
- DMK
- KDM**
- KB
- KR -W2
- KRM
- KA
- KQ2
- KQ2-G
- KG
- KFG2
- MS
- KKA
- KP
- KPQ/KPG
- LQ1
- LQ3
- LQHB

1 Grease-free Specifications

Symbol	Specifications
X17	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue
X39	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue Clean (Copper-free, air blow, double packaging)

Suffix "-X17" to the end of part number.
Example) **KDM10-04-X17**

2 Other Specifications

Symbol	Specifications
X12	Lubricant: White vaseline Release button color: White

3 Clean Series

Symbol	Specifications
10-	Brass parts: With electroless nickel plating (X2) Lubricant: Fluorine grease Double packaging

Example) **10-KDM10-23**

4 Mixed Tubing Size Type

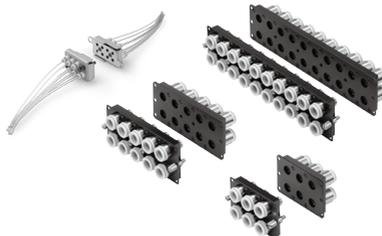
Tubes of different sizes can be used simultaneously.

- Tubing size: $\phi 3.2$, $\phi 4$, $\phi 6$, $\phi 8$
- Number of connecting tubes: 10, 20

Please contact your local sales representative for more details.

5 Other Tubing Size

Tubing size O.D.	Number of connecting tubes	Part no.
$\phi 2$	6	KDM6-02-X955-1
$\phi 10$	6	KDM6-10-X1053
$\phi 10$	10	KDM10-10-X1053
$\phi 10$	20	KDM20-10-X1053
$\phi 12$	6	KDM6-12-X1053
$\phi 12$	10	KDM10-12-X1053
$\phi 12$	20	KDM20-12-X1053



Piping Module

KB Series

Applicable tubing O.D.: **Metric Size**

Connection thread: **M, R, Rc**

Suitable for centralized distribution of supply air

Easy distribution utilizing One-touch fittings

One-touch fitting installation without the use of tools

Locking system makes the use of tools unnecessary and piping more efficient.

Air output direction possible through 360°

Universal construction allows for changes in air output direction after connections are completed.



Applicable Tubing

Tubing material	Nylon, Soft nylon, Polyurethane, FEP, PFA
Tubing O.D.	ø4, ø6, ø8, ø10, ø12, ø16

Applicable Thread Size

Male thread	R1/8, R1/4, R3/8, R1/2
Female thread	M5 x 0.8, M6 x 1, Rc1/8, Rc1/4, Rc3/8, Rc1/2

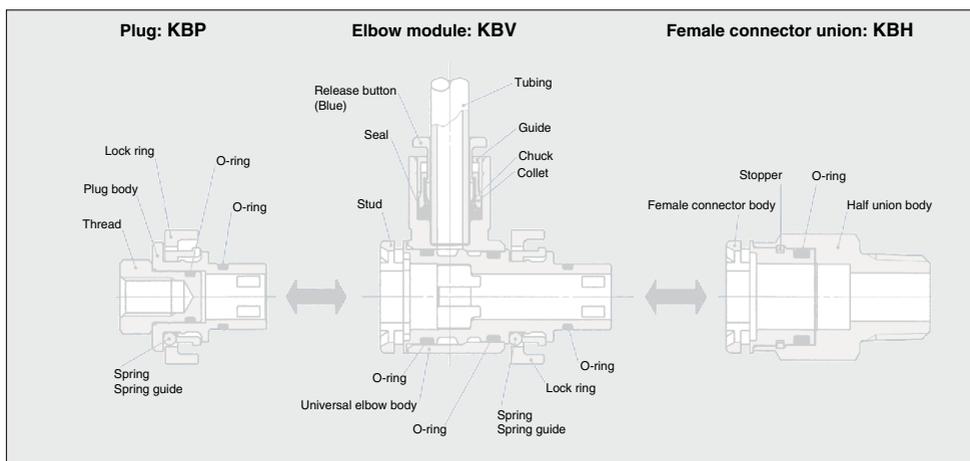
Specifications

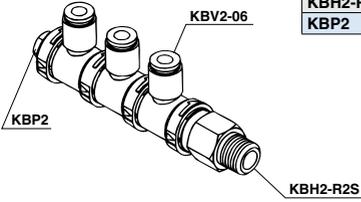
Fluid	Air	
Operating pressure range*1	-100 kPa to 1 MPa	
Proof pressure	3 MPa	
Ambient and fluid temperatures	-5 to 60°C (No freezing)	
Thread	Mounting section	JIS B0203 (Taper thread for piping)
	Nut section	JIS B0205 (Metric coarse thread)
		JIS B0205 (Metric fine thread)
Seal on the threads (Standard)	With thread seal	
Copper-free (Standard)	Brass parts are all electroless nickel plated.	

*1 Please avoid using in a vacuum holding application such as a leak tester, since there is leakage.

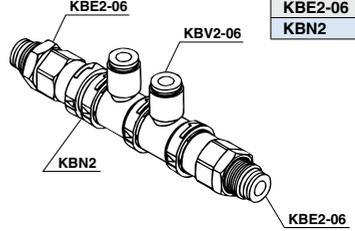
Principal Parts Material

Body	C3604, PBT, POM
Stud	POM
Lock ring	POM
Spring	Stainless steel 304
Spring guide	POM
Stopper	POM
Thread	C3604
Guide	Stainless steel 304, PBT, C3604
Collet, Release button	POM
Seal, O-ring	NBR
Chuck	Stainless steel 304

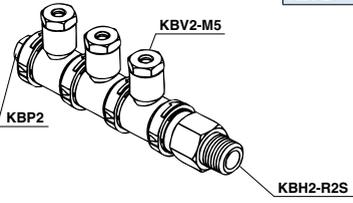




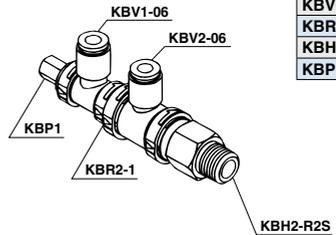
Component module	Qty.
KBV2-06	3
KBH2-R2S	1
KBP2	1



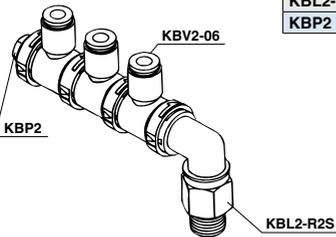
Component module	Qty.
KBE2-06	2
KBE2-06	2
KBN2	1



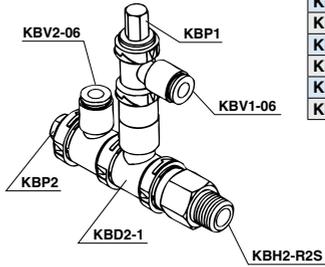
Component module	Qty.
KBV2-M5	3
KBH2-R2S	1
KBP2	1



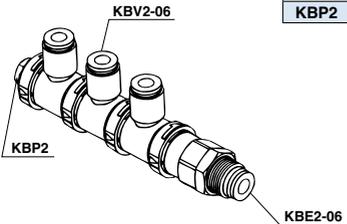
Component module	Qty.
KBV2-06	1
KBV1-06	1
KBR2-1	1
KBH2-R2S	1
KBP1	1



Component module	Qty.
KBV2-06	3
KBL2-R2S	1
KBP2	1



Component module	Qty.
KBV2-06	1
KBV1-06	1
KBD2-1	1
KBH2-R2S	1
KBP2	1
KBP1	1



Component module	Qty.
KBV2-06	3
KBE2-06	1
KBP2	1

When the piping modules have the same body size number, they can be combined. When combining modules with different body size numbers, convert the size with the different diameter module (KBR).

Elbow module

KBV



Body size	Applicable tubing O.D. [mm]	Model
1	4	KBV1-04
1	6	-06
2	6	KBV2-06
2	8	-08
3	8	KBV3-08
3	10	-10
3	12	-12
4	12	KBV4-12
4	16	-16

Branch elbow module

KBZ



Body size	Applicable tubing O.D. [mm]	Model
1	4	KBZ1-04
1	6	-06
2	8	KBZ2-08
3	10	KBZ3-10
3	12	-12
4	12	KBZ4-12

Elbow socket module

KBV



Body size	Connection thread	Model
1	M5 x 0.8	KBV1-M5
1	M6 x 1.0	-M6
2	M5 x 0.8	KBV2-M5
2	M6 x 1.0	-M6
2		-R1
3	Rc1/8	KBV3-R1
3		-R2
4	Rc1/4	KBV4-R2
4	Rc3/8	-R3

* Refer to page 355 for applicable color caps.

Female connector union

KBH



Body size	Connection thread	Model
1	R1/8	KBH1-R1S
2		KBH2-R1S
2	R1/4	-R2S
2	R3/8	-R3S
3	R1/4	KBH3-R2S
3	R3/8	-R3S
3	R1/2	-R4S
4	R3/8	KBH4-R3S
4	R1/2	-R4S

Female connector elbow union

KBL



Body size	Connection thread	Model
1	R1/8	KBL1-R1S
2		KBL2-R1S
2	R1/4	-R2S
2	R3/8	-R3S
3	R1/4	KBL3-R2S
3	R3/8	-R3S
3	R1/2	-R4S
4	R3/8	KBL4-R3S
4	R1/2	-R4S

Bulkhead female connector

KBE



Body size	Applicable tubing O.D. [mm]	Connection thread	Model
1	4	M12 x 1.0	KBE1-04
1	6	M14 x 1.0	-06
2			KBE2-06
2	8	M16 x 1.0	-08
2	10	M20 x 1.0	-10
3	8	M16 x 1.0	KBE3-08
3	10	M20 x 1.0	-10
3	12	M22 x 1.0	-12
4			KBE4-12

Male connector socket

KBB



Body size	Connection thread	Model
1	M5 x 0.8	KBB1-M5
2	M6 x 1.0	KBB2-M6
3	Rc1/8	KBB3-R1
4	Rc1/4	KBB4-R2

Female connector socket

KBS



Body size	Connection thread	Model
1	Rc1/8	KBS1-R1
2	Rc1/4	KBS2-R2
3	Rc3/8	KBS3-R3
4	Rc1/2	KBS4-R4

* Refer to page 355 for applicable color caps.

Oval Type

KQ2

Round Type

KQ2

KQ2

KQB2

KS/KX

KM

KF

M

H/DL

L/L

KC

KK

KKH

KK

130

DM

DMK

KDM

KB

KR

-W2

KRM

KA

KQG2

KQ2-G

KG

KFG2

MS

KKA

KP

KPO/KPG

LQ1

LQ3

LQHB

Nipple		KBN
	Body size	Model
	1	KBN1
	2	KBN2
	3	KBN3
4	KBN4	

Cap		KBC
	Body size	Model
	1	KBC1
	2	KBC2
	3	KBC3
4	KBC4	

Elbow different diameter female connector module			KBD
	Body size	Branch body size	Model
	2	1	KBD2-1
	3	2	KBD3-2
	4	3	KBD4-3

Bracket		KBX
	Applicable model	Model
	KBP, KBC	KBX6
	KBE1-04	KBX12
	KBE1-06, KBE2-06	KBX14
	KBE2-08, KBE3-08	KBX16
	KBE2-10, KBE3-10	KBX20
KBE3-12, KBE4-12	KBX22	

Different diameter module			KBR
	Body size	Branch body size	Model
	2	1	KBR2-1
	3	2	KBR3-2
	4	3	KBR4-3

Plug		KBP
	Body size	Model
	1	KBP1
	2	KBP2
	3	KBP3
4	KBP4	

* In the case of KBX6, use the enclosed mounting screws designed for KBP (plug) and KBC (cap).
Screw size: Cross recessed round head screw (M6 x 1 x 8L) Screw color: Black

* Refer to page 355 for applicable color caps.

KR-W2 Series

Applicable tubing O.D.: **Metric Size**

Connection thread: **R, Rc**

Spatter Proof



Applicable Tubing

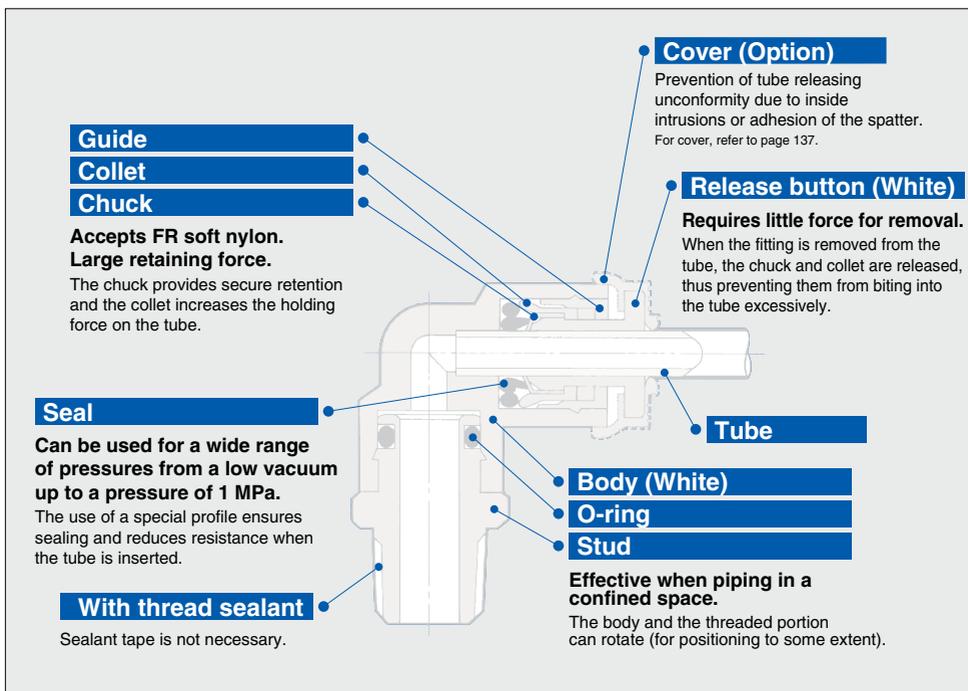
Tubing material	FR double layer, FR soft nylon
Tubing O.D.	ø6, ø8, ø10, ø12

Specifications

Fluid	Air, Water ^{*1}	
Operating pressure range ^{*2}	-100 kPa to 1 MPa	
Proof pressure	3 MPa	
Ambient and fluid temperatures	-5 to 60°C, Water: 0 to 60°C (No freezing)	
Thread	Mounting section	JIS B0203 (Taper thread for piping)
	Nut section	JIS B0205 (Metric fine thread)
Seal on the threads	With sealant (Standard)	

*1 The surge pressure must be under the maximum operating pressure.

*2 Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.



Male connector

KRH-W2

Use to pipe a female thread in the same direction.
Most general model.



Applicable tubing O.D. [mm]	Connection thread	Model
6	R1/8	KRH06-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
8	R1/8	KRH08-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
10	R1/8	KRH10-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
	R1/2	-04SW2
12	R1/4	KRH12-02SW2
	R3/8	-03SW2
	R1/2	-04SW2

45° male elbow

KRK-W2

Use to pipe a female thread at a 45° angle. Its direction is in-between that of the male connector and male elbow.



Applicable tubing O.D. [mm]	Connection thread	Model
6	R1/8	KRK06-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
8	R1/8	KRK08-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
10	R1/8	KRK10-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
	R1/2	-04SW2
12	R1/4	KRK12-02SW2
	R3/8	-03SW2
	R1/2	-04SW2

Male elbow

KRL-W2

Use to pipe a female thread at right angles.
Most general model.



Applicable tubing O.D. [mm]	Connection thread	Model
6	R1/8	KRL06-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
8	R1/8	KRL08-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
10	R1/8	KRL10-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
	R1/2	-04SW2
12	R1/4	KRL12-02SW2
	R3/8	-03SW2
	R1/2	-04SW2

Extended male elbow

KRW-W2

Basically, it is used together with a male elbow.
Its extended height allows for multi-levelled piping and prevents interference among fittings.



Applicable tubing O.D. [mm]	Connection thread	Model
6	R1/8	KRW06-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
8	R1/8	KRW08-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
10	R1/4	KRW10-02SW2
	R3/8	-03SW2
	R1/2	-04SW2
	R1/4	KRW12-02SW2
12	R3/8	-03SW2
	R1/2	-04SW2

Universal male elbow

KRV-W2

Hexagon head of the body allows tightening with a box wrench in confined spaces.



Applicable tubing O.D. [mm]	Connection thread	Model
6	R1/8	KRV06-01SW2
	R1/4	-02SW2
8	R1/8	KRV08-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
10	R1/4	KRV10-02SW2
	R3/8	-03SW2
12	R3/8	KRV12-03SW2
	R1/2	-04SW2

Male branch tee

KRT-W2

Use to branch a female thread at both 90° angles.



Applicable tubing O.D. [mm]	Connection thread	Model
6	R1/8	KRT06-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
8	R1/8	KRT08-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
10	R1/8	KRT10-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
	R1/2	-04SW2
12	R1/4	KRT12-02SW2
	R3/8	-03SW2
	R1/2	-04SW2

Branch

KRU-W2

Use to branch a female thread in the same direction.



Applicable tubing O.D. [mm]	Connection thread	Model
6	R1/8	KRU06-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
8	R1/8	KRU08-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
10	R1/4	KRU10-02SW2
	R3/8	-03SW2
	R1/2	-04SW2
	R1/4	KRU12-02SW2
12	R3/8	-03SW2
	R1/2	-04SW2

Male run tee

KRY-W2

Use to branch a female thread in the same direction and at a 90° angle.



Applicable tubing O.D. [mm]	Connection thread	Model
6	R1/8	KRY06-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
8	R1/8	KRY08-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
10	R1/8	KRY10-01SW2
	R1/4	-02SW2
	R3/8	-03SW2
	R1/2	-04SW2
12	R1/4	KRY12-02SW2
	R3/8	-03SW2
	R1/2	-04SW2

Straight union

KRH-W2

Use to connect tubing in the same direction.



Applicable tubing O.D. [mm]	Model
6	KRH06-00W2
8	KRH08-00W2
10	KRH10-00W2
12	KRH12-00W2

Bulkhead union

KRE-W2

Use to connect tubing through a panel, etc.



Applicable tubing O.D. [mm]	Model
6	KRE06-00W2
8	KRE08-00W2
10	KRE10-00W2
12	KRE12-00W2

Union elbow

KRL-W2

Use to connect tubing at right angles.



Applicable tubing O.D. [mm]	Model
6	KRL06-00W2
8	KRL08-00W2
10	KRL10-00W2
12	KRL12-00W2

Oval Type

KQ2

Round Type

KQ2

KQB2

KS/KX

KM

KF

M

H/DL

L/LL

KC

KK

KKH

KK 130

DM

DMK

KDM

KB

KR-W2

KRM

KA

KQG2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/KPG

LQ1

LQ3

LQHB

Union tee

KRT-W2

Use to branch tubing at both 90° angles.

	Applicable tubing O.D. [mm]	Model
	6	KRT06-00W2
	8	KRT08-00W2
	10	KRT10-00W2
	12	KRT12-00W2

Union “Y”

KRU-W2

Use to branch tubing in the same direction.

	Applicable tubing O.D. [mm]	Model
	6	KRU06-00W2
	8	KRU08-00W2
	10	KRU10-00W2
	12	KRU12-00W2

Plug-in reducer

KRR-W2

Use to size down One-touch fittings.

	Applicable tubing O.D. [mm]	Applicable fitting size	Model
	6	8	KRR06-08W2
		10	-10W2
	8	10	KRR08-10W2
		12	-12W2
	10	12	KRR10-12W2

Plug-in “Y”

KRU-W2

Use to branch One-touch fittings in the same direction.

	Applicable tubing O.D. [mm]	Applicable fitting size	Model
	6	6	KRU06-99W2
	8	8	KRU08-99W2
	10	10	KRU10-99W2
	12	12	KRU12-99W2

Plug

KRP

Use to plug unused One-touch fittings.

	Applicable fitting size	Model
	6	KRP-06
	8	KRP-08
	10	KRP-10
	12	KRP-12

* Color: Green

Spatter cover 1

KR

Prevention of tube releasing unconformity due to an inside intrusion or adhesion of the spatter.
KR (Applicable tube: FR soft nylon)

	Applicable fitting size	Model
	6	KR-06C
	8	KR-08C
	10	KR-10C
	12	KR-12C

* When tube insert parts are in line as KQU Union “Y”, use KR-□□C1.

* Color: Gray

Spatter cover 2

KR

Prevention of tube releasing unconformity due to an inside intrusion or adhesion of the spatter.
KR (Applicable tube: FR soft nylon, FR double layer)

	Applicable fitting size	Model
	6	KR-06C1
	8	KR-08C1
	10	KR-10C1
	12	KR-12C1

* Color: Gray

Bulkhead connector

KRE-W2

Use to connect a male thread and tubing through a panel, etc.



Applicable tubing O.D. [mm]	Connection thread	Model
6	Rc1/8	KRE06-01W2
	Rc1/4	-02W2
	Rc3/8	-03W2
8	Rc1/8	KRE08-01W2
	Rc1/4	-02W2
	Rc3/8	-03W2
10	Rc1/4	KRE10-02W2
	Rc3/8	-03W2
12	Rc3/8	KRE12-03W2
	Rc1/2	-04W2

Plug-in elbow

KRL-W2

Use to change the tube direction of One-touch fittings by 90°.

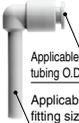


Applicable tubing O.D. [mm]	Applicable fitting size	Model
6	6	KRL06-99W2
8	8	KRL08-99W2
10	10	KRL10-99W2
12	12	KRL12-99W2

Extended plug-in elbow

KRW-W2

Use to change the tube direction of One-touch fittings by 90°. Multi-leveled piping is also possible with the plug-in elbow.



Applicable tubing O.D. [mm]	Applicable fitting size	Model
6	6	KRW06-99W2
8	8	KRW08-99W2
10	10	KRW10-99W2
12	12	KRW12-99W2



Made to Order

1 Copper-free (With electroless nickel plating)

Symbol	Specifications
X2	Copper-free (With electroless nickel plating)

Suffix "X2" to the end of part number.
Example) KRH06-01SW2-X2

Oval Type

KQ2

Round Type

KQ2

KQB2

KS/KX

KM

KF

M

H/DL

L/LL

KC

KK

KKH

KK130

DM

DMK

KDM

KB

KR-W2

KRM

KA

KQG2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/KPG

LQ1

LQ3

LQHB

KRM Series

Applicable tubing O.D.: **Metric Size**

Connection thread: **Rc**

Spatter Proof

Compact piping possible.

Manifold piping possible.

Many varieties (8 types) are available.

One-touch fittings give the most efficient operation.

Cover (Option)



Model

Model	Porting		No. of Port A	Port A size	Port B size
	Port A	Port B			
KRM11	One-touch fitting	One-touch fitting	6, 10	ø6 tube	ø10 tube
				ø8 tube	ø12 tube
KRM12	One-touch fitting	Rc female thread	6, 10	ø6 tube	Rc1/4
				ø8 tube	Rc3/8

Applicable Tubing

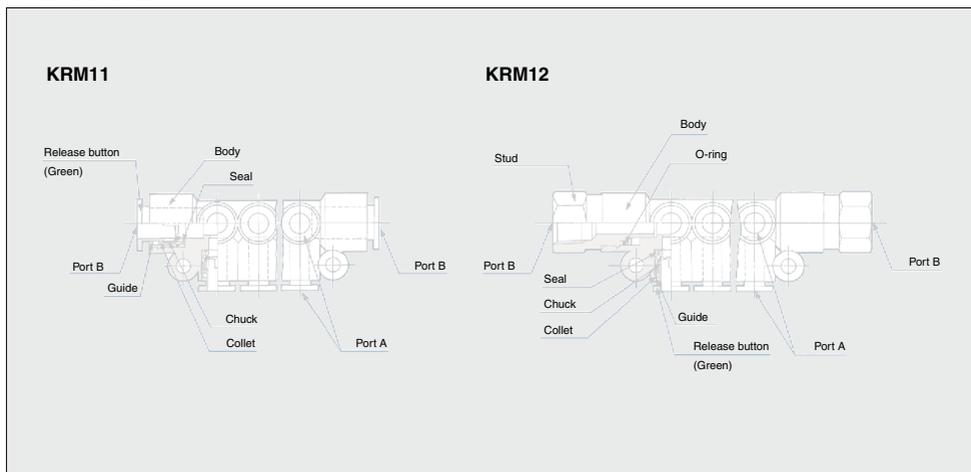
Tubing material	FR double layer, FR soft nylon
Tubing O.D.	ø6, ø8, ø10, ø12

Specifications

Model	KRM11	KRM12
Fluid	Air, Water ^{*1}	
Maximum operating pressure	1 MPa	
Proof pressure	3 MPa	
Ambient and fluid temperatures	-5 to 60°C, Water: 0 to 60°C (No freezing)	
Thread	—	JIS B0203 (Taper thread for piping)
Accessory	None	Hexagon socket head blank plug with sealant: 1 pc.

*1 The surge pressure must be under the maximum operating pressure.

Construction



KRM11



Applicable tubing O.D. [mm]		No. of Port A	Model
(A)	(B)		
6	10	6	KRM11-06-10-6
		10	-10
8	12	6	KRM11-08-12-6
		10	-10

KRM12



Applicable tubing O.D. (A) [mm]	Connection thread	No. of Port A	Model
6	Rc1/4	6	KRM12-06-02-6
		10	-10
8	Rc3/8	6	KRM12-08-03-6
		10	-10

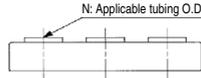
Spatter cover 3

KRMC

KRMC (Applicable tubing: FR soft nylon)

Applicable tubing O.D. [mm]	N	Model
6	6	KRMC-06-6
	10	-10
8	6	KRMC-08-6
	10	-10

Refer to page 137 for spatter cover 1 and 2.



Oval Type

KQ2

Round Type

KQ2

KQB2

KS/KX

KM

KF

M

H/DL

L/L

KC

KK

KKH

KK130

DM

DMK

KDM

KB

KR

-W2

KRM

KA

KQG2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/KPG

LQ1

LQ3

LQHB

Antistatic One-touch Fittings

KA Series

Applicable tubing O.D.: **Metric Size**

Connection thread: **M, Uni Thread**

One-touch fittings with antistatic prevention.

One-touch IN/OUT connection.

Possible to use from vacuum (-100 kPa).

Can be used in copper-free application.

Flame resistance (Equivalent to UL-94 standard, material V-0)

Surface resistance 10^4 to $10^7 \Omega$

Conductive resin is used for body and seals in fittings and tubing.



Antistatic Measures

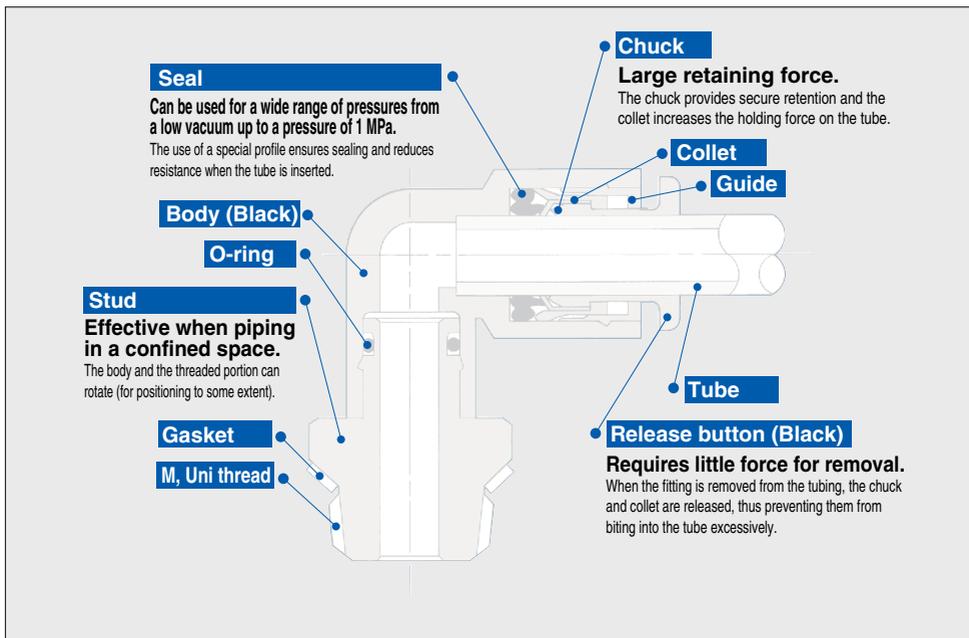
Spatter Proof

Applicable Tubing

Tubing material	Antistatic soft nylon, Antistatic polyurethane
Tubing O.D.	φ3.2, φ4, φ6, φ8, φ10, φ12

Specifications

Fluid	Air
Operating pressure range	-100 kPa to 1 MPa
Proof pressure	3 MPa
Ambient and fluid temperatures	0 to 40°C
Thread	Uni thread JIS B0209 (Metric coarse thread)
Seal on the threads	Gasket
Copper-free	Brass parts are all electroless nickel plated.
Surface resistance	10^4 to $10^7 \Omega$



Male connector

KAH

Use to pipe a female thread in the same direction.
Most general model.

	Applicable tubing O.D. [mm]	Connection thread	Model
	3.2	M5 x 0.8	KAH23-M5
		M6 x 1.0	-M6
		Uni 1/8	-U01
	4	M5 x 0.8	KAH04-M5
		M6 x 1.0	-M6
		Uni 1/8	-U01
	6	Uni 1/4	-U02
		M5 x 0.8	KAH06-M5
		M6 x 1.0	-M6
	8	Uni 1/8	-U01
		Uni 1/4	-U02
		Uni 3/8	-U03
	10	Uni 1/8	KAH10-U01
		Uni 1/4	-U02
		Uni 3/8	-U03
	12	Uni 1/2	-U04
		Uni 1/4	KAH12-U02
		Uni 3/8	-U03
		Uni 1/2	-U04

Male branch tee

KAT

Use to branch a female thread at both 90° angles.

	Applicable tubing O.D. [mm]	Connection thread	Model
	3.2	M5 x 0.8	KAT23-M5
		M6 x 1.0	-M6
		Uni 1/8	-U01
	4	M5 x 0.8	KAT04-M5
		M6 x 1.0	-M6
		Uni 1/8	-U01
	6	Uni 1/4	-U02
		M5 x 0.8	KAT06-M5
		M6 x 1.0	-M6
	8	Uni 1/8	-U01
		Uni 1/4	-U02
		Uni 3/8	-U03
	10	Uni 1/8	KAT10-U01
		Uni 1/4	-U02
		Uni 3/8	-U03
	12	Uni 1/2	-U04
		Uni 1/4	KAT12-U02
		Uni 3/8	-U03
		Uni 1/2	-U04

Male elbow

KAL

Use to pipe a female thread at right angles.
Most general model.

	Applicable tubing O.D. [mm]	Connection thread	Model
	3.2	M5 x 0.8	KAL23-M5
		M6 x 1.0	-M6
		Uni 1/8	-U01
	4	M5 x 0.8	KAL04-M5
		M6 x 1.0	-M6
		Uni 1/8	-U01
	6	Uni 1/4	-U02
		M5 x 0.8	KAL06-M5
		M6 x 1.0	-M6
	8	Uni 1/8	-U01
		Uni 1/4	-U02
		Uni 3/8	-U03
	10	Uni 1/8	KAL10-U01
		Uni 1/4	-U02
		Uni 3/8	-U03
	12	Uni 1/2	-U04
		Uni 1/4	KAL12-U02
		Uni 3/8	-U03
		Uni 1/2	-U04

Male run tee

KAY

Use to branch a female thread in the same direction and at a 90° angle.

	Applicable tubing O.D. [mm]	Connection thread	Model
	3.2	M5 x 0.8	KAY23-M5
		M6 x 1.0	-M6
		Uni 1/8	-U01
	4	M5 x 0.8	KAY04-M5
		M6 x 1.0	-M6
		Uni 1/8	-U01
	6	Uni 1/4	-U02
		M5 x 0.8	KAY06-M5
		M6 x 1.0	-M6
	8	Uni 1/8	-U01
		Uni 1/4	-U02
		Uni 3/8	-U03
	10	Uni 1/8	KAY10-U01
		Uni 1/4	-U02
		Uni 3/8	-U03
	12	Uni 1/2	-U04
		Uni 1/4	KAY12-U02
		Uni 3/8	-U03
		Uni 1/2	-U04

Branch **KAU**

Use to branch a female thread in the same direction.

Applicable tubing O.D. [mm]	Connection thread	Model
3.2	M5 x 0.8	KAU23-M5
	M6 x 1.0	-M6
	Uni 1/8	-U01
4	M5 x 0.8	KAU04-M5
	M6 x 1.0	-M6
	Uni 1/8	-U01
6	Uni 1/4	-U02
	M5 x 0.8	KAU06-M5
	M6 x 1.0	-M6
8	Uni 1/8	-U01
	Uni 1/4	-U02
	Uni 3/8	-U03
10	Uni 1/4	KAU08-U01
	Uni 3/8	-U03
	Uni 1/2	-U04
12	Uni 1/4	KAU10-U02
	Uni 3/8	-U03
	Uni 1/2	-U04

<M5, M6>

<Uni thread>

Union tee **KAT**

Use to branch tubing at both 90° angles.

Applicable tubing O.D. [mm]	Model
3.2	KAT23-00
4	KAT04-00
6	KAT06-00
8	KAT08-00
10	KAT10-00
12	KAT12-00

Union "Y" **KAU**

Use to branch tubing in the same direction.

Applicable tubing O.D. [mm]	Model
3.2	KAU23-00
4	KAU04-00
6	KAU06-00
8	KAU08-00
10	KAU10-00
12	KAU12-00

Straight union **KAH**

Use to connect tubing in the same direction.

Applicable tubing O.D. [mm]	Model
3.2	KAH23-00
4	KAH04-00
6	KAH06-00
8	KAH08-00
10	KAH10-00
12	KAH12-00

Different diameter straight **KAH**

Use to connect tubing of different sizes.

Applicable tubing O.D. [mm]	Applicable tubing O.D. [mm]		Model
	(a)	(b)	
3.2	4	4	KAH23-04
4	6	6	KAH04-06
6	8	8	KAH06-08
8	10	10	KAH08-10
10	12	12	KAH10-12



Union elbow **KAL**

Use to connect tubing at right angles.

Applicable tubing O.D. [mm]	Model
3.2	KAL23-00
4	KAL04-00
6	KAL06-00
8	KAL08-00
10	KAL10-00
12	KAL12-00

Plug-in reducer **KAR**

Use to change size of One-touch fittings.

Applicable tubing O.D.	Applicable tubing O.D. [mm]	Applicable fitting size	Model
3.2	4	4	KAR23-04
		6	KAR04-06
4	6	8	-08
		10	-10
		8	KAR06-08
6	10	10	-10
		12	-12
		8	KAR08-10
8	12	12	-12
		10	KAR10-12



Stainless Steel 316 One-touch Fittings

KQG2 Series

Applicable tubing O.D.: **Metric Size**

Connection thread: **M5, R, RC**

Material/

Metal parts: **Stainless steel 316**

Seal parts: Special **FKM**

Can be used with steam.

Fluid temperature: **-5 to 150°C**

Grease-free



Corrosion Resistant

Heat Resistant

Applicable Tubing

Tubing material	FEP, PFA, Nylon, Soft nylon, Polyurethane, Polyolefin
Tubing O.D.	ø3.2, ø4, ø6, ø8, ø10, ø12, ø16

Specifications

Fluid	Air, Water, Steam*1
Operating pressure range*2	-100 kPa to 1 MPa*3
Proof pressure	3.0 MPa
Ambient and fluid temperatures*4	-5 to 150°C (No freezing)*3
Lubricant	Grease-free specification
Seal on the threads	With sealant

*1 Please consult with SMC regarding applicable tube separately.

*2 Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

*3 Check the operating pressure range and operating temperature range of the tubing.

*4 It is recommended that you use the inner sleeve in the following conditions. (Except ø3.2)

- When using in an environment where the fluid temperature changes drastically.
- When using at a high temperature.

* Temperature Condition of Mounting the Inner Sleeve

Tubing	Temperature
FEP tubing/TH series	80°C or more
PFA tubing/TL series	120°C or more

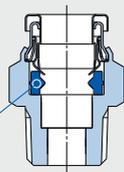
Cross Reference Table of the Inner Sleeve

Tubing O.D.	Tubing material			Applicable inner sleeve	
	TUS (Soft polyurethane)	TH/THH (FEP)	TL/TIL (PFA)	Part no.	Length
ø4	—	TH0402	—	TJG-0402	18
	TUS0425	TH0425	—	TJG-0425	18
	—	—	TL0403	TJG-0403	18
ø6	TUS0604	TH0604	TL0604	TJG-0604	19
	TUS0805	—	—	TJG-0805	20.5
ø8	—	TH0806	TL0806	TJG-0806	20.5
	TUS1065	—	—	TJG-1065	23
ø10	—	TH1075	—	TJG-1075	23
	—	TH1008	TL1008	TJG-1008	23
	TUS1208	—	—	TJG-1208	24
ø12	—	TH1209	—	TJG-1209	24
	—	—	TL1210	TJG-1210	24
	—	TH1210	TL1210	TJG-1210	24

* Stainless steel 316 is used for the TJG series.

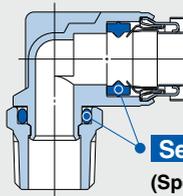
All **Stainless steel 316**
except seal parts

Male connector



Seal parts
(Special FKM)

Male elbow



Seal parts
(Special FKM)

For inch size, refer to the [Web Catalog](#).

Male connector

KQG2H

Applicable tubing O.D. [mm]	Connection thread R, M	Model
ø3.2	M5 x 0.8	KQG2H23-M5
	1/8	KQG2H23-01S
	1/4	KQG2H23-02S
ø4	M5 x 0.8	KQG2H04-M5
	1/8	KQG2H04-01S
	1/4	KQG2H04-02S
ø6	M5 x 0.8	KQG2H06-M5
	1/8	KQG2H06-01S
	1/4	KQG2H06-02S
	3/8	KQG2H06-03S
ø8	1/8	KQG2H08-01S
	1/4	KQG2H08-02S
	3/8	KQG2H08-03S
ø10	1/8	KQG2H10-01S
	1/4	KQG2H10-02S
	3/8	KQG2H10-03S
ø12	1/2	KQG2H10-04S
	1/4	KQG2H12-02S
	3/8	KQG2H12-03S
ø16	1/2	KQG2H12-04S
	3/8	KQG2H16-03S
	1/2	KQG2H16-04S



Straight union

KQG2H

Applicable tubing O.D. [mm]	Model
ø3.2	KQG2H23-00
ø4	KQG2H04-00
ø6	KQG2H06-00
ø8	KQG2H08-00
ø10	KQG2H10-00
ø12	KQG2H12-00
ø16	KQG2H16-00



Male elbow

KQG2L

Applicable tubing O.D. [mm]	Connection thread R, M	Model
ø3.2	M5 x 0.8	KQG2L23-M5
	1/8	KQG2L23-01S
	1/4	KQG2L23-02S
ø4	M5 x 0.8	KQG2L04-M5
	1/8	KQG2L04-01S
	1/4	KQG2L04-02S
ø6	M5 x 0.8	KQG2L06-M5
	1/8	KQG2L06-01S
	1/4	KQG2L06-02S
	3/8	KQG2L06-03S
ø8	1/8	KQG2L08-01S
	1/4	KQG2L08-02S
	3/8	KQG2L08-03S
ø10	1/8	KQG2L10-01S
	1/4	KQG2L10-02S
	3/8	KQG2L10-03S
ø12	1/2	KQG2L10-04S
	1/4	KQG2L12-02S
	3/8	KQG2L12-03S
ø16	1/2	KQG2L12-04S
	3/8	KQG2L16-03S
	1/2	KQG2L16-04S



Hexagon socket head male connector

KQG2S

Applicable tubing O.D. [mm]	Connection thread R, M	Model
ø3.2	M5 x 0.8	KQG2S23-M5
	1/8	KQG2S04-M5
ø4	M5 x 0.8	KQG2S04-M5
	1/8	KQG2S04-01S
ø6	M5 x 0.8	KQG2S06-M5
	1/8	KQG2S06-01S
	1/4	KQG2S06-02S
ø8	1/8	KQG2S08-01S
	1/4	KQG2S08-02S
	3/8	KQG2S08-03S
ø10	1/8	KQG2S10-01S
	1/4	KQG2S10-02S
	3/8	KQG2S10-03S
	1/2	KQG2S10-04S
ø12	1/4	KQG2S12-02S
	3/8	KQG2S12-03S
	1/2	KQG2S12-04S
ø16	3/8	KQG2S16-03S
	1/2	KQG2S16-04S



Male branch tee

KQG2T



Applicable tubing O.D. [mm]	Connection thread R, M	Model
ø3.2	M5 x 0.8	KQG2T23-M5
	1/8	KQG2T23-01S
	1/4	KQG2T23-02S
ø4	M5 x 0.8	KQG2T04-M5
	1/8	KQG2T04-01S
	1/4	KQG2T04-02S
ø6	M5 x 0.8	KQG2T06-M5
	1/8	KQG2T06-01S
	1/4	KQG2T06-02S
	3/8	KQG2T06-03S
ø8	1/8	KQG2T08-01S
	1/4	KQG2T08-02S
	3/8	KQG2T08-03S
ø10	1/8	KQG2T10-01S
	1/4	KQG2T10-02S
	3/8	KQG2T10-03S
	1/2	KQG2T10-04S
ø12	1/4	KQG2T12-02S
	3/8	KQG2T12-03S
	1/2	KQG2T12-04S
ø16	3/8	KQG2T16-03S
	1/2	KQG2T16-04S

Union tee

KQG2T



Applicable tubing O.D. [mm]	Model
ø3.2	KQG2T23-00
ø4	KQG2T04-00
ø6	KQG2T06-00
ø8	KQG2T08-00
ø10	KQG2T10-00
ø12	KQG2T12-00
ø16	KQG2T16-00

Union "Y"

KQG2U



Applicable tubing O.D. [mm]	Model
ø3.2	KQG2U23-00
ø4	KQG2U04-00
ø6	KQG2U06-00
ø8	KQG2U08-00
ø10	KQG2U10-00
ø12	KQG2U12-00
ø16	KQG2U16-00

Union elbow

KQG2L



Applicable tubing O.D. [mm]	Model
ø3.2	KQG2L23-00
ø4	KQG2L04-00
ø6	KQG2L06-00
ø8	KQG2L08-00
ø10	KQG2L10-00
ø12	KQG2L12-00
ø16	KQG2L16-00

Different diameter tee

KQG2T



Applicable tubing O.D. [mm]		Model
(a)	(b)	
ø3.2	ø4	KQG2T23-04
ø4	ø6	KQG2T04-06
ø6	ø8	KQG2T06-08
ø8	ø10	KQG2T08-10
ø10	ø12	KQG2T10-12
ø12	ø16	KQG2T12-16

Bulkhead union

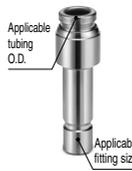
KQG2E



Applicable tubing O.D. [mm]	Model
ø3.2	KQG2E23-00
ø4	KQG2E04-00
ø6	KQG2E06-00
ø8	KQG2E08-00
ø10	KQG2E10-00
ø12	KQG2E12-00
ø16	KQG2E16-00

Plug-in reducer

KQG2R



Applicable tubing O.D. [mm]	Applicable fitting size	Model
ø3.2	ø4	KQG2R23-04
ø4	ø6	KQG2R04-06
ø6	ø8	KQG2R06-08
ø8	ø10	KQG2R08-10
ø10	ø12	KQG2R10-12
ø12	ø16	KQG2R12-16

Different diameter straight

KQG2H



Applicable tubing O.D. [mm]		Model
(a)	(b)	
ø3.2	ø4	KQG2H23-04
ø4	ø6	KQG2H04-06
ø6	ø8	KQG2H06-08
ø8	ø10	KQG2H08-10
ø10	ø12	KQG2H10-12
ø12	ø16	KQG2H12-16

Different diameter union "Y"

KQG2U



Applicable tubing O.D. [mm]		Model
(a)	(b)	
ø3.2	ø4	KQG2U23-04
ø4	ø6	KQG2U04-06
ø6	ø8	KQG2U06-08
ø8	ø10	KQG2U08-10
ø10	ø12	KQG2U10-12
ø12	ø16	KQG2U12-16

Bulkhead connector

KQG2E



Applicable tubing O.D. [mm]	Connection thread Rc	Model
ø3.2	1/4	KQG2E23-02
ø4	1/8	KQG2E04-01
	1/4	KQG2E04-02
ø6	1/8	KQG2E06-01
	1/4	KQG2E06-02
	3/8	KQG2E06-03
ø8	1/8	KQG2E08-01
	1/4	KQG2E08-02
	3/8	KQG2E08-03
ø10	1/4	KQG2E10-02
	3/8	KQG2E10-03
ø12	3/8	KQG2E12-03
	1/2	KQG2E12-04
ø16	3/8	KQG2E16-03
	1/2	KQG2E16-04

Extended male elbow

KQG2W



Applicable tubing O.D. [mm]	Connection thread R, M	Model
ø3.2	M5 x 0.8	KQG2W23-M5
	1/8	KQG2W23-01S
	1/4	KQG2W23-02S
ø4	M5 x 0.8	KQG2W04-M5
	1/8	KQG2W04-01S
	1/4	KQG2W04-02S
ø6	M5 x 0.8	KQG2W06-M5
	1/8	KQG2W06-01S
	1/4	KQG2W06-02S
	3/8	KQG2W06-03S
	1/8	KQG2W08-01S
ø8	1/4	KQG2W08-02S
	3/8	KQG2W08-03S
ø10	1/4	KQG2W10-02S
	3/8	KQG2W10-03S
	1/2	KQG2W10-04S
ø12	1/4	KQG2W12-02S
	3/8	KQG2W12-03S
	1/2	KQG2W12-04S
ø16	3/8	KQG2W16-03S
	1/2	KQG2W16-04S

Female connector

KQG2F



Applicable tubing O.D. [mm]	Connection thread Rc	Model
ø3.2	1/8	KQG2F23-01
ø4	1/8	KQG2F04-01
	1/4	KQG2F04-02
ø6	1/8	KQG2F06-01
	1/4	KQG2F06-02
	3/8	KQG2F06-03
ø8	1/8	KQG2F08-01
	1/4	KQG2F08-02
ø10	3/8	KQG2F08-03
	1/4	KQG2F10-02
ø10	3/8	KQG2F10-03
	1/4	KQG2F12-02
ø12	3/8	KQG2F12-03
	1/2	KQG2F12-04
ø16	3/8	KQG2F16-03
	1/2	KQG2F16-04

Plug

KQG2P



Applicable fitting size	Model
ø3.2	KQG2P-23
ø4	KQG2P-04
ø6	KQG2P-06
ø8	KQG2P-08
ø10	KQG2P-10
ø12	KQG2P-12
ø16	KQG2P-16

Related Equipment

Spatter cover



Applicable tubing O.D.	Model
6	KQB2-06C-X1124
8	KQB2-08C-X1124
10	KQB2-10C-X1124

- * Applicable tubing: FR soft nylon, FR double layer, FR three-layer
- * Cannot be used for union "Y" (KQG2U) 2-port side.
- * Since the spatter cover is designed for multi-layer (double layer, three-layer) tubing, sufficient effects cannot be obtained in foreign matter flow-in or followability for single-layer tubing.
- * The cover can be attached regardless of the single-layer/multi-layer tubing.

Spare Parts

Description	Tubing O.D.	Part no.	Material
Gasket	—	M-5G3	Stainless steel 316, Special FKM
Bulkhead nut	ø3.2	KQG223-P01	Stainless steel 316
	ø4		
	ø6		
	ø8		
	ø10		
	ø12		
	ø16		

Oval Type

KQ2

Round Type

KQ2

KQB2

KS/KX

KM

KF

M

H/DL
L/L

KC

KK

KKH

KK
130

DM

DMK

KDM

KB

KR
-W2

KRM

KA

KQG2

KQ2-G

KG

KFG2

MS

KKA

KP

KPO/
KPG

LQ1

LQ3

LQHB

Stainless Steel One-touch Fittings

KQ2-G Series

Applicable tubing O.D.: **Metric Size**

Connection thread: **M5, R, Rc**

Corrosion Resistant

One-touch IN/OUT connection.

Possible to use in vacuum to -100 kPa



Applicable Tubing

Tubing material	FEP, PFA, Nylon, Soft nylon, Polyurethane
Tubing O.D.	ø4, ø6, ø8, ø10, ø12, ø16

Specifications

Fluid	Air, Water ^{*1}	
Operating pressure range ^{*2}	-100 kPa to 1 MPa	
Proof pressure	3 MPa	
Ambient and fluid temperatures	-5 to 60°C, Water: 0 to 40°C (No freezing)	
Thread	Mounting section	JIS B0203 (Taper thread for piping) JIS B0205 (Metric coarse thread)
	Nut section	JIS B0205 (Metric fine thread)
Sealant on the threads	With sealant ^{*3} or without sealant	

*1 The surge pressure must be under the maximum operating pressure.

*2 Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

*3 With sealant: Suffix "S" to the end of part number.

Guide

Chuck

Suitable for use with nylon and urethane. Large holding force

The chuck provides secure retention and the collet increases the holding force on the tube.

Seal

Can be used for a wide range of pressures from a low vacuum up to a pressure of 1 MPa.

The use of a special profile ensures sealing and reduces resistance when the tube is inserted.

Release button (White)

Requires little force for removal.

Prevents the chuck from biting too deeply into the tubing.

Body

O-ring

Stud

Effective when piping in a confined space.

Body part rotates allowing for positioning.

Connection thread

M, R, Rc

Guide

Chuck

Body

Release button (Light gray)

Seal

* Fittings without thread portion, and with all resin body material are copper free specification.

Male connector

KQ2H-G

Use to pipe a female thread in the same direction.
Most general model.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	M5 x 0.8	KQ2H04-M5G1
	R1/8	KQ2H04-01GS1
	R1/4	KQ2H04-02GS1
ø6	M5 x 0.8	KQ2H06-M5G1
	R1/8	KQ2H06-01GS1
	R1/4	KQ2H06-02GS1
	R3/8	KQ2H06-03GS1
ø8	R1/8	KQ2H08-01GS
	R1/4	KQ2H08-02GS
ø10	R3/8	KQ2H08-03GS
	R1/8	KQ2H10-01GS
	R1/4	KQ2H10-02GS
	R3/8	KQ2H10-03GS
ø12	R1/2	KQ2H10-04GS
	R1/4	KQ2H12-02GS
	R3/8	KQ2H12-03GS
ø16	R1/2	KQ2H12-04GS
	R3/8	KQ2H16-03GS
	R1/2	KQ2H16-04GS



Male elbow

KQ2L-G

Use to pipe a female thread at right angles.
Most general model.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	M5 x 0.8	KQ2L04-M5G1
	R1/8	KQ2L04-01GS1
	R1/4	KQ2L04-02GS1
ø6	M5 x 0.8	KQ2L06-M5G1
	R1/8	KQ2L06-01GS1
	R1/4	KQ2L06-02GS1
	R3/8	KQ2L06-03GS1
ø8	R1/8	KQ2L08-01GS
	R1/8	KQ2L08-01GQS*1
	R1/4	KQ2L08-02GS
ø10	R3/8	KQ2L08-03GS
	R1/8	KQ2L10-01GS
	R1/4	KQ2L10-02GS
	R3/8	KQ2L10-03GS
ø12	R1/2	KQ2L10-04GS
	R1/4	KQ2L12-02GS
	R3/8	KQ2L12-03GS
ø16	R1/2	KQ2L12-04GS
	R3/8	KQ2L16-03GS
	R1/2	KQ2L16-04GS



*1 For details, refer to page 155.

Hexagon socket head male connector

KQ2S-G

Internal hexagon socket allows tightening with a hexagon wrench in confined spaces.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	M5 x 0.8	KQ2S04-M5G1
	R1/8	KQ2S04-01GS1
ø6	M5 x 0.8	KQ2S06-M5G1
	R1/8	KQ2S06-01GS1
	R1/4	KQ2S06-02GS1
ø8	R1/8	KQ2S08-01GS
	R3/8	KQ2S08-02GS
ø10	R1/8	KQ2S08-03GS
	R1/4	KQ2S10-01GS
	R3/8	KQ2S10-02GS
	R1/2	KQ2S10-03GS
ø12	R1/4	KQ2S10-04GS
	R1/4	KQ2S12-02GS
	R3/8	KQ2S12-03GS
	R1/2	KQ2S12-04GS



Extended male elbow

KQ2W-G

Basically, it is used together with a male elbow.
Its extended height allows for multi-leveled piping and prevents interference among fittings.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	M5 x 0.8	KQ2W04-M5G1
	R1/8	KQ2W04-01GS1
	R1/4	KQ2W04-02GS1
ø6	M5 x 0.8	KQ2W06-M5G1
	R1/8	KQ2W06-01GS1
	R1/4	KQ2W06-02GS1
	R3/8	KQ2W06-03GS1
ø8	R1/8	KQ2W08-01GS
	R1/8	KQ2W08-01GQS*1
	R1/4	KQ2W08-02GS
ø10	R3/8	KQ2W08-03GS
	R1/8	KQ2W10-01GS
	R1/4	KQ2W10-02GS
	R3/8	KQ2W10-03GS
ø12	R1/2	KQ2W10-04GS
	R1/4	KQ2W12-02GS
	R3/8	KQ2W12-03GS
	R1/2	KQ2W12-04GS



*1 For details, refer to page 155.

Universal male elbow

KQ2V-G

Hexagon head of the body allows tightening with a box wrench in confined spaces.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	M5 x 0.8	KQ2V04-M5G1
	R1/8	KQ2V04-01GS1
ø6	M5 x 0.8	KQ2V06-M5G1
	R1/8	KQ2V06-01GS1
ø8	R1/4	KQ2V06-02GS1
	R1/8	KQ2V08-01GS
	R1/4	KQ2V08-02GS
ø10	R3/8	KQ2V10-03GS
	R3/8	KQ2V12-03GS
ø12	R3/8	KQ2V12-03GS
	R1/2	KQ2V12-04GS






Male branch tee

KQ2T-G

Use to branch a female thread at both 90° angles.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	M5 x 0.8	KQ2T04-M5G1
	R1/8	KQ2T04-01GS1
ø6	R1/4	KQ2T04-02GS1
	M5 x 0.8	KQ2T06-M5G1
	R1/8	KQ2T06-01GS1
	R1/4	KQ2T06-02GS1
ø8	R3/8	KQ2T06-03GS1
	R1/8	KQ2T08-01GS
	R1/8	KQ2T08-01GQS*1
ø10	R1/4	KQ2T08-02GS
	R3/8	KQ2T08-03GS
	R1/8	KQ2T10-01GS
ø12	R1/4	KQ2T10-02GS
	R3/8	KQ2T10-03GS
	R1/2	KQ2T10-04GS
ø16	R1/4	KQ2T12-02GS
	R3/8	KQ2T12-03GS
	R1/2	KQ2T12-04GS
ø16	R3/8	KQ2T16-03GS
	R1/2	KQ2T16-04GS






*1 For details, refer to page 155.

Male run tee

KQ2Y-G

Use to branch a female thread in the same direction and at a 90° angle.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	M5 x 0.8	KQ2Y04-M5G1
	R1/8	KQ2Y04-01GS1
ø6	R1/4	KQ2Y04-02GS1
	M5 x 0.8	KQ2Y06-M5G1
	R1/8	KQ2Y06-01GS1
ø8	R1/4	KQ2Y06-02GS1
	R3/8	KQ2Y06-03GS1
	R1/8	KQ2Y08-01GS
	R1/8	KQ2Y08-01GQS*1
ø10	R1/4	KQ2Y08-02GS
	R3/8	KQ2Y08-03GS
	R1/8	KQ2Y10-01GS
	R1/4	KQ2Y10-02GS
ø12	R3/8	KQ2Y10-03GS
	R1/2	KQ2Y10-04GS
	R1/4	KQ2Y12-02GS
ø16	R3/8	KQ2Y12-03GS
	R1/2	KQ2Y12-04GS
	R3/8	KQ2Y16-03GS
ø16	R1/2	KQ2Y16-04GS






*1 For details, refer to page 155.

Branch "Y"

KQ2U-G

Use to branch a female thread in the same direction.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	M5 x 0.8	KQ2U04-M5G
	R1/8	KQ2U04-01GS
ø6	R1/4	KQ2U04-02GS
	M5 x 0.8	KQ2U06-M5G
	R1/8	KQ2U06-01GS
ø8	R1/4	KQ2U06-02GS
	R3/8	KQ2U06-03GS
	R1/8	KQ2U08-01GS
ø10	R1/4	KQ2U08-02GS
	R3/8	KQ2U08-03GS
ø12	R1/4	KQ2U10-02GS
	R1/2	KQ2U10-04GS
	R1/4	KQ2U12-02GS
ø12	R3/8	KQ2U12-03GS
	R1/2	KQ2U12-04GS






Branch male elbow

KQ2LU-G

Use to two-branch a female thread at right angles.

Applicable tubing O.D. [mm]	Connection thread	Model
Round type ø4, ø6	M5 x 0.8	KQ2LU04-M5G
	R1/8	KQ2LU04-01GS
	R1/4	KQ2LU04-02GS
ø4	M5 x 0.8	KQ2LU06-M5G
	R1/8	KQ2LU06-01GS
	R1/4	KQ2LU06-02GS
ø6	M5 x 0.8	KQ2LU06-M5G
	R1/8	KQ2LU06-01GS
	R1/4	KQ2LU06-02GS
ø8	R3/8	KQ2LU06-03GS
	R1/8	KQ2LU08-01GS
	R1/4	KQ2LU08-02GS
ø10	R3/8	KQ2LU08-03GS
	R1/4	KQ2LU10-02GS
	R1/2	KQ2LU10-04GS
ø12	R1/4	KQ2LU12-02GS
	R3/8	KQ2LU12-03GS
	R1/2	KQ2LU12-04GS



Male delta union

KQ2D-G

Use to branch a female thread at two right angles.

Applicable tubing O.D. [mm]	Connection thread	Model
Oval type ø4, ø6	M5 x 0.8	KQ2D04-M5G1
	R1/8	KQ2D04-01GS1
	R1/4	KQ2D04-02GS1
ø4	M5 x 0.8	KQ2D06-M5G1
	R1/8	KQ2D06-01GS1
	R1/4	KQ2D06-02GS1
ø6	R3/8	KQ2D06-03GS1
	R1/8	KQ2D08-01GS
	R1/4	KQ2D08-02GS
ø8	R3/8	KQ2D08-03GS
	R1/4	KQ2D10-02GS
	R3/8	KQ2D10-03GS
ø10	R1/2	KQ2D10-04GS
	R1/4	KQ2D12-02GS
	R3/8	KQ2D12-03GS
ø12	R1/2	KQ2D12-04GS



Double branch "Y"

KQ2UD-G

Use to four-branch a female thread in the same direction.

Applicable tubing O.D. [mm]	Connection thread	Model
Round type ø4, ø6	R1/8	KQ2UD04-01GS
	R1/4	KQ2UD04-02GS
ø4	R1/8	KQ2UD06-01GS
	R1/4	KQ2UD06-02GS



Straight union

KQ2H

Use to connect tubing in the same direction.

Applicable tubing O.D. [mm]	Model
Round type ø4, ø6	ø4 KQ2H04-00A1
Oval type ø4, ø6	
Round type ø8 to ø16	ø6 KQ2H06-00A1
Oval type ø8 to ø16	
	ø8 KQ2H08-00A
	ø10 KQ2H10-00A
	ø12 KQ2H12-00A
	ø16 KQ2H16-00A

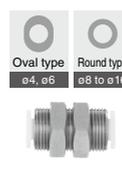


Bulkhead union

KQ2E-G

Use to connect tubing through a panel, etc.

Applicable tubing O.D. [mm]	Model
Round type ø4, ø6	ø4 KQ2E04-00G1
Oval type ø4, ø6	
Round type ø8 to ø16	ø6 KQ2E06-00G1
Oval type ø8 to ø16	
	ø8 KQ2E08-00G
	ø10 KQ2E10-00G
	ø12 KQ2E12-00G
	ø16 KQ2E16-00G



Union elbow

KQ2L

Use to connect tubing at right angles.

Oval type ø4, ø6	Round type ø8 to ø16	Applicable tubing O.D. [mm]		Model
		(a)	(b)	
		ø4	ø6	KQ2L04-00A1
		ø6	ø8	KQ2L06-00A1
		ø8	ø10	KQ2L08-00A
		ø10	ø12	KQ2L10-00A
		ø12	ø16	KQ2L12-00A
		ø16		KQ2L16-00A

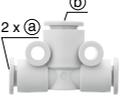


Different diameter tee

KQ2T

Use to connect tubing of reduced size for branching at both 90° angles.

Oval type ø4, ø6	Round type ø8 to ø16	Applicable tubing O.D. [mm]		Model
		(a)	(b)	
		ø4	ø6	KQ2T04-06A1
		ø6	ø8	KQ2T06-08A1
		ø8	ø10	KQ2T08-10A
		ø10	ø12	KQ2T10-12A
		ø12	ø16	KQ2T12-16A



Union tee

KQ2T

Use to branch tubing at both 90° angles.

Oval type ø4, ø6	Round type ø8 to ø16	Applicable tubing O.D. [mm]		Model
		(a)	(b)	
		ø4	ø6	KQ2T04-00A1
		ø6	ø8	KQ2T06-00A1
		ø8	ø10	KQ2T08-00A
		ø10	ø12	KQ2T10-00A
		ø12	ø16	KQ2T12-00A
		ø16		KQ2T16-00A



Different diameter union "Y"

KQ2U

Use to connect tubing of reduced size for branching in the same direction.

Round type ø4 to ø16	Applicable tubing O.D. [mm]		Model
	(a)	(b)	
	ø4	ø6	KQ2U04-06A
	ø6	ø8	KQ2U06-08A
	ø8	ø10	KQ2U08-10A
	ø10	ø12	KQ2U10-12A
	ø12	ø16	KQ2U12-16A



Union "Y"

KQ2U

Use to branch tubing in the same direction.

Round type ø4 to ø16	Applicable tubing O.D. [mm]		Model
	(a)	(b)	
	ø4	ø6	KQ2U04-00A
	ø6	ø8	KQ2U06-00A
	ø8	ø10	KQ2U08-00A
	ø10	ø12	KQ2U10-00A
	ø12	ø16	KQ2U12-00A
	ø16		KQ2U16-00A



Different diameter double union "Y"

KQ2UD

Use to connect tubing of reduced size for four-branching in the same direction.

Round type ø4 to ø8	Applicable tubing O.D. [mm]		Model
	(a)	(b)	
	ø4	ø6	KQ2UD04-06A
	ø6	ø8	KQ2UD06-08A



Different diameter straight

KQ2H

Use to connect tubing of different sizes.

Oval type ø4, ø6	Round type ø8 to ø16	Applicable tubing O.D. [mm]		Model
		(a)	(b)	
		ø4	ø6	KQ2H04-06A1
		ø6	ø8	KQ2H06-08A1
		ø8	ø10	KQ2H08-10A
		ø10	ø12	KQ2H10-12A
		ø12	ø16	KQ2H12-16A



Branch union elbow

KQ2LU

Use to branch tubing at right angles.

Round type ø4 to ø12	Applicable tubing O.D. [mm]		Model
	(a)	(b)	
	ø4	ø6	KQ2LU04-00A
	ø6	ø8	KQ2LU06-00A
	ø8	ø10	KQ2LU08-00A
	ø10	ø12	KQ2LU10-00A
	ø12		KQ2LU12-00A



Delta union

KQ2D

Use to branch tubing at three right angles.

Applicable tubing O.D. [mm]	Model
ø4	KQ2D04-00A1
ø6	KQ2D06-00A1
ø8	KQ2D08-00A
ø10	KQ2D10-00A
ø12	KQ2D12-00A



Female connector

KQ2F

Use to pipe a male thread of a pressure gauge, etc.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	Rc1/8	KQ2F04-01G1
	Rc1/4	KQ2F04-02G1
ø6	Rc1/8	KQ2F06-01G1
	Rc1/4	KQ2F06-02G1
	Rc3/8	KQ2F06-03G1
ø8	Rc1/8	KQ2F08-01G
	Rc1/4	KQ2F08-02G
ø10	Rc3/8	KQ2F10-03G
	Rc1/4	KQ2F12-02G
ø12	Rc3/8	KQ2F12-03G
	Rc1/2	KQ2F12-04G



Plug-in elbow

KQ2L

Use to change the tube direction of One-touch fittings by 90°.

Applicable tubing O.D. [mm]	Applicable fitting size	Model
ø4	ø4	KQ2L04-99A1
ø6	ø6	KQ2L06-99A1
ø8	ø8	KQ2L08-99A
ø10	ø10	KQ2L10-99A
ø12	ø12	KQ2L12-99A
ø16	ø16	KQ2L16-99A



Applicable tubing O.D.

Applicable fitting size

Bulkhead connector

KQ2E-G

Use to connect a male thread and tubing through a panel, etc.

Applicable tubing O.D. [mm]	Connection thread	Model
ø4	Rc1/8	KQ2E04-01G1
	Rc1/4	KQ2E04-02G1
ø6	Rc1/8	KQ2E06-01G1
	Rc1/4	KQ2E06-02G1
	Rc3/8	KQ2E06-03G1
ø8	Rc1/8	KQ2E08-01G
	Rc1/4	KQ2E08-02G
ø10	Rc3/8	KQ2E10-03G
	Rc1/4	KQ2E10-02G
ø12	Rc3/8	KQ2E12-03G
	Rc1/2	KQ2E12-04G
ø16	Rc3/8	KQ2E16-03G
	Rc1/2	KQ2E16-04G



Plug-in reducer

KQ2R

Use to change size of One-touch fittings.

Applicable tubing O.D. [mm]	Applicable fitting size	Model
ø4	ø6	KQ2R04-06A1
	ø8	KQ2R04-08A1
	ø10	KQ2R04-10A1
ø6	ø4	KQ2R06-04A1
	ø8	KQ2R06-08A1
	ø10	KQ2R06-10A1
ø8	ø12	KQ2R06-12A1
	ø10	KQ2R08-10A
	ø12	KQ2R08-12A
ø10	ø12	KQ2R10-12A
	ø16	KQ2R10-16A
ø12	ø16	KQ2R12-16A



Applicable tubing O.D.

Applicable fitting size

Tube cap

KQ2C

Use to plug unused tubing.

Applicable tubing O.D. [mm]	Model
ø4	KQ2C04-00A1
ø6	KQ2C06-00A1
ø8	KQ2C08-00A
ø10	KQ2C10-00A
ø12	KQ2C12-00A
ø16	KQ2C16-00A





Made to Order

Please contact SMC for detailed dimensions, specifications, and lead times.

1 Made to Order

Symbol	Specifications
X12	Lubricant: White vaseline Release button color: White
X17	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue
KQ2□08-01G□□	Effective area is interchangeable with the current product (KG series). Model: Male elbow, Extended male elbow, Male branch tee, Male run tee Applicable tubing O.D./Port size: ø8/R1/8 Example) KQ2L08-01GQS

2 Clean Series

Please consult with SMC separately for applicable models.

Symbol	Specifications
10-	Lubricant: Fluorine grease Air blow in a clean room Double packaging Resin body/Release button color: White

Example) **10-KQ2H06-02GS1** (With thread)
10-KQ2H06-00A (Without thread)

Spare Parts

Description	Part no.	Applicable thread	Applicable model
Gasket	M-5G2	M5	—
Pipe nut	KQ04-P01G	—	KQ2E04-00G1, KQ2E04-01G1, KQ2E04-02G1
	KQ06-P01G	—	KQ2E06-00G1, KQ2E06-01G1, KQ2E06-02G1, KQ2E06-03G1
	KQ08-P01G	—	KQ2E08-00G, KQ2E08-01G, KQ2E08-02G, KQ2E08-03G
	KQ10-P01G	—	KQ2E10-00G, KQ2E10-02G, KQ2E10-03G
	KQ12-P01G	—	KQ2E12-00G, KQ2E12-03G, KQ2E12-04G
	KQ16-P01G	—	KQ2E16-00G, KQ2E16-03G, KQ2E16-04G

Stainless Steel One-touch Fittings

KG Series

Applicable tubing O.D.: **Metric Size**

Connection thread: **M5, R, Rc**

Stainless steel specifications applicable to corrosive environments

Stainless steel 303 adopted for metal elements

Suitable for use in CRT production lines where contact with copper must be avoided, food processing machines where water or salt water splashes and clean room where discoloration of copper material and corrosion must be avoided.



Corrosion Resistant

Applicable Tubing

Tubing material	FEP, PFA, Nylon, Soft nylon, Polyurethane
Tubing O.D.	ø4, ø6, ø8, ø10, ø12, ø16

Specifications

Fluid		Air, Water*1
Operating pressure range*2		-100 kPa to 1M Pa
Proof pressure		3 MPa
Ambient and fluid temperatures		-5 to 60°C, Water: 0 to 40°C (No freezing)
Thread	Mounting section	JIS B0203 (Taper thread for piping) JIS B0205 (Metric coarse thread)
	Nut section	JIS B0205 (Metric fine thread)
Sealant on the threads		With sealant*3 or without sealant

*1 The surge pressure must be under the maximum operating pressure.

*2 Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

*3 With sealant: Suffix "S" to the end of part number.

Guide

Collet

Chuck

Suitable for use with nylon and urethane. Large retaining force

The chuck provides secure retention and the collet increases the holding force on the tube.

Seal

Can be used for a wide range of pressures from a low vacuum up to a pressure of 1 MPa.

The use of a special profile ensures sealing and reduces resistance when the tube is inserted.

Release button (White)

Requires little force for removal.

When the fitting is removed from the tube, the chuck and collet are released, thus preventing them from biting into the tube excessively.

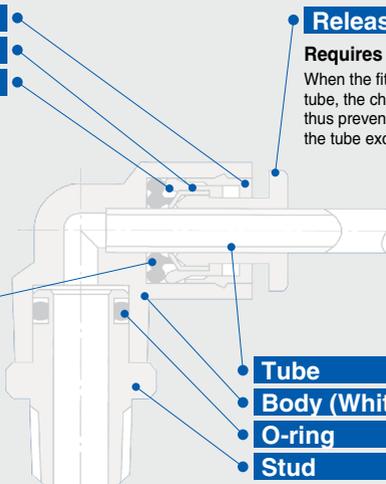
Tube

Body (White)

O-ring

Stud

Effective when piping in a confined space.
The body and the threaded portion can rotate.



Male connector

KGH

Use to pipe a female thread in the same direction.
Most general model.

	Applicable tubing O.D. [mm]	Connection thread	Model
 <M5>	4	M5 x 0.8	KGH04-M5
		R1/8	-01
		R1/4	-02
 <R>	6	M5 x 0.8	KGH06-M5
		R1/8	-01
		R1/4	-02
	8	R3/8	-03
		R1/8	KGH08-01
		R1/4	-02
	10	R3/8	-03
		R1/8	KGH10-01
		R1/4	-02
	12	R3/8	-03
		R1/2	-04
		R1/4	KGH12-02
	16	R3/8	-03
		R1/2	-04
		R1/2	KGH16-03
		R1/2	-04

Male elbow

KGL

Use to pipe a female thread at right angles.
Most general model.

	Applicable tubing O.D. [mm]	Connection thread	Model
 <M5>	4	M5 x 0.8	KGL04-M5
		R1/8	-01
		R1/4	-02
	6	M5 x 0.8	KGL06-M5
		R1/8	-01
		R1/4	-02
	8	R3/8	-03
		R1/8	KGL08-01
		R1/4	-02
	10	R3/8	-03
		R1/8	KGL10-01
		R1/4	-02
	12	R3/8	-03
		R1/2	-04
		R1/4	KGL12-02
	16	R3/8	-03
		R1/2	-04
		R1/2	KGL16-03
		R1/2	-04

Hexagon socket head male connector

KGS

Internal hexagon socket allows tightening with a hexagon wrench in confined spaces.

	Applicable tubing O.D. [mm]	Connection thread	Model
 <M5>	4	M5 x 0.8	KGS04-M5
		R1/8	-01
		R1/4	-02
	6	M5 x 0.8	KGS06-M5
		R1/8	-01
		R1/4	-02
	8	R1/8	KGS08-01
		R1/4	-02
		R3/8	-03
	10	R1/8	KGS10-01
		R1/4	-02
		R3/8	-03
	12	R1/2	-04
		R1/4	KGS12-02
		R3/8	-03
		R1/2	-04

Extended male elbow

KGW

Basically, it is used together with a male elbow.
Its extended height allows for multi-leveled piping and prevents interference among fittings.

	Applicable tubing O.D. [mm]	Connection thread	Model
 <M5>	4	M5 x 0.8	KGW04-M5
		R1/8	-01
		R1/4	-02
	6	M5 x 0.8	KGW06-M5
		R1/8	-01
		R1/4	-02
	8	R3/8	-03
		R1/8	KGW08-01
		R1/4	-02
	10	R3/8	-03
		R1/2	-04
		R1/4	KGW10-02
	12	R3/8	-03
		R1/2	-04
		R1/2	KGW12-02
		R1/2	-04

Universal male elbow

KGV

Hexagon head of the body allows tightening with a box wrench in confined spaces.

	Applicable tubing O.D. [mm]	Connection thread	Model
 <M5>	4	M5 x 0.8	KGV04-M5
		R1/8	-01
	6	M5 x 0.8	KGV06-M5
R1/4		-01	
 <R>	8	R1/8	KGV08-01
		R3/8	-02
	10	R1/4	KGV10-02
R3/8		-03	
12	R3/8	KGV12-03	
	R1/2	-04	

Male run tee

KGY

Use to branch a female thread in the same direction and at a 90° angle.

	Applicable tubing O.D. [mm]	Connection thread	Model
 <M5>	4	M5 x 0.8	KGY04-M5
		R1/8	-01
	6	M5 x 0.8	KGY06-M5
R1/8		-01	
 <R>	8	R1/4	-02
		R3/8	-03
	10	R1/8	KGY08-01
R1/4		-02	
12	R3/8	-03	
	R1/8	KGY10-01	
	R1/4	-02	
16	R3/8	-03	
	R1/2	-04	
	R1/4	KGY12-02	
12	R3/8	-03	
	R1/2	-04	
16	R3/8	KGY16-03	
	R1/2	-04	

Male branch tee

KGT

Use to branch a female thread at both 90° angles.

	Applicable tubing O.D. [mm]	Connection thread	Model
 <M5>	4	M5 x 0.8	KGT04-M5
		R1/8	-01
	6	M5 x 0.8	KGT06-M5
R1/4		-02	
 <R>	8	R1/8	KGT08-01
		R3/8	-03
	10	R1/4	-02
R3/8		-03	
12	R1/8	KGT10-01	
	R1/4	-02	
	R3/8	-03	
16	R1/2	-04	
	R1/4	KGT12-02	
12	R3/8	-03	
	R1/2	-04	
16	R3/8	KGT16-03	
	R1/2	-04	

Branch

KGU

Use to branch a female thread in the same direction.

	Applicable tubing O.D. [mm]	Connection thread	Model
 <M5>	4	M5 x 0.8	KGU04-M5
		R1/8	-01
	6	M5 x 0.8	KGU06-M5
R1/4		-02	
 <R>	8	R1/8	KGU08-01
		R3/8	-03
	10	R1/4	KGU10-02
R3/8		-03	
12	R1/2	-04	
	R1/4	KGU12-02	
	R3/8	-03	
16	R1/2	-04	

Branch male elbow

KGLU

Use to two-branch a female thread at right angles.

	Applicable tubing O.D. [mm]	Connection thread	Model
 <M5>	4	M5 x 0.8	KGLU04-M5
		R1/8	-01
		R1/4	-02
 <R>	6	M5 x 0.8	KGLU06-M5
		R1/8	-01
		R1/4	-02
	8	R3/8	-03
		R1/8	KGLU08-01
		R1/4	-02
	10	R3/8	-03
		R1/2	-04
		R1/4	KGLU10-02
	12	R3/8	-03
		R1/2	-04
		R1/4	KGLU12-02

Male delta union

KGD

Use to branch a female thread at two right angles.

	Applicable tubing O.D. [mm]	Connection thread	Model
 <M5>	4	M5 x 0.8	KGD04-M5
		R1/8	-01
		R1/4	-02
 <R>	6	M5 x 0.8	KGD06-M5
		R1/8	-01
		R1/4	-02
	8	R3/8	-03
		R1/8	KGD08-01
		R1/4	-02
	10	R3/8	-03
		R1/2	-04
		R1/4	KGD10-02
	12	R3/8	-03
		R1/2	-04
		R1/4	KGD12-02

Double branch

KGUD

Use to four-branch a female thread in the same direction.

	Applicable tubing O.D. [mm]	Connection thread	Model
	4	R1/8	KGUD04-01
		R1/4	-02
	6	R1/8	KGUD06-01
		R1/4	-02

Straight union

KGH

Use to connect tubing in the same direction.

	Applicable tubing O.D. [mm]	Model
	4	KGH04-00
	6	KGH06-00
	8	KGH08-00
	10	KGH10-00
	12	KGH12-00

Bulkhead union

KGE

Use to connect tubing through a panel, etc.

	Applicable tubing O.D. [mm]	Model
	4	KGE04-00
	6	KGE06-00
	8	KGE08-00
	10	KGE10-00
	12	KGE12-00
	16	KGE16-00

Union elbow KGL

Use to connect tubing at right angles.

	Applicable tubing O.D. [mm]		Model
	(a)	(b)	
	4	6	KGL04-00
	6	8	KGL06-00
	8	10	KGL08-00
	10	12	KGL10-00
	12	16	KGL12-00
	16		KGL16-00

Union tee KGT

Use to branch tubing at both 90° angles.

	Applicable tubing O.D. [mm]		Model
	(a)	(b)	
	4	6	KGT04-00
	6	8	KGT06-00
	8	10	KGT08-00
	10	12	KGT10-00
	12	16	KGT12-00
	16		KGT16-00

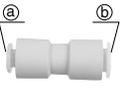
Union "Y" KGU

Use to branch tubing in the same direction.

	Applicable tubing O.D. [mm]		Model
	(a)	(b)	
	4	6	KGU04-00
	6	8	KGU06-00
	8	10	KGU08-00
	10	12	KGU10-00
	12		KGU12-00

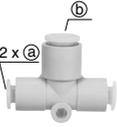
Different diameter straight KGH

Use to connect tubing of different sizes.

	Applicable tubing O.D. [mm]		Model
	(a)	(b)	
	4	6	KGH04-06
	6	8	KGH06-08
	8	10	KGH08-10
	10	12	KGH10-12

Different diameter tee KGT

Use to connect tubing of reduced size for branching at both 90° angles.

	Applicable tubing O.D. [mm]		Model
	(a)	(b)	
	4	6	KGT04-06
	6	8	KGT06-08
	8	10	KGT08-10
	10	12	KGT10-12

Different diameter union "Y" KGU

Use to connect tubing of reduced size for branching in the same direction.

	Applicable tubing O.D. [mm]		Model
	(a)	(b)	
	4	6	KGU04-06
	6	8	KGU06-08
	8	10	KGU08-10
	10	12	KGU10-12

Different diameter double union "Y" KGUD

Use to connect tubing of reduced size for four-branching in the same direction.

	Applicable tubing O.D. [mm]		Model
	(a)	(b)	
	4	6	KGUD04-06
	6	8	KGUD06-08

Branch union elbow KGLU

Use to branch tubing at right angles.

	Applicable tubing O.D. [mm]		Model
	(a)	(b)	
	4	6	KGLU04-00
	6	8	KGLU06-00
	8	10	KGLU08-00
	10	12	KGLU10-00
	12		KGLU12-00

- Oval Type
- KQ2
- Round Type
- KQ2
- KQB2
- KS/KX
- KM
- KF
- M
- H/DLL
- L/L
- KC
- KK
- KKH
- KK130
- DM
- DMK
- KDM
- KB
- KR-W2
- KRM
- KA
- KQ2
- KQ2-G
- KG
- KFG2
- MS
- KKA
- KP
- KPQ/KPG
- LQ1
- LQ3
- LQHB

Delta union

KGD

Use to branch tubing at three right angles.



Applicable tubing O.D. [mm]	Model
4	KGD04-00
6	KGD06-00
8	KGD08-00
10	KGD10-00
12	KGD12-00

Plug-in elbow

KGL

Use to change the tube direction of One-touch fittings by 90°.



Applicable tubing O.D. [mm]	Applicable fitting size	Model
4	4	KGL04-99
6	6	KGL06-99
8	8	KGL08-99
10	10	KGL10-99
12	12	KGL12-99

Plug-in reducer

KGR

Use to change size of One-touch fittings.



Applicable tubing O.D. [mm]	Applicable fitting size	Model
4	6	KGR04-06
	8	-08
	10	-10
6	4	KGR06-04
	8	-08
	10	-10
8	12	-12
	10	KGR08-10
	12	-12
10	12	KGR10-12
	16	-16
12	16	KGR12-16

Female connector

KGF

Use to pipe a male thread of a pressure gauge, etc.



Applicable tubing O.D. [mm]	Connection thread	Model
4	Rc1/8	KGF04-01
	Rc1/4	-02
6	Rc1/8	KGF06-01
	Rc1/4	-02
	Rc3/8	-03
8	Rc1/8	KGF08-01
	Rc1/4	-02
	Rc3/8	-03
10	Rc1/4	KGF10-02
	Rc3/8	-03
12	Rc1/4	KGF12-02
	Rc3/8	-03
	Rc1/2	-04

Bulkhead connector

KGE

Use to connect a male thread and tubing through a panel, etc.



Applicable tubing O.D. [mm]	Connection thread	Model
4	Rc1/8	KGE04-01
	Rc1/4	-02
6	Rc1/8	KGE06-01
	Rc1/4	-02
	Rc3/8	-03
8	Rc1/8	KGE08-01
	Rc1/4	-02
	Rc3/8	-03
10	Rc1/4	KGE10-02
	Rc3/8	-03
12	Rc3/8	KGE12-03
	Rc1/2	-04
	Rc3/8	KGE16-03
16	Rc1/2	-04

Tube cap

KGC

Use to plug unused tubing.



Applicable tubing O.D. [mm]	Model
4	KGC04-00
6	KGC06-00
8	KGC08-00
10	KGC10-00
12	KGC12-00
16	KGC16-00



Made to Order

1 Grease-free Specifications

Symbol	Specifications
X17	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue
X39	Grease-free Rubber material: NBR (With fluorine coating) Release button color: Light blue Clean (Air blow, double packaging)
X94	Grease-free Rubber material: FKM (With fluorine coating) Release button color: Light blue

Suffix "-X17" to the end of part number.
Example) **KGH06-01-X17**

2 Other Specifications

Symbol	Specifications
X12	Lubricant: White vaseline Release button color: White
X34	Rubber material: FKM

3 Clean Series

Symbol	Specifications
10-	Lubricant: Fluorine grease Double packaging

Example) **10-KGH06-02**

Spare Parts

Description	Part no.	Applicable thread	Applicable model
Gasket	M-5G2	M5	—
Pipe nut	KG04-P01	—	KGE04-00, KGE04-01, KGE04-02
	KG06-P01	—	KGE06-00, KGE06-01 KGE06-02, KGE06-03
	KG08-P01	—	KGE08-00, KGE08-01 KGE08-02, KGE08-03
	KG10-P01	—	KGE10-00, KGE10-02, KGE10-03
	KG12-P01	—	KGE12-00, KGE12-03, KGE12-04
	KG16-P01	—	KGE16-00, KGE16-03, KGE16-04

Oval
Type

KQ2

Round
Type

KQ2

KQB2

KS/
KX

KM

KF

M

H/DL
L/LL

KC

KK

KKH

KK
130

DM

DMK

KDM

KB

KR
-W2

KRM

KA

KQG2

KQ2-G

KG

KFG2

MS

KKA

KP

KPO/
KPG

LQ1

LQ3

LQHB

Stainless Steel 316 Insert Fittings

KFG2 Series

Applicable tubing O.D.: Metric Size

Connection thread: R, Rc

Corrosion Resistant

Heat Resistant

Material: Stainless steel 316

Fluid temperature: 260°C

* Swivel elbow/With sealant: 150°C

Applicable tubing material:

FEP, PFA, Modified PTFE
2-layer soft fluoropolymer, Nylon
Soft nylon, Polyurethane
Soft polyurethane
Polyolefin
Soft polyolefin
Antistatic soft nylon
Antistatic polyurethane
Hard polyurethane

Can be used with steam.

Grease-free

Compatible with the Food Sanitation Law

(Component materials have met apparatuses and container-packages standards.)



Applicable Tubing

Tubing material*1	FEP, PFA, Modified PTFE, 2-layer soft fluoropolymer, Nylon, Soft nylon, Polyurethane, Soft polyurethane, Polyolefin, Soft polyolefin, Antistatic soft nylon, Antistatic polyurethane, Hard polyurethane
Tubing O.D.	ø4 x ø2.5, ø4 x ø3, ø6 x ø4, ø8 x ø6, ø10 x ø7.5, ø10 x ø8, ø12 x ø9, ø12 x ø10, ø16 x ø13

*1 For soft polyurethane tubing, hard polyurethane tubing, antistatic polyurethane tubing, water cannot be used.

Series	Tubing material	Tubing O.D. x I.D. [mm]									
		ø4 x ø2.5	ø4 x ø3	ø6 x ø4	ø8 x ø6	ø10 x ø7.5	ø10 x ø8	ø12 x ø9	ø12 x ø10	ø16 x ø13	
TH	FEP	●	—	●	●	●	●	●	●	—	
TL	Super PFA	—	—	—	—	—	—	—	—	—	
TLM	PFA	●	●	●	●	●	●	●	●	●	
TD	Modified PTFE	●	—	●	●	—	●	—	—	—	
TQ	Special fluoropolymer	●	—	●	—	—	●	●	—	—	
T	Nylon	●	—	●	●	●	—	●	—	●	
TS	Soft nylon	●	—	●	●	●	—	●	—	—	
TU	Polyurethane	●	—	●	—	—	—	—	—	—	
TPH	Polyolefin	●	—	●	●	●	—	●	—	—	
TUS	Soft polyurethane	●	—	●	—	—	—	—	—	—	
TUH	Hard polyurethane (High pressure)	●	—	●	—	—	—	—	—	—	
TPS	Soft polyolefin	●	—	●	—	—	—	—	—	—	
TAS	Antistatic soft nylon	●	—	●	—	—	—	—	—	—	
TAU	Antistatic polyurethane	●	—	●	—	—	—	—	—	—	

Specifications

Fluid	Air, Water, Steam*2 *3
Operating pressure range*1	–100 kPa to 1 MPa*4
Proof pressure	3.0 MPa
Ambient and fluid temperatures	–65 to 260°C (No freezing)*4 [Swivel elbow and with sealant types: –5 to 150°C]
Lubricant	Grease-free specification
Seal on the threads	Without sealant (With sealant type compatible)*5

*1 Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

*2 Please consult with SMC regarding applicable tubing separately.

*3 Using special FKM that is resistant even when steam is used.

*4 Check the operating pressure range and operating temperature range of the tubing.

*5 With sealant: Suffix "S" to the end of part number.

* Union nut is shipped together.

Superior tube mounting

Union nut

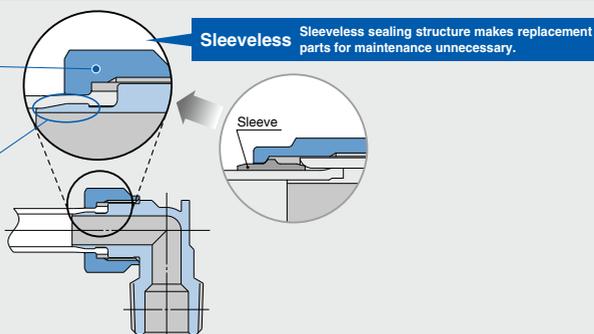
Light tightening torque
Comparison with current model

Approx. **60% down**

* Comparison with KFG□0806

Barb

Sealing performance and holding of tube
are secured by backup from the barb.



Male connector

KFG2H

Applicable tubing size [mm]		Connection thread R	Model
O.D.	I.D.		
ø4	ø2.5	1/8	KFG2H0425-01
		1/4	KFG2H0425-02
ø4	ø3	1/8	KFG2H0403-01
		1/4	KFG2H0403-02
ø6	ø4	1/8	KFG2H0604-01
		1/4	KFG2H0604-02
ø8	ø6	1/8	KFG2H0806-01
		1/4	KFG2H0806-02
		3/8	KFG2H0806-03
ø10	ø7.5	1/4	KFG2H1075-02
		3/8	KFG2H1075-03
		1/2	KFG2H1075-04
ø10	ø8	1/4	KFG2H1008-02
		3/8	KFG2H1008-03
		1/2	KFG2H1008-04
ø12	ø9	1/4	KFG2H1209-02
		3/8	KFG2H1209-03
		1/2	KFG2H1209-04
ø12	ø10	1/4	KFG2H1210-02
		3/8	KFG2H1210-03
		1/2	KFG2H1210-04
ø16	ø13	3/8	KFG2H1613-03
		1/2	KFG2H1613-04



Male branch tee

KFG2T

Applicable tubing size [mm]		Connection thread R	Model
O.D.	I.D.		
ø4	ø2.5	1/8	KFG2T0425-01
		1/4	KFG2T0425-02
ø4	ø3	1/8	KFG2T0403-01
		1/4	KFG2T0403-02
ø6	ø4	1/8	KFG2T0604-01
		1/4	KFG2T0604-02
ø8	ø6	1/8	KFG2T0806-01
		1/4	KFG2T0806-02
		3/8	KFG2T0806-03
ø10	ø7.5	1/4	KFG2T1075-02
		3/8	KFG2T1075-03
		1/2	KFG2T1075-04
ø10	ø8	1/4	KFG2T1008-02
		3/8	KFG2T1008-03
		1/2	KFG2T1008-04
ø12	ø9	1/4	KFG2T1209-02
		3/8	KFG2T1209-03
		1/2	KFG2T1209-04
ø12	ø10	1/4	KFG2T1210-02
		3/8	KFG2T1210-03
		1/2	KFG2T1210-04
ø16	ø13	3/8	KFG2T1613-03
		1/2	KFG2T1613-04



Male elbow

KFG2L

Applicable tubing size [mm]		Connection thread R	Model
O.D.	I.D.		
ø4	ø2.5	1/8	KFG2L0425-01
		1/4	KFG2L0425-02
ø4	ø3	1/8	KFG2L0403-01
		1/4	KFG2L0403-02
ø6	ø4	1/8	KFG2L0604-01
		1/4	KFG2L0604-02
ø8	ø6	1/8	KFG2L0806-01
		1/4	KFG2L0806-02
		3/8	KFG2L0806-03
ø10	ø7.5	1/4	KFG2L1075-02
		3/8	KFG2L1075-03
		1/2	KFG2L1075-04
ø10	ø8	1/4	KFG2L1008-02
		3/8	KFG2L1008-03
		1/2	KFG2L1008-04
ø12	ø9	1/4	KFG2L1209-02
		3/8	KFG2L1209-03
		1/2	KFG2L1209-04
ø12	ø10	1/4	KFG2L1210-02
		3/8	KFG2L1210-03
		1/2	KFG2L1210-04
ø16	ø13	3/8	KFG2L1613-03
		1/2	KFG2L1613-04



Straight union

KFG2H

Applicable tubing size [mm]		Model
O.D.	I.D.	
ø4	ø2.5	KFG2H0425-00
		KFG2H0403-00
ø6	ø4	KFG2H0604-00
		KFG2H0806-00
ø10	ø7.5	KFG2H1075-00
		KFG2H1008-00
ø12	ø9	KFG2H1209-00
		KFG2H1210-00
ø16	ø13	KFG2H1613-00



Union tee

KFG2T

Applicable tubing size [mm]		Model
O.D.	I.D.	
ø4	ø2.5	KFG2T0425-00
		KFG2T0403-00
ø6	ø4	KFG2T0604-00
		KFG2T0806-00
ø10	ø7.5	KFG2T1075-00
		KFG2T1008-00
ø12	ø9	KFG2T1209-00
		KFG2T1210-00
ø16	ø13	KFG2T1613-00



Bulkhead union

KFG2E



Applicable tubing size [mm]		Model
O.D.	I.D.	
ø4	ø2.5	KFG2E0425-00
ø4	ø3	KFG2E0403-00
ø6	ø4	KFG2E0604-00
ø8	ø6	KFG2E0806-00
ø10	ø7.5	KFG2E1075-00
ø10	ø8	KFG2E1008-00
ø12	ø9	KFG2E1209-00
ø12	ø10	KFG2E1210-00
ø16	ø13	KFG2E1613-00

Female connector

KFG2F



Applicable tubing size [mm]		Connection thread R	Model
O.D.	I.D.		
ø4	ø2.5	1/4	KFG2F0425-02
ø4	ø3	1/4	KFG2F0403-02
ø6	ø4	1/4	KFG2F0604-02
ø8	ø6	3/8	KFG2F0806-03
ø10	ø7.5	3/8	KFG2F1075-03
ø10	ø8	3/8	KFG2F1008-03
ø12	ø9	3/8	KFG2F1209-03
ø12	ø10	3/8	KFG2F1210-03
ø16	ø13	1/2	KFG2F1613-04

Union elbow

KFG2L



Applicable tubing size [mm]		Model
O.D.	I.D.	
ø4	ø2.5	KFG2L0425-00
ø4	ø3	KFG2L0403-00
ø6	ø4	KFG2L0604-00
ø8	ø6	KFG2L0806-00
ø10	ø7.5	KFG2L1075-00
ø10	ø8	KFG2L1008-00
ø12	ø9	KFG2L1209-00
ø12	ø10	KFG2L1210-00
ø16	ø13	KFG2L1613-00

Union nut

KFG2N



Applicable tubing O.D. [mm]	Model
ø4	KFG2N-04
ø6	KFG2N-06
ø8	KFG2N-08
ø10	KFG2N-10
ø12	KFG2N-12
ø16	KFG2N-16

Swivel elbow

KFG2V



Applicable tubing size [mm]		Connection thread R	Model
O.D.	I.D.		
ø4	ø2.5	1/8	KFG2V0425-01
		1/4	KFG2V0425-02
ø4	ø3	1/8	KFG2V0403-01
		1/4	KFG2V0403-02
ø6	ø4	1/8	KFG2V0604-01
		1/4	KFG2V0604-02
ø8	ø6	1/8	KFG2V0806-01
		1/4	KFG2V0806-02
		3/8	KFG2V0806-03
ø10	ø7.5	1/4	KFG2V1075-02
		3/8	KFG2V1075-03
		1/2	KFG2V1075-04
ø10	ø8	1/4	KFG2V1008-02
		3/8	KFG2V1008-03
		1/2	KFG2V1008-04
ø12	ø9	1/4	KFG2V1209-02
		3/8	KFG2V1209-03
		1/2	KFG2V1209-04
ø12	ø10	1/4	KFG2V1210-02
		3/8	KFG2V1210-03
		1/2	KFG2V1210-04
ø16	ø13	3/8	KFG2V1613-03
		1/2	KFG2V1613-04

Spare Parts

Description	Tubing O.D.	Part no.	Material
Bulkhead nut	ø4	KFG204-P01	Stainless steel 316
	ø6	KFG206-P01	
	ø8	KFG208-P01	
	ø10	KFG210-P01	
	ø12	KFG212-P01	
	ø16	KFG216-P01	

Miniature Fittings/Stainless Steel 316

MS Series

Applicable tubing O.D.: Metric Size

Connection thread: M5, R1/8

Corrosion Resistant

For use in corrosive environments

Stainless steel 316

Compact piping space

Tube has a large retaining force. Hose nipple assures easy installation and removal.

Line up various types

Possible for special tubing in the same direction. Accepts many types of plastic tubing.

Hose nipple and hose elbow

Accepts nylon, soft nylon, and polyurethane tubing.



Specifications

Applicable tubing material	Nylon	Soft nylon	Polyurethane	Super PFA*1	FEP*2	Modified PTFE*3
Applicable tubing O.D./I.D.	ø4/ø2.5 ø6/ø4	ø3.18/ø2.18	ø4/ø2.5 ø6/ø4	ø3.18/ø2 ø4/ø2.5 ø6/ø4	ø6/ø4	ø4/ø2.5 ø6/ø4
Fluid	Air, Water*4					
Max. operating pressure (at 20°C)	1.5 MPa	1 MPa	0.8 MPa	1 MPa	1.5 MPa	1.4 MPa
Ambient and fluid temperatures	-5 to 60°C, Water: 0 to 40°C (No freezing)					
Port size	M5					
Thread	JIS B0205 (Metric coarse thread)			JIS B0205 (Metric coarse thread)		

*1, *2, *3 Applicable only for hose nipple type.

*4 Barb fitting, barb elbow and barb tee are not compatible with water.

Hose nipple

Barb

Configuration for easy insertion into the tube
Holds the tube tightly.

Body

Stainless steel 316

Gasket

Low tightening torque
Tight seal

Tube

Possible for combination use of nylon tubing and polyurethane tubing.

Cap nut

Certainly hold the tube by manual clamping
Easy removal of tube by loosening
Stainless steel 316

Barb fitting

Barb

Configuration for easy insertion into the tube
Holds the tube tightly.

Body

Stainless steel 316

Tube

Gasket

Low tightening torque
Tight seal

Applicable tubing O.D.: $\varnothing 3.18, \varnothing 4, \varnothing 6$

Port size: M5

Description	Note	Model	Application	
Barb fitting for soft tube 	$\varnothing 3.18/\varnothing 2.18$ x M5	MS-5AU-3	For soft nylon tubing	
	$\varnothing 3.18/\varnothing 2$ x M5		For polyurethane tubing	
	$\varnothing 4/\varnothing 2.5$ x M5	MS-5AU-4	For soft nylon and polyurethane tubing	
$\varnothing 6/\varnothing 4$ x M5	MS-5AU-6			
Barb elbow for soft tube 	$\varnothing 3.18/\varnothing 2.18$ x M5	MS-5ALHU-3	Body rotates at 360° around the stud axis	For soft nylon tubing
	$\varnothing 3.18/\varnothing 2$ x M5			For polyurethane tubing
	$\varnothing 4/\varnothing 2.5$ x M5	MS-5ALHU-4	For soft nylon and polyurethane tubing	
	$\varnothing 6/\varnothing 4$ x M5	MS-5ALHU-6		
Hose nipple 	$\varnothing 4/\varnothing 2.5$ x M5	MS-5H-4	For nylon, soft nylon, and polyurethane tubing	
	$\varnothing 6/\varnothing 4$ x M5	MS-5H-6		
Hose elbow 	$\varnothing 4/\varnothing 2.5$ x M5	MS-5HLH-4	<ul style="list-style-type: none"> For nylon, soft nylon, and polyurethane tubing Body rotates at 360° around the stud axis 	
	$\varnothing 6/\varnothing 4$ x M5	MS-5HLH-6		

Description	Note	Model	Application	
Universal elbow 	M5 female x M5 male	MS-5UL	Body rotates at 360° around the stud axis	
Universal tee 	M5 female x M5 female x M5 male	MS-5UT	Body rotates at 360° around the stud axis	
Bushing 	R1/8 x M5 female	MS-5B	For reducing Rc1/8 female to M5.	
Plug 		MS-5P	Use to plug unused M5 port.	
Extension fitting 	M5 male x M5 female	MS-5J	Solid piece moves fitting up from workpiece	
Nipple 	M5 male x M5 male	MS-5N	Fitting to workpiece and fitting to fitting connection	
Universal nipple 	M5 male x M5 male	MS-5UN	Body rotates at 360° around the stud axis	
Barb tee for soft tube 	$\varnothing 3.18/\varnothing 2.18$ x M5	MS-5ATHU-3	Body rotates at 360° around the stud axis	For soft nylon tubing
	$\varnothing 3.18/\varnothing 2$ x M5			For polyurethane tubing
	$\varnothing 4/\varnothing 2.5$ x M5	MS-5ATHU-4	For soft nylon and polyurethane tubing	
	$\varnothing 6/\varnothing 4$ x M5	MS-5ATHU-6		



Made to Order

1 Gasket Material Modification

Symbol	Specifications	
X83	Gasket material: Stainless steel 304, NBR	
	Applicable thread	Gasket part no.
	M5	M-5G2
X112	Gasket material: Stainless steel 316, Special FKM	
	Applicable thread	Gasket part no.
	M5	M-5G3

Suffix "-X83" to the end of part number.
Example) **MS-5AU-4-X83**

2 Clean Series

Symbol	Specifications
10-	Lubricant: Fluorine grease (Only MS-5UN) Double packaging

Example) **10-MS-5AN-4**

Spare Parts

Description	Part no.	Applicable thread	Material	Applicable model
Gasket	M-5G1	M5	PVC	—
	M-5G2		Stainless steel 304, NBR	—
	M-5G3		Stainless steel 316, Special FKM	—
	M-5GH		Nylon 66, GF30%	MS-5ALHU-6 MS-5HLH-4 MS-5HLH-6 MS-5ATHU-6
	MS-5-4-P01	—	Stainless steel 316	MS-5H-4 MS-5HL-4 MS-5HLH-4
Cap nut	MS-5-6-P01	—	Stainless steel 316	MS-5H-6 MS-5HL-6 MS-5HLH-6

- Oval Type
- KQ2
- Round Type
- KQ2
- KQB2
- KS/KX
- KM
- KF
- M
- H/DL
- L/LL
- KC
- KK
- KKH
- KK 130
- DM
- DMK
- KDM
- KB
- KR -W2
- KRM
- KA
- KQG2
- KQ2-G
- KG
- KFG2
- MS**
- KKA
- KP
- KPQ/KPG
- LQ1
- LQ3
- LQHB

S Couplers/Stainless Steel Type

KKK Series

Connection type: R, Rc

Corrosion Resistant

Heat Resistant

Material/

Metal parts: **Stainless steel 304**

Seal parts: **Special FKM**

Port sizes of 1/8 to 1 1/2 are standardized.



Both plug and socket have an integral check valve.

Available with and without check valves depending on the operating conditions.

Reduces liquid dripping when the plug and socket are uncoupled.

Body size	Liquid dripping cm ³ at each removal	Aeration cm ³ at each removal
KKK3	0.02	0.1
KKK4	0.04	0.1
KKK6	0.06	0.2
KKK7	0.14	0.5
KKK8	0.27	0.9
KKK9	0.77	2.7

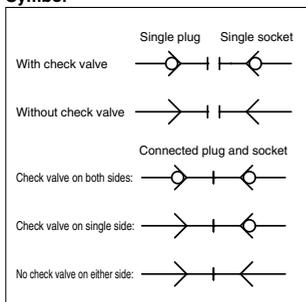
Liquid dripping:

Volume of water leakage at the time when the plug and socket are uncoupled.

Aeration:

Volume of external air entrained when the plug and socket are connected.

Symbol



Specifications

Fluid	Water, Air
Operating pressure range *1	KKK3: -100 kPa to 1 MPa KKK4/6/7/8/9: 0 to 1 MPa
Proof pressure	10 MPa
Ambient and fluid temperatures	-5 to 150°C (No freezing) * This product should not be used with steam.
Non-greased specification	No grease is used. (Rubber: Fluorine coated, Metal sliding parts: Plated with fluorine-contained material)
Material	Metal part: Stainless steel 304, Rubber material: Fluororubber (Special FKM)
Seal	With male thread sealant

*1 Do not use the S couplers with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

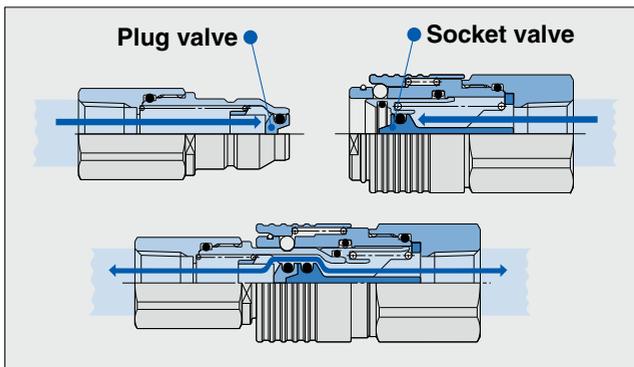
Performance

Plug and socket connection	One-touch connection and release
Check valve	Check valve on both sides, Without check valve

* The KKK series cannot be connected with the KK series or KKH series.

Effective Area

Built-in check valve	Plug	Socket	Effective area [mm ²]
Plug: With check valve Socket: With check valve	KKK3P-01F	KKK3S-01F	17.4
	KKK4P-02F	KKK4S-02F	26.4
	KKK6P-04F	KKK6S-04F	54.2
	KKK7P-06F	KKK7S-06F	99.6
	KKK8P-10F	KKK8S-10F	168.3
Plug: Without check valve Socket: With check valve	KKK9P-12F	KKK9S-12F	332.1
	KKK3P-01M-1	KKK3S-01M	18.5
	KKK4P-02M-1	KKK4S-02M	31.8
Plug: Without check valve Socket: Without check valve	KKK6P-04M-1	KKK6S-04M	55.3
	KKK3P-01M-1	KKK3S-01M-1	22.6
	KKK4P-02M-1	KKK4S-02M-1	40.2
	KKK6P-04M-1	KKK6S-04M-1	76.0



With check valve

Plug (P)

Male thread type



Body size	Port size	Model
1/8	R1/8	KKA3P-01M
	R1/4	-02M
	R3/8	-03M
1/4	R1/4	KKA4P-02M
	R3/8	-03M
	R1/2	-04M
1/2	R3/8	KKA6P-03M
	R1/2	-04M
	R3/4	-06M
3/4	R1/2	KKA7P-04M
	R3/4	-06M
	R1	-10M
1	R3/4	KKA8P-06M
	R1	-10M
	R1 1/4	-12M
1 1/4	R1	KKA9P-10M
	R1 1/4	-12M
	R1 1/2	-14M

Socket (S)

Male thread type



Body size	Port size	Model
1/8	R1/8	KKA3S-01M
	R1/4	-02M
	R3/8	-03M
1/4	R1/4	KKA4S-02M
	R3/8	-03M
	R1/2	-04M
1/2	R3/8	KKA6S-03M
	R1/2	-04M
	R3/4	-06M
3/4	R1/2	KKA7S-04M
	R3/4	-06M
	R1	-10M
1	R3/4	KKA8S-06M
	R1	-10M
	R1 1/4	-12M
1 1/4	R1	KKA9S-10M
	R1 1/4	-12M
	R1 1/2	-14M

Female thread type



Body size	Port size	Model
1/8	Rc1/8	KKA3P-01F
	Rc1/4	-02F
	Rc3/8	-03F
1/4	Rc1/4	KKA4P-02F
	Rc3/8	-03F
	Rc1/2	-04F
1/2	Rc3/8	KKA6P-03F
	Rc1/2	-04F
	Rc3/4	-06F
3/4	Rc1/2	KKA7P-04F
	Rc3/4	-06F
	Rc1	-10F
1	Rc3/4	KKA8P-06F
	Rc1	-10F
	Rc1 1/4	-12F
1 1/4	Rc1	KKA9P-10F
	Rc1 1/4	-12F
	Rc1 1/2	-14F

Female thread type



Body size	Port size	Model
1/8	Rc1/8	KKA3S-01F
	Rc1/4	-02F
	Rc3/8	-03F
1/4	Rc1/4	KKA4S-02F
	Rc3/8	-03F
	Rc1/2	-04F
1/2	Rc3/8	KKA6S-03F
	Rc1/2	-04F
	Rc3/4	-06F
3/4	Rc1/2	KKA7S-04F
	Rc3/4	-06F
	Rc1	-10F
1	Rc3/4	KKA8S-06F
	Rc1	-10F
	Rc1 1/4	-12F
1 1/4	Rc1	KKA9S-10F
	Rc1 1/4	-12F
	Rc1 1/2	-14F

Oval
Type

KQ2

Round
Type

KQ2

KQB2

KS/
KX

KM

KF

M

H/DL
L/L

KC

KK

KKH

KK
130

DM

DMK

KDM

KB

KR
-W2

KRM

KA

KQ2

KQ2-G

KG

KFG2

MS

KKA

KP

KPO/
KPG

LQ1

LQ3

LQHB

Without check valve

Plug (P)

Male thread type



Body size	Port size	Model
1/8	R1/8	KKA3P-01M-1
	R1/4	-02M-1
	R3/8	-03M-1
1/4	R1/4	KKA4P-02M-1
	R3/8	-03M-1
	R1/2	-04M-1
1/2	R3/8	KKA6P-03M-1
	R1/2	-04M-1
	R3/4	-06M-1

Socket (S)

Male thread type



Body size	Port size	Model
1/8	R1/8	KKA3S-01M-1
	R1/4	-02M-1
	R3/8	-03M-1
1/4	R1/4	KKA4S-02M-1
	R3/8	-03M-1
	R1/2	-04M-1
1/2	R3/8	KKA6S-03M-1
	R1/2	-04M-1
	R3/4	-06M-1

Female thread type



Body size	Port size	Model
1/8	Rc1/8	KKA3P-01F-1
	Rc1/4	-02F-1
	Rc3/8	-03F-1
1/4	Rc1/4	KKA4P-02F-1
	Rc3/8	-03F-1
	Rc1/2	-04F-1
1/2	Rc3/8	KKA6P-03F-1
	Rc1/2	-04F-1
	Rc3/4	-06F-1

Female thread type



Body size	Port size	Model
1/8	Rc1/8	KKA3S-01F-1
	Rc1/4	-02F-1
	Rc3/8	-03F-1
1/4	Rc1/4	KKA4S-02F-1
	Rc3/8	-03F-1
	Rc1/2	-04F-1
1/2	Rc3/8	KKA6S-03F-1
	Rc1/2	-04F-1
	Rc3/4	-06F-1

Clean One-touch Fittings (for blowing)

KP Series

Applicable tubing O.D.: **Metric Size**

Connection thread: **R**

Clean

Completely oil free (Rubber parts are fluorine-coated.)
Liquid-contact areas are non-metallic.
Parts cleaning, assembly, and double packaging in a clean room
Can be used for vacuum (-100 kPa).



Recommended Applicable Tubing

Tubing material	PFA, Polyolefin, Soft polyolefin, Polyurethane
Tubing O.D.	ø4, ø6, ø8, ø10, ø12

- * FEP, nylon and soft nylon tubing, and tubing not compatible with the clean series can also be used. However, the degree of clean performance will be reduced.
- * Due to the softness of polyurethane tubing, it may fold when being inserted. Hold the end of the tubing and insert it all the way in.

Specifications

Cleanliness class (ISO)	Class 3*1
Fluid	Air, Nitrogen gas, Water (pure water)*2
Maximum operating pressure (20°C)	1 MPa*3
Operating vacuum pressure	-100 kPa {10 Torr}
Proof pressure (20°C)	3 MPa
Ambient and fluid temperatures	-20 to 80°C
Thread	JIS B0203 (Taper thread for piping)

- *1 Refer to particle generation classifications.
- *2 The surge pressure must be under the maximum operating pressure.
- *3 The maximum operating pressure is the value at 20°C. Refer to the operating pressure curve for other temperatures.
- * Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

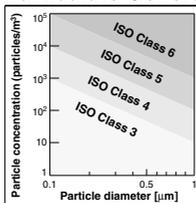
Caution

The KP series is a line of special One-touch fittings for use in clean room blowing and washing lines.

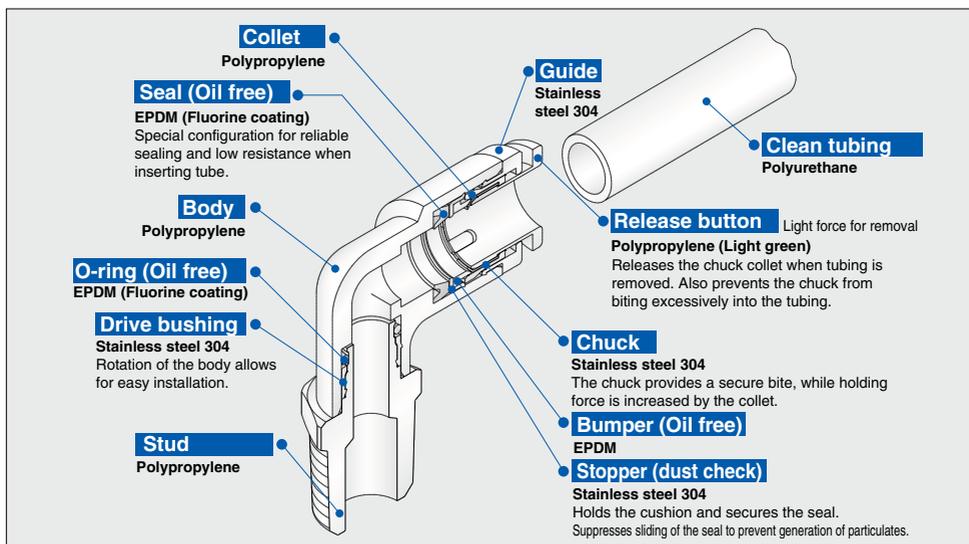
Please consult with SMC regarding other types of applications.

Seal material: The durability of EPDM with respect to mineral oils is inferior, which makes it unsuitable for piping in general pneumatic equipment.

Particulate Generation Classification



* For details, refer to the Web Catalog.



Male connector

KPH

Use to pipe a female thread in the same direction.
Most general model.



Applicable tubing O.D. [mm]	Connection thread	Model
4	R1/8	KPH04-01
	R1/4	-02
6	R1/8	KPH06-01
	R1/4	-02
8	R1/8	KPH08-01
	R1/4	-02
10	R1/4	KPH10-02
	R3/8	-03
12	R3/8	KPH12-03
	R1/2	-04

Male run tee

KPY

Use to branch a female thread in the same direction and at a 90° angle.



Applicable tubing O.D. [mm]	Connection thread	Model
4	R1/8	KPY04-01
	R1/4	-02
6	R1/8	KPY06-01
	R1/4	-02
8	R1/8	KPY08-01
	R1/4	-02
10	R1/4	KPY10-02
	R3/8	-03
12	R3/8	KPY12-03
	R1/2	-04

Male elbow

KPL

Use to pipe a female thread at right angles.
Most general model.



Applicable tubing O.D. [mm]	Connection thread	Model
4	R1/8	KPL04-01
	R1/4	-02
6	R1/8	KPL06-01
	R1/4	-02
8	R1/8	KPL08-01
	R1/4	-02
10	R1/4	KPL10-02
	R3/8	-03
12	R3/8	KPL12-03
	R1/2	-04

Branch

KPU

Use to branch a female thread in the same direction.



Applicable tubing O.D. [mm]	Connection thread	Model
4	R1/8	KPU04-01
	R1/4	-02
6	R1/8	KPU06-01
	R1/4	-02
8	R1/8	KPU08-01
	R1/4	-02
10	R1/4	KPU10-02
	R3/8	-03
12	R3/8	KPU12-03
	R1/2	-04

Male branch tee

KPT

Use to branch a female thread at both 90° angles.



Applicable tubing O.D. [mm]	Connection thread	Model
4	R1/8	KPT04-01
	R1/4	-02
6	R1/8	KPT06-01
	R1/4	-02
8	R1/8	KPT08-01
	R1/4	-02
10	R1/4	KPT10-02
	R3/8	-03
12	R3/8	KPT12-03
	R1/2	-04

Straight union

KPH

Use to connect tubing in the same direction.



Applicable tubing O.D. [mm]	Model
4	KPH04-00
6	KPH06-00
8	KPH08-00
10	KPH10-00
12	KPH12-00

Union elbow **KPL**

Use to connect tubing at right angles.

	Applicable tubing O.D. [mm]	Model
	4	KPL04-00
6	KPL06-00	
8	KPL08-00	
10	KPL10-00	
12	KPL12-00	

Union tee **KPT**

Use to branch tubing at both 90° angles.

	Applicable tubing O.D. [mm]	Model
	4	KPT04-00
6	KPT06-00	
8	KPT08-00	
10	KPT10-00	
12	KPT12-00	

Union "Y" **KPU**

Use to branch tubing in the same direction.

	Applicable tubing O.D. [mm]	Model
	4	KPU04-00
6	KPU06-00	
8	KPU08-00	
10	KPU10-00	
12	KPU12-00	

Plug-in reducer **KPR**

Use to change size of One-touch fittings.

	Applicable tubing O.D. [mm]	Applicable fitting size	Model
	4	6	8
10			KPR04-06-10
6	8	10	KPR06-08-10
		12	KPR06-08-12
8	10	12	KPR08-10-12
		12	KPR08-10-12

Plug **KPP**

Use to plug unused One-touch fittings.

	Applicable fitting size	Model
	4	KPP-04
6	KPP-06	
8	KPP-08	
10	KPP-10	
12	KPP-12	



Made to Order

1 With Sealant Tape

Symbol	Specifications
X53	With sealant tape

Suffix "-X53" to the end of part number.
Example) **KPH04-01-X53**

Oval Type

KQ2

Round Type

KQ2

KQB2

KS/KX

KM

KF

M

H/DL/LLL

KC

KK

KKH

KK 130

DM

DMK

KDM

KB

KR-W2

KRM

KA

KQ2

KQ2-G

KG

KFG2

MS

KKA

KP

KPO/KPG

LQ1

LQ3

LQHB

Clean One-touch Fittings (for drive system air piping)

KPQ/KPG Series

Applicable tubing O.D.: **Metric Size**

Connection thread: **R**

Clean

Resin parts are P.P.
(Polypropylene)



KPQ series



KPG series

Recommended Applicable Tubing

Tubing material	PFA, Polyurethane
Tubing O.D.	ø4, ø6, ø8, ø10, ø12

FEP, nylon and soft nylon tubing, and tubing not compatible with the clean series can also be used. However, the degree of clean performance will be reduced.

Specifications

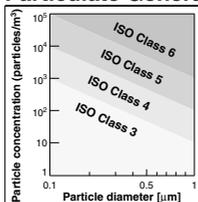
Cleanliness class (ISO)	Class 3*1
Fluid	Air
Maximum operating pressure (20°C)	1 MPa*2
Operating vacuum pressure	-100 kPa
Proof pressure (20°C)	3 MPa
Ambient and fluid temperatures	-5°C to 60°C
Thread	JIS B020 3 (Taper thread for piping)
Lubricant	Fluorine-based grease

*1 Refer to particle generation classifications. This falls outside of the grade because fluorine grease is applied to the internal seal materials.

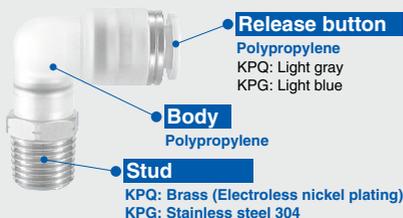
*2 The maximum operating pressure is the value at 20°C. Refer to the operating pressure curve for other temperatures.

* Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

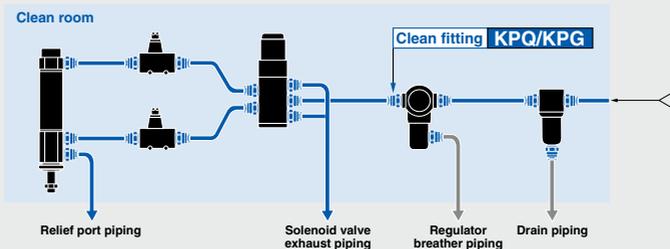
Particulate Generation Classification



* For details, refer to the [Web Catalog](#).



Drive air piping system



Male connector **KPQH/KPGH**

Use to pipe a female thread in the same direction.
Most general model.

	Applicable tubing O.D. [mm]	Connection thread	Model	
			KPQH	KPGH
 <M5>	4	M5 x 0.8	KPQH04-M5	KPGH04-M5
		R1/8	-01	-01
		R1/4	-02	-02
 <R>	6	M5 x 0.8	KPQH06-M5	KPGH06-M5
		R1/8	-01	-01
		R1/4	-02	-02
 <R>	8	R1/8	KPQH08-01	KPGH08-01
		R1/4	-02	-02
		R1/4	-02	-02
 <R>	10	R1/4	KPQH10-02	KPGH10-02
		R3/8	-03	-03
		R3/8	KPQH12-03	KPGH12-03
 <R>	12	R3/8	KPQH12-03	KPGH12-03
		R1/2	-04	-04

Male run tee **KPQY/KPGY**

Use to branch a female thread in the same direction and at a 90° angle.

	Applicable tubing O.D. [mm]	Connection thread	Model	
			KPQY	KPGY
 <M5>	4	M5 x 0.8	KPQY04-M5	KPGY04-M5
		R1/8	-01	-01
		R1/4	-02	-02
 <R>	6	M5 x 0.8	KPQY06-M5	KPGY06-M5
		R1/8	-01	-01
		R1/4	-02	-02
 <R>	8	R1/8	KPQY08-01	KPGY08-01
		R1/4	-02	-02
		R1/4	-02	-02
 <R>	10	R1/4	KPQY10-02	KPGY10-02
		R3/8	-03	-03
		R3/8	KPQY12-03	KPGY12-03
 <R>	12	R3/8	KPQY12-03	KPGY12-03
		R1/2	-04	-04

Male elbow **KPQL/KPGL**

Use to pipe a female thread at right angles.
Most general model.

	Applicable tubing O.D. [mm]	Connection thread	Model	
			KPQL	KPGL
 <M5>	4	M5 x 0.8	KPQL04-M5	KPGL04-M5
		R1/8	-01	-01
		R1/4	-02	-02
 <R>	6	M5 x 0.8	KPQL06-M5	KPGL06-M5
		R1/8	-01	-01
		R1/4	-02	-02
 <R>	8	R1/8	KPQL08-01	KPGL08-01
		R1/4	02	-02
		R1/4	-02	-02
 <R>	10	R1/4	KPQL10-02	KPGL10-02
		R3/8	-03	-03
		R3/8	KPQL12-03	KPGL12-03
 <R>	12	R3/8	KPQL12-03	KPGL12-03
		R1/2	-04	-04

Branch **KPQU/KPGU**

Use to branch a female thread in the same direction.

	Applicable tubing O.D. [mm]	Connection thread	Model	
			KPQU	KPGU
 <M5>	4	M5 x 0.8	KPQU04-M5	KPGU04-M5
		R1/8	-01	-01
		R1/4	-02	-02
 <R>	6	M5 x 0.8	KPQU06-M5	KPGU06-M5
		R1/8	-01	-01
		R1/4	-02	-02
 <R>	8	R1/8	KPQU08-01	KPGU08-01
		R1/4	-02	-02
		R1/4	-02	-02
 <R>	10	R1/4	KPQU10-02	KPGU10-02
		R3/8	-03	-03
		R3/8	KPQU12-03	KPGU12-03
 <R>	12	R3/8	KPQU12-03	KPGU12-03
		R1/2	-04	-04

Male branch tee **KPQL/KPGL**

Use to branch a female thread at both 90° angles.

	Applicable tubing O.D. [mm]	Connection thread	Model	
			KPQT	KPGT
 <M5>	4	M5 x 0.8	KPQT04-M5	KPGT04-M5
		R1/8	-01	-01
		R1/4	-02	-02
 <R>	6	M5 x 0.8	KPQT06-M5	KPGT06-M5
		R1/8	-01	-01
		R1/4	-02	-02
 <R>	8	R1/8	KPQT08-01	KPGT08-01
		R1/4	-02	-02
		R1/4	-02	-02
<R>	10	R1/4	KPQT10-02	KPGT10-02
		R3/8	-03	-03
		R3/8	KPQT12-03	KPGT12-03
<R>	12	R3/8	KPQT12-03	KPGT12-03
		R1/2	-04	-04

Straight union **KPQH/KPGH**

Use to connect tubing in the same direction.

	Applicable tubing O.D. [mm]	Model	
		KPQH	KPGH
 <R>	4	KPQH04-00	KPGH04-00
	6	KPQH06-00	KPGH06-00
 <R>	8	KPQH08-00	KPGH08-00
	10	KPQH10-00	KPGH10-00
 <R>	12	KPQH12-00	KPGH12-00

Oval Type

KQ2

Round Type

KQ2

KQ2

KQB2

KS/KX

KM

KF

M

H/DL

L/LL

KC

KK

KKH

KK 130

DM

DMK

KDM

KB

KR-W2

KRM

KA

KQ2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/KPG

LQ1

LQ3

LQHB

Union elbow **KPQL/KPGL**

Use to connect tubing at right angles.

Applicable tubing O.D. [mm]	Model	
	KPQL	KPGL
4	KPQL04-00	KPGL04-00
6	KPQL06-00	KPGL06-00
8	KPQL08-00	KPGL08-00
10	KPQL10-00	KPGL10-00
12	KPQL12-00	KPGL12-00

Union tee **KPQT/KPGT**

Use to branch tubing at both 90° angles.

Applicable tubing O.D. [mm]	Model	
	KPQT	KPGT
4	KPQT04-00	KPGT04-00
6	KPQT06-00	KPGT06-00
8	KPQT08-00	KPGT08-00
10	KPQT10-00	KPGT10-00
12	KPQT12-00	KPGT12-00

Union "Y" **KPQU/KPGU**

Use to branch tubing in the same direction.

Applicable tubing O.D. [mm]	Model	
	KPQU	KPGU
4	KPQU04-00	KPGU04-00
6	KPQU06-00	KPGU06-00
8	KPQU08-00	KPGU08-00
10	KPQU10-00	KPGU10-00
12	KPQU12-00	KPGU12-00

Plug-in reducer **KPQR/KPGR**

Use to change size of One-touch fittings.

Applicable tubing O.D.	Applicable fitting size	Model	
		KPQR	KPGR
4	6	KPQR04-06	KPGR04-06
	8	-08	-08
6	8	KPQR06-08	KPGR06-08
	10	-10	-10
8	10	KPQR08-10	KPGR08-10
	12	-12	-12
10	12	KPQR10-12	KPGR10-12

Plug **KPP**

Use to plug unused One-touch fittings.

Applicable fitting size	Model
4	KPP-04
6	KPP-06
8	KPP-08
10	KPP-10
12	KPP-12



Made to Order

1 With Sealant Tape

Symbol	Specifications
X53 *1	With sealant tape

*1 The following model is not available as made to order: Connection thread M5.

2 Grease-free Specifications

Symbol	Specifications
X193 *1	Grease-free Rubber material: EPDM (Fluorine coating) Gasket: M-5G3 (Stainless steel 316, Special FKM)*2 With release bushing, Guide color: Natural

*1 KPG series: Compatible with products with threads only *2 M5 thread

Quadruple sealing construction

The quadruple sealing construction (PAT.) based on SMC's original idea results in highly reliable sealing characteristics with outstanding leakage prevention effect.

Locking

- Locking mechanism utilizes sealing lock by the nut.
- Trapezoidal thread allows application of high torque.
- 2 stage pressing by the tubing holder of the nut ensures secure tube holding.

Flow-through characteristics

Excellent flow-through characteristics are achieved by minimizing liquid deposit.

Strong resistance to tube bending and deformation.

Able to withstand lateral loads with the tubing support.

Tubing sizes are interchangeable.

- The reducer method allows tubing size changes without replacing the body.
- Helps standardize fitting items resulting in less stock requirements.

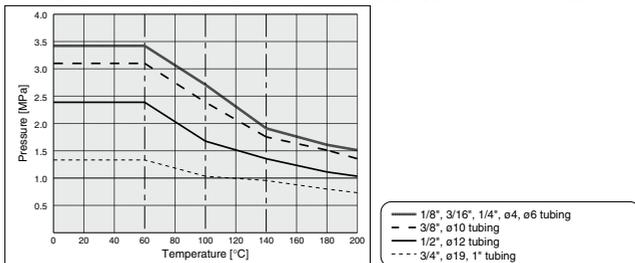
Easy tightening of nuts.

- No positioning guide is required, simply tighten up the tubing to the end of the fitting body.
- The trapezoidal thread prevents oblique nut insertion.

Specifications

Feature	Model	Heat Resistant		Corrosion Resistant		Clean	
		LQ1□10	LQ1□20	LQ1□30	LQ1□40	LQ1□50	LQ1□60
Material		NEW PFA					
Max. operating pressure (at 20°C)		1 MPa					
Proof pressure		Refer to the withstand pressure and heat resistance performance data.					
Operating temperature		0 to 200°C					

Withstand Pressure and Heat Resistance Performance



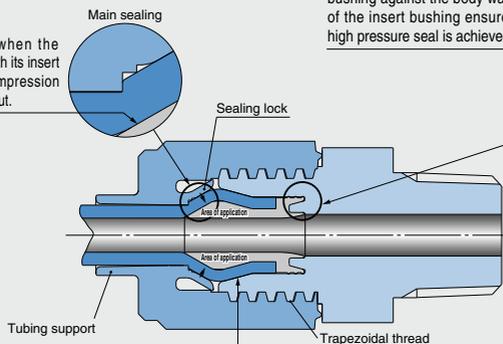
For details about precautions and specifications, refer to the [Web Catalog](#).

Basic type

2 stage pressing construction ensures sealing and tubing locking to absorb differences in the tube outside diameter.

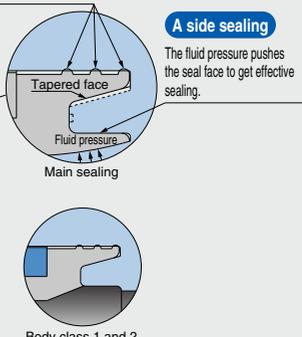
D side sealing

A seal is formed when the tubing is inserted, with its insert bushing, and its compression against the internal nut.



B side sealing

By tapering the face of the body, perfect sealing is achieved by the pressure of the bushing against the body wall (the protrusion of the insert bushing ensures that a secure high pressure seal is achieved).



A side sealing

The fluid pressure pushes the seal face to get effective sealing.

C side sealing

Sealed by the pressure exerted on the tubing by the internal nut.

Threaded connection

Connector

LQ1H



Male

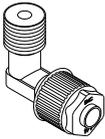


Female

p. 181

Elbow

LQ1L



Male



Female

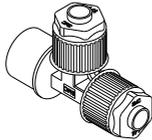
p. 182

Run tee

LQ1R



Male

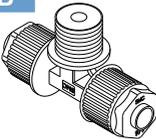


Female

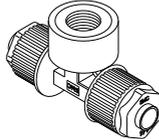
p. 183

Branch tee

LQ1B



Male



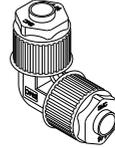
Female

p. 184

Tubing connection

Union elbow

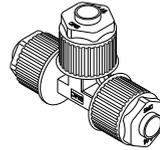
LQ1E



p. 185

Union tee

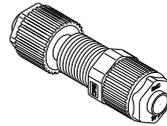
LQ1T



p. 185

Panel mount union

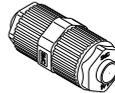
LQ1P



p. 186

Union

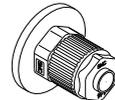
LQ1U



p. 186

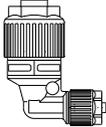
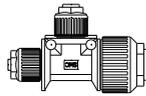
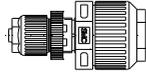
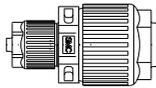
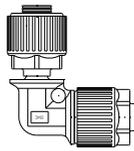
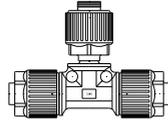
Union flange

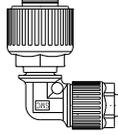
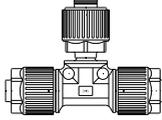
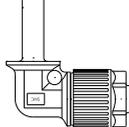
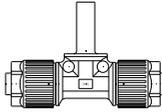
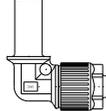
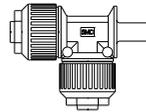
LQ1F



p. 187

Tubing connection

<p>Union elbow reducing</p> <p>LQ1E-R</p>  <p>p. 187</p>
<p>Union tee reducing</p> <p>LQ1T-R</p>  <p>p. 188</p>
<p>Panel mount union reducing</p> <p>LQ1P-R</p>  <p>p. 189</p>
<p>Union reducing</p> <p>LQ1U-R</p>  <p>p. 189</p>
<p>Space saving union elbow</p> <p>LQ1E-SS</p>  <p>p. 189</p>
<p>Space saving union tee</p> <p>LQ1T-ST</p>  <p>p. 190</p>

<p>Space saving union elbow reducing</p> <p>LQ1E-SS-R</p>  <p>p. 189</p>
<p>Space saving union tee reducing</p> <p>LQ1T-S-R</p>  <p>p. 190</p>
<p>Tubing extension union elbow</p> <p>LQ1E-T</p>  <p>p. 191</p>
<p>Tubing extension union tee</p> <p>LQ1T-TT</p>  <p>p. 191</p>
<p>Tubing extension union elbow reducing</p> <p>LQ1E-T-R</p>  <p>p. 192</p>
<p>Tubing extension union tee reducing</p> <p>LQ1T-T-R</p>  <p>p. 192</p>

Oval Type
KQ2
Round Type
KQ2
KQB2
KS/KX
KM
KF
M
H/LL
L/LL
KC
KK
KKH
KK 130
DM
DMK
KDM
KB
KR -W2
KRM
KA
KQG2
KQ2-G
KG
KFG2
MS
KKA
KP
KPQ/ KPG
LQ1
LQ3
LQHB

Fluoropolymer Fittings *LQ1 Series*

Male connector

LQ1H-M



Enter the thread type in □.

Nil	R, Rc
N	NPT

Metric size		
Applicable tubing O.D.	Connection thread R, NPT	Model
ø4		LQ1H11-M□
ø3	1/8"	LQ1H12-M□
ø6		LQ1H21-M□
ø4	1/8"	LQ1H22-M□
ø3		LQ1H2C-M□
ø6		LQ1H23-M□
ø4	1/4"	LQ1H24-M□
ø3		LQ1H2F-M□
ø10		LQ1H31-M□
ø8	1/4"	LQ1H32-M□
ø6		LQ1H33-M□
ø10		LQ1H34-M□
ø8		LQ1H35-M□
ø6		LQ1H36-M□
ø4	3/8"	LQ1H37-M□
ø3		LQ1H3E-M□
ø10		LQ1H39-M□
ø8	1/8"	LQ1H310-M□
ø12		LQ1H41-M□
ø10	3/8"	LQ1H42-M□
ø12		LQ1H43-M□
ø10		LQ1H44-M□
ø8	1/2"	LQ1H45-M□
ø6		LQ1H46-M□
ø3		LQ1H4F-M□
ø12	1/4"	LQ1H49-M□
ø19		LQ1H51-M□
ø12	1/2"	LQ1H52-M□
ø19		LQ1H53-M□
ø12		LQ1H54-M□
ø10	3/4"	LQ1H55-M□
ø6		LQ1H57-M□
ø19	1/4"	LQ1H58-M□
ø19	3/8"	LQ1H59-M□
ø25		LQ1H61-M□
ø19	3/4"	LQ1H62-M□
ø25		LQ1H63-M□
ø19		LQ1H64-M□
ø12	1"	LQ1H65-M□
ø25		LQ1H66-M□
Inch size		
Applicable tubing O.D.	Connection thread R, NPT	Model
1/8"	1/8"	LQ1H1A-M□
1/4"		LQ1H2A-M□
3/16"	1/8"	LQ1H2B-M□
1/8"		LQ1H2C-M□
1/4"		LQ1H2D-M□
3/16"	1/4"	LQ1H2E-M□
1/8"		LQ1H2F-M□
3/8"		LQ1H3A-M□
1/4"	1/4"	LQ1H3B-M□
3/8"		LQ1H3C-M□
1/4"	3/8"	LQ1H3D-M□
1/8"		LQ1H3E-M□
3/8"	1/8"	LQ1H3F-M□
1/2"		LQ1H4A-M□
3/8"	3/8"	LQ1H4B-M□
1/2"		LQ1H4C-M□
3/8"	1/2"	LQ1H4D-M□
1/4"	3/8"	LQ1H4E-M□
1/8"		LQ1H4F-M□
1/2"	1/4"	LQ1H4G-M□
3/4"		LQ1H5A-M□
1/2"	1/2"	LQ1H5B-M□
3/4"		LQ1H5C-M□
1/2"	3/4"	LQ1H5D-M□
3/8"	3/4"	LQ1H5E-M□
1/4"		LQ1H5F-M□
3/4"	1/4"	LQ1H5G-M□
1"	3/8"	LQ1H5H-M□
3/4"		LQ1H6A-M□
1"	3/4"	LQ1H6B-M□
3/4"		LQ1H6C-M□
1/2"	1"	LQ1H6D-M□
1"		LQ1H6E-M□
1"	1/2"	LQ1H6F-M□

Female connector

LQ1H-F



Enter the thread type in □.

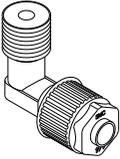
Nil	R, Rc
N	NPT

Metric size		
Applicable tubing O.D.	Connection thread Rc, NPT	Model
ø4		LQ1H11-F□
ø3	1/8"	LQ1H12-F□
ø6		LQ1H21-F□
ø4	1/8"	LQ1H22-F□
ø3		LQ1H2C-F□
ø6		LQ1H23-F□
ø4	1/4"	LQ1H24-F□
ø3		LQ1H2F-F□
ø10		LQ1H31-F□
ø8	1/4"	LQ1H32-F□
ø6		LQ1H33-F□
ø10		LQ1H34-F□
ø8		LQ1H35-F□
ø6		LQ1H36-F□
ø10	3/8"	LQ1H39-F□
ø8		LQ1H310-F□
ø12		LQ1H41-F□
ø10	3/8"	LQ1H42-F□
ø12		LQ1H43-F□
ø10		LQ1H44-F□
ø8	1/2"	LQ1H45-F□
ø6		LQ1H46-F□
ø12	1/4"	LQ1H49-F□
ø12	1/8"	LQ1H410-F□
ø19		LQ1H51-F□
ø12	1/2"	LQ1H52-F□
ø19		LQ1H53-F□
ø12	3/4"	LQ1H54-F□
ø19	1/4"	LQ1H58-F□
ø19	3/8"	LQ1H59-F□
ø25		LQ1H61-F□
ø19	3/4"	LQ1H62-F□
ø25		LQ1H63-F□
ø19	1"	LQ1H64-F□
Inch size		
Applicable tubing O.D.	Connection thread Rc, NPT	Model
1/8"	1/8"	LQ1H1A-F□
1/4"		LQ1H2A-F□
3/16"	1/8"	LQ1H2B-F□
1/8"		LQ1H2C-F□
1/4"		LQ1H2D-F□
3/16"	1/4"	LQ1H2E-F□
1/8"		LQ1H2F-F□
3/8"		LQ1H3A-F□
1/4"	1/4"	LQ1H3B-F□
3/8"		LQ1H3C-F□
1/4"	3/8"	LQ1H3D-F□
3/8"	1/8"	LQ1H3F-F□
1/2"		LQ1H4A-F□
3/8"	3/8"	LQ1H4B-F□
1/2"		LQ1H4C-F□
3/8"	1/2"	LQ1H4D-F□
1/4"	1/2"	LQ1H4E-F□
1/2"	1/4"	LQ1H4G-F□
1/2"	1/8"	LQ1H4H-F□
3/4"		LQ1H5A-F□
1/2"	1/2"	LQ1H5B-F□
3/4"		LQ1H5C-F□
1/2"	3/4"	LQ1H5D-F□
3/4"	1/4"	LQ1H5G-F□
3/4"	3/8"	LQ1H5H-F□
1"		LQ1H6A-F□
3/4"	3/4"	LQ1H6B-F□
1"		LQ1H6C-F□
3/4"	1"	LQ1H6D-F□

Fluoropolymer Fittings *LQ1 Series*

Male elbow

LQ1L-M



Enter the thread type in □.

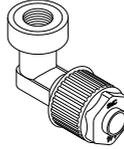
Nil	R, Rc
N	NPT

Metric size		
Applicable tubing O.D.	Connection thread R, NPT	Model
ø4	1/8"	LQ1L11-M□
ø3		LQ1L12-M□
ø6		LQ1L21-M□
ø4	1/8"	LQ1L22-M□
ø3		LQ1L2C-M□
ø6		LQ1L23-M□
ø4	1/4"	LQ1L24-M□
ø3		LQ1L2F-M□
ø10		LQ1L31-M□
ø8	1/4"	LQ1L32-M□
ø6		LQ1L33-M□
ø10		LQ1L34-M□
ø8	3/8"	LQ1L35-M□
ø6		LQ1L36-M□
ø4		LQ1L37-M□
ø3	1/8"	LQ1L3E-M□
ø10		LQ1L39-M
ø8		LQ1L310-M
ø12	3/8"	LQ1L41-M□
ø10		LQ1L42-M□
ø12		LQ1L43-M□
ø10	1/2"	LQ1L44-M□
ø8		LQ1L45-M□
ø6		LQ1L46-M□
ø4		*LQ1L47-M□
ø3		*LQ1L4F-M□
ø12	1/4"	LQ1L49-M□
ø19	1/2"	LQ1L51-M□
ø12		LQ1L52-M□
ø19		LQ1L53-M□
ø12	3/4"	LQ1L54-M□
ø10		LQ1L55-M□
ø8		LQ1L56-M□
ø6		LQ1L57-M□
ø19	3/8"	*LQ1L59-M□
ø25	3/4"	LQ1L61-M□
ø19		LQ1L62-M□
ø25		LQ1L63-M□
ø19	1"	LQ1L64-M□
ø12		LQ1L65-M□
ø25		*LQ1L67-M□
Inch size		
Applicable tubing O.D.	Connection thread R, NPT	Model
1/8"	1/8"	LQ1L1A-M□
1/4"		LQ1L2A-M□
3/16"		LQ1L2B-M□
1/8"	1/8"	LQ1L2C-M□
1/4"		LQ1L2D-M□
3/16"		LQ1L2E-M□
1/8"	1/4"	LQ1L2F-M□
3/8"		LQ1L3A-M□
1/4"		LQ1L3B-M□
3/8"	3/8"	LQ1L3C-M□
1/4"		LQ1L3D-M□
1/8"		LQ1L3E-M□
3/8"	1/8"	LQ1L3F-M
1/2"		LQ1L4A-M□
3/8"		LQ1L4B-M□
1/2"	1/2"	LQ1L4C-M□
3/8"		LQ1L4D-M□
3/4"		LQ1L4E-M□
1/4"	1/2"	LQ1L4F-M□
1/8"		*LQ1L4F-M□
1/2"		LQ1L4G-M□
3/4"	1/2"	LQ1L5A-M□
1/2"		LQ1L5B-M□
3/4"		LQ1L5C-M□
1/2"	3/4"	LQ1L5D-M□
3/8"		LQ1L5E-M□
1/4"		LQ1L5F-M□
3/4"	3/8"	*LQ1L5H-M□
1"		LQ1L6A-M□
3/4"		LQ1L6B-M□
1"	1"	LQ1L6C-M□
3/4"		LQ1L6D-M□
1/2"		LQ1L6E-M□
1"	3/8"	*LQ1L6G-M□

* Products marked "*" are produced upon receipt of order. (The body of the fitting is PTFE machined.)

Female elbow

LQ1L-F



Enter the thread type in □.

Nil	R, Rc
N	NPT

Metric size		
Applicable tubing O.D.	Connection thread Rc, NPT	Model
ø4	1/8"	LQ1L11-F□
ø3		LQ1L12-F□
ø6		LQ1L21-F□
ø4	1/8"	LQ1L22-F□
ø3		LQ1L2C-F□
ø6		LQ1L23-F□
ø4	1/4"	LQ1L24-F□
ø3		LQ1L2F-F□
ø10		LQ1L31-F□
ø8	1/4"	LQ1L32-F□
ø6		LQ1L33-F□
ø10		LQ1L34-F□
ø8	3/8"	LQ1L35-F□
ø6		LQ1L36-F□
ø3		LQ1L3E-F□
ø10	1/8"	LQ1L39-F
ø8		LQ1L310-F
ø12		LQ1L41-F□
ø10	3/8"	LQ1L42-F□
ø12		LQ1L43-F□
ø10		LQ1L44-F□
ø12	1/2"	LQ1L44-F□
ø12		LQ1L49-F□
ø12		LQ1L410-F□
ø19	1/2"	LQ1L51-F□
ø12		LQ1L52-F□
ø19		LQ1L53-F□
ø12	3/4"	LQ1L54-F□
ø19		LQ1L59-F□
ø25		LQ1L61-F□
ø19	3/4"	LQ1L62-F□
ø25		LQ1L63-F□
ø19		LQ1L64-F□
Inch size		
Applicable tubing O.D.	Connection thread Rc, NPT	Model
1/8"	1/8"	LQ1L1A-F□
1/4"		LQ1L2A-F□
3/16"		LQ1L2B-F□
1/8"	1/8"	LQ1L2C-F□
1/4"		LQ1L2D-F□
3/16"		LQ1L2E-F□
1/8"	1/4"	LQ1L2F-F□
3/8"		LQ1L3A-F□
1/4"		LQ1L3B-F□
3/8"	3/8"	LQ1L3C-F□
1/4"		LQ1L3D-F□
1/8"		LQ1L3E-F□
3/8"	1/8"	LQ1L3F-F
1/2"		LQ1L4A-F□
3/8"		LQ1L4B-F□
1/2"	1/2"	LQ1L4C-F□
3/8"		LQ1L4D-F□
3/4"		LQ1L4E-F□
1/2"	1/2"	LQ1L4F-F□
3/4"		LQ1L4G-F□
1/2"		LQ1L4H-F□
3/4"	3/4"	LQ1L5A-F□
1/2"		LQ1L5B-F□
3/4"		LQ1L5C-F□
1/2"	3/4"	LQ1L5D-F□
3/4"		LQ1L5E-F□
1"		LQ1L5F-F□
3/4"	3/4"	LQ1L6A-F□
1"		LQ1L6B-F□
3/4"		LQ1L6C-F□
1"	1"	LQ1L6D-F□
3/4"		LQ1L6D-F□

- Oval Type
- KQ2
- Round Type
- KQ2
- KQ2
- KQB2
- KS/KX
- KM
- KF
- M
- H/DL/LLL
- KC
- KK
- KKH
- KK 130
- DM
- DMK
- KDM
- KB
- KR-W2
- KRM
- KA
- KQG2
- KQ2-G
- KG
- KFG2
- MS
- KKA
- KP
- KPO/KPG
- LQ1
- LQ3
- LQHB

Fluoropolymer Fittings *LQ1 Series*

Male run tee

LQ1R-M



Enter the thread type in □.

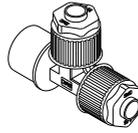
Nil	R, Rc
N	NPT

Metric size		
Applicable tubing O.D.	Connection thread R, NPT	Model
ø4	1/8"	LQ1R11-M□
ø3		LQ1R12-M□
ø6		LQ1R21-M□
ø4		LQ1R22-M□
ø3		LQ1R2C-M□
ø6	1/4"	LQ1R23-M□
ø4		LQ1R24-M□
ø3		LQ1R2F-M□
ø10	1/4"	LQ1R31-M□
ø8		LQ1R32-M□
ø6		LQ1R33-M□
ø10		LQ1R34-M□
ø8	3/8"	LQ1R35-M□
ø6		LQ1R36-M□
ø10	1/8"	*LQ1R39-M□
ø8		*LQ1R310-M□
ø12	3/8"	LQ1R41-M□
ø10		LQ1R42-M□
ø12	1/2"	LQ1R43-M□
ø10		LQ1R44-M□
ø12	1/4"	LQ1R49-M□
ø19	1/2"	LQ1R51-M□
ø12		LQ1R52-M□
ø19	3/4"	LQ1R53-M□
ø12		LQ1R54-M□
ø19	1/4"	LQ1R58-M□
ø19	3/8"	LQ1R59-M□
ø25	3/4"	LQ1R61-M□
ø19		LQ1R62-M□
ø25	1"	LQ1R63-M□
ø19		LQ1R64-M□
Inch size		
Applicable tubing O.D.	Connection thread R, NPT	Model
1/8"	1/8"	LQ1R1A-M□
1/4"		LQ1R2A-M□
3/16"	1/8"	LQ1R2B-M□
1/8"		LQ1R2C-M□
1/4"	1/4"	LQ1R2D-M□
3/16"		LQ1R2E-M□
1/8"		LQ1R2F-M□
3/8"	1/4"	LQ1R3A-M□
1/4"		LQ1R3B-M□
3/8"	3/8"	LQ1R3C-M□
1/4"		LQ1R3D-M□
3/8"	1/8"	*LQ1R3F-M□
1/2"	3/8"	LQ1R4A-M□
3/8"		LQ1R4B-M□
1/2"	1/2"	LQ1R4C-M□
3/8"		LQ1R4D-M□
1/2"	1/4"	LQ1R4G-M□
3/4"		LQ1R5A-M□
1/2"	1/2"	LQ1R5B-M□
3/4"		LQ1R5C-M□
1/2"	3/4"	LQ1R5D-M□
3/4"		LQ1R5G-M□
3/4"	3/8"	LQ1R5H-M□
1"		LQ1R6A-M□
3/4"	3/4"	LQ1R6B-M□
1"		LQ1R6C-M□
3/4"	1"	LQ1R6D-M□

* Products marked "*" are produced upon receipt of order. (The body of the fitting is PTFE machined.)

Female run tee

LQ1R-F



Enter the thread type in □.

Nil	R, Rc
N	NPT

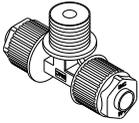
Metric size		
Applicable tubing O.D.	Connection thread Rc, NPT	Model
ø4	1/8"	LQ1R11-F□
ø3		LQ1R12-F□
ø6		LQ1R21-F□
ø4		LQ1R22-F□
ø3		LQ1R2C-F□
ø6	1/4"	LQ1R23-F□
ø4		LQ1R24-F□
ø3		LQ1R2F-F□
ø10	1/4"	LQ1R31-F□
ø8		LQ1R32-F□
ø6		LQ1R33-F□
ø10		LQ1R34-F□
ø8	3/8"	LQ1R35-F□
ø6		LQ1R36-F□
ø10	1/8"	*LQ1R39-F□
ø8		*LQ1R310-F□
ø12	3/8"	LQ1R41-F□
ø10		LQ1R42-F□
ø12	1/2"	LQ1R43-F□
ø10		LQ1R44-F□
ø12	1/4"	*LQ1R49-F□
ø19	1/2"	LQ1R51-F□
ø12		LQ1R52-F□
ø19	3/4"	LQ1R53-F□
ø12		LQ1R54-F□
ø19	3/8"	LQ1R59-F□
ø25	3/4"	LQ1R61-F□
ø19		LQ1R62-F□
ø25	1"	LQ1R63-F□
ø19		LQ1R64-F□
ø25	1/2"	LQ1R66-F□
Inch size		
Applicable tubing O.D.	Connection thread Rc, NPT	Model
1/8"	1/8"	LQ1R1A-F□
1/4"		LQ1R2A-F□
3/16"	1/8"	LQ1R2B-F□
1/8"		LQ1R2C-F□
1/4"	1/4"	LQ1R2D-F□
3/16"		LQ1R2E-F□
1/8"		LQ1R2F-F□
3/8"	1/4"	LQ1R3A-F□
1/4"		LQ1R3B-F□
3/8"	3/8"	LQ1R3C-F□
1/4"		LQ1R3D-F□
3/8"	1/8"	*LQ1R3F-F□
1/2"	3/8"	LQ1R4A-F□
3/8"		LQ1R4B-F□
1/2"	1/2"	LQ1R4C-F□
3/8"		LQ1R4D-F□
1/2"	1/4"	*LQ1R4G-F□
3/4"		LQ1R5A-F□
1/2"	1/2"	LQ1R5B-F□
3/4"		LQ1R5C-F□
1/2"	3/4"	LQ1R5D-F□
3/4"		LQ1R5H-F□
1"	3/4"	LQ1R6A-F□
3/4"		LQ1R6B-F□
1"	1"	LQ1R6C-F□
3/4"		LQ1R6D-F□

* Products marked "*" are produced upon receipt of order. (The body of the fitting is PTFE machined.)

Fluoropolymer Fittings *LQ1 Series*

Male branch tee

LQ1B-M



Enter the thread type in □.

Nil	R, Rc
N	NPT

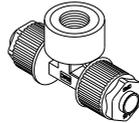
Metric size		
Applicable tubing O.D.	Connection thread R, NPT	Model
ø4	1/8"	LQ1B11-M□
ø3		LQ1B12-M□
ø6		LQ1B21-M□
ø4		LQ1B22-M□
ø3	1/8"	LQ1B2C-M□
ø6		LQ1B23-M□
ø4		LQ1B24-M□
ø3		LQ1B2F-M□
ø10	1/4"	LQ1B31-M□
ø8		LQ1B32-M□
ø6		LQ1B33-M□
ø10		LQ1B34-M□
ø8	3/8"	LQ1B35-M□
ø6		LQ1B36-M□
ø10		*LQ1B39-M□
ø8		*LQ1B310-M□
ø12	3/8"	LQ1B41-M□
ø10		LQ1B42-M□
ø12		LQ1B43-M□
ø10		LQ1B44-M□
ø8	1/2"	*LQ1B45-M□
ø12		LQ1B49-M□
ø19		LQ1B51-M□
ø12		LQ1B52-M□
ø19	1/2"	LQ1B53-M□
ø12		LQ1B54-M□
ø19		LQ1B58-M□
ø19		LQ1B59-M□
ø25	3/4"	LQ1B61-M□
ø19		LQ1B62-M□
ø25		LQ1B63-M□
ø19		LQ1B64-M□
ø25	1"	LQ1B66-M□
ø19		LQ1B66-M□
ø25		LQ1B66-M□
ø19		LQ1B66-M□

Inch size		
Applicable tubing O.D.	Connection thread R, NPT	Model
1/8"	1/8"	LQ1B1A-M□
1/4"		LQ1B2A-M□
3/16"		LQ1B2B-M□
1/8"	1/8"	LQ1B2C-M□
1/4"		LQ1B2D-M□
3/16"		LQ1B2E-M□
1/8"		LQ1B2F-M□
3/8"	1/4"	LQ1B3A-M□
1/4"		LQ1B3B-M□
3/8"		LQ1B3C-M□
1/4"		LQ1B3D-M□
3/8"	3/8"	*LQ1B3F-M□
1/2"		LQ1B4A-M□
3/8"		LQ1B4B-M□
1/2"		LQ1B4C-M□
3/8"	1/2"	LQ1B4D-M□
1/2"		LQ1B4G-M□
3/4"		LQ1B5A-M□
1/2"		LQ1B5B-M□
3/4"	3/4"	LQ1B5C-M□
1/2"		LQ1B5D-M□
3/4"		LQ1B5G-M□
3/4"		LQ1B5H-M□
1"	3/8"	LQ1B6A-M□
3/4"		LQ1B6B-M□
1"		LQ1B6C-M□
3/4"		LQ1B6D-M□
1"	1/2"	LQ1B6F-M□
3/4"		LQ1B6F-M□
1"		LQ1B6F-M□
3/4"		LQ1B6F-M□

* Products marked "*" are produced upon receipt of order. (The body of the fitting is PTFE machined.)

Female branch tee

LQ1B-F



Enter the thread type in □.

Nil	R, Rc
N	NPT

Metric size		
Applicable tubing O.D.	Connection thread Rc, NPT	Model
ø4	1/8"	LQ1B11-F□
ø3		LQ1B12-F□
ø6		LQ1B21-F□
ø4		LQ1B22-F□
ø3	1/8"	LQ1B2C-F□
ø6		LQ1B23-F□
ø4		LQ1B24-F□
ø3		LQ1B2F-F□
ø10	1/4"	LQ1B31-F□
ø8		LQ1B32-F□
ø6		LQ1B33-F□
ø10		LQ1B34-F□
ø8	3/8"	LQ1B35-F□
ø6		LQ1B36-F□
ø10		*LQ1B39-F□
ø8		*LQ1B310-F□
ø12	3/8"	LQ1B41-F□
ø10		LQ1B42-F□
ø12		LQ1B43-F□
ø10		LQ1B44-F□
ø8	1/2"	*LQ1B49-F□
ø12		LQ1B51-F□
ø19		LQ1B52-F□
ø12		LQ1B53-F□
ø19	1/2"	LQ1B54-F□
ø12		LQ1B58-F□
ø19		*LQ1B59-F□
ø19		LQ1B61-F□
ø25	3/4"	LQ1B62-F□
ø19		LQ1B63-F□
ø25		LQ1B64-F□
ø19		LQ1B66-F□
ø25	1"	LQ1B66-F□
ø19		LQ1B66-F□
ø25		LQ1B66-F□
ø19		LQ1B66-F□

Inch size		
Applicable tubing O.D.	Connection thread Rc, NPT	Model
1/8"	1/8"	LQ1B1A-F□
1/4"		LQ1B2A-F□
3/16"		LQ1B2B-F□
1/8"	1/8"	LQ1B2C-F□
1/4"		LQ1B2D-F□
3/16"		LQ1B2E-F□
1/8"		LQ1B2F-F□
3/8"	1/4"	LQ1B3A-F□
1/4"		LQ1B3B-F□
3/8"		LQ1B3C-F□
1/4"		LQ1B3D-F□
3/8"	3/8"	*LQ1B3F-F□
1/2"		LQ1B4A-F□
3/8"		LQ1B4B-F□
1/2"		LQ1B4C-F□
3/8"	1/2"	LQ1B4D-F□
1/2"		*LQ1B4G-F□
3/4"		LQ1B5A-F□
1/2"		LQ1B5B-F□
3/4"	3/4"	LQ1B5C-F□
1/2"		LQ1B5D-F□
3/4"		*LQ1B5G-F□
3/4"		*LQ1B5H-F□
1"	3/8"	LQ1B6A-F□
3/4"		LQ1B6B-F□
1"		LQ1B6C-F□
3/4"		LQ1B6D-F□
1"	1/2"	LQ1B6F-F□
3/4"		LQ1B6F-F□
1"		LQ1B6F-F□
3/4"		LQ1B6F-F□

* Products marked "*" are produced upon receipt of order. (The body of the fitting is PTFE machined.)

- Oval Type
- KQ2
- Round Type
- KQ2
- KQB2
- KS/KX
- KM
- KF
- M
- H/DL
- L/L
- KC
- KK
- KKH
- KK 130
- DM
- DMK
- KDM
- KB
- KR-W2
- KRM
- KA
- KQG2
- KQ2-G
- KG
- KFG2
- MS
- KKA
- KP
- KPQ/KPG
- LQ1
- LQ3
- LQHB

Union elbow

LQ1E

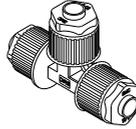


Metric size	
Applicable tubing O.D.	Model
ø4	LQ1E11
ø3	LQ1E12
ø6	LQ1E21□□
ø4	LQ1E22□□
ø3	LQ1E2C□□
ø10	LQ1E31□□
ø8	LQ1E32□□
ø6	LQ1E33□□
ø12	LQ1E41□□
ø10	LQ1E42□□
ø19	LQ1E51□□
ø12	LQ1E52□□
ø25	LQ1E61□□
ø19	LQ1E62□□
Inch size	
Applicable tubing O.D.	Model
1/8"	LQ1E1A
1/4"	LQ1E2A□□
3/16"	LQ1E2B□□
1/8"	LQ1E2C□□
3/8"	LQ1E3A□□
1/4"	LQ1E3B□□
1/2"	LQ1E4A□□
3/8"	LQ1E4B□□
3/4"	LQ1E5A□□
1/2"	LQ1E5B□□
1"	LQ1E6A□□
3/4"	LQ1E6B□□

Enter the symbol for combination of different diameter sizes in □□. For details, refer to the [Web Catalog](#).

Union tee

LQ1T

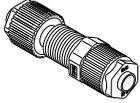


Metric size	
Applicable tubing O.D.	Model
ø4	LQ1T11
ø3	LQ1T12
ø6	LQ1T21□□
ø4	LQ1T22□□
ø3	LQ1T2C□□
ø10	LQ1T31□□
ø8	LQ1T32□□
ø6	LQ1T33□□
ø12	LQ1T41□□
ø10	LQ1T42□□
ø19	LQ1T51□□
ø12	LQ1T52□□
ø25	LQ1T61□□
ø19	LQ1T62□□
Inch size	
Applicable tubing O.D.	Model
1/8"	LQ1T1A
1/4"	LQ1T2A□□
3/16"	LQ1T2B□□
1/8"	LQ1T2C□□
3/8"	LQ1T3A□□
1/4"	LQ1T3B□□
1/2"	LQ1T4A□□
3/8"	LQ1T4B□□
3/4"	LQ1T5A□□
1/2"	LQ1T5B□□
1"	LQ1T6A□□
3/4"	LQ1T6B□□

Enter the symbol for combination of different diameter sizes in □□. For details, refer to the [Web Catalog](#).

Panel mount union

LQ1P

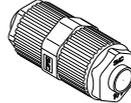


Metric size	
Applicable tubing O.D.	Model
ø4	LQ1P11
ø3	LQ1P12
ø6	LQ1P21□□
ø4	LQ1P22□□
ø3	LQ1P2C□□
ø10	LQ1P31□□
ø8	LQ1P32□□
ø6	LQ1P33□□
ø12	LQ1P41□□
ø10	LQ1P42□□
ø19	LQ1P51□□
ø12	LQ1P52□□
ø25	LQ1P61□□
ø19	LQ1P62□□
Inch size	
Applicable tubing O.D.	Model
1/8"	LQ1P1A
1/4"	LQ1P2A□□
3/16"	LQ1P2B□□
1/8"	LQ1P2C□□
3/8"	LQ1P3A□□
1/4"	LQ1P3B□□
1/2"	LQ1P4A□□
3/8"	LQ1P4B□□
3/4"	LQ1P5A□□
1/2"	LQ1P5B□□
1"	LQ1P6A□□
3/4"	LQ1P6B□□

Enter the symbol for combination of different diameter sizes in □□. For details, refer to the [Web Catalog](#).

Union

LQ1U



Metric size	
Applicable tubing O.D.	Model
ø4	LQ1U11
ø3	LQ1U12
ø6	LQ1U21□□
ø4	LQ1U22□□
ø3	LQ1U2C□□
ø10	LQ1U31□□
ø8	LQ1U32□□
ø6	LQ1U33□□
ø12	LQ1U41□□
ø10	LQ1U42□□
ø19	LQ1U51□□
ø12	LQ1U52□□
ø25	LQ1U61□□
ø19	LQ1U62□□
Inch size	
Applicable tubing O.D.	Model
1/8"	LQ1U1A
1/4"	LQ1U2A□□
3/16"	LQ1U2B□□
1/8"	LQ1U2C□□
3/8"	LQ1U3A□□
1/4"	LQ1U3B□□
1/2"	LQ1U4A□□
3/8"	LQ1U4B□□
3/4"	LQ1U5A□□
1/2"	LQ1U5B□□
1"	LQ1U6A□□
3/4"	LQ1U6B□□

Enter the symbol for combination of different diameter sizes in □□. For details, refer to the [Web Catalog](#).

Oval Type

KQ2

Round Type

KQ2

KQB2

KS/
KX

KM

KF

M

H/DL

L/L

KC

KK

KKH

KK
130

DM

DMK

KDM

KB

KR
-W2

KRM

KA

KQ2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/
KPG

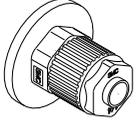
LQ1

LQ3

LQHB

Union flange

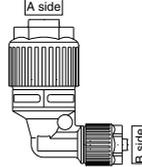
LQ1F



Metric size	
Applicable tubing O.D.	Model
ø12	LQ1F41
ø10	LQ1F42
ø19	LQ1F51
ø12	LQ1F52
ø25	LQ1F61
ø19	LQ1F62
Inch size	
Applicable tubing O.D.	Model
1/2"	LQ1F4A
3/8"	LQ1F4B
3/4"	LQ1F5A
1/2"	LQ1F5B
1"	LQ1F6A
3/4"	LQ1F6B

Union elbow reducing

LQ1E-R



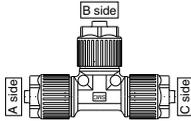
Metric size		
Applicable tubing O.D.		Model
A side	B side	
ø12	ø8	LQ1E41-R2
ø12	ø6	*LQ1E41-R3
ø12	ø4	*LQ1E41-R4
ø19	ø10	*LQ1E51-R2
ø19	ø8	*LQ1E51-R3
ø19	ø6	*LQ1E51-R4
ø19	ø4	*LQ1E51-R5
ø25	ø12	*LQ1E61-R2
ø25	ø10	*LQ1E61-R3
ø25	ø8	*LQ1E61-R4
ø25	ø6	*LQ1E61-R5
Inch size		
Applicable tubing O.D.		Model
A side	B side	
3/8"	1/8"	*LQ1E3A-R3
1/2"	1/4"	LQ1E4A-R2
1/2"	3/16"	*LQ1E4A-R3
1/2"	1/8"	*LQ1E4A-R4
3/4"	3/8"	*LQ1E5A-R2
3/4"	1/4"	*LQ1E5A-R3
3/4"	3/16"	*LQ1E5A-R4
1"	1/2"	*LQ1E6A-R2
1"	3/8"	*LQ1E6A-R3
1"	1/4"	*LQ1E6A-R4
1"	3/16"	*LQ1E6A-R5

* Products marked "a" are produced upon receipt of order. (The body of the fitting is PTFE machined.)

Fluoropolymer Fittings *LQ1 Series*

Union tee reducing

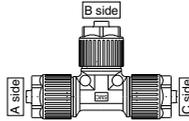
LQ1T-R



Metric size			
Applicable tubing O.D.			Model
A side	B side	C side	
ø10	ø3	ø10	LQ1T31-R4
ø8	ø8	ø10	LQ1T31-R7
ø6	ø6	ø10	LQ1T31-R8
ø6	ø8	ø8	LQ1T32-R5
ø6	ø10	ø10	LQ1T32-R6
ø6	ø6	ø8	LQ1T32-R7
ø12	ø8	ø12	LQ1T41-R2
ø12	ø6	ø12	LQ1T41-R3
ø10	ø12	ø12	LQ1T41-R5
ø10	ø10	ø12	LQ1T41-R7
ø6	ø10	ø12	LQ1T41-R11
ø6	ø12	ø12	LQ1T41-R12
ø10	ø6	ø12	LQ1T41-R22
ø6	ø6	ø12	LQ1T41-R23
ø12	ø3	ø12	LQ1T41-R26
ø6	ø12	ø6	LQ1T41-R32
ø3	ø12	ø3	LQ1T41-R34
ø19	ø10	ø19	LQ1T51-R2
ø19	ø8	ø19	LQ1T51-R3
ø19	ø6	ø19	LQ1T51-R4
ø12	ø19	ø19	LQ1T51-R5
ø10	ø19	ø19	LQ1T51-R6
ø12	ø12	ø19	*LQ1T51-R7
ø10	ø10	ø19	*LQ1T51-R8
ø10	ø19	ø10	LQ1T51-R10
ø8	ø19	ø19	LQ1T51-R12
ø6	ø19	ø19	LQ1T51-R13
ø10	ø12	ø19	*LQ1T51-R17
ø12	ø6	ø19	LQ1T51-R24
ø19	ø4	ø19	LQ1T51-R26
ø19	ø3	ø19	LQ1T51-R28
ø10	ø19	ø12	LQ1T51-R31
ø25	ø12	ø25	LQ1T61-R2
ø25	ø10	ø25	LQ1T61-R3
ø25	ø8	ø25	*LQ1T61-R4
ø19	ø25	ø25	LQ1T61-R5
ø12	ø25	ø25	LQ1T61-R6
ø19	ø19	ø25	LQ1T61-R7
ø12	ø12	ø19	*LQ1T61-R8
ø12	ø25	ø12	LQ1T61-R10
ø12	ø19	ø25	LQ1T61-R11
ø10	ø25	ø25	LQ1T61-R12
ø8	ø25	ø25	*LQ1T61-R13
ø6	ø25	ø25	LQ1T61-R15
ø10	ø19	ø25	LQ1T61-R18
ø6	ø19	ø25	LQ1T61-R19
ø19	ø12	ø25	LQ1T61-R20
ø25	ø6	ø25	*LQ1T61-R26
ø10	ø25	ø19	LQ1T61-R30
ø12	ø25	ø19	LQ1T61-R31
ø6	ø25	ø6	LQ1T61-R34

Union tee reducing

LQ1T-R



Inch size			
Applicable tubing O.D.			Model
A side	B side	C side	
1/4"	3/8"	3/8"	LQ1T3A-R5
1/4"	1/4"	3/8"	LQ1T3A-R7
1/2"	1/4"	1/2"	LQ1T4A-R2
1/2"	1/8"	1/2"	LQ1T4A-R4
3/8"	1/2"	1/2"	LQ1T4A-R5
1/4"	1/2"	1/2"	LQ1T4A-R6
3/8"	3/8"	1/2"	LQ1T4A-R7
1/4"	1/4"	1/2"	LQ1T4A-R8
1/4"	1/2"	1/8"	LQ1T4A-R10
1/4"	3/8"	1/2"	LQ1T4A-R17
3/8"	1/4"	1/2"	LQ1T4A-R20
1/8"	1/2"	1/8"	LQ1T4A-R33
3/4"	3/8"	3/4"	LQ1T5A-R2
1/2"	3/4"	3/4"	LQ1T5A-R5
3/8"	3/4"	3/4"	LQ1T5A-R6
1/2"	1/2"	3/4"	*LQ1T5A-R7
3/8"	3/8"	3/4"	LQ1T5A-R8
3/8"	3/4"	3/8"	*LQ1T5A-R10
1/4"	3/4"	3/4"	LQ1T5A-R12
1/2"	3/8"	3/4"	*LQ1T5A-R17
3/8"	1/4"	3/4"	LQ1T5A-R21
1/2"	1/4"	3/4"	LQ1T5A-R22
3/4"	1/8"	3/4"	LQ1T5A-R26
3/8"	3/4"	1/2"	LQ1T5A-R31
1/4"	3/4"	1/4"	*LQ1T5A-R32
1"	1/2"	1"	LQ1T6A-R2
1"	3/8"	1"	*LQ1T6A-R3
1"	1/4"	1"	*LQ1T6A-R4
3/4"	1"	1"	LQ1T6A-R5
1/2"	1"	1"	LQ1T6A-R6
3/4"	3/4"	1"	LQ1T6A-R7
1/2"	1/2"	1"	*LQ1T6A-R8
1/2"	1"	1/2"	LQ1T6A-R10
3/8"	3/4"	1"	LQ1T6A-R11
3/8"	1"	1"	LQ1T6A-R12
1/4"	1"	1"	*LQ1T6A-R13
1/2"	3/4"	1"	LQ1T6A-R17
1/4"	3/4"	1"	*LQ1T6A-R18
3/4"	1/2"	1"	LQ1T6A-R20
3/8"	1"	3/4"	LQ1T6A-R30
1/2"	1"	3/4"	LQ1T6A-R31
1/4"	1"	1/4"	*LQ1T6A-R33

* Products marked "*" are produced upon receipt of order. (The body of the fitting is PTFE machined.)

Oval Type

KQ2

Round Type

KQ2

KQB2

KS/KX

KM

KF

M

H/DL
L/LL

KC

KK

KKH

KK
130

DM

DMK

KDM

KB

KR
-W2

KRM

KA

KQ2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/
KPG

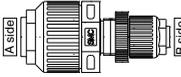
LQ1

LQ3

LQHB

Panel mount union reducing

LQ1P-R



Metric size		
Applicable tubing O.D.		Model
A side	B side	
ø12	ø6	*LQ1P41-R3
ø19	ø10	*LQ1P51-R2
Inch size		
Applicable tubing O.D.		Model
A side	B side	
1/2"	1/4"	*LQ1P4A-R2
3/4"	3/8"	*LQ1P5A-R2

* Products marked "*" are produced upon receipt of order. (The body of the fitting is PTFE machined.)

Union reducing

LQ1U-R

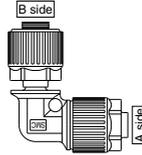


Metric size		
Applicable tubing O.D.		Model
A side	B side	
ø10	ø4	LQ1U31-R3
ø10	ø3	LQ1U31-R4
ø12	ø8	LQ1U41-R2
ø12	ø6	LQ1U41-R3
ø12	ø4	LQ1U41-R4
ø12	ø3	LQ1U41-R5
ø19	ø10	*LQ1U51-R2
ø19	ø8	*LQ1U51-R3
ø19	ø6	LQ1U51-R4
ø19	ø4	LQ1U51-R5
ø19	ø3	LQ1U51-R6
ø25	ø12	LQ1U61-R2
ø25	ø10	LQ1U61-R3
ø25	ø6	*LQ1U61-R5
Inch size		
Applicable tubing O.D.		Model
A side	B side	
1/2"	1/4"	LQ1U4A-R2
1/2"	3/16"	LQ1U4A-R3
1/2"	1/8"	LQ1U4A-R4
3/4"	3/8"	*LQ1U5A-R2
3/4"	1/4"	LQ1U5A-R3
3/4"	3/16"	LQ1U5A-R4
3/4"	1/8"	LQ1U5A-R5
1"	1/2"	LQ1U6A-R2
1"	3/8"	LQ1U6A-R3
1"	1/4"	*LQ1U6A-R4

* Products marked "*" are produced upon receipt of order. (The body of the fitting is PTFE machined.)

Space saving union elbow

LQ1E-SS

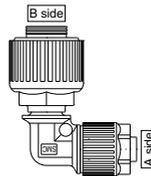


Metric size		
Applicable tubing O.D.		Model
A side	B side	
ø6	2	LQ1E21-SS
ø10	3	LQ1E31-SS
ø8	3	LQ1E32-SS
ø12	4	LQ1E41-SS
ø19	5	*LQ1E51-SS
ø25	6	LQ1E61-SS
Inch size		
Applicable tubing O.D.		Model
A side	B side	
1/4"	2	LQ1E2A-SS
3/8"	3	LQ1E3A-SS
1/2"	4	LQ1E4A-SS
3/4"	5	*LQ1E5A-SS
1"	6	LQ1E6A-SS

* Products marked "*" are produced upon receipt of order. (The body of the fitting is PTFE machined.)

Space saving union elbow reducing

LQ1E-SS-R

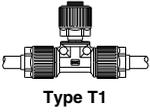


Metric size		
Applicable tubing O.D.		Model
A side	B side	
ø6	3	*LQ1E21-SS-R9
	4	*LQ1E21-SS-R10
ø10	2	*LQ1E31-SS-R2
	4	*LQ1E31-SS-R8
ø8	2	*LQ1E32-SS-R1
	3	LQ1E32-SS-R8
ø12	3	*LQ1E41-SS-R1
	2	LQ1E41-SS-R3
ø25	5	*LQ1E41-SS-R8
	5	LQ1E61-SS-R1
Inch size		
Applicable tubing O.D.		Model
A side	B side	
1/4"	3	*LQ1E2A-SS-R9
	4	*LQ1E2A-SS-R10
3/8"	2	*LQ1E3A-SS-R1
	4	*LQ1E3A-SS-R8
1/2"	3	*LQ1E4A-SS-R1
	2	LQ1E4A-SS-R2
1"	5	*LQ1E4A-SS-R8
	5	LQ1E6A-SS-R1

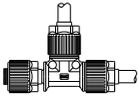
* Products marked "*" are produced upon receipt of order. (The body of the fitting is PTFE machined.)

Space saving union tee

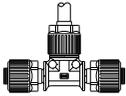
LQ1T-ST



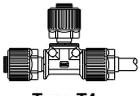
Type T1



Type T2



Type T3

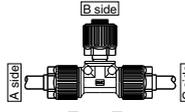


Type T4

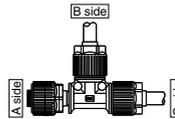
Metric size		Model
Applicable tubing O.D.		
ø6		LQ1T21-ST1
		LQ1T21-ST2
		LQ1T21-ST3
		LQ1T21-ST4
ø10		LQ1T31-ST1
		LQ1T31-ST2
		LQ1T31-ST3
		LQ1T31-ST4
ø8		LQ1T32-ST1
		LQ1T32-ST2
		LQ1T32-ST3
		LQ1T32-ST4
ø12		LQ1T41-ST1
		LQ1T41-ST2
		LQ1T41-ST3
		LQ1T41-ST4
ø19		LQ1T51-ST1
		LQ1T51-ST2
		LQ1T51-ST3
		LQ1T51-ST4
ø25		LQ1T61-ST1
		LQ1T61-ST2
		LQ1T61-ST3
		LQ1T61-ST4
Inch size		Model
Applicable tubing O.D.		
1/4"		LQ1T2A-ST1
		LQ1T2A-ST2
		LQ1T2A-ST3
		LQ1T2A-ST4
3/8"		LQ1T3A-ST1
		LQ1T3A-ST2
		LQ1T3A-ST3
		LQ1T3A-ST4
1/2"		LQ1T4A-ST1
		LQ1T4A-ST2
		LQ1T4A-ST3
		LQ1T4A-ST4
3/4"		LQ1T5A-ST1
		LQ1T5A-ST2
		LQ1T5A-ST3
		LQ1T5A-ST4
1"		LQ1T6A-ST1
		LQ1T6A-ST2
		LQ1T6A-ST3
		LQ1T6A-ST4

Space saving union tee reducing

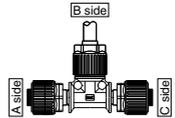
LQ1T-S-R



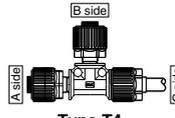
Type T1



Type T2



Type T3



Type T4

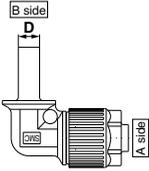
Metric size				Model
Applicable tubing O.D.				
A side (Left)	B side (Center)	C side (Right)		
ø6	Body size 3	ø6		LQ1T21-ST1-R39
Body size 3	ø6	ø6		LQ1T21-ST2-R41
ø8	Body size 3	ø8		LQ1T32-ST1-R37
Body size 3	ø8	ø8		LQ1T32-ST2-R40
ø12	Body size 3	ø12		*LQ1T41-ST1-R1
ø12	Body size 5	ø12		*LQ1T41-ST1-R37
ø19	Body size 4	ø19		*LQ1T51-ST1-R1
ø19	Body size 3	ø19		*LQ1T51-ST1-R2
ø12	Body size 5	ø19		LQ1T51-ST1-R5
ø6	Body size 5	ø19		*LQ1T51-ST1-R13
ø12	Body size 6	ø19		*LQ1T51-ST1-R36
ø19	Body size 6	ø12		*LQ1T51-ST1-R37
Body size 5	ø6	ø19		LQ1T51-ST2-R4
ø25	Body size 5	ø25		*LQ1T61-ST1-R1
Body size 4	ø25			*LQ1T61-ST1-R2
Body size 6	ø19	ø25		LQ1T61-ST2-R1
Inch size				Model
Applicable tubing O.D.				
A side (Left)	B side (Center)	C side (Right)		
Body size 3	3/8	1/4		LQ1T3A-ST2-R5
1/2	Body size 3	1/2		*LQ1T4A-ST1-R1
3/8	Body size 3	1/2		*LQ1T4A-ST1-R7
1/2	Body size 5	1/2		*LQ1T4A-ST1-R37
3/4	Body size 4	3/4		*LQ1T5A-ST1-R1
3/4	Body size 3	3/4		*LQ1T5A-ST1-R2
1/2	Body size 5	3/4		LQ1T5A-ST1-R5
1/2	Body size 4	3/4		LQ1T5A-ST1-R7
1/4	Body size 5	3/4		*LQ1T5A-ST1-R12
Body size 4	3/4	3/4		*LQ1T5A-ST2-R1
Body size 5	1/4	3/4		LQ1T5A-ST2-R3
Body size 4	3/4	Body size 4		*LQ1T5A-ST3-R5
1	Body size 5	1		*LQ1T6A-ST1-R1
1	Body size 4	1		*LQ1T6A-ST1-R2
1	Body size 3	1		*LQ1T6A-ST1-R3
Body size 6	3/4	1		LQ1T6A-ST2-R1
Body size 6	3/4	3/4		LQ1T6A-ST2-R2

* Products marked "*" are produced upon receipt of order. (The body of the fitting is PTFE machined.)

- Oval Type
- KQ2
- Round Type
- KQ2
- KQB2
- KS/KX
- KM
- KF
- M
- H/DL/L/L
- KC
- KK
- KKH
- KK 130
- DM
- DMK
- KDM
- KB
- KR -W2
- KRM
- KA
- KQ2
- KQ2-G
- KG
- KFG2
- MS
- KKA
- KP
- KPO/KPG
- LQ1
- LQ3
- LQHB

Tubing extension union elbow

LQ1E-T

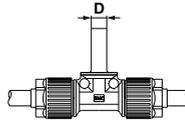


Metric size		
Applicable tubing O.D.	Tubing size (D)	Model
A side	B side	
ø6	6 x 4	LQ1E21-T
ø10	10 x 8	LQ1E31-T
ø8	8 x 6	LQ1E32-T
ø12	12 x 10	LQ1E41-T
ø19	19 x 16	*LQ1E51-T
ø25	25 x 22	LQ1E61-T
Inch size		
Applicable tubing O.D.	Tubing size (D)	Model
A side	B side	
1/4"	1/4" x 5/32"	LQ1E2A-T
3/8"	3/8" x 1/4"	LQ1E3A-T
1/2"	1/2" x 3/8"	LQ1E4A-T
3/4"	3/4" x 5/8"	*LQ1E5A-T
1"	1" x 7/8"	LQ1E6A-T

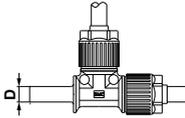
* Products marked "*" are produced upon receipt of order. (The body of the fitting is PTFE machined.)

Tubing extension union tee

LQ1T-TT



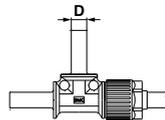
Type T1



Type T2



Type T3



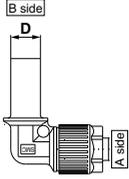
Type T4

Metric size		
Applicable tubing O.D.	Tubing size (D)	Model
ø6	6 x 4	*LQ1T21-TT1
		*LQ1T21-TT2
ø10	10 x 8	*LQ1T31-TT1
		*LQ1T31-TT2
ø8	8 x 6	*LQ1T32-TT1
		*LQ1T32-TT2
		*LQ1T32-TT3
ø12	10 x 8	*LQ1T41-TT1
		*LQ1T41-TT2
ø19	19 x 16	*LQ1T41-TT3
		LQ1T51-TT1
		LQ1T51-TT2
		LQ1T51-TT3
ø25	25 x 22	LQ1T51-TT4
		LQ1T61-TT1
		LQ1T61-TT2
		LQ1T61-TT3
ø25	25 x 22	LQ1T61-TT4
Inch size		
Applicable tubing O.D.	Tubing size (D)	Model
1/4"	1/4" x 5/32"	LQ1T2A-TT1
		LQ1T2A-TT2
		LQ1T2A-TT3
		LQ1T2A-TT4
3/8"	3/8" x 1/4"	LQ1T3A-TT1
		LQ1T3A-TT2
		LQ1T3A-TT3
		LQ1T3A-TT4
1/2"	1/2" x 3/8"	LQ1T4A-TT1
		LQ1T4A-TT2
		LQ1T4A-TT3
		LQ1T4A-TT4
3/4"	3/4" x 5/8"	LQ1T5A-TT1
		LQ1T5A-TT2
		LQ1T5A-TT3
		LQ1T5A-TT4
1"	1" x 7/8"	LQ1T6A-TT1
		LQ1T6A-TT2
		LQ1T6A-TT3
		LQ1T6A-TT4

* Products marked "*" are produced upon receipt of order. (The body of the fitting is PTFE machined.)

Tubing extension union elbow reducing

LQ1E-T-R



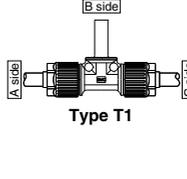
Metric size		
Applicable tubing O.D.	Tubing size (D)	Model
A side	B side	
ø6	8 x 6	LQ1E21-T-R8
	10 x 8	LQ1E21-T-R9
	12 x 10	LQ1E21-T-R10
ø4	6 x 4	LQ1E22-T-R8
	8 x 6	LQ1E22-T-R9
	10 x 8	LQ1E22-T-R10
ø10	12 x 10	LQ1E22-T-R11
	8 x 6	LQ1E31-T-R1
	6 x 4	LQ1E31-T-R2
ø10	12 x 10	LQ1E31-T-R8
	19 x 16	*LQ1E31-T-R9
	6 x 4	LQ1E32-T-R1
ø8	10 x 8	LQ1E32-T-R8
	12 x 10	LQ1E32-T-R9
	19 x 16	*LQ1E32-T-R10
ø12	10 x 8	LQ1E41-T-R1
	8 x 6	LQ1E41-T-R2
	6 x 4	LQ1E41-T-R3
ø12	19 x 16	*LQ1E41-T-R8
	25 x 22	*LQ1E41-T-R9
	25 x 22	*LQ1E51-T-R8
ø19	25 x 22	*LQ1E51-T-R8
ø25	19 x 16	LQ1E61-T-R1

Inch size		
Applicable tubing O.D.	Tubing size (D)	Model
A side	B side	
1/4"	3/8" x 1/4"	*LQ1E2A-T-R8
	1/2" x 3/8"	*LQ1E2A-T-R9
3/8"	1/4" x 5/32"	*LQ1E3A-T-R1
	1/2" x 3/8"	*LQ1E3A-T-R8
	3/4" x 5/8"	*LQ1E3A-T-R9
1/2"	3/8" x 1/4"	*LQ1E4A-T-R1
	3/4" x 5/8"	*LQ1E4A-T-R8
	1" x 7/8"	*LQ1E4A-T-R9
3/4"	1" x 7/8"	*LQ1E5A-T-R8
	1" x 3/4" x 5/8"	LQ1E6A-T-R1

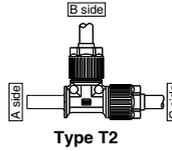
* Products marked "*" are produced upon receipt of order. (The body of the fitting is PTFE machined.)

Tubing extension union tee reducing

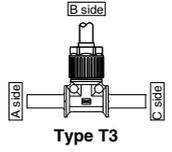
LQ1T-T-R



Type T1



Type T2



Type T3

Metric size			
Applicable tubing O.D.		Model	
A side (Left)	B side (Center)	C side (Right)	
ø6	Tube ø10	ø6	*LQ1T21-TT1-R39
Tube ø10	ø6	ø6	*LQ1T21-TT2-R41
ø8	Tube ø10	ø8	*LQ1T32-TT1-R37
Tube ø10	ø8	ø8	*LQ1T32-TT2-R40
ø12	Tube ø10	ø12	*LQ1T41-TT1-R1
ø12	Tube ø19	ø12	*LQ1T41-TT1-R37
ø19	Tube ø12	ø19	*LQ1T51-TT1-R1
ø19	Tube ø10	ø19	*LQ1T51-TT1-R2
ø19	Tube ø19	ø19	LQ1T51-TT1-R5
ø6	Tube ø19	ø19	*LQ1T51-TT1-R13
ø19	Tube ø25	ø19	LQ1T51-TT1-R37
ø6	Tube ø25	ø19	*LQ1T51-TT1-R38
Tube ø19	ø6	ø19	LQ1T51-TT2-R4
ø25	Tube ø19	ø25	*LQ1T61-TT1-R1
ø25	Tube 1/2	ø25	*LQ1T61-TT1-R2
Tube ø25	ø19	ø25	LQ1T61-TT2-R1

Inch size			
Applicable tubing O.D.		Model	
A side (Left)	B side (Center)	C side (Right)	
Tube 3/8	3/8	1/4	LQ1T3A-TT2-R5
1/2	Tube 3/8	1/2	*LQ1T4A-TT1-R1
3/8	Tube 3/8	1/2	*LQ1T4A-TT1-R7
1/2	Tube 3/4	1/2	*LQ1T4A-TT1-R37
3/4	Tube 1/2	3/4	*LQ1T5A-TT1-R1
3/4	Tube 3/8	3/4	*LQ1T5A-TT1-R2
1/4	Tube 3/4	3/4	*LQ1T5A-TT1-R3
1/2	Tube 3/4	3/4	LQ1T5A-TT1-R5
1/2	Tube 1/2	3/4	LQ1T5A-TT1-R7
Tube 3/4	1/4	3/4	LQ1T5A-TT2-R4
Tube 1	3/4	3/4	*LQ1T5A-TT2-R40
Tube 3/4	3/4	Tube 1/2	LQ1T5A-TT3-R5
Tube 1/2	3/4	Tube 1/2	*LQ1T5A-TT3-R7
ø25	Tube 3/4	ø25	*LQ1T6A-TT1-R1
ø25	Tube 1/2	ø25	*LQ1T6A-TT1-R2
ø25	Tube 3/8	ø25	*LQ1T6A-TT1-R3
Tube 1	ø19	ø25	LQ1T6A-TT2-R1

* Products marked "*" are produced upon receipt of order. (The body of the fitting is PTFE machined.)

Fluoropolymer Fittings/Flare Type

LQ3 Series

Applicable tubing O.D.: Metric/Inch Size

Connection thread: R, Rc, NPT

200°C compatible

Excellent heat resistance

Excellent flow-through characteristics

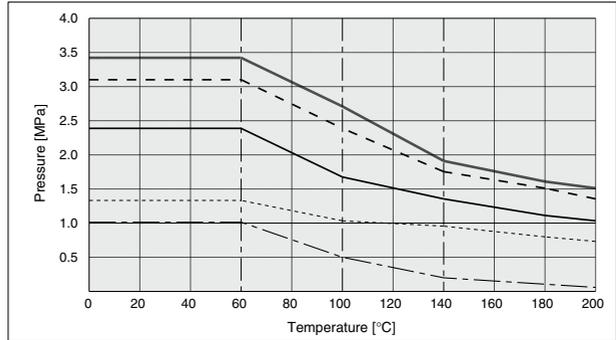
Ease of installation

Triple-seal construction

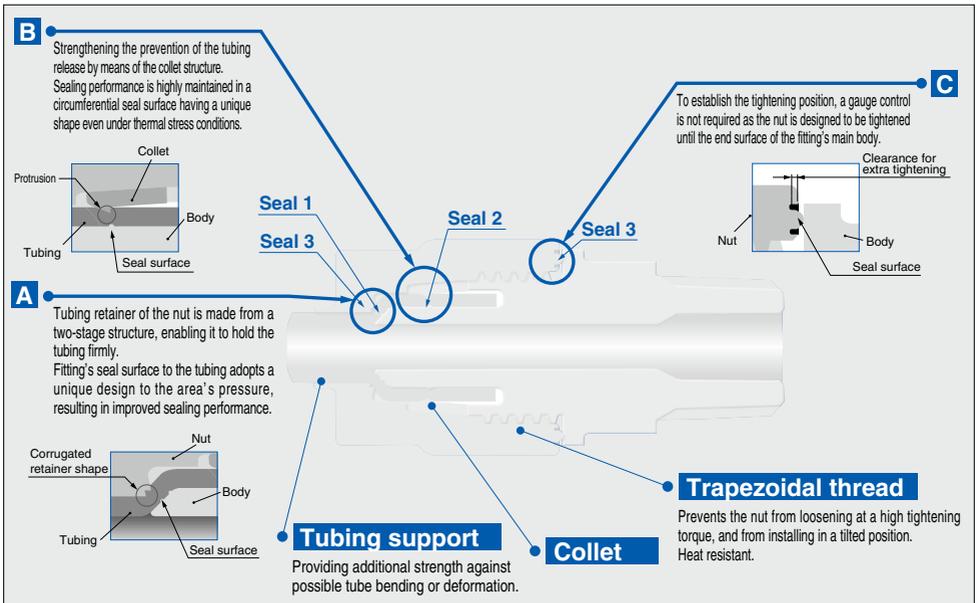
Flare type collet construction

Specifications		Heat Resistant		Corrosion Resistant		Clean	
		LQ3□10	LQ3□20	LQ3□30	LQ3□40	LQ3□50	LQ3□60
Feature	Model	NEW PFA					
Material		NEW PFA					
Max. operating pressure (at 20°C)		1 MPa					
Proof pressure		Refer to the withstand pressure and heat resistance performance data.					
Operating temperature	Nut material PVDF	0 to 150°C					
	Nut material PFA	0 to 200°C					

Withstand Pressure and Heat Resistance Performance



For details about precautions and specifications, refer to the **Web Catalog**.



Threaded connection

Connector

LQ3H

Male

Female



p. 195

Elbow

LQ3L

Male

Female



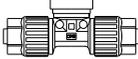
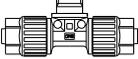
p. 196

Branch

LQ3B

Male

Female



p. 197

Run tee

LQ3R

Male

Female



p. 198

Tubing connection

Union elbow

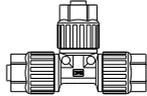
LQ3E



p. 199

Union tee

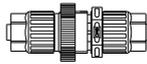
LQ3T



p. 199

Panel mount union

LQ3P



p. 199

Union

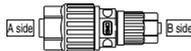
LQ3U



p. 199

Union reducing

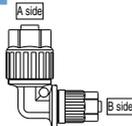
LQ3U-R



p. 200

Union elbow reducing

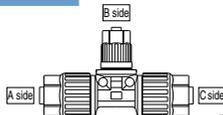
LQ3E-R



p. 200

Union tee reducing

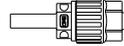
LQ3T-R



p. 201

Tubing extension straight connector

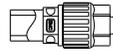
LQ3H-T



p. 201

Straight adapter

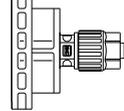
LQ3A



p. 202

Union flange

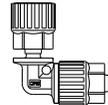
LQ3F



p. 202

Space saving union elbow

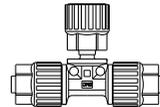
LQ3E-S



p. 203

Space saving branch tee

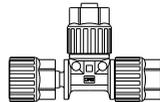
LQ3T-SB



p. 203

Space saving run tee

LQ3T-SR



p. 203

Oval Type

KQ2

Round Type

KQ2

KQB2

KS/KX

KM

KF

M

H/DL
L/L

KC

KK

KKH

KK
130

DM

DMK

KDM

KB

KR
-W2

KRM

KA

KQ2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/
KPG

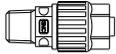
LQ1

LQ3

LQHB

Male connector

LQ3H-M



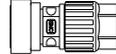
Metric size		
Applicable tubing O.D.	Connection thread R, NPT	Model
ø4	1/8"	LQ3H11-M □
		LQ3H12-M □
ø6	1/8"	LQ3H21-M □
	1/4"	LQ3H22-M □
ø10	1/8"	LQ3H31-M □
ø8		LQ3H32-M □
ø10	1/4"	LQ3H33-M □
ø8		LQ3H34-M □
ø10	3/8"	LQ3H35-M □
		LQ3H36-M □
ø8	1/2"	LQ3H38-M □
		LQ3H41-M □
ø12	1/4"	LQ3H42-M □
	3/8"	LQ3H43-M □
	1/2"	LQ3H44-M □
	3/4"	LQ3H51-M □
ø19	3/8"	LQ3H52-M □
	1/2"	LQ3H53-M □
ø25	3/4"	LQ3H61-M □
	1"	LQ3H62-M □
Inch size		
Applicable tubing O.D.	Connection thread R, NPT	Model
1/8"	1/8"	LQ3H1A-M □
1/4"	1/8"	LQ3H2A-M □
	1/4"	LQ3H2B-M □
3/8"	1/8"	LQ3H3A-M □
	1/4"	LQ3H3B-M □
	3/8"	LQ3H3C-M □
	1/2"	LQ3H3D-M □
1/2"	1/4"	LQ3H4A-M □
	3/8"	LQ3H4B-M □
	1/2"	LQ3H4C-M □
	3/4"	LQ3H4D-M □
3/4"	3/8"	LQ3H5A-M □
	1/2"	LQ3H5B-M □
1"	3/4"	LQ3H5C-M □
	1"	LQ3H6A-M □
	3/4"	LQ3H6B-M □
1 1/4"	1"	LQ3H7A-M □
	1 1/4"	LQ3H7B-M □
1 1/2"	1 1/2"	LQ3H8C-M □

Enter the thread type in □.

Nil	R, Rc
N	NPT

Female connector

LQ3H-F



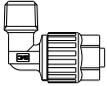
Metric size		
Applicable tubing O.D.	Connection thread Rc, NPT	Model
ø4	1/8"	LQ3H11-F □
		LQ3H12-F □
ø6	1/8"	LQ3H21-F □
	1/4"	LQ3H22-F □
ø10	1/8"	LQ3H31-F □
ø8		LQ3H32-F □
ø10	1/4"	LQ3H33-F □
ø8		LQ3H34-F □
ø10	3/8"	LQ3H35-F □
		LQ3H36-F □
ø8	1/2"	LQ3H41-F □
		LQ3H42-F □
ø12	3/8"	LQ3H43-F □
	1/2"	LQ3H44-F □
	3/8"	LQ3H51-F □
ø19	1/2"	LQ3H52-F □
	3/4"	LQ3H53-F □
ø25	1/2"	LQ3H61-F □
	3/4"	LQ3H62-F □
Inch size		
Applicable tubing O.D.	Connection thread Rc, NPT	Model
1/8"	1/8"	LQ3H1A-F □
1/4"	1/8"	LQ3H2A-F □
	1/4"	LQ3H2B-F □
3/8"	1/8"	LQ3H3A-F □
	1/4"	LQ3H3B-F □
	3/8"	LQ3H3C-F □
1/2"	1/4"	LQ3H4A-F □
	3/8"	LQ3H4B-F □
3/4"	1/2"	LQ3H4C-F □
	3/4"	LQ3H4D-F □
	3/8"	LQ3H5A-F □
1"	1/2"	LQ3H5B-F □
	3/4"	LQ3H5C-F □
1"	1/2"	LQ3H6A-F □
	3/4"	LQ3H6B-F □
1"	1"	LQ3H6C-F □

Enter the thread type in □.

Nil	R, Rc
N	NPT

Male elbow

LQ3L-M



Metric size		
Applicable tubing O.D.	Connection thread R, NPT	Model
ø4	1/8"	LQ3L11-M□
		LQ3L12-M□
ø6	1/8"	LQ3L21-M□
	1/4"	LQ3L22-M□
ø10	1/8"	LQ3L31-M□
		LQ3L32-M□
ø8	1/4"	LQ3L33-M□
		LQ3L34-M□
ø10	3/8"	LQ3L35-M□
		LQ3L36-M□
ø8	1/2"	LQ3L38-M□
		LQ3L41-M□
ø12	3/8"	LQ3L42-M□
	1/2"	LQ3L43-M□
ø19	3/8"	LQ3L51-M□
	1/2"	LQ3L52-M□
ø19	3/4"	LQ3L53-M□
		LQ3L61-M□
ø25	1/2"	LQ3L62-M□
	3/4"	LQ3L62-M□
ø25	1"	LQ3L63-M□
		LQ3L63-M□
Inch size		
Applicable tubing O.D.	Connection thread R, NPT	Model
1/8"	1/8"	LQ3L1A-M□
	1/8"	LQ3L2A-M□
1/4"	1/4"	LQ3L2B-M□
	1/8"	LQ3L3A-M□
3/8"	1/4"	LQ3L3B-M□
	3/8"	LQ3L3C-M□
1/2"	1/2"	LQ3L3D-M□
	1/4"	LQ3L4A-M□
1/2"	3/8"	LQ3L4B-M□
	1/2"	LQ3L4C-M□
3/4"	3/8"	LQ3L5A-M□
	1/2"	LQ3L5B-M□
3/4"	3/4"	LQ3L5C-M□
	1/2"	LQ3L6A-M□
1"	3/4"	LQ3L6B-M□
	1"	LQ3L6C-M□

Enter the thread type in □.

Nil	R, Rc
N	NPT

Female elbow

LQ3L-F



Metric size		
Applicable tubing O.D.	Connection thread Rc, NPT	Model
ø4	1/8"	LQ3L11-F□
		LQ3L12-F□
ø6	1/8"	LQ3L21-F□
	1/4"	LQ3L22-F□
ø10	1/8"	LQ3L31-F□
		LQ3L32-F□
ø8	1/4"	LQ3L33-F□
		LQ3L34-F□
ø10	3/8"	LQ3L35-F□
		LQ3L36-F□
ø8	1/2"	LQ3L41-F□
		LQ3L42-F□
ø12	3/8"	LQ3L42-F□
	1/2"	LQ3L43-F□
ø19	3/8"	LQ3L51-F□
	1/2"	LQ3L52-F□
ø19	3/4"	LQ3L53-F□
		LQ3L61-F□
ø25	1/2"	LQ3L62-F□
	3/4"	LQ3L62-F□
ø25	1"	LQ3L63-F□
		LQ3L63-F□
Inch size		
Applicable tubing O.D.	Connection thread Rc, NPT	Model
1/8"	1/8"	LQ3L1A-F□
	1/8"	LQ3L2A-F□
1/4"	1/4"	LQ3L2B-F□
	1/8"	LQ3L3A-F□
3/8"	1/4"	LQ3L3B-F□
	3/8"	LQ3L3C-F□
1/2"	1/4"	LQ3L4A-F□
	3/8"	LQ3L4B-F□
1/2"	1/2"	LQ3L4C-F□
	3/8"	LQ3L5A-F□
3/4"	1/2"	LQ3L5B-F□
	3/4"	LQ3L5C-F□
1"	1/2"	LQ3L6A-F□
	3/4"	LQ3L6B-F□
1"	1"	LQ3L6C-F□
		LQ3L6C-F□

Enter the thread type in □.

Nil	R, Rc
N	NPT

Oval Type

KQ2

Round Type

KQ2

KQ2

KQ2

KS/KX

KM

KF

M

H/DL

L/LL

KC

KK

KKH

KK

KK 130

DM

DMK

KDM

KB

KR

-W2

KRM

KA

KQ2

KQ2-G

KG

KFG2

MS

KKA

KP

KPO/KPG

LQ1

LQ3

LQHB

Male branch tee

LQ3B-M



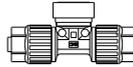
Metric size		
Applicable tubing O.D.	Connection thread R, NPT	Model
ø4	1/8"	LQ3B11-M□
		LQ3B12-M□
ø6	1/8"	LQ3B21-M□
	1/4"	LQ3B22-M□
ø10	1/8"	LQ3B31-M□
ø8		LQ3B32-M□
ø10	1/4"	LQ3B33-M□
ø8		LQ3B34-M□
ø10	3/8"	LQ3B35-M□
		ø8
ø12	1/4"	LQ3B41-M□
	3/8"	LQ3B42-M□
	1/2"	LQ3B43-M□
ø19	3/8"	LQ3B51-M□
	1/2"	LQ3B52-M□
	3/4"	LQ3B53-M□
ø25	1/2"	LQ3B61-M□
	3/4"	LQ3B62-M□
	1"	LQ3B63-M□
Inch size		
Applicable tubing O.D.	Connection thread R, NPT	Model
1/8"	1/8"	LQ3B1A-M□
1/4"	1/8"	LQ3B2A-M□
	1/4"	LQ3B2B-M□
3/8"	1/8"	LQ3B3A-M□
	1/4"	LQ3B3B-M□
	3/8"	LQ3B3C-M□
1/2"	1/4"	LQ3B4A-M□
	3/8"	LQ3B4B-M□
	1/2"	LQ3B4C-M□
3/4"	3/8"	LQ3B5A-M□
	1/2"	LQ3B5B-M□
	3/4"	LQ3B5C-M□
1"	1/2"	LQ3B6A-M□
	3/4"	LQ3B6B-M□
	1"	LQ3B6C-M□

Enter the thread type in □.

Nil	R, Rc
N	NPT

Female branch tee

LQ3B-F



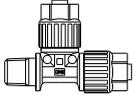
Metric size		
Applicable tubing O.D.	Connection thread Rc, NPT	Model
ø4	1/8"	LQ3B11-F□
		LQ3B12-F□
ø6	1/8"	LQ3B21-F□
	1/4"	LQ3B22-F□
ø10	1/8"	LQ3B31-F□
ø8		LQ3B32-F□
ø10	1/4"	LQ3B33-F□
ø8		LQ3B34-F□
ø10	3/8"	LQ3B35-F□
		ø8
ø12	1/4"	LQ3B41-F□
	3/8"	LQ3B42-F□
	1/2"	LQ3B43-F□
ø19	3/8"	LQ3B51-F□
	1/2"	LQ3B52-F□
	3/4"	LQ3B53-F□
ø25	1/2"	LQ3B61-F□
	3/4"	LQ3B62-F□
	1"	LQ3B63-F□
Inch size		
Applicable tubing O.D.	Connection thread Rc, NPT	Model
1/8"	1/8"	LQ3B1A-F□
1/4"	1/8"	LQ3B2A-F□
	1/4"	LQ3B2B-F□
3/8"	1/8"	LQ3B3A-F□
	1/4"	LQ3B3B-F□
	3/8"	LQ3B3C-F□
1/2"	1/4"	LQ3B4A-F□
	3/8"	LQ3B4B-F□
	1/2"	LQ3B4C-F□
3/4"	3/8"	LQ3B5A-F□
	1/2"	LQ3B5B-F□
	3/4"	LQ3B5C-F□
1"	1/2"	LQ3B6A-F□
	3/4"	LQ3B6B-F□
	1"	LQ3B6C-F□

Enter the thread type in □.

Nil	R, Rc
N	NPT

Male run tee

LQ3R-M



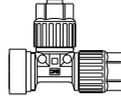
Metric size		
Applicable tubing O.D.	Connection thread R, NPT	Model
ø4	1/8"	LQ3R11-M□
		LQ3R12-M□
ø6	1/8"	LQ3R21-M□
	1/4"	LQ3R22-M□
ø10	1/8"	LQ3R31-M□
ø8		LQ3R32-M□
ø10	1/4"	LQ3R33-M□
		ø8
ø10	3/8"	LQ3R35-M□
		ø8
ø12	1/4"	LQ3R41-M□
	3/8"	LQ3R42-M□
	1/2"	LQ3R43-M□
ø19	3/8"	LQ3R51-M□
	1/2"	LQ3R52-M□
	3/4"	LQ3R53-M□
ø25	1/2"	LQ3R61-M□
	3/4"	LQ3R62-M□
	1"	LQ3R63-M□
Inch size		
Applicable tubing O.D.	Connection thread R, NPT	Model
1/8"	1/8"	LQ3R1A-M□
1/4"	1/8"	LQ3R2A-M□
	1/4"	LQ3R2B-M□
3/8"	1/8"	LQ3R3A-M□
	1/4"	LQ3R3B-M□
	3/8"	LQ3R3C-M□
1/2"	1/4"	LQ3R4A-M□
	3/8"	LQ3R4B-M□
	1/2"	LQ3R4C-M□
3/4"	3/8"	LQ3R5A-M□
	1/2"	LQ3R5B-M□
	3/4"	LQ3R5C-M□
1"	1/2"	LQ3R6A-M□
	3/4"	LQ3R6B-M□
	1"	LQ3R6C-M□

Enter the thread type in □.

Nil	R, Rc
N	NPT

Female run tee

LQ3R-F



Metric size		
Applicable tubing O.D.	Connection thread Rc, NPT	Model
ø4	1/8"	LQ3R11-F□
		LQ3R12-F□
ø6	1/8"	LQ3R21-F□
	1/4"	LQ3R22-F□
ø10	1/8"	LQ3R31-F□
ø8		LQ3R32-F□
ø10	1/4"	LQ3R33-F□
		ø8
ø10	3/8"	LQ3R35-F□
		ø8
ø12	1/4"	LQ3R41-F□
	3/8"	LQ3R42-F□
	1/2"	LQ3R43-F□
ø19	3/8"	LQ3R51-F□
	1/2"	LQ3R52-F□
	3/4"	LQ3R53-F□
ø25	1/2"	LQ3R61-F□
	3/4"	LQ3R62-F□
	1"	LQ3R63-F□
Inch size		
Applicable tubing O.D.	Connection thread Rc, NPT	Model
1/8"	1/8"	LQ3R1A-F□
1/4"	1/8"	LQ3R2A-F□
	1/4"	LQ3R2B-F□
3/8"	1/8"	LQ3R3A-F□
	1/4"	LQ3R3B-F□
	3/8"	LQ3R3C-F□
1/2"	1/4"	LQ3R4A-F□
	3/8"	LQ3R4B-F□
	1/2"	LQ3R4C-F□
3/4"	3/8"	LQ3R5A-F□
	1/2"	LQ3R5B-F□
	3/4"	LQ3R5C-F□
1"	1/2"	LQ3R6A-F□
	3/4"	LQ3R6B-F□
	1"	LQ3R6C-F□

Enter the thread type in □.

Nil	R, Rc
N	NPT

Oval Type

KQ2

Round Type

KQ2

KQB2

KS/KX

KM

KF

M

H/DL

L/LL

KC

KK

KKH

KK 130

DM

DMK

KDM

KB

KR -W2

KRM

KA

KQ2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/KPG

LQ1

LQ3

LQHB

Union elbow

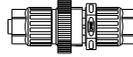
LQ3E



Metric size	
Applicable tubing O.D.	Model
ø4	LQ3E11
ø3	LQ3E12
ø6	LQ3E21
ø10	LQ3E31
ø8	LQ3E32
ø12	LQ3E41
ø19	LQ3E51
ø25	LQ3E61
Inch size	
Applicable tubing O.D.	Model
1/8"	LQ3E1A
1/4"	LQ3E2A
3/8"	LQ3E3A
1/2"	LQ3E4A
3/4"	LQ3E5A
1"	LQ3E6A
1 1/4"	LQ3E7A
1 1/2"	LQ3E8A

Panel mount union

LQ3P



Metric size	
Applicable tubing O.D.	Model
ø4	LQ3P11
ø3	LQ3P12
ø6	LQ3P21
ø10	LQ3P31
ø8	LQ3P32
ø12	LQ3P41
ø19	LQ3P51
ø25	LQ3P61
Inch size	
Applicable tubing O.D.	Model
1/8"	LQ3P1A
1/4"	LQ3P2A
3/8"	LQ3P3A
1/2"	LQ3P4A
3/4"	LQ3P5A
1"	LQ3P6A

Union tee

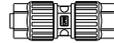
LQ3T



Metric size	
Applicable tubing O.D.	Model
ø4	LQ3T11
ø3	LQ3T12
ø6	LQ3T21
ø10	LQ3T31
ø8	LQ3T32
ø12	LQ3T41
ø19	LQ3T51
ø25	LQ3T61
Inch size	
Applicable tubing O.D.	Model
1/8"	LQ3T1A
1/4"	LQ3T2A
3/8"	LQ3T3A
1/2"	LQ3T4A
3/4"	LQ3T5A
1"	LQ3T6A
1 1/4"	LQ3T7A
1 1/2"	LQ3T8A

Union

LQ3U



Metric size	
Applicable tubing O.D.	Model
ø4	LQ3U11
ø3	LQ3U12
ø6	LQ3U21
ø10	LQ3U31
ø8	LQ3U32
ø12	LQ3U41
ø19	LQ3U51
ø25	LQ3U61
Inch size	
Applicable tubing O.D.	Model
1/8"	LQ3U1A
1/4"	LQ3U2A
3/8"	LQ3U3A
1/2"	LQ3U4A
3/4"	LQ3U5A
1"	LQ3U6A
1 1/4"	LQ3U7A
1 1/2"	LQ3U8A

Union reducing

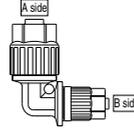
LQ3U-R



Metric size		
Applicable tubing O.D.		Model
A side	B side	
ø4	ø3	LQ3U11-R1
ø6	ø4	LQ3U21-R1
	ø3	LQ3U21-R2
ø10	ø8	LQ3U31-R1
	ø6	LQ3U31-R2
ø8	ø6	LQ3U32-R1
	ø4	LQ3U32-R2
ø12	ø10	LQ3U41-R1
	ø8	LQ3U41-R2
ø19	ø12	LQ3U51-R1
	ø10	LQ3U51-R2
ø25	ø19	LQ3U61-R1
	ø12	LQ3U61-R2
Inch size		
Applicable tubing O.D.		Model
A side	B side	
1/4"	1/8"	LQ3U2A-R1
3/8"	1/4"	LQ3U3A-R1
	1/8"	LQ3U3A-R2
1/2"	3/8"	LQ3U4A-R1
	1/4"	LQ3U4A-R2
3/4"	1/2"	LQ3U5A-R1
	3/8"	LQ3U5A-R2
	1/4"	LQ3U5A-R3
1"	3/4"	LQ3U6A-R1
	1/2"	LQ3U6A-R2
1 1/4"	1"	LQ3U7A-R1

Union elbow reducing

LQ3E-R



Metric size		
Applicable tubing O.D.		Model
A side	B side	
ø4	ø3	LQ3E11-R1
ø6	ø4	LQ3E21-R1
	ø3	LQ3E21-R2
ø10	ø8	LQ3E31-R1
	ø6	LQ3E31-R2
ø8	ø6	LQ3E32-R1
	ø4	LQ3E32-R2
ø12	ø10	LQ3E41-R1
	ø8	LQ3E41-R2
ø19	ø12	LQ3E51-R1
	ø10	LQ3E51-R2
ø25	ø19	LQ3E61-R1
	ø12	LQ3E61-R2
Inch size		
Applicable tubing O.D.		Model
A side	B side	
1/4"	1/8"	LQ3E2A-R1
3/8"	1/4"	LQ3E3A-R1
	1/8"	LQ3E3A-R2
1/2"	3/8"	LQ3E4A-R1
	1/4"	LQ3E4A-R2
3/4"	1/2"	LQ3E5A-R1
	3/8"	LQ3E5A-R2
	1/4"	LQ3E5A-R3
1"	3/4"	LQ3E6A-R1
	1/2"	LQ3E6A-R2

Oval Type

KQ2

KQ2

Round Type

KQ2

KQB2

KS/KX

KM

KF

M

H/DL

L/LL

KC

KK

KKH

KK 130

DM

DMK

KDM

KB

KR-W2

KRM

KA

KQG2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/KPG

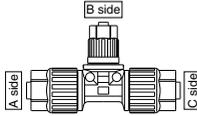
LQ1

LQ3

LQHB

Union tee reducing

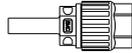
LQ3T-R



Metric size			
Applicable tubing O.D.			Model
A side (Left)	B side (Center)	C side (Right)	
ø4	ø3	ø4	LQ3T11-R1
	ø4	ø3	LQ3T11-R5
ø6	ø4	ø6	LQ3T21-R1
	ø3	ø6	LQ3T21-R2
	ø6	ø4	LQ3T21-R5
	ø6	ø3	LQ3T21-R6
ø10	ø8	ø10	LQ3T31-R1
	ø6	ø10	LQ3T31-R2
	ø10	ø8	LQ3T31-R5
ø8	ø10	ø6	LQ3T31-R6
	ø6	ø8	LQ3T32-R1
ø12	ø8	ø6	LQ3T32-R5
	ø10	ø12	LQ3T41-R1
ø19	ø12	ø10	LQ3T41-R5
	ø12	ø19	LQ3T51-R1
ø25	ø19	ø12	LQ3T51-R5
	ø19	ø25	LQ3T61-R1
ø25	ø25	ø19	LQ3T61-R5
	Inch size		
Applicable tubing O.D.			Model
A side (Left)	B side (Center)	C side (Right)	
1/4"	1/8"	1/4"	LQ3T2A-R1
	1/4"	1/8"	LQ3T2A-R5
3/8"	1/4"	3/8"	LQ3T3A-R1
	1/8"	3/8"	LQ3T3A-R2
	3/8"	1/4"	LQ3T3A-R5
1/4"	1/4"	1/4"	LQ3T3A-R7
	3/8"	1/4"	LQ3T3A-R9
1/2"	3/8"	1/2"	LQ3T4A-R1
	1/4"	1/2"	LQ3T4A-R2
	1/2"	3/8"	LQ3T4A-R5
	1/2"	1/4"	LQ3T4A-R6
	3/8"	3/8"	LQ3T4A-R7
	1/4"	1/4"	LQ3T4A-R8
3/8"	1/2"	3/8"	LQ3T4A-R9
	1/2"	3/4"	LQ3T5A-R1
3/4"	3/8"	3/4"	LQ3T5A-R2
	1/4"	3/4"	LQ3T5A-R3
	3/4"	1/2"	LQ3T5A-R5
	3/4"	3/8"	LQ3T5A-R6
	1/2"	1/2"	LQ3T5A-R7
1/2"	3/4"	1/2"	LQ3T5A-R9
3/8"	3/4"	3/8"	LQ3T5A-R10
3/4"	1/2"	1/4"	LQ3T5A-R11
	3/4"	1/4"	LQ3T5A-R12
1"	3/4"	1"	LQ3T6A-R1
	1/2"	1"	LQ3T6A-R2
	3/8"	1"	LQ3T6A-R3
	1/4"	1"	LQ3T6A-R4
	1"	3/4"	LQ3T6A-R5
	1"	1/2"	LQ3T6A-R6
3/4"	3/4"	3/4"	LQ3T6A-R7
	1"	3/4"	LQ3T6A-R9
1/2"	1"	1/2"	LQ3T6A-R10
1"	1"	3/8"	LQ3T6A-R12
	1"	1/4"	LQ3T6A-R13
3/4"	1"	1/4"	LQ3T6A-R14

Tubing extension straight connector

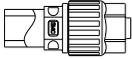
LQ3H-T



Metric size	
Applicable tubing O.D.	Model
ø6	LQ3H21-T
ø10	LQ3H31-T
ø8	LQ3H32-T
ø12	LQ3H41-T
ø19	LQ3H51-T
ø25	LQ3H61-T
Inch size	
Applicable tubing O.D.	Model
1/4"	LQ3H2A-T
3/8"	LQ3H3A-T
1/2"	LQ3H4A-T
3/4"	LQ3H5A-T
1"	LQ3H6A-T
1 1/4"	LQ3H7A-T

Straight adapter

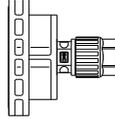
LQ3A



Metric size	
Applicable tubing O.D.	Model
6 x 4	LQ3A21
	LQ3A22
	LQ3A23
	LQ3A24
	LQ3A25
8 x 6	LQ3A32
	LQ3A34
10 x 8	LQ3A36
	LQ3A37
8 x 6	LQ3A38
12 x 10	LQ3A41
	LQ3A42
	LQ3A43
	LQ3A44
19 x 16	LQ3A51
	LQ3A52
	LQ3A53
25 x 22	LQ3A61
	LQ3A62
	LQ3A63
Inch size	
Applicable tubing O.D.	Model
1/4" x 5/32"	LQ3A2A
	LQ3A2B
	LQ3A2C
	LQ3A2D
	LQ3A2E
3/8" x 1/4"	LQ3A3A
	LQ3A3B
	LQ3A3C
1/2" x 3/8"	LQ3A4A
	LQ3A4B
	LQ3A4C
	LQ3A4D
3/4" x 5/8"	LQ3A5A
	LQ3A5B
	LQ3A5C
1" x 3/4"	LQ3A6A
	LQ3A6B
	LQ3A6C
1 1/4" x 1.1"	LQ3A7A

Union flange

LQ3F



Metric size	
Applicable tubing O.D.	Model
6 x 4	LQ3F22
12 x 10	LQ3F42
	LQ3F43
19 x 16	LQ3F51
	LQ3F52
25 x 22	LQ3F53
	LQ3F62
	LQ3F63
25 x 22	LQ3F64
	Inch size
Applicable tubing O.D.	Model
1/4" x 5/32"	LQ3F2B
1/2" x 3/8"	LQ3F4B
	LQ3F4C
3/4" x 5/8"	LQ3F5A
	LQ3F5B
	LQ3F5C
1" x 7/8"	LQ3F6B
	LQ3F6C
	LQ3F6D

Oval Type

KQ2

Round Type

KQ2

KQB2

KS/KX

KM

KF

M

H/DL

L/LL

KC

KK

KKH

KK 130

DM

DMK

KDM

KB

KR -W2

KRM

KA

KQG2

KQ2-G

KG

KFG2

MS

KKA

KP

KPQ/KPG

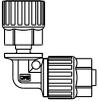
LQ1

LQ3

LQHB

Space saving union elbow

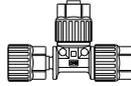
LQ3E-S



Metric size	
Applicable tubing O.D.	Model
ø6	LQ3E21-S
ø10	LQ3E31-S
ø8	LQ3E32-S
ø12	LQ3E41-S
ø19	LQ3E51-S
ø25	LQ3E61-S
Inch size	
Applicable tubing O.D.	Model
1/4"	LQ3E2A-S
3/8"	LQ3E3A-S
1/2"	LQ3E4A-S
3/4"	LQ3E5A-S
1"	LQ3E6A-S
1 1/4"	LQ3E7A-S

Space saving run tee

LQ3T-SR



Metric size	
Applicable tubing O.D.	Model
ø6	LQ3T21-SR
ø10	LQ3T31-SR
ø8	LQ3T32-SR
ø12	LQ3T41-SR
ø19	LQ3T51-SR
ø25	LQ3T61-SR
Inch size	
Applicable tubing O.D.	Model
1/4"	LQ3T2A-SR
3/8"	LQ3T3A-SR
1/2"	LQ3T4A-SR
3/4"	LQ3T5A-SR
1"	LQ3T6A-SR

Space saving branch tee

LQ3T-SB



Metric size	
Applicable tubing O.D.	Model
ø6	LQ3T21-SB
ø10	LQ3T31-SB
ø8	LQ3T32-SB
ø12	LQ3T41-SB
ø19	LQ3T51-SB
ø25	LQ3T61-SB
Inch size	
Applicable tubing O.D.	Model
1/4"	LQ3T2A-SB
3/8"	LQ3T3A-SB
1/2"	LQ3T4A-SB
3/4"	LQ3T5A-SB
1"	LQ3T6A-SB

Fluoropolymer Bore Through Connector

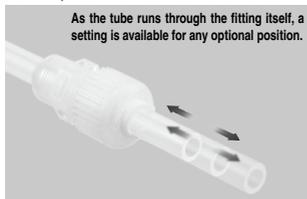
LQHB Series

Applicable tubing O.D.: Metric/Inch Size

Connection thread: R, NPT

Freely choose tube positioning

Can be used in pressure feed of chemical liquids, etc., during the production process of semiconductors. Applicable to chemical liquids such as acid, alkali, and deionized water.



Specifications

Max. operating pressure (at 20°C)	1.0 MPa (Refer to Precautions 1.)
Operating temperature	0 to 200°C (Refer to Precautions 1.)
Applicable tubing O.D.	Refer to the Combination Chart.

Heat Resistant

Corrosion Resistant

Clean

Precautions

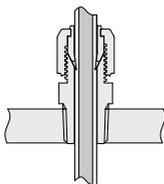
1. The operating pressure or operating temperature range for each tubing size differs depending on the usage conditions. Keep the supplied fluid pressure and temperature within the range of each specification.
2. The piping should be arranged in such a way that no extraction force other than the fluid pressure should be added to the tubing.
3. Avoid using in instances where the nut is soaked in the fluid.
4. Screw in the R or NPT screw after inserting the tubing. (If the screw is screwed in first, the tubing may be hard to insert.)

Types of Use

There are presumably two different types of use for the bore through connector as indicated in conditions A and B, and the specifications will differ according to the type of use.

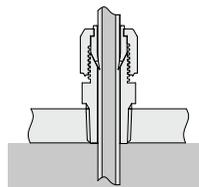
Condition A

- For applications including boring through panels or walls, etc.
- Atmospheric release

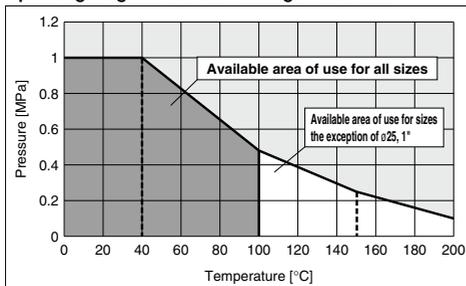


Condition B

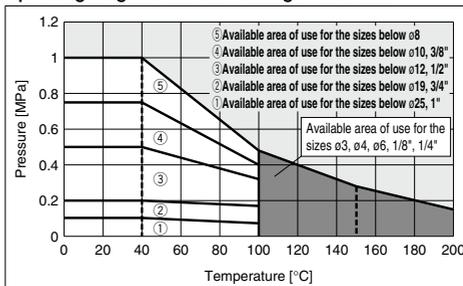
- For applying sustained pressure to the female thread.
- Using the same pressure and temperature as that of the inside of the tube.



Operating range for the bore through connector



Operating range for the bore through connector



Easy tightening of nuts

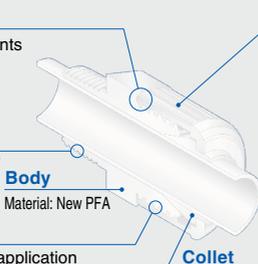
- The trapezoidal thread prevents oblique nut insertion.

Taper thread

Thread type: R, NPT

Locking

Trapezoidal thread allows application of high torque.



Nut

Material: New PFA

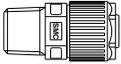
Maximum operating temperature

200°C

The tube is held securely in place by the tightening nut and collet.
Material: PTFE

Bore through connector

LQHB



Metric size		
Applicable tubing O.D.	Connection thread R, NPT	Model
ø3		LQHB03-□
ø4	1/8"	LQHB04-□
ø6	1/4"	LQHB06-□
ø8	3/8"	LQHB08-□
ø10		LQHB10-□
ø12	1/2"	LQHB12-□
ø19	3/4"	LQHB19-□
ø25	1"	LQHB25-□
Inch size		
Applicable tubing O.D.	Connection thread R, NPT	Model
1/8"	1/8"	LQHB03-□
1/4"	1/4"	LQHB07-□
3/8"	3/8"	LQHB11-□
1/2"	1/2"	LQHB13-□
3/4"	3/4"	LQHB19-□
1"	1"	LQHB25-□

□: Nil (R), N (NPT)

Speed Controllers with One-touch Fitting

Speed Controller with One-touch Fitting: Standard Type

	Model	Port size on the cylinder side	Applicable tubing O.D. Metric size [mm]							Page	
			2	3.2	4	6	8	10	12		16
Push-lock type Elbow type	AS12□1F	M5	●	●	●	●	●	●	●	213	
	AS22□1F	1/8, 1/4				●	●	●	●		
	AS32□1F	1/4, 3/8					●	●	●		
	AS42□1F	1/2						●	●		
Push-lock type Face seal Elbow type	AS22□1F	1/8, 1/4				●	●	●	●	215	
	AS32□1F	1/4, 3/8					●	●	●		
	AS42□1F	1/2						●	●		
Push-lock type Uni thread Elbow type	AS22□1F	1/8, 1/4				●	●	●	●	217	
	AS32□1F	1/4, 3/8					●	●	●		
	AS42□1F	1/2						●	●		
Push-lock type Universal type	AS13□1F	M5		●	●	●	●	●	●	213	
	AS23□1F	1/8, 1/4				●	●	●	●		
	AS33□1F	1/4, 3/8					●	●	●		
	AS43□1F	1/2						●	●		
Push-lock type Uni thread Universal type	AS23□1F	1/8, 1/4				●	●	●	●	217	
	AS33□1F	1/4, 3/8					●	●	●		
	AS43□1F	1/2						●	●		
Elbow type	AS12□1F	M3	●	●	●	●	●	●	●	219	
	AS12□1F	M5	●	●	●	●	●	●	●		
	AS22□1F	1/8, 1/4				●	●	●	●		
	AS32□1F	1/4, 3/8					●	●	●		
	AS42□1F	1/2						●	●		
Uni thread Elbow type	AS22□1F	1/8, 1/4				●	●	●	●	223	
	AS32□1F	3/8					●	●	●		
	AS42□1F	1/2						●	●		
Universal type	AS13□1F	M3		●	●	●	●	●	●	219	
	AS13□1F	M5		●	●	●	●	●	●		
	AS23□1F	1/8, 1/4				●	●	●	●		
	AS33□1F	1/4, 3/8					●	●	●		
	AS43□1F	1/2						●	●		
Uni thread Universal type	AS23□1F	1/8, 1/4				●	●	●	●	223	
	AS33□1F	3/8					●	●	●		
	AS43□1F	1/2						●	●		
Push-lock type With indicator/Elbow type	AS12□1FS	M5	●	●	●	●	●	●	●	225	
	AS22□1FS	1/8, 1/4				●	●	●	●		
	AS32□1FS	1/4, 3/8					●	●	●		
	AS42□1FS	1/2						●	●		
Push-lock type Uni thread With indicator/Elbow type	AS22□1FS	1/8, 1/4				●	●	●	●	227	
	AS32□1FS	1/4, 3/8					●	●	●		
	AS42□1FS	1/2						●	●		
Push-lock type With indicator/Universal type	AS13□1FS	M5, 10-32UNF		●	●	●	●	●	●	225	
	AS23□1FS	1/8, 1/4				●	●	●	●		
	AS33□1FS	1/4, 3/8					●	●	●		
	AS43□1FS	1/2						●	●		

- AS
- AS-1F
- AS-FS
- AS-W2
- AS-X737
- AS-F
- AS-P
- AS-2F
- AS-2FS
- AS-1F-3
- AS-DPP
- ASD
- AS-FE
- AS-FG
- AS-1FG
- AS-FSG
- AS-2FG
- AS□1FG
- AS-2FSG
- ASD-FG
- AS-PPQ
- AS-PPQ
- AS-FM
- ASD-FM
- AS-F-D
- ASD-F-D
- AS-F-T
- ASD-F-T
- ASP
- ASV
- AS-R
- AS-Q
- ASR
- ASQ

Related

Speed Controllers with One-touch Fitting

Speed Controller with One-touch Fitting: Standard Type

Flame resistant (Equivalent to UL-94 Standard V-0) Elbow type



Model	Port size on the cylinder side	Applicable tubing O.D. Metric size [mm]						Page	
		2	3.2	4	6	8	10	12	16
AS12□1F	M5				●				
AS22□1F	1/8, 1/4				●	●	●		
AS32□1F	1/4, 3/8				●	●	●	●	
AS42□1F	1/2						●	●	

229

All metal exterior Elbow type



AS22□1-01-F□S-X737	1/8				●				
AS22□1-02-F□S-X737	1/4				●	●	●		
AS32□1-03-F□S-X737	3/8						●	●	

231

Elbow type (Metal body)



AS12□1	M5				●				
AS22□1	1/8				●	●			
AS22□1	1/4				●	●	●		
AS32□1	3/8						●	●	
AS42□1	1/2						●	●	

233

Plug-in type



AS10□0P	ø4				●				
AS20□0P	ø4, ø6				●	●			
AS25□0P	ø6						●	●	
AS30□0P	ø8, ø10						●	●	

235

Push-lock type In-line type



AS1002F					●	●			
AS2002F					●	●			
AS2052F							●	●	
AS3002F							●	●	●
AS4002F								●	●

237

In-line type



AS1002F		●	●	●	●				
AS2002F			●	●	●				
AS2052F				●	●	●			
AS3002F					●	●	●	●	
AS4002F							●	●	●

238

Push-lock type With indicator In-line type



AS1002FS□					●	●			
AS2002FS□					●	●			
AS2052FS□							●	●	
AS3002FS□							●	●	●
AS4002FS□								●	●

239

In-line type Panel mount type



AS1001F					●	●			
AS2001F					●	●			
AS2051F							●	●	
AS3001F							●	●	●
AS4001F								●	●

240

Centralized piping type Made to Order



AS-DPP00092	ø4				●				
AS-DPP00093	ø6						●		

241

Dual speed controller



ASD230F	M5				●	●			
ASD330F	1/8				●	●	●		
ASD430F	1/4				●	●	●	●	
ASD530F	1/4						●	●	●
ASD530F	3/8						●	●	●
ASD630F	1/2							●	●

242

Speed Controller with Residual Pressure Release Valve

With One-touch fitting/
Elbow



With One-touch fitting/
Universal



Model	Port size on the cylinder side	Applicable tubing O.D. Metric size [mm]							Page	
		2	3.2	4	6	8	10	12		16
AS22□1FE	1/8			●	●	●	●	●		243
AS22□1FE	1/4			●	●	●	●	●		
AS32□1FE	3/8			●	●	●	●	●		
AS42□1FE	1/2			●	●	●	●	●		
AS23□1FE	1/8			●	●	●	●	●		243
AS23□1FE	1/4			●	●	●	●	●		
AS33□1FE	3/8			●	●	●	●	●		
AS43□1FE	1/2			●	●	●	●	●		

Speed Controller Stainless Steel Series

Push-lock type
Elbow type



Elbow type



Push-lock type
Universal type



Universal type



Push-lock type
With indicator/
Elbow type



Push-lock type
With indicator/
Universal type



Push-lock type
In-line type



Model	Port size on the cylinder side	Applicable tubing O.D. Metric size [mm]							Page	
		2	3.2	4	6	8	10	12		16
AS12□1FG	M5	●	●	●	●	●	●	●		245
AS22□1FG	1/8, 1/4			●	●	●	●	●		
AS32□1FG	1/4, 3/8			●	●	●	●	●		
AS42□1FG	1/2			●	●	●	●	●		
AS12□1FG	M5			●	●	●	●	●		247
AS22□1FG	1/8			●	●	●	●	●		
AS22□1FG	1/4			●	●	●	●	●		
AS32□1FG	1/4			●	●	●	●	●		
AS32□1FG	3/8			●	●	●	●	●		
AS42□1FG	1/2			●	●	●	●	●		
AS13□1FG	M5			●	●	●	●	●		245
AS23□1FG	1/8, 1/4			●	●	●	●	●		
AS33□1FG	1/4, 3/8			●	●	●	●	●		
AS43□1FG	1/2			●	●	●	●	●		
AS13□1FG	M5			●	●	●	●	●		247
AS23□1FG	1/8			●	●	●	●	●		
AS23□1FG	1/4			●	●	●	●	●		
AS33□1FG	1/4			●	●	●	●	●		
AS33□1FG	3/8			●	●	●	●	●		
AS43□1FG	1/2			●	●	●	●	●		
AS12□1FSG	M5	●	●	●	●	●	●	●		249
AS22□1FSG	1/8, 1/4			●	●	●	●	●		
AS32□1FSG	1/4, 3/8			●	●	●	●	●		
AS42□1FSG	1/2			●	●	●	●	●		
AS12□1FSG1	M5			●	●	●	●	●		249
AS22□1FSG1	1/8, 1/4			●	●	●	●	●		
AS32□1FSG1	1/4, 3/8			●	●	●	●	●		
AS42□1FSG1	1/2			●	●	●	●	●		
AS1002FG				●	●	●	●	●		251
AS2002FG				●	●	●	●	●		
AS2052FG				●	●	●	●	●		
AS3002FG				●	●	●	●	●		
AS4002FG				●	●	●	●	●		

- AS
- AS-1F
- AS-FS
- AS-W2
- AS-X737
- AS-F
- AS-P
- AS-2F
- AS-2FS
- AS-1F-3
- AS-DPP
- ASD
- AS-FE
- AS-FG
- AS-1FG
- AS-FSG
- AS-2FG
- AS□1FG
- AS-2FSG
- ASD-FG
- AS-FPG
- AS-FM
- ASD-FM
- AS-F-D
- ASD-F-D
- AS-F-T
- ASD-F-T
- ASP
- ASV
- AS-R
- AS-Q
- ASR
- ASQ
- Related

Speed Controllers with One-touch Fitting

Speed Controller Stainless Steel Series	Model	Port size on the cylinder side	Applicable tubing O.D. Metric size [mm]							Page
			2	3.2	4	6	8	10	12	
In-line type 	AS1001FG			•	•	•				252
	AS2001FG			•	•	•				
	AS2051FG				•	•	•			
	AS3001FG					•	•	•	•	
	AS4001FG							•	•	
Push-lock type With indicator In-line type 	AS1002FSG		•	•	•					253
	AS2002FSG			•	•	•				
	AS2052FSG				•	•	•			
	AS3002FSG					•	•	•	•	
	AS4002FSG							•	•	
Dual speed controller 	ASD230FG	M5			•	•				254
	ASD330FG	1/8				•	•			
	ASD430FG	1/4					•	•		
	ASD530FG	1/4						•	•	
	ASD530FG	3/8							•	
	ASD630FG	1/2								
Clean speed controller with One-touch fitting 	AS12□1FP□	M5			•	•				255
	AS22□1FP□	1/8				•	•			
	AS22□1FP□	1/4					•	•		
	AS32□1FP□	3/8						•	•	
	AS42□1FP□	1/2							•	

Speed Controller for Low Speed Operation	Model	Port size on the cylinder side	Applicable tubing O.D. Metric size [mm]							Page
			2	3.2	4	6	8	10	12	
Elbow type 	AS12□1FM	M5		•	•	•				257
	AS22□1FM	1/8			•	•	•			
	AS22□1FM	1/4				•	•	•		
Universal type 	AS13□1FM	M5		•	•	•				257
	AS23□1FM	1/8			•	•	•			
	AS23□1FM	1/4					•	•		
In-line type 	AS1001FM			•	•	•				259
	AS2001FM				•	•	•			
	AS2051FM							•	•	
Dual speed controller 	ASD230FM	M5			•	•				260
	ASD330FM	1/8				•	•			
	ASD430FM	1/4						•	•	

Speed Controllers with One-touch Fitting

Speed Controller with Pilot Check Valve



Model	Port size on the cylinder side	Applicable tubing O.D. Metric size [mm]	Page
ASP330F-01	1/8	2 3.2 4 6 8 10 12 16	269
ASP430F-02	1/4	2 3.2 4 6 8 10 12 16	
ASP530F-03	3/8	2 3.2 4 6 8 10 12 16	
ASP630F-04	1/2	2 3.2 4 6 8 10 12 16	

Speed Exhaust Controller



Model	Port size on the cylinder side	Applicable tubing O.D. Metric size [mm]	Page
ASV120F-M3	M3 x 0.5	2 3.2 4 6 8 10 12 16	270
ASV220F-M5	M5 x 0.8	2 3.2 4 6 8 10 12 16	
ASV310F-01	R1/8	2 3.2 4 6 8 10 12 16	
ASV310F-02	R1/4	2 3.2 4 6 8 10 12 16	
ASV410F-01	R1/8	2 3.2 4 6 8 10 12 16	
ASV410F-02	R1/4	2 3.2 4 6 8 10 12 16	
ASV410F-03	R3/8	2 3.2 4 6 8 10 12 16	
ASV510F-02	R1/4	2 3.2 4 6 8 10 12 16	
ASV510F-03	R3/8	2 3.2 4 6 8 10 12 16	
ASV510F-04	R1/2	2 3.2 4 6 8 10 12 16	

Air Saving Speed Controller

With pressure reduction function



Model	Port size on the cylinder side	Applicable tubing O.D. Metric size [mm]	Page
AS22R-□01-□	1/8	2 3.2 4 6 8 10 12 16	271
AS22R-□02-□	1/4	2 3.2 4 6 8 10 12 16	
AS32R-□02-□	1/4	2 3.2 4 6 8 10 12 16	
AS32R-□03-□	3/8	2 3.2 4 6 8 10 12 16	
AS42R-□03-□	3/8	2 3.2 4 6 8 10 12 16	
AS42R-□04-□	1/2	2 3.2 4 6 8 10 12 16	

With rapid supply and exhaust function



Model	Port size on the cylinder side	Applicable tubing O.D. Metric size [mm]	Page
AS22Q-□02-□	1/4	2 3.2 4 6 8 10 12 16	271
AS32Q-□02-□	1/4	2 3.2 4 6 8 10 12 16	
AS32Q-□03-□	3/8	2 3.2 4 6 8 10 12 16	
AS42Q-□03-□	3/8	2 3.2 4 6 8 10 12 16	
AS42Q-□04-□	1/2	2 3.2 4 6 8 10 12 16	

Air Saving Valve

Pressure valve



Model	Port size on the cylinder side	Applicable tubing O.D. Metric size [mm]	Page
ASR430F	1/4	2 3.2 4 6 8 10 12 16	273
ASR530F	1/4	2 3.2 4 6 8 10 12 16	
ASR530F	3/8	2 3.2 4 6 8 10 12 16	
ASR630F	3/8	2 3.2 4 6 8 10 12 16	
ASR630F	1/2	2 3.2 4 6 8 10 12 16	

Flow valve



Model	Port size on the cylinder side	Applicable tubing O.D. Metric size [mm]	Page
ASQ430F	1/4	2 3.2 4 6 8 10 12 16	273
ASQ530F	1/4	2 3.2 4 6 8 10 12 16	
ASQ530F	3/8	2 3.2 4 6 8 10 12 16	
ASQ630F	3/8	2 3.2 4 6 8 10 12 16	
ASQ630F	1/2	2 3.2 4 6 8 10 12 16	

Related Products

Restrictor/AS-X214/X21 Page 275



Bushing Type Check Valve with One-touch Fittings Straight Type, Male Connector Type AKH Series Page 277

Bushing Type AKB Series



Residual Pressure Release Valve with One-touch Fittings/KEA Series Page 276

With One-touch Fittings without a Push Button Guard KEA Series



Check Valve INA/XTO Series Page 278

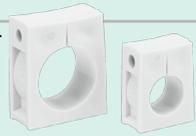


Residual Pressure Release Valve with One-touch Fittings/KEB Series Page 276

With One-touch Fittings with a Push Button Guard KEB Series



Holder for Speed Controller TMH Page 278



Residual Pressure Release Valve with Rc Thread and a Push Button Guard KEC Series Page 276



Multi-holder TMA Series Page 278



Quick Exhaust Valve with One-touch Fittings AQF Series Page 276



Metering Valve with Silencer ASN2 Series Page 277



- AS
- AS ·1F
- AS ·FS
- AS ·W2
- AS ·X737
- AS-F
- AS-P
- AS ·2F
- AS ·2FS
- AS ·1F-3
- AS ·DPP
- ASD
- AS ·FE
- AS ·FG
- AS ·1FG
- AS ·FSG
- AS ·2FG
- AS□ 1FG
- AS ·2FSG
- ASD ·FG
- AS-PPQ
- AS-PPG
- AS ·FM
- ASD ·FM
- AS ·F-D
- ASD ·F-D
- AS ·F-T
- ASD ·F-T
- ASP
- ASV
- AS-R
- AS-Q
- ASR
- ASQ

Related

Speed Controller with One-touch Fitting

Push-lock type

AS Series

Elbow Type/Universal Type

Applicable tubing O.D.: Metric Size Connection thread: M, R

How to Order

Width across flats (H)

E	8 mm
Nil	9 mm

Applicable tubing O.D.*1

02	ø2
23	ø3.2*2
04	ø4
06	ø6

*1 For selecting applicable tubing O.D., refer to the model on the table below.
*2 Use ø1/8" tubing.

Body size

1	M5 x 0.8
---	----------

Port size

M5	M5 x 0.8
----	----------

Body size 1 AS 1 2 0 1 F - M5 E - 06 A - []

Body size 2/3/4 AS 2 2 0 1 F - 01 - 06 S A - []

Body size

2	1/8, 1/4
3	3/8
4	1/2

Type

2	Elbow
3	Universal

Port size

01	R1/8
02	R1/4
03	R3/8
04	R1/2

Control type*1

0	Meter-out
1	Meter-in

*1 Meter-out and meter-in types can be visually identified by the color of the knob.
Meter-out: Gray
Meter-in: Light blue

Applicable tubing O.D.*1

23	ø3.2*2
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12
16	ø16

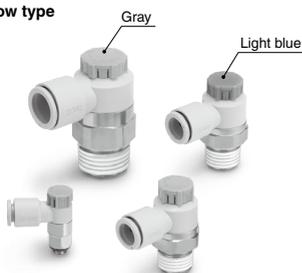
Seal method

Nil	Without sealant
S	With sealant

Made to order
Refer to the next page for details.

Push-lock type

Elbow type



Universal type



*1 For selecting applicable tubing O.D., refer to the model on the table below.
*2 Use ø1/8" tubing.

Model

Port size	Applicable tubing O.D.							Elbow type		Universal type	
	Metric size							Meter-out	Meter-in	Meter-out	Meter-in
	2 ^{#2}	3.2	4	6	8	10	12				
M5 x 0.8	*1	●	●	●	●	●	●	AS1201F-M5E	AS1211F-M5E	AS1301F-M5E	AS1311F-M5E
R1/8	●	●	●	●	●	●	*1	AS2201F-01	AS2211F-01	AS2301F-01	AS2311F-01
R1/4	●	●	●	●	●	●	●	AS2201F-02	AS2211F-02	AS2301F-02	AS2311F-02
R1/4	●	●	●	●	●	●	●	AS3201F-02	AS3211F-02	AS3301F-02	AS3311F-02
R3/8	●	●	●	●	●	●	●	AS3201F-03	AS3211F-03	AS3301F-03	AS3311F-03
R1/2	●	●	●	●	●	●	*1	AS4201F-04	AS4211F-04	AS4301F-04	AS4311F-04

*1 Universal type is not available.

*2 Only polyurethane tubing is applicable for ø2.

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane, FEP, PFA

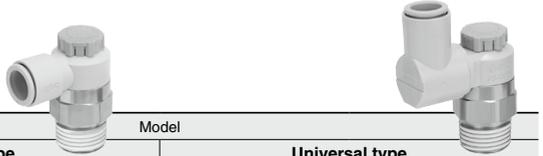
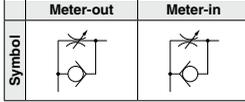
*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

Elbow Type/Universal Type

AS

Symbol

Flow Direction Symbols on Body



Applicable tubing O.D. [mm]	Connection thread	Model			
		Elbow type		Universal type	
		Meter-out	Meter-in	Meter-out	Meter-in
2	M5 x 0.8	AS1201F-M5E-02A	AS1211F-M5E-02A	—	—
	M5 x 0.8	AS1201F-M5E-23A	AS1211F-M5E-23A	AS1301F-M5E-23A	AS1311F-M5E-23A
3.2	R1/8	AS2201F-01-23SA	AS2211F-01-23SA	AS2301F-01-23SA	AS2311F-01-23SA
	R1/4	-02-23SA	-02-23SA	—	—
4	M5 x 0.8	AS1201F-M5E-04A	AS1211F-M5E-04A	AS1301F-M5E-04A	AS1311F-M5E-04A
	R1/8	AS2201F-01-04SA	AS2211F-01-04SA	AS2301F-01-04SA	AS2311F-01-04SA
	R1/4	-02-04SA	-02-04SA	-02-04SA	-02-04SA
6	M5 x 0.8	AS1201F-M5E-06A	AS1211F-M5E-06A	AS1301F-M5E-06A	AS1311F-M5E-06A
	R1/8	AS2201F-01-06SA	AS2211F-01-06SA	AS2301F-01-06SA	AS2311F-01-06SA
	R1/4	-02-06SA	-02-23SA	-02-06SA	-02-06SA
		AS3201F-02-06SA	AS3211F-02-06SA	AS3301F-02-06SA	AS3311F-02-06SA
R3/8	-03-06SA	-03-06SA	-03-06SA	-03-06SA	
8	R1/8	AS2201F-01-08SA	AS2211F-01-08SA	AS2301F-01-08SA	AS2311F-01-08SA
	R1/4	-02-08SA	-02-08SA	-02-08SA	-02-08SA
		AS3201F-02-08SA	AS3211F-02-08SA	AS3301F-02-08SA	AS3311F-02-08SA
R3/8	-03-08SA	-03-08SA	-03-08SA	-03-08SA	
10	R1/8	AS2201F-01-10SA	AS2211F-01-10SA	—	—
	R1/4	-02-10SA	-02-10SA	AS2301F-02-10SA	AS2311F-02-10SA
		AS3201F-02-10SA	AS3211F-02-10SA	AS3301F-02-10SA	AS3311F-02-10SA
	R3/8	-03-10SA	-03-10SA	-03-10SA	-03-10SA
12	R1/2	AS4201F-04-10SA	AS4211F-04-10SA	AS4301F-04-10SA	AS4311F-04-10SA
	R1/4	AS3201F-02-12SA	AS3211F-02-12SA	AS3301F-02-12SA	AS3311F-02-12SA
	R3/8	-03-12SA	-03-12SA	-03-12SA	-03-12SA
16	R1/2	AS4201F-04-12SA	AS4211F-04-12SA	AS4301F-04-12SA	AS4311F-04-12SA
	R1/2	AS4201F-04-16SA	AS4211F-04-16SA	—	—

For inch size, refer to the Web Catalog.



Made to Order

1 Lubricant: Vaseline X12

Example) AS2201F-01-04SA-X12

2 Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve) X21

Example) AS2201F-01-04SA-X21

- * Not particle-free
- * The restrictor is only compatible with the part number of the meter-out type.
- * Only the needle and O-ring are fluorine-coated.

3 Restrictor (Without check valve) X214

Example) AS2201F-01-04SA-X214

* The restrictor is only compatible with the part number of the meter-out type.

4 Clean Series 10-

Example) 10-AS2201F-01-04SA

- * Fluorine grease is used.
- * The cleanliness class (ISO class) is 5.

AS

AS-1F

AS-FS

AS-W2

AS-X737

AS-F

AS-P

AS-2F

AS-2FS

AS-1F-3

AS-DPP

ASD

AS-FE

AS-FG

AS-1FG

AS-FSG

AS-2FG

AS□1FG

AS-2FSG

ASD-FG

AS-PPQ

AS-PPG

AS-FM

ASD-FM

AS-F-D

ASD-F-D

AS-F-T

ASD-F-T

ASP

ASV

AS-R

AS-Q

ASR

ASQ

Related

Speed Controller with One-touch Fitting

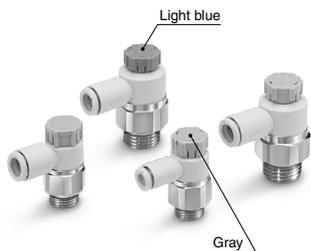
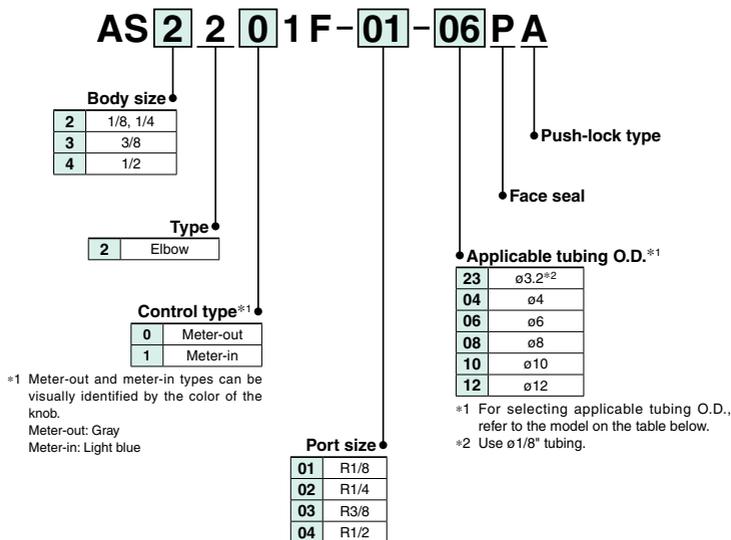
Push-lock type Face seal

AS Series

Elbow Type

Applicable tubing O.D.: Metric Size Connection thread: R

How to Order



Model

Port size	Applicable tubing O.D.					Elbow type	
	Metric size					Meter-out	Meter-in
	3.2	4	6	8	10		
R1/8	●	●	●	●	●	AS2201F-01-□PA	AS2211F-01-□PA
R1/4	●	●	●	●	●	AS2201F-02-□PA	AS2211F-02-□PA
R3/8			●	●	●	AS3201F-03-□PA	AS3211F-03-□PA
R1/2					●	AS4201F-04-□PA	AS4211F-04-□PA

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane, FEP, PFA

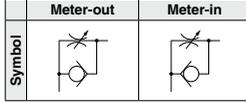
*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

Elbow Type

AS

Symbol

Flow Direction Symbols on Body



Applicable tubing O.D. [mm]	Connection thread	Model	
		Elbow type	
		Meter-out	Meter-in
3.2	R1/8	AS2201F-01-23PA	AS2211F-01-23PA
	R1/4	-02-23PA	-02-23PA
4	R1/8	AS2201F-01-04PA	AS2211F-01-04PA
	R1/4	-02-04PA	-02-04PA
6	R1/8	AS2201F-01-06PA	AS2211F-01-06PA
	R1/4	-02-06PA	-02-06PA
	R3/8	AS3201F-03-06PA	AS3211F-03-06PA
8	R1/8	AS2201F-01-08PA	AS2211F-01-08PA
	R1/4	-02-08PA	-02-08PA
	R3/8	AS3201F-03-08PA	AS3211F-03-08PA
10	R1/8	AS2201F-01-10PA	AS2211F-01-10PA
	R1/4	-02-10PA	-02-10PA
	R3/8	AS3201F-03-10PA	AS3211F-03-10PA
12	R1/2	AS4201F-04-10PA	AS4211F-04-10PA
	R3/8	AS3201F-03-12PA	AS3211F-03-12PA
	R1/2	AS4201F-04-12PA	AS4211F-04-12PA

For inch size, refer to the **Web Catalog**.



Made to Order

1 Lubricant: Vaseline

X12

Example) AS2201F-01-04PA-X12

2 Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve)

X21

Example) AS2201F-01-04PA-X21

- * Not particle-free
- * The restrictor is only compatible with the part number of the meter-out type.
- * Only the needle and O-ring are fluorine-coated.

3 Restrictor (Without check valve)

X214

Example) AS2201F-01-04PA-X214

- * The restrictor is only compatible with the part number of the meter-out type.

4 Clean Series

10-

Example) 10-AS2201F-01-04PA

- * Fluorine grease is used.
- * The cleanliness class (ISO class) is 5.

AS

AS-1F

AS-FS

AS-W2

AS-X737

AS-F

AS-P

AS-2F

AS-2FS

AS-1F-3

AS-DPP

ASD

AS-FE

AS-FG

AS-1FG

AS-FSG

AS-2FG

AS□1FG

AS-2FSG

ASD-FG

AS-PPQ

AS-FM

ASD-FM

AS-F-D

ASD-F-D

AS-F-T

ASD-F-T

ASP

ASV

AS-R

ASQ

Related

Speed Controller with Uni One-touch Fitting

Push-lock type

AS Series

Elbow Type/Universal Type

Applicable tubing O.D.: Metric Size Connection thread: Uni

How to Order

AS 2 2 0 1 F - U01 - 06 A

Body size

2	1/8, 1/4
3	3/8
4	1/2

Type

2	Elbow
3	Universal

Control type

0	Meter-out
1	Meter-in

Push-lock type

Applicable tubing O.D.*1

23	ø3.2*2
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12
16	ø16

*1 For selecting applicable tubing O.D., refer to the model on the table below.
*2 Use ø1/8" tubing.

Port size

U01	Uni 1/8
U02	Uni 1/4
U03	Uni 3/8
U04	Uni 1/2

* Meter-out and meter-in types can be visually identified by the color of the knob.
Meter-out: Gray
Meter-in: Light blue

With One-touch fitting



Model

Connection thread Uni thread	Applicable tubing O.D.						Elbow type		Universal type	
	Metric size						Meter-out	Meter-in	Meter-out	Meter-in
	3.2	4	6	8	10	12				
1/8	●	●	●	●	●*1		AS2201F-U01	AS2211F-U01	AS2301F-U01	AS2311F-U01
1/4	●*1	●	●	●	●		AS2201F-U02	AS2211F-U02	AS2301F-U02	AS2311F-U02
1/4			●	●	●	●	AS3201F-U02	AS3211F-U02	AS3301F-U02	AS3311F-U02
3/8			●	●	●	●	AS3201F-U03	AS3211F-U03	AS3301F-U03	AS3311F-U03
1/2				●	●	●*1	AS4201F-U04	AS4211F-U04	AS4301F-U04	AS4311F-U04

*1 Universal type is not available.

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane, FEP, PFA

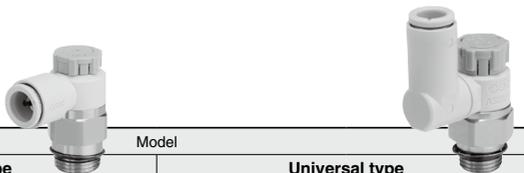
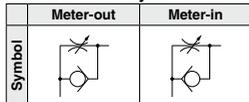
*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing.
(Refer to pages 285 and 287 for details.)

Elbow Type/Universal Type

AS

Symbol

Flow Direction Symbols on Body



Applicable tubing O.D. [mm]	Uni thread	Model			
		Elbow type		Universal type	
		Meter-out	Meter-in	Meter-out	Meter-in
3.2	1/8	AS2201F-U01-23A	AS2211F-U01-23A	AS2301F-U01-23A	AS2311F-U01-23A
	1/4	-U02-23A	-U02-23A	—	—
4	1/8	AS2201F-U01-04A	AS2211F-U01-04A	AS2301F-U01-04A	AS2311F-U01-04A
	1/4	-U02-04A	-U02-04A	-U02-04A	-U02-04A
6	1/8	AS2201F-U01-06A	AS2211F-U01-06A	AS2301F-U01-06A	AS2311F-U01-06A
	1/4	-U02-06A	-U02-06A	-U02-06A	-U02-06A
		AS3201F-U02-06A	AS3211F-U02-06A	AS3301F-U02-06A	AS3311F-U02-06A
	3/8	-U03-06A	-U03-06A	-U03-06A	-U03-06A
8	1/8	AS2201F-U01-08A	AS2211F-U01-08A	AS2301F-U01-08A	AS2311F-U01-08A
	1/4	-U02-08A	-U02-08A	-U02-08A	-U02-08A
		AS3201F-U02-08A	AS3211F-U02-08A	AS3301F-U02-08A	AS3311F-U02-08A
	3/8	-U03-08A	-U03-08A	-U03-08A	-U03-08A
10	1/8	AS2201F-U01-10A	AS2211F-U01-10A	—	—
	1/4	-U02-10A	-U02-10A	AS2301F-U02-10A	AS2311F-U02-10A
		AS3201F-U02-10A	AS3211F-U02-10A	AS3301F-U02-10A	AS3311F-U02-10A
	3/8	-U03-10A	-U03-10A	-U03-10A	-U03-10A
	1/2	AS4201F-U04-10A	AS4211F-U04-10A	AS4301F-U04-10A	AS4311F-U04-10A
12	1/4	AS3201F-U02-12A	AS3211F-U02-12A	AS3301F-U02-12A	AS3311F-U02-12A
	3/8	-U03-12A	-U03-12A	-U03-12A	-U03-12A
	1/2	AS4201F-U04-12A	AS4211F-U04-12A	AS4301F-U04-12A	AS4311F-U04-12A
16	1/2	AS4201F-U04-16A	AS4211F-U04-16A	—	—

For inch size, refer to the [Web Catalog](#).

AS

AS
·1F

AS
-FS

AS
-W2

AS
-X737

AS-F

AS-P

AS
·2F

AS
2FS

AS
·1F-3

AS
-DPP

ASD

AS
·FE

AS
-FG

AS
1FG

AS
·FSG

AS
·2FG

AS□
1FG

AS
·2FSG

ASD
·FG

AS-PPQ
AS-PPQ

AS
·FM

ASD
·FM

AS
·F-D

ASD
·F-D

AS
·F-T

ASD
·F-T

ASP

ASV

AS-R
AS-Q

ASR
ASQ

Related

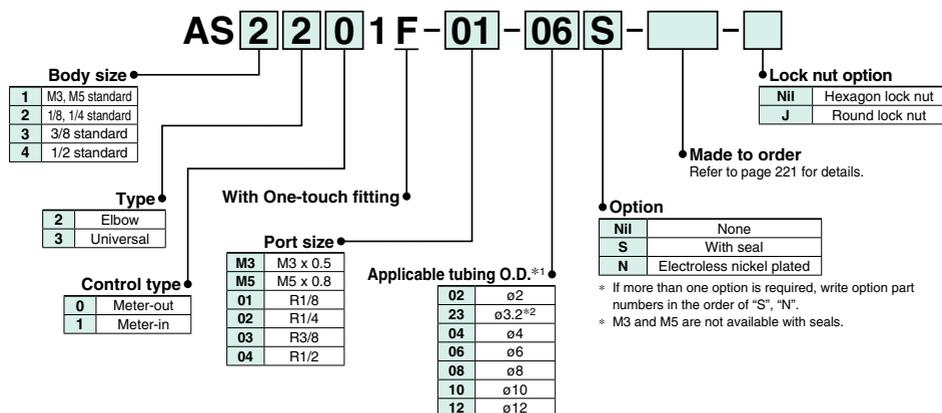
Speed Controller with One-touch Fitting

AS□□□1F Series

Elbow Type/Universal Type

Applicable tubing O.D.: Metric Size Connection thread: M, R

How to Order



*1 For selecting applicable tubing O.D., refer to the model on the table below.

*2 Use ø1/8" tubing.

Elbow type



Universal type



Model

Models marked with are electroless nickel plated as standard. (N specifications)

Port size	Applicable tubing O.D.						Elbow type		Universal type	
	Metric size						Meter-out	Meter-in	Meter-out	Meter-in
	2	3.2	4	6	8	10				
M3 x 0.5							AS1201F-M3	AS1211F-M3	AS1301F-M3	AS1311F-M3
M5 x 0.8							AS1201F-M5	AS1211F-M5	AS1301F-M5	AS1311F-M5
R1/8							AS2201F-01	AS2211F-01	AS2301F-01	AS2311F-01
R1/4							AS2201F-02	AS2211F-02	AS2301F-02	AS2311F-02
R1/4							AS3201F-02	AS3211F-02	AS3301F-02	AS3311F-02
R3/8							AS3201F-03	AS3211F-03	AS3301F-03	AS3311F-03
R1/2							AS4201F-04	AS4211F-04	AS4301F-04	AS4311F-04

*1 Elbow type only

* Meter-out and meter-in types can be visually differentiated by the lock nut. The lock nut on the meter-out type is zinc chromated (the round lock nut is electroless nickel plated), while the meter-in type is black zinc chromate plated.

Specifications

Fluid	Air
Proof pressure	1.5 MPa (1.05 MPa* ¹)
Max. operating pressure	1 MPa (0.7 MPa* ¹)
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*²	Nylon, Soft nylon, Polyurethane* ³
Option	With seal* ⁴ , Round lock nut, Electroless nickel plated* ⁵

*1 In case of AS12□□1F-M3-02, AS12□□1F-M5-02

*2 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

*3 In case of AS12□□1F-M3-02 and AS12□□1F-M5-02, polyurethane only.

*4 M3, M5 type ports are not available with seals.

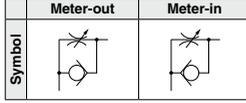
*5 Brass parts are all electroless nickel plated.

Elbow Type/Universal Type

AS□□□1F

Symbol

Flow Direction Symbols on Body



* Photo shows the model without seal.



Applicable tubing O.D. [mm]	Connection thread	Model			
		Elbow type		Universal type	
		Meter-out	Meter-in	Meter-out	Meter-in
2	M3 x 0.5	AS1201F-M3-02	AS1211F-M3-02	—	—
	M5 x 0.8	AS1201F-M5-02	AS1211F-M5-02	—	—
3.2	M3 x 0.5	AS1201F-M3-23	AS1211F-M3-23	AS1301F-M3-23	AS1311F-M3-23
	M5 x 0.8	-M5-23	-M5-23	-M5-23	-M5-23
	R1/8	AS2201F-01-23S	AS2211F-01-23S	AS2301F-01-23S	AS2311F-01-23S
4	M3 x 0.5	AS1201F-M3-04	AS1211F-M3-04	AS1301F-M3-04	AS1311F-M3-04
	M5 x 0.8	-M5-04	-M5-04	-M5-04	-M5-04
	R1/8	AS2201F-01-04S	AS2211F-01-04S	AS2301F-01-04S	AS2311F-01-04S
	R1/4	-02-04S	-02-04S	-02-04S	-02-04S
6	M5 x 0.8	AS1201F-M5-06	AS1211F-M5-06	AS1301F-M5-06	AS1311F-M5-06
	R1/8	AS2201F-01-06S	AS2211F-01-06S	AS2301F-01-06S	AS2311F-01-06S
	R1/4	-02-06S	-02-06S	-02-06S	-02-06S
		AS3201F-02-06S	AS3211F-02-06S	AS3301F-02-06S	AS3311F-02-06S
R3/8	-03-06S	-03-06S	-03-06S	-03-06S	
8	R1/8	AS2201F-01-08S	AS2211F-01-08S	AS2301F-01-08S	AS2311F-01-08S
	R1/4	-02-08S	-02-08S	-02-08S	-02-08S
		AS3201F-02-08S	AS3211F-02-08S	AS3301F-02-08S	AS3311F-02-08S
	R3/8	-03-08S	-03-08S	-03-08S	-03-08S
10	R1/8	AS2201F-01-10S	AS2211F-01-10S	—	—
	R1/4	-02-10S	-02-10S	AS2301F-02-10S	AS2311F-02-10S
		AS3201F-02-10S	AS3211F-02-10S	AS3301F-02-10S	AS3311F-02-10S
	R3/8	-03-10S	-03-10S	-03-10S	-03-10S
R1/2	AS4201F-04-10S	AS4211F-04-10S	AS4301F-04-10S	AS4311F-04-10S	
12	R1/4	AS3201F-02-12S	AS3211F-02-12S	AS3301F-02-12S	AS3311F-02-12S
	R3/8	-03-12S	-03-12S	-03-12S	-03-12S
	R1/2	AS4201F-04-12S	AS4211F-04-12S	AS4301F-04-12S	AS4311F-04-12S

For inch size, refer to the Web Catalog.

- AS
- AS-1F
- AS-FS
- AS-W2
- AS-X737
- AS-F
- AS-P
- AS-2F
- AS-2FS
- AS-1F-3
- AS-3
- AS-DPP
- ASD
- AS-FE
- AS-FG
- AS-1FG
- AS-FSG
- AS-2FG
- AS□1FG
- AS-2FSG
- ASD-FG
- AS-PPQ
- AS-PPG
- AS-FM
- ASD-FM
- AS-F-D
- ASD-F-D
- AS-F-T
- ASD-F-T
- ASP
- ASV
- AS-R
- AS-Q
- ASR
- ASQ
- Related



Made to Order

1 Lubricant: Vaseline **X12**

Example) AS2201F-01-04S-X12

2 Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve) **X21**

Example) AS2201F-01-04S-X21

- * Not particle-free
- * The restrictor is only compatible with the part number of the meter-out type.

3 Restrictor (Without check valve) **X214**

Example) AS2201F-01-04S-X214

- * The restrictor is only compatible with the part number of the meter-out type.

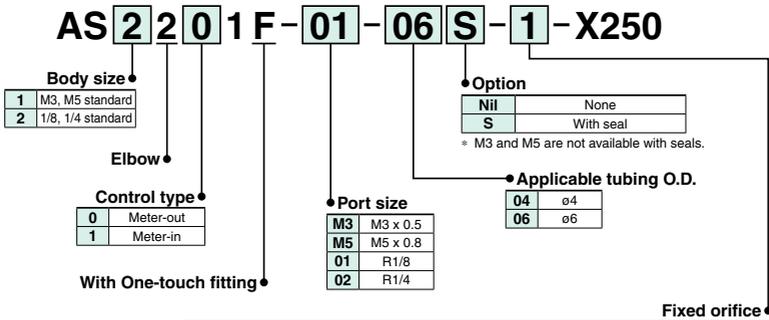
4 Clean Series **10-**

Lubricant: Fluorine grease, Double packaging

Example) 10-AS2201F-01-06

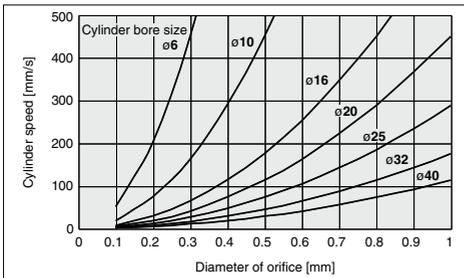
5 Fixed Throttle (No needle function) **X250**

How to Order



Symbol	Fixed orifice	Applicable model			
		AS12□1F-M3-04	AS12□1F-M5-04 AS12□1F-M5-06	AS22□1F-01-04 AS22□1F-01-06	AS22□1F-02-06
1	ø0.1	○	○	○	○
2	ø0.2	○	○	○	○
3	ø0.3	○	○	○	○
4	ø0.4	○	○	○	○
5	ø0.5	○	○	○	○
6	ø0.6	○	○	○	○
7	ø0.7	○	○	○	○
8	ø0.8	○	○	○	○
9	ø0.9	○	○	○	○
10	ø1.0	○	○	○	○

The graph below shows the relationship between orifices for each cylinder bore and cylinder speed. Please refer to it during selection. The cylinder speeds on the graph are theoretical values. Actual values may differ depending on the piping conditions or sliding friction, so please use this graph as a guideline only.



AS

AS
·1FAS
-FSAS
-W2AS
-X737

AS-F

AS-P

AS
·2FAS
·2FSAS
·1F-3AS
-DPP

ASD

AS
·FEAS
-FGAS
·1FGAS
·FSGAS
·2FGAS□
1FGAS
·2FSGASD
·FGAS-PPQ
AS-PPGAS
·FMASD
·FMAS
·F-DASD
·F-DAS
·F-TASD
·F-T

ASP

ASV

AS-R
AS-QASR
ASQ

Related

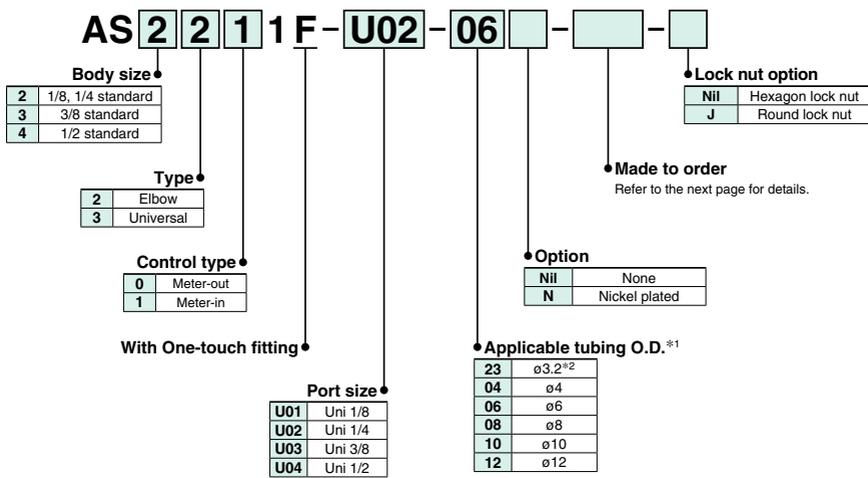
Speed Controller with Uni One-touch Fitting

AS□□□1F-U Series

Elbow Type/Universal Type

Applicable tubing O.D.: Metric Size Connection thread: Uni

How to Order



*1 For selecting applicable tubing O.D., refer to the model on the table below.

*2 Use ø1/8" tubing.



Model

Models marked with "☉" are nickel plated as standard.

Connection thread Uni thread	Applicable tubing O.D.					Elbow type		Universal type	
	Metric size					Meter-out	Meter-in	Meter-out	Meter-in
	3.2	4	6	8	10				
1/8	☉	☉	☉	☉	☉ ^{*1}	AS2201F-U01	AS2211F-U01	AS2301F-U01	AS2311F-U01
1/4		☉	☉	☉	☉	AS2201F-U02	AS2211F-U02	AS2301F-U02	AS2311F-U02
1/4			☉	☉	☉	AS3201F-U02	AS3211F-U02	AS3301F-U02	AS3311F-U02
3/8			☉	☉	☉	AS3201F-U03	AS3211F-U03	AS3301F-U03	AS3311F-U03
1/2				☉	☉	AS4201F-U04	AS4211F-U04	AS4301F-U04	AS4311F-U04

*1 Elbow type only

*2 Meter-out and meter-in types can be visually differentiated by the lock nut. The lock nut on the meter-out type is zinc chromated (the round lock nut is electroless nickel plated), while the meter-in type is black zinc chromate plated.

Specifications

Fluid	Air
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Proof pressure	1.5 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material ^{*1}	Nylon, Soft nylon, Polyurethane
Mounting thread	Uni thread
Thread seal	Gasket
Option	Round lock nut, Electroless nickel plated ^{*2}

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

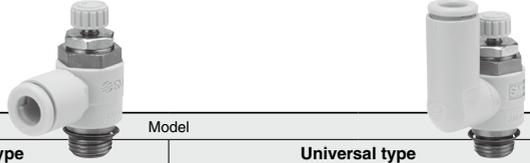
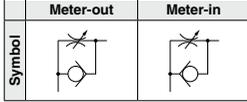
*2 Brass parts are all electroless nickel plated.

Elbow Type/Universal Type

AS□□□1F-U

Symbol

Flow Direction Symbols on Body



Applicable tubing O.D. [mm]	Uni thread	Model			
		Elbow type		Universal type	
		Meter-out	Meter-in	Meter-out	Meter-in
3.2	1/8	AS2201F-U01-23	AS2211F-U01-23	AS2301F-U01-23	AS2311F-U01-23
4	1/8	AS2201F-U01-04	AS2211F-U01-04	AS2301F-U01-04	AS2311F-U01-04
	1/4	-U02-04	-U02-04	-U02-04	-U02-04
6	1/8	AS2201F-U01-06	AS2211F-U01-06	AS2301F-U01-06	AS2311F-U01-06
	1/4	-U02-06	-U02-06	-U02-06	-U02-06
		AS3201F-U02-06	AS3211F-U02-06	AS3301F-U02-06	AS3311F-U02-06
3/8	-U03-06	-U03-06	-U03-06	-U03-06	
8	1/8	AS2201F-U01-08	AS2211F-U01-08	AS2301F-U01-08	AS2311F-U01-08
	1/4	-U02-08	-U02-08	-U02-08	-U02-08
		AS3201F-U02-08	AS3211F-U02-08	AS3301F-U02-08	AS3311F-U02-08
3/8	-U03-08	-U03-08	-U03-08	-U03-08	
10	1/8	AS2201F-U01-10	AS2211F-U01-10	—	—
	1/4	-U02-10	-U02-10	AS2301F-U02-10	AS2311F-U02-10
		AS3201F-U02-10	AS3211F-U02-10	AS3301F-U02-10	AS3311F-U02-10
	3/8	-U03-10	-U03-10	-U03-10	-U03-10
1/2	AS4201F-U04-10	AS4211F-U04-10	AS4301F-U04-10	AS4311F-U04-10	
12	1/4	AS3201F-U02-12	AS3211F-U02-12	AS3301F-U02-12	AS3311F-U02-12
	3/8	-U03-12	-U03-12	-U03-12	-U03-12
	1/2	AS4201F-U04-12	AS4211F-U04-12	AS4301F-U04-12	AS4311F-U04-12

For inch size, refer to the Web Catalog.



Made to Order

1 Antistatic Type

X260

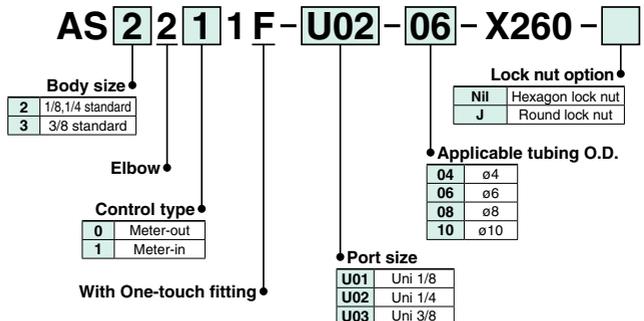
Model

Model	Applicable tubing O.D.			
	Metric size			
	4	6	8	10
AS22□1F-U01	●	●	●	●
AS22□1F-U02	●	●	●	●
AS32□1F-U03		●	●	

* Electroless nickel plated



How to Order



AS

AS-1F

AS-FS

AS-W2

AS-X737

AS-F

AS-P

AS-2F

AS-2FS

AS-1F-3

AS-DPP

ASD

AS-FE

AS-FG

AS-1FG

AS-FSG

AS-2FG

AS□1FG

AS-2FSG

ASD-FG

AS-PPQ

AS-PPG

AS-FM

ASD-FM

AS-F-D

ASD-F-D

AS-F-T

ASD-F-T

AS-P

ASV

AS-R

AS-SQ

ASR

ASQ

Related

Speed Controller with Indicator

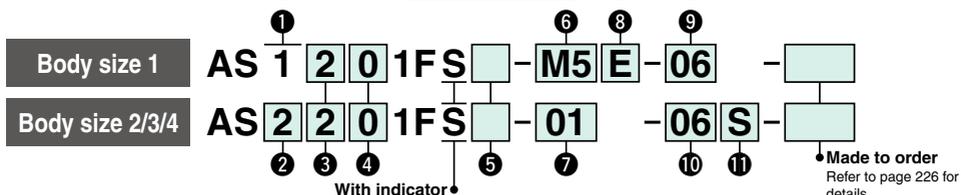
Push-lock type

AS-FS Series

Elbow Type/Universal Type

Applicable tubing O.D.: Metric Size Connection thread: M, R

How to Order



1 Body size

1	M5 x 0.8 10-32UNF
---	----------------------

2 Body size

2	1/8, 1/4
3	3/8
4	1/2

6 Port size

M5	M5 x 0.8
U10/32	10-32UNF

7 Port size

01	R1/8
02	R1/4
03	R3/8
04	R1/2

3 Type

2	Elbow
3	Universal

4 Control type*1

0	Meter-out
1	Meter-in

*1 Meter-out and meter-in types can be visually identified by the color of the knob.
Meter-out: Gray
Meter-in: Light blue

5 Indicator window direction

		Elbow	Universal
Nil	0° Indicator window	●	—
1	180° Indicator window	●	●
2	90° Indicator window	●	—
3	270° Indicator window	●	—

* Orientation of indicator direction is fixed when manufacturing, and cannot be changed by the user. In addition, the universal type is only available with 180° setting.

9 Applicable tubing O.D.*1

02	φ2	04	φ4
23	φ3.2*2	06	φ6

10 Applicable tubing O.D.*1

23	φ3.2*2	10	φ10
04	φ4	12	φ12
06	φ6	16	φ16
08	φ8		

*1 For selecting applicable tubing O.D., refer to the model on the table below.

*2 Use φ1/8" tubing.

8 Width across flats (H)

E	8 mm
Nil	9 mm

11 Seal method

Nil	Without sealant
S	With sealant

Model

Port size	Applicable tubing O.D.							Elbow type		Universal type	
	2*1	Metric size						Meter-out	Meter-in	Meter-out	Meter-in
		3.2	4	6	8	10	12				
M5 x 0.8	●	●	●	●	●	●	AS1201FS□-M5E	AS1211FS□-M5E	AS1301FS1-M5E	AS1311FS1-M5E	
R1/8	●	●	●	●	●	●	AS2201FS□-01	AS2211FS□-01	AS2301FS1-01	AS2311FS1-01	
R1/4	●	●	●	●	●	●	AS2201FS□-02	AS2211FS□-02	AS2301FS1-02	AS2311FS1-02	
R1/4			●	●	●	●	AS3201FS□-02	AS3211FS□-02	AS3301FS1-02	AS3311FS1-02	
R3/8			●	●	●	●	AS3201FS□-03	AS3211FS□-03	AS3301FS1-03	AS3311FS1-03	
R1/2				●	●	●	AS4201FS□-04	AS4211FS□-04	AS4301FS1-04	AS4311FS1-04	

*1 Only polyurethane tubing is applicable for φ2.

*2 Universal type is not available.

Elbow type



Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane, FEP, PFA

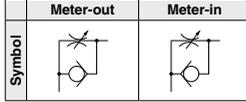
*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

Elbow Type/Universal Type

AS-FS

Symbol

Flow Direction Symbols on Body



Applicable tubing O.D. [mm]	Connection thread	Model			
		Elbow type		Universal type	
		Meter-out	Meter-in	Meter-out	Meter-in
2	M5 x 0.8	AS1201FS□-M5E-02	AS1211FS□-M5E-02	—	—
	M5 x 0.8	AS1201FS□-M5E-23	AS1211FS□-M5E-23	AS1301FS1-M5E-23	AS1311FS1-M5E-23
3.2	R1/8	AS2201FS□-01-23S	AS2211FS□-01-23S	AS2301FS1-01-23S	AS2311FS1-01-23S
	R1/4	-02-23S	-02-23S	—	—
4	M5 x 0.8	AS1201FS□-M5E-04	AS1211FS□-M5E-04	AS1301FS1-M5E-04	AS1311FS1-M5E-04
	R1/8	AS2201FS□-01-04S	AS2211FS□-01-04S	AS2301FS1-01-04S	AS2311FS1-01-04S
	R1/4	-02-04S	-02-04S	-02-04S	-02-04S
6	M5 x 0.8	AS1201FS□-M5E-06	AS1211FS□-M5E-06	AS1301FS1-M5E-06	AS1311FS1-M5E-06
	R1/8	AS2201FS□-01-06S	AS2211FS□-01-06S	AS2301FS1-01-06S	AS2311FS1-01-06S
	R1/4	-02-06S	-02-06S	-02-06S	-02-06S
		AS3201FS□-02-06S	AS3211FS□-02-06S	AS3301FS1-02-06S	AS3311FS1-02-06S
8	R3/8	-03-06S	-03-06S	-03-06S	-03-06S
	R1/8	AS2201FS□-01-08S	AS2211FS□-01-08S	AS2301FS1-01-08S	AS2311FS1-01-08S
	R1/4	-02-08S	-02-08S	-02-08S	-02-08S
AS3201FS□-02-08S		AS3211FS□-02-08S	AS3301FS1-02-08S	AS3311FS1-02-08S	
10	R3/8	-03-08S	-03-08S	-03-08S	-03-08S
	R1/8	AS2201FS□-01-10S	AS2211FS□-01-10S	—	—
	R1/4	-02-10S	-02-10S	AS2301FS1-02-10S	AS2311FS1-02-10S
		AS3201FS□-02-10S	AS3211FS□-02-10S	AS3301FS1-02-10S	AS3311FS1-02-10S
12	R3/8	-03-10S	-03-10S	-03-10S	-03-10S
	R1/2	AS4201FS□-04-10S	AS4211FS□-04-10S	AS4301FS1-04-10S	AS4311FS1-04-10S
	R1/4	AS3201FS□-02-12S	AS3211FS□-02-12S	AS3301FS1-02-12S	AS3311FS1-02-12S
16	R3/8	-03-12S	-03-12S	-03-12S	-03-12S
	R1/2	AS4201FS□-04-12S	AS4211FS□-04-12S	AS4301FS1-04-12S	AS4311FS1-04-12S
16	R1/2	AS4201FS□-04-16S	AS4211FS□-04-16S	—	—

For inch size, refer to the [Web Catalog](#).



Made to Order

1 Lubricant: Vaseline X12

Example) AS2201FS-01-04S-X12

2 Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve) X21

Example) AS2201FS-01-04S-X21

- * Not particle-free
- * The restrictor is only compatible with the part number of the meter-out type.
- * Only the needle and O-ring are fluorine-coated.

3 Restrictor (Without check valve) X214

Example) AS2201FS-01-04S-X214

* The restrictor is only compatible with the part number of the meter-out type.

4 Clean Series 10-

Example) 10-AS2201FS-01-04S

- * Fluorine grease is used.
- * The cleanliness class (ISO class) is 5.

Speed Controller with Indicator/Uni Thread Type

Push-lock type

AS-FS Series

Elbow Type

Applicable tubing O.D.: Metric Size Connection thread: Uni

How to Order

AS 2 2 0 1 FS □ - U01 - 06

Body size

2	1/8, 1/4
3	3/8
4	1/2

Type

2	Elbow
---	-------

Control type*1

0	Meter-out
1	Meter-in

With indicator

Applicable tubing O.D.*1

23	ø3.2*2
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12
16	ø16

Port size

U01	Uni 1/8
U02	Uni 1/4
U03	Uni 3/8
U04	Uni 1/2

Indicator window direction

Nil	0°	
1	180°	

* Orientation of indicator direction is fixed when manufacturing, and cannot be changed by the user.

*1 Meter-out and meter-in types can be visually identified by the color of the knob.
Meter-out: Gray
Meter-in: Light blue



Model

Port size	Applicable tubing O.D.						Elbow type	
	Metric size						Meter-out	Meter-in
	3.2	4	6	8	10	12	16	
R1/8	●	●	●	●	●			AS2201FS□-U01 AS2211FS□-U01
R1/4	●	●	●	●	●			AS2201FS□-U02 AS2211FS□-U02
R1/4			●	●	●	●		AS3201FS□-U02 AS3211FS□-U02
R3/8			●	●	●	●		AS3201FS□-U03 AS3211FS□-U03
R1/2					●	●	●	AS4201FS□-U04 AS4211FS□-U04

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane, FEP, PFA

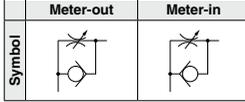
*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing.
(Refer to pages 285 and 287 for details.)

Elbow Type

AS-FS

Symbol

Flow Direction Symbols on Body



Applicable tubing O.D. [mm]	Connection thread	Model	
		Elbow type	
		Meter-out	Meter-in
3.2	R1/8	AS2201FS□-U01-23	AS2211FS□-U01-23
	R1/4	AS2201FS□-U02-23	AS2211FS□-U02-23
4	R1/8	AS2201FS□-U01-04	AS2211FS□-U01-04
	R1/4	-U02-04	-U02-04
6	R1/8	AS2201FS□-U01-06	AS2211FS□-U01-06
	R1/4	-U02-06	-U02-06
		AS3201FS□-U02-06	AS3211FS□-U02-06
	R3/8	-U03-06	-U03-06
8	R1/8	AS2201FS□-U01-08	AS2211FS□-U01-08
	R1/4	-U02-08	-U02-08
		AS3201FS□-U02-08	AS3211FS□-U02-08
	R3/8	-U03-08	-U03-08
10	R1/8	AS2201FS□-U01-10	AS2211FS□-U01-10
	R1/4	-U02-10	-U02-10
		AS3201FS□-U02-10	AS3211FS□-U02-10
	R3/8	-U03-10	-U03-10
12	R1/4	AS3201FS□-U02-12	AS3211FS□-U02-12
	R3/8	-U03-12	-U03-12
	R1/2	AS4201FS□-U04-12	AS4211FS□-U04-12
16	R1/2	AS4201FS□-U04-16	AS4211FS□-U04-16

For inch size, refer to the [Web Catalog](#).

- AS
- AS-1F
- AS-FS
- AS-W2
- AS-X737
- AS-F
- AS-P
- AS-2F
- AS-2FS
- AS-1F-3
- AS-DPP
- ASD
- AS-FE
- AS-FG
- AS-1FG
- AS-FSG
- AS-2FG
- AS□1FG
- AS-2FSG
- ASD-FG
- AS-PPQ
- AS-PPG
- AS-FM
- ASD-FM
- AS-F-D
- ASD-F-D
- AS-F-T
- ASD-F-T
- ASP
- ASV
- AS-R
- AS-Q
- ASR
- ASQ
- Related

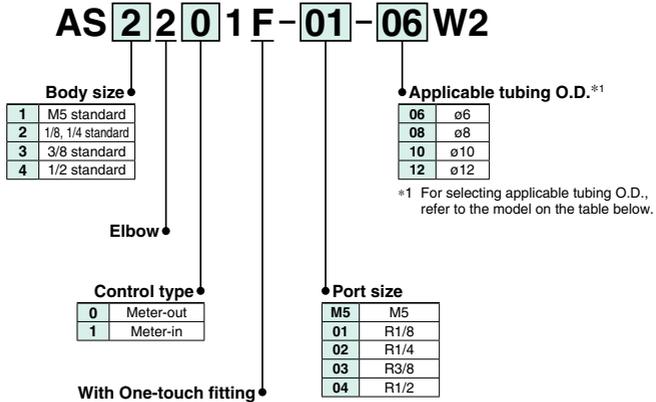
AS□□□1F-W2 Series

Elbow Type

Applicable tubing O.D.: Metric Size Connection thread: M5, R

Spatter Proof

How to Order



Model

Models marked with "⊙" are electroless nickel plated as standard. (N specifications)

Port size	Applicable tubing O.D.				Elbow type	
	Metric size				Meter-out	Meter-in
	6	8	10	12		
M5	⊙				AS1201F-M5-□W2	AS1211F-M5-□W2
R1/8	⊙	⊙	⊙		AS2201F-01-□W2	AS2211F-01-□W2
R1/4	⊙	⊙	⊙		AS2201F-02-□W2	AS2211F-02-□W2
R1/4	⊙	⊙	⊙	⊙	AS3201F-02-□W2	AS3211F-02-□W2
R3/8	⊙	⊙	⊙	⊙	AS3201F-03-□W2	AS3211F-03-□W2
R1/2			⊙	⊙	AS4201F-04-□W2	AS4211F-04-□W2

* Meter-out and meter-in types can be visually differentiated by the lock nut. The lock nut on the meter-out type is electroless nickel plated, while the meter-in type is black zinc chromate plated.

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane, FR double layer, FR Three-layer, FR soft nylon

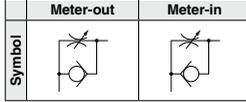
*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 283 to 287, 305, 307, and 311 for details.)

Elbow Type

AS□□□1F-W2

Symbol

Flow Direction Symbols on Body



Applicable tubing O.D. [mm]	Connection thread	Model	
		Elbow type	
		Meter-out	Meter-in
6	M5	AS1201F-M5-06W2	AS1211F-M5-06W2
	R1/8	AS2201F-01-06W2	AS2211F-01-06W2
	R1/4	AS2201F-02-06W2	AS2211F-02-06W2
		AS3201F-02-06W2	AS3211F-02-06W2
8	R3/8	AS3201F-03-06W2	AS3211F-03-06W2
	R1/8	AS2201F-01-08W2	AS2211F-01-08W2
		AS2201F-02-08W2	AS2211F-02-08W2
10	R1/4	AS3201F-02-08W2	AS3211F-02-08W2
		AS3201F-03-08W2	AS3211F-03-08W2
	R1/8	AS2201F-01-10W2	AS2211F-01-10W2
		AS2201F-02-10W2	AS2211F-02-10W2
12	R3/8	AS3201F-02-10W2	AS3211F-02-10W2
		AS3201F-03-10W2	AS3211F-03-10W2
	R1/2	AS4201F-04-10W2	AS4211F-04-10W2
	R1/4	AS3201F-02-12W2	AS3211F-02-12W2
AS3201F-03-12W2		AS3211F-03-12W2	
	R1/2	AS4201F-04-12W2	AS4211F-04-12W2

- AS
- AS-1F
- AS-FS
- AS-W2
- AS-X737
- AS-F
- AS-P
- AS-2F
- AS-2FS
- AS-1F-3
- AS-DPP
- ASD
- AS-FE
- AS-FG
- AS-1FG
- AS-FSG
- AS-2FG
- AS□1FG
- AS-2FSG
- ASD-FG
- AS-PPQ
- AS-PPG
- AS-FM
- ASD-FM
- AS-F-D
- ASD-F-D
- AS-F-T
- ASD-F-T
- ASP
- ASV
- AS-R
- AS-Q
- ASR
- ASQ
- Related

All Metal Exterior Speed Controller with One-touch Fitting

AS-X737 Series

Elbow Type

Applicable tubing O.D.: Metric Size Connection thread: R

Spatter Proof

How to Order

AS **3** **2** **0** **1** - **03** - **F08** **S** - **X737**

Body size

2	1/8, 1/4 standard
3	3/8 standard

Control type

0	Meter-out
1	Meter-in

Thread size

01	R1/8
02	R1/4
03	R3/8

All metal exterior
* Except sealant

With sealant

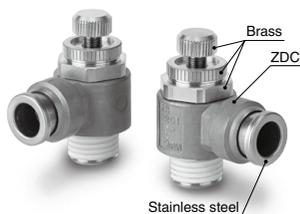
Applicable tubing O.D.*1

06	ø6
08	ø8
10	ø10

*1 For selecting applicable tubing O.D., refer to the model on the table below.

With One-touch fitting

Improved environmental resistance with the all metal exterior



Model

Port size	Applicable tubing O.D.			Elbow type	
	Metric size			Meter-out	Meter-in
	6	8	10		
R1/8	●	●		AS2201-01-F□S-X737	AS2211-01-F□S-X737
R1/4	●	●	●	AS2201-02-F□S-X737	AS2211-02-F□S-X737
R3/8		●	●	AS3201-03-F□S-X737	AS3211-03-F□S-X737

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material	Nylon, Soft nylon, Polyurethane, FR double layer, FR Three-layer, FR soft nylon

Meter-out and meter-in types can be visually differentiated by the lock nut.

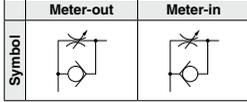
The lock nut on the meter-out type is brass color, while the meter-in type is black.

Elbow Type

AS-X737

Symbol

Flow Direction Symbols on Body



Applicable tubing O.D. [mm]	Connection thread	Model	
		Elbow type	
		Meter-out	Meter-in
6	R1/8	AS2201-01-F06S-X737	AS2211-01-F06S-X737
	R1/4	-02-F06S-X737	-02-F06S-X737
8	R1/8	AS2201-01-F08S-X737	AS2211-01-F08S-X737
	R1/4	-02-F08S-X737	-02-F08S-X737
10	R3/8	AS3201-03-F08S-X737	AS3211-03-F08S-X737
	R1/4	AS2201-02-F10S-X737	AS2211-02-F10S-X737
	R3/8	AS3201-03-F10S-X737	AS3211-03-F10S-X737

Related Products

Spatter cover



Sales unit: 10 pcs./bag **p. 95 148**

Can also be used for the KQB2/KQG2 Series.

* Cannot be used for union "Y" (KQB□/KQG2U) 2-port side.



Metal One-touch Fittings **p. 91**
KQB2 Series



Stainless Steel 316 One-touch Fittings **p. 144**
KQG2 Series

- AS
- AS-1F
- AS-FS
- AS-W2
- AS-X737
- AS-F
- AS-P
- AS-2F
- AS-2FS
- AS-1F-3
- AS-DPP
- ASD
- AS-FE
- AS-FG
- AS-1FG
- AS-FSG
- AS-2FG
- AS□1FG
- AS-2FSG
- ASD-FG
- AS-PPQ
- AS-PPG
- AS-FM
- ASD-FM
- AS-F-D
- ASD-F-D
- AS-F-T
- ASD-F-T
- ASP
- ASV
- AS-R
- AS-Q
- ASR
- ASQ
- Related

Metal Body: Speed Controller with One-touch Fitting

AS□□□1-F Series

Elbow Type

Applicable tubing O.D.: **Metric Size** Connection thread: **M5, R**

Spatter Proof

How to Order

AS 3 2 0 1 - 03 - F 06 S □ - □ - □

Speed controller

Body size

1	M5 standard
2	01, 02 standard
3	03 standard
4	04 standard

Elbow

Control type

0	Meter-out
1	Meter-in

Thread size

M5	M5 x 0.8
01	R1/8
02	R1/4
03	R3/8
04	R1/2

* M5 size: S (with seal) is not necessary.

With One-touch fitting

Lock nut option

NII	Hexagon lock nut
J	Round lock nut

Made to order
Refer to the next page for details.

Option

NII	None
K	Hexagon lock nut
N	Electroless nickel plated

If more than one option is required, write option part numbers in the order of "K", "N".

With seal

Tube size*1

04	φ4
06	φ6
08	φ8
10	φ10
12	φ12

*1 For selecting applicable tubing O.D., refer to the model on the table below.

Flame resistant resin is used for One-touch fittings. (Equivalent to UL-94 Standard V-0)



Model

Models marked with "⊙" are electroless nickel plated as standard. (N specifications)

Port size	Applicable tubing O.D.					Elbow type	
	Metric size					Meter-out	Meter-in
	4	6	8	10	12		
M5 x 0.8	⊙	⊙				AS1201-M5	AS1211-M5
R1/8		⊙				AS2201-01	AS2211-01
R1/4		⊙	⊙	⊙		AS2201-02	AS2211-02
R1/4			⊙	⊙		AS3201-02	AS3211-02
R3/8			⊙	⊙		AS3201-03	AS3211-03
R1/2				●	●	AS4201-04	AS4211-04

Specifications

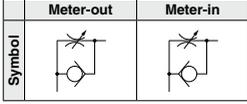
Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material	Nylon, Soft nylon, Polyurethane, FR double layer, FR Three-layer, FR soft nylon
Option	Hexagon lock nut, Electroless nickel plated*1

Meter-out and meter-in types can be visually differentiated by the lock nut. The lock nut on the meter-out type is electroless nickel plated, while the meter-in type is black zinc chromate plated.

*1 Brass parts are all electroless nickel plated.

Elbow Type **AS□□□1-F**

Symbol
Flow Direction Symbols on Body



Applicable tubing O.D. [mm]	Connection thread	Model	
		Elbow type	
		Meter-out	Meter-in
4	M5 x 0.8	AS1201-M5-F04	AS1211-M5-F04
	M5 x 0.8	AS1201-M5-F06	AS1211-M5-F06
6	R1/8	AS2201-01-F06S	AS2211-01-F06S
	R1/4	-02-F06S	-02-F06S
8	R1/8	AS2201-01-F08S	AS2211-01-F08S
	R1/4	-02-F08S	-02-F08S
	R1/4	AS3201-02-F08S	AS3211-02-F08S
	R3/8	-03-F08S	-03-F08S
	R1/4	AS2201-02-F10S	AS2211-02-F10S
10	R1/4	AS3201-02-F10S	AS3211-02-F10S
	R3/8	-03-F10S	-03-F10S
	R1/2	AS4201-04-F10S	AS4211-04-F10S
12	R1/2	AS4201-04-F12S	AS4211-04-F12S



Made to Order

1 Lubricant: Vaseline **X12**

Example) AS1201-M5-F04-X12

2 Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve) **X21**

Example) AS1201-M5-F04-X21

- * Not particle-free
- * The restrictor is only compatible with the part number of the meter-out type.

3 Restrictor (Without check valve) **X214**

Example) AS1201-M5-F04-X214

- * The restrictor is only compatible with the part number of the meter-out type.

- AS
- AS-1F
- AS-FS
- AS-W2
- AS-X737
- AS-F
- AS-P
- AS-2F
- AS-2FS
- AS-1F-3
- AS-DPP
- ASD
- AS-FE
- AS-FG
- AS-1FG
- AS-FSG
- AS-2FG
- AS□1FG
- AS-2FSG
- ASD-FG
- AS-PPQ
- AS-PPG
- AS-FM
- ASD-FM
- AS-F-D
- ASD-F-D
- AS-F-T
- ASD-F-T
- ASP
- ASV
- AS-R
- AS-Q
- ASR
- ASQ
- Related

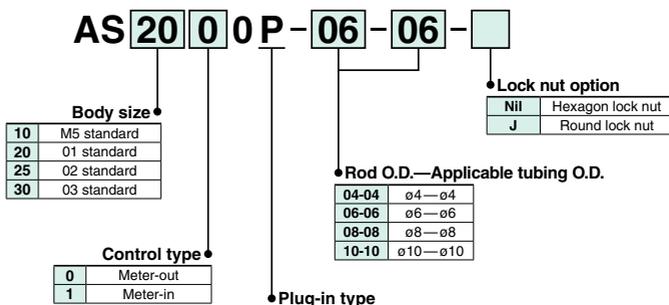
Speed Controller with One-touch Fitting Plug-in Type

AS□□□□P Series

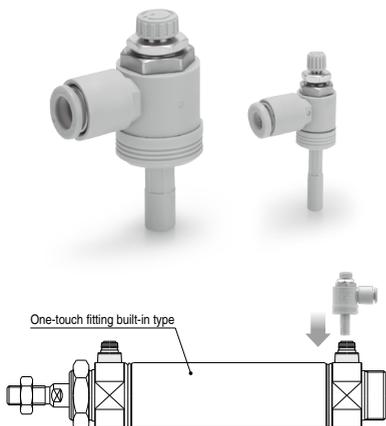
Elbow Type

Applicable rod O.D. - tubing O.D.: **Metric Size**

How to Order



**Can be mounted directly to the One-touch fitting!
No need for tools, reducing time required for mounting.**



Model

Model		Rod and applicable tubing O.D.			
Meter-out	Meter-in	4	6	8	10
AS1000P-04-04	AS1010P-04-04	●	—	—	—
AS2000P-04-04	AS2010P-04-04	●	—	—	—
AS2000P-06-06	AS2010P-06-06	—	●	—	—
AS2500P-06-06	AS2510P-06-06	—	●	—	—
AS3000P-08-08	AS3010P-08-08	—	—	●	—
AS3000P-10-10	AS3010P-10-10	—	—	—	●

<Visual identification between meter-out and meter-in types>

The lock nut provides identification. The lock nut of the meter-out type is zinc chromated (The round lock nut is electroless nickel plated), and the one of the meter-in type is black zinc chromated.

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material ^{*1}	Nylon, Soft nylon, Polyurethane

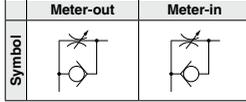
*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing.
(Refer to pages 285 and 287 for details.)

Elbow Type

AS□□□□P

Symbol

Flow Direction Symbols on Body



Applicable tubing O.D. [mm]	Applicable rod O.D. [mm]	Model	
		Elbow Type	
		Meter-out	Meter-in
4	4	AS1000P-04-04	AS1010P-04-04
		AS2000P-04-04	AS2010P-04-04
6	6	AS2000P-06-06	AS2010P-06-06
		AS2500P-06-06	AS2510P-06-06
8	8	AS3000P-08-08	AS3010P-08-08
10	10	AS3000P-10-10	AS3010P-10-10

AS

AS
·1F

AS
-FS

AS
-W2

AS
-X737

AS-F

AS-P

AS
·2F

AS
·2FS

AS
·1F-3

AS
-DPP

ASD

AS
·FE

AS
-FG

AS
·1FG

AS
·FSG

AS
·2FG

AS□
1FG

AS
·2FSG

ASD
·FG

AS-PPQ
AS-PPG

AS
·FM

ASD
·FM

AS
·F-D

ASD
·F-D

AS
·F-T

ASD
·F-T

ASP

ASV

AS-R
AS-Q

ASR
ASQ

Related

Speed Controller with One-touch Fittings

Push-lock type

AS□2F Series

In-line Type

Applicable tubing O.D.: Metric Size

How to Order

AS 200 2F - 06 A

Body size ●

100	M5 standard
200	1/8 standard
205	1/4 standard
300	3/8 standard
400	1/2 standard

With One-touch fittings ●

● Push-lock type

● Applicable tubing O.D.*1

23	ø3.2 ^{*2}
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

*1 For selecting applicable tubing O.D., refer to the model shown below.

*2 Use ø1/8" tubing.

Model

Model	Applicable tubing O.D.					
	Metric size					
	3.2	4	6	8	10	12
AS1002F	●	●	●			
AS2002F		●	●			
AS2052F			●	●		
AS3002F			●	●	●	●
AS4002F					●	●

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane, FEP, PFA

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

* Brass parts are all electroless nickel plated.

In-line Type

AS□2F

Symbol



Applicable tubing O.D. [mm]	Model	Applicable tubing O.D. [mm]	Model
	In-line Type		In-line Type
3.2	AS1002F-23A	8	AS2052F-08A
	AS1002F-04A		AS3002F-08A
4	AS2002F-04A	10	AS3002F-10A
	AS1002F-06A		AS4002F-10A
	AS2002F-06A		AS3002F-12A
6	AS2052F-06A	12	AS4002F-12A
	AS3002F-06A		

For inch size, refer to the Web Catalog.

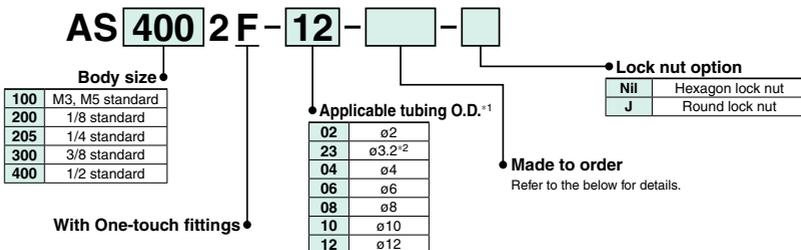
Speed Controller with One-touch Fittings

AS□2F Series

In-line Type

Applicable tubing O.D.: Metric Size

How to Order



*1 For selecting applicable tubing O.D., refer to the model shown below.
*2 Use ø1/8" tubing.

Model

Model	Applicable tubing O.D.						
	Metric size						
	2	3.2	4	6	8	10	12
AS1002F	●	●	●	●			
AS2002F			●				
AS2052F				●	●		
AS3002F				●	●	●	●
AS4002F						●	●

Specifications

Fluid	Air
Proof pressure	1.5 MPa (1.05 MPa)
Max. operating pressure	1 MPa (0.7 MPa)
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

* Brass parts are all electroless nickel plated.

In-line Type

AS□2F



Applicable tubing O.D. [mm]	Model	Applicable tubing O.D. [mm]	Model
	In-line Type		In-line Type
2	AS1002F-02	8	AS2052F-08
	AS1002F-23		AS3002F-08
3.2	AS1002F-04	10	AS3002F-10
	AS2002F-04		AS4002F-10
4	AS1002F-06	12	AS3002F-12
	AS2002F-06		AS4002F-12
	AS2052F-06		
	AS3002F-06		

For inch size, refer to the Web Catalog.

Made to Order

1 Lubricant: Vaseline

X12

Example) AS2002F-04-X12

2 Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve)

X21

Example) AS2002F-04-X21

* Not particle-free

3 Restrictor (Without check valve)

X214

Example) AS2002F-04-X214

4 Clean Series

10-

Lubricant: Fluorine grease, Double packaging

Example) 10-AS2002F-04

Speed Controller with Indicator

Push-lock type

In-line Type

AS□2FS Series Applicable tubing O.D.: Metric Size

How to Order

AS 200 2 FS 1 - 06

Body size

100	M5 standard
200	1/8 standard
205	1/4 standard
300	3/8 standard
400	1/2 standard

With One-touch fittings

With indicator

Indicator window direction

Nil	0°		
	1	180°	
	2	90°	
	3	270°	

Applicable tubing O.D.*1

23	ø3.2*2
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

*1 For selecting applicable tubing O.D., refer to the model shown below.
*2 Use ø1/8" tubing.

Model

Model	Applicable tubing O.D.					
	Metric size					
	3.2	4	6	8	10	12
AS1002FS□	●	●	●			
AS2002FS□		●	●			
AS2052FS□			●	●		
AS3002FS□			●	●	●	●
AS4002FS□					●	●

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane, FEP, PFA

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

In-line Type

AS□2FS



Symbol



Applicable tubing O.D. [mm]	Model
3.2	In-line Type
	AS1002FS□-23
4	AS1002FS□-04
	AS2002FS□-04
	AS1002FS□-06
6	AS2002FS□-06
	AS2052FS□-06
	AS3002FS□-06

Applicable tubing O.D. [mm]	Model
8	In-line Type
	AS2052FS□-08
10	AS3002FS□-08
	AS3002FS□-10
12	AS4002FS□-10
	AS3002FS□-12
	AS4002FS□-12

For inch size, refer to the **Web Catalog**.

Speed Controller with One-touch Fittings

AS□1F-3 Series

In-line Type/Panel Mount Type

Applicable tubing O.D.: Metric Size

How to Order

AS **200** 1 F - **06** - 3 - [] - []

Body size

100	M5 standard
200	1/8 standard
205	1/4 standard
300	3/8 standard
400	1/2 standard

Applicable tubing O.D.*1

23	ø3.2 ^{*2}
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

Lock nut option

NII	Hexagon lock nut
J	Round lock nut

Panel mount type

Panel mount thickness: 35 mm at the maximum

Made to order
Refer to the below for details.

With One-touch fittings

*1 For selecting applicable tubing O.D., refer to the model shown below.
*2 Use ø1/8" tubing.

Model

Model	Applicable tubing O.D.					
	Metric size					
	3.2	4	6	8	10	12
AS1001F	●	●	●			
AS2001F		●	●			
AS2051F			●	●		
AS3001F			●	●	●	●
AS4001F					●	●

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing.
(Refer to pages 285 and 287 for details.)

* Brass parts are all electroless nickel plated.

In-line Type/Panel Mount Type

AS□1F-3



Symbol



Applicable tubing O.D. [mm]	Model		Applicable tubing O.D. [mm]	Model	
	In-line Type/Panel Mount Type			In-line Type/Panel Mount Type	
3.2	AS1001F-23-3		8	AS2051F-08-3	
	AS1001F-04-3			AS3001F-08-3	
4	AS2001F-04-3		10	AS3001F-10-3	
	AS1001F-06-3			AS4001F-10-3	
	AS2001F-06-3			AS3001F-12-3	
6	AS2051F-06-3		12	AS4001F-12-3	
	AS2001F-06-3				
	AS3001F-06-3				

For inch size, refer to the Web Catalog.



Made to Order

1 Lubricant: Vaseline

X12

Example) AS2001F-04-3-X12

2 Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve)

X21

Example) AS2001F-04-3-X21

* Not particle-free

3 Restrictor (Without check valve)

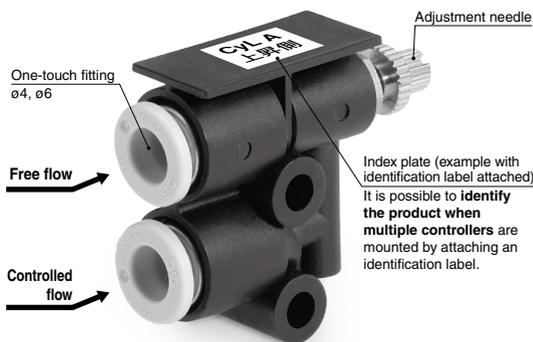
X214

Example) AS2001F-04-3-X214

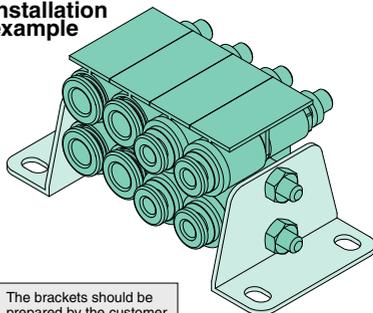
AS-DPP00092/00093 Series

Centralized Piping Type

Applicable tubing O.D.: Metric Size



Installation example



Model

Model	Applicable tubing O.D.	
	Metric size	
	4	6
AS-DPP00092	●	—
AS-DPP00093	—	●

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa (0.7 MPa*1)
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing.

(Refer to pages 285 and 287 for details.)

* Brass parts are all electroless nickel plated.

Dual Speed Controller with One-touch Fitting

ASD□30F Series

Universal Type

Applicable tubing O.D.: Metric Size Connection thread: M5, R

Lurch Prevention

How to Order

ASD **3** **30** F - **01** - **06** S - [] - []

Body size

2	M5 standard
3	1/8 standard
4	1/4 standard
5	3/8 standard
6	1/2 standard

Universal
With One-touch fitting

Port size

M5	M5 x 0.8
01	R1/8
02	R1/4
03	R3/8
04	R1/2

Applicable tubing O.D.*1

04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

Lock nut option

NII	Hexagon lock nut
J	Round lock nut

Made to order
Refer to the below for details.

With seal*1
*1 M5 size: S (with seal) is not necessary.

*1 For selecting applicable tubing O.D., refer to the model on the table below.

Model

Model	Port size	Applicable tubing O.D.				
		Metric size				
		4	6	8	10	12
ASD230F-M5	M5 x 0.8	●	●			
ASD330F-01	R1/8		●	●		
ASD430F-02	R1/4			●	●	
ASD530F-02	R1/4		●	●	●	●
ASD530F-03	R3/8		●	●	●	●
ASD630F-04	R1/2				●	●

Specifications

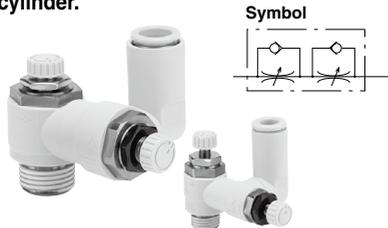
Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane
Option	Round lock nut

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)
* Brass parts are all electroless nickel plated. The lock nut on the meter-out type is zinc chromated (the round lock nut is electroless nickel plated), while the meter-in type is black zinc chromate plated.

Universal Type

ASD□30F

Meter-in/Meter-out control type
Prevention of a stick-slip phenomenon,
and speed control of a single acting
cylinder.



Applicable tubing O.D. (mm)	Connection thread	Model
		Universal type
4	M5 x 0.8	ASD230F-M5-04
	M5 x 0.8	ASD230F-M5-06
6	R1/8	ASD330F-01-06S
	R1/4	ASD430F-02-06S
	R3/8	ASD530F-02-06S
		-03-06S
8	R1/8	ASD330F-01-08S
	R1/4	ASD430F-02-08S
	R3/8	ASD530F-02-08S

Applicable tubing O.D. (mm)	Connection thread	Model
		Universal type
10	R1/4	ASD430F-02-10S
	R3/8	ASD530F-02-10S
		-03-10S
12	R1/2	ASD630F-04-10S
	R1/4	ASD530F-02-12S
	R3/8	-03-12S
	R1/2	ASD630F-04-12S

For inch size, refer to the Web Catalog.

Made to Order



1 Lubricant: Vaseline X12

2 Clean Series 10-

Example) ASD230F-M5-04-X12

Lubricant: Fluorine grease, Double packaging

Example) 10-ASD230F-M5-04

Speed Controller with Residual Pressure Release Valve

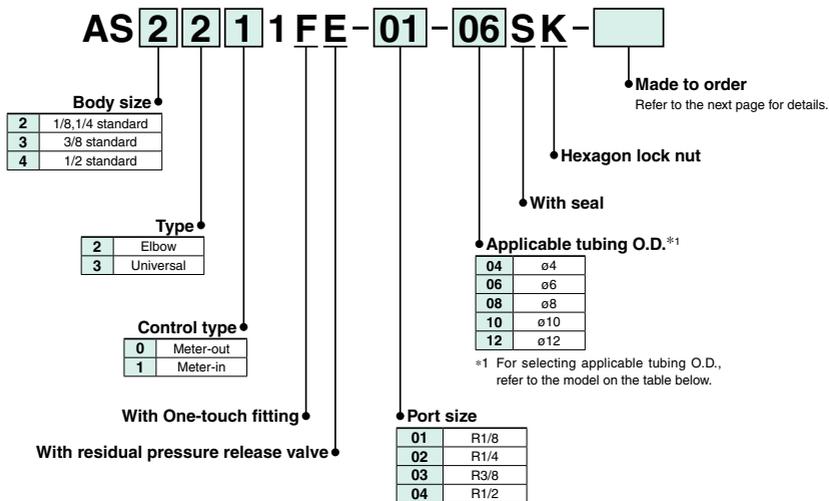
AS□□□1FE Series

Elbow Type/Universal Type

Applicable tubing O.D.: Metric Size Connection thread: R

Residual Pressure Exhaust

How to Order



Residual pressure exhaust of the cylinder
Residual pressure can be easily released with one push of button.

Elbow type



Universal type



Model

Port size	Applicable tubing O.D.				Elbow type		Universal type	
	Metric size				Meter-out	Meter-in	Meter-out	Meter-in
	4	6	8	10				
R1/8	●	●	●	●*1	AS2201FE-01	AS2211FE-01	AS2301FE-01	AS2311FE-01
R1/4	●	●	●	●	AS2201FE-02	AS2211FE-02	AS2301FE-02	AS2311FE-02
R3/8		●	●	●	AS3201FE-03	AS3211FE-03	AS3301FE-03	AS3311FE-03
R1/2				●	AS4201FE-04	AS4211FE-04	AS4301FE-04	AS4311FE-04

*1 Elbow type only

* Meter-out and meter-in types can be visually differentiated by the lock nut. The lock nut on the meter-out type is electroless nickel plated, while the meter-in type is black zinc chromate plated.

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Sonic conductance of residual pressure release valve	0.16 dm ³ /(s·bar)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

Elbow Type/Universal Type

AS□□□1FE

Symbol



Applicable tubing O.D. [mm]	Connection thread	Model			
		Elbow type		Universal type	
		Meter-out	Meter-in	Meter-out	Meter-in
4	R1/8	AS2201FE-01-04SK	AS2211FE-01-04SK	AS2301FE-01-04SK	AS2311FE-01-04SK
	R1/4	-02-04SK	-02-04SK	-02-04SK	-02-04SK
6	R1/8	AS2201FE-01-06SK	AS2211FE-01-06SK	AS2301FE-01-06SK	AS2311FE-01-06SK
	R1/4	-02-06SK	-02-06SK	-02-06SK	-02-06SK
8	R3/8	AS3201FE-03-06SK	AS3211FE-03-06SK	AS3301FE-03-06SK	AS3311FE-03-06SK
	R1/8	AS2201FE-01-08SK	AS2211FE-01-08SK	AS2301FE-01-08SK	AS2311FE-01-08SK
	R1/4	-02-08SK	-02-08SK	-02-08SK	-02-08SK
10	R3/8	AS3201FE-03-08SK	AS3211FE-03-08SK	AS3301FE-03-08SK	AS3311FE-03-08SK
	R1/8	AS2201FE-01-10SK	AS2211FE-01-10SK	—	—
	R1/4	-02-10SK	-02-10SK	AS2301FE-02-10SK	AS2311FE-02-10SK
12	R3/8	AS3201FE-03-10SK	AS3211FE-03-10SK	AS3301FE-03-10SK	AS3311FE-03-10SK
	R1/2	AS4201FE-04-10SK	AS4211FE-04-10SK	AS4301FE-04-10SK	AS4311FE-04-10SK
	R3/8	AS3201FE-03-12SK	AS3211FE-03-12SK	AS3301FE-03-12SK	AS3311FE-03-12SK
12	R1/2	AS4201FE-04-12SK	AS4211FE-04-12SK	AS4301FE-04-12SK	AS4311FE-04-12SK



Made to Order

1 Lubricant: Vaseline

X12

Example) AS2201FE-01-04SK-X12

2 Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve)

X21

Example) AS2201FE-01-04SK-X21

- * Not particle-free
- * The restrictor is only compatible with the part number of the meter-out type.

3 Restrictor (Without check valve)

X214

Example) AS2201FE-01-04SK-X214

- * The restrictor is only compatible with the part number of the meter-out type.

- AS
- AS-1F
- AS-FS
- AS-W2
- AS-X737
- AS-F
- AS-P
- AS-2F
- AS-2FS
- AS-1F-3
- AS-DPP
- ASD
- AS-FE
- AS-FG
- AS-1FG
- AS-FSG
- AS-2FG
- AS□1FG
- AS-2FSG
- ASD-FG
- AS-PPQ
- AS-PPG
- AS-FM
- ASD-FM
- AS-F-D
- ASD-F-D
- AS-F-T
- ASD-F-T
- ASP
- ASV
- AS-R
- AS-Q
- ASR
- ASQ
- Related

Stainless Steel: Speed Controller with One-touch Fitting

Push-lock type

Elbow Type/Universal Type

AS-FG Series

Applicable tubing O.D.: Metric Size Connection thread: M, R

Corrosion Resistant

How to Order

Body size

1	M5 x 0.8
---	----------

Port size

M5	M5 x 0.8
----	----------

Applicable tubing O.D.*1

02	ø2
23	ø3.2 ^{*2}
04	ø4
06	ø6

*1 For selecting applicable tubing O.D., refer to the model on the table below.
*2 Use ø1/8" tubing.

Body size 1 AS 1 2 0 1 FG - M5 - 06 A -

Body size 2/3/4 AS 2 2 0 1 FG - 01 - 06 S A -

Body size

2	1/8, 1/4
3	3/8
4	1/2

Type

2	Elbow
3	Universal

Control type*1

0	Meter-out
1	Meter-in

*1 Meter-out and meter-in types can be visually identified by the color of the knob.
Meter-out: Gray
Meter-in: Light blue

Stainless steel specifications (Stainless steel 303)

* The material can be visually identified by the color of the release button.
Stainless steel type: White

Port size

01	R1/8
02	R1/4
03	R3/8
04	R1/2

Made to order
Refer to the next page for details.

Push-lock type

Seal method

Nil	Without sealant
S	With sealant

Applicable tubing O.D.*1

23	ø3.2 ^{*2}	10	ø10
04	ø4	12	ø12
06	ø6	16	ø16
08	ø8		

*1 For selecting applicable tubing O.D., refer to the model on the table below.
*2 Use ø1/8" tubing.

Elbow type



Universal type



Model

Port size	Applicable tubing O.D.							Elbow type		Universal type		
	Metric size							Meter-out	Meter-in	Meter-out	Meter-in	
M5 x 0.8	2 ^{*2}	3.2	4	6	8	10	12	16	AS1201FG-M5	AS1211FG-M5	AS1301FG-M5	AS1311FG-M5
R1/8									AS2201FG-01	AS2211FG-01	AS2301FG-01	AS2311FG-01
R1/4									AS2201FG-02	AS2211FG-02	AS2301FG-02	AS2311FG-02
R1/4									AS3201FG-02	AS3211FG-02	AS3301FG-02	AS3311FG-02
R3/8									AS3201FG-03	AS3211FG-03	AS3301FG-03	AS3311FG-03
R1/2									AS4201FG-04	AS4211FG-04	AS4301FG-04	AS4311FG-04

*1 Universal type is not available.

*2 Only polyurethane tubing is applicable for ø2.

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane, FEP, PFA

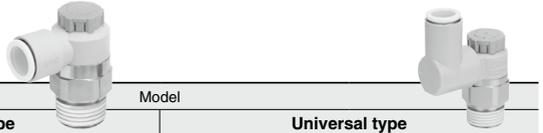
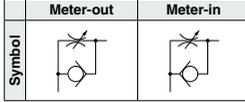
*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing.
(Refer to pages 285 and 287 for details.)

Elbow Type/Universal Type

AS-FG

Symbol

Flow Direction Symbols on Body



Applicable tubing O.D. [mm]	Connection thread	Model			
		Elbow type		Universal type	
		Meter-out	Meter-in	Meter-out	Meter-in
2	M5 x 0.8	AS1201FG-M5-02A	AS1211FG-M5-02A	—	—
3.2	M5 x 0.8	AS1201FG-M5-23A	AS1211FG-M5-23A	AS1301FG-M5-23A	AS1311FG-M5-23A
	R1/8	AS2201FG-01-23SA	AS2211FG-01-23SA	AS2301FG-01-23SA	AS2311FG-01-23SA
	R1/4	-02-23SA	-02-23SA	—	—
4	M5 x 0.8	AS1201FG-M5-04A	AS1211FG-M5-04A	AS1301FG-M5-04A	AS1311FG-M5-04A
	R1/8	AS2201FG-01-04SA	AS2211FG-01-04SA	AS2301FG-01-04SA	AS2311FG-01-04SA
	R1/4	-02-04SA	-02-04SA	-02-04SA	-02-04SA
6	M5 x 0.8	AS1201FG-M5-06A	AS1211FG-M5-06A	AS1301FG-M5-06A	AS1311FG-M5-06A
	R1/8	AS2201FG-01-06SA	AS2211FG-01-06SA	AS2301FG-01-06SA	AS2311FG-01-06SA
	R1/4	-02-06SA	-02-06SA	-02-06SA	-02-06SA
		AS3201FG-02-06SA	AS3211FG-02-06SA	AS3301FG-02-06SA	AS3311FG-02-06SA
8	R3/8	-03-06SA	-03-06SA	-03-06SA	-03-06SA
	R1/8	AS2201FG-01-08SA	AS2211FG-01-08SA	AS2301FG-01-08SA	AS2311FG-01-08SA
	R1/4	-02-08SA	-02-08SA	-02-08SA	-02-08SA
		AS3201FG-02-08SA	AS3211FG-02-08SA	AS3301FG-02-08SA	AS3311FG-02-08SA
R3/8	-03-08SA	-03-08SA	-03-08SA	-03-08SA	
10	R1/8	AS2201FG-01-10SA	AS2211FG-01-10SA	—	—
	R1/4	-02-10SA	-02-10SA	AS2301FG-02-10SA	AS2311FG-02-10SA
		AS3201FG-02-10SA	AS3211FG-02-10SA	AS3301FG-02-10SA	AS3311FG-02-10SA
	R3/8	-03-10SA	-03-10SA	-03-10SA	-03-10SA
12	R1/2	AS4201FG-04-10SA	AS4211FG-04-10SA	AS4301FG-04-10SA	AS4311FG-04-10SA
	R1/4	AS3201FG-02-12SA	AS3211FG-02-12SA	AS3301FG-02-12SA	AS3311FG-02-12SA
	R3/8	-03-12SA	-03-12SA	-03-12SA	-03-12SA
16	R1/2	AS4201FG-04-12SA	AS4211FG-04-12SA	AS4301FG-04-12SA	AS4311FG-04-12SA
	R1/2	AS4201FG-04-16SA	AS4211FG-04-16SA	—	—

For inch size, refer to the [Web Catalog](#).



Made to Order

1 Lubricant: Vaseline X12

Example) AS2201FG-01-04SA-X12

2 Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve) X21

Example) AS2201FG-01-04SA-X21

- * Not particle-free
- * The restrictor is only compatible with the part number of the meter-out type.

3 Restrictor (Without check valve) X214

Example) AS2201FG-01-04SA-X214

- * The restrictor is only compatible with the part number of the meter-out type.

4 Clean Series 10-

Example) 10-AS2201FG-01-04SA

- * Fluorine grease is used.
- * The cleanliness class (ISO class) is 5.
- * Excluding G thread type.

Stainless Steel: Speed Controller with One-touch Fitting

AS□□□1FG Series

Elbow Type/Universal Type

Applicable tubing O.D.: Metric Size Connection thread: M5, R

Corrosion Resistant

How to Order

AS **2** **3** **0** **1** FG - **01** - **06** S - -

- Body size**

1	M5 standard
2	1/8, 1/4 standard
3	3/8 standard
4	1/2 standard
- Type**

2	Elbow
3	Universal
- Control type**

0	Meter-out
1	Meter-in
- With One-touch fitting**
- Stainless steel specifications (Stainless steel 303)**
- Port size**

M5	M5 x 0.8
01	R1/8
02	R1/4
03	R3/8
04	R1/2
- Lock nut option**

Nll	Hexagon lock nut
J	Round lock nut
- Made to order**
Refer to the next page for details.
- Seal method**

Nll	Without sealant
S	With sealant*1

*1 M5 is not available with seals.
- Applicable tubing O.D.*1**

23	ø3.2*2
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

*1 For selecting applicable tubing O.D., refer to the model on the table below.
*2 Use ø1/8" tubing.

Stainless steel 303 used for metal parts.

Elbow type



Universal type



Model

Port size	Applicable tubing O.D.					Elbow type		Universal type	
	Metric size					Meter-out	Meter-in	Meter-out	Meter-in
	3.2	4	6	8	10				
M5 x 0.8	●	●	●	●	●	AS1201FG-M5	AS1211FG-M5	AS1301FG-M5	AS1311FG-M5
R1/8	●	●	●	●	●*1	AS2201FG-01	AS2211FG-01	AS2301FG-01	AS2311FG-01
R1/4		●	●	●	●	AS2201FG-02	AS2211FG-02	AS2301FG-02	AS2311FG-02
R1/4			●	●	●	AS3201FG-02	AS3211FG-02	AS3301FG-02	AS3311FG-02
R3/8			●	●	●	AS3201FG-03	AS3211FG-03	AS3301FG-03	AS3311FG-03
R1/2				●	●	AS4201FG-04	AS4211FG-04	AS4301FG-04	AS4311FG-04

*1 Elbow type only

*2 Meter-out and meter-in types can be visually differentiated by the flow direction symbol on the resin body.

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane

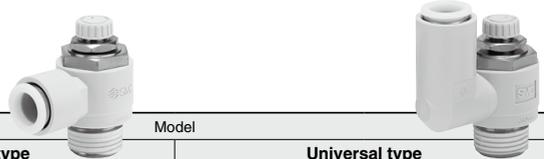
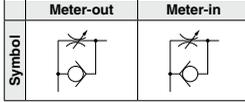
*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

Elbow Type/Universal Type

AS□□□1FG

Symbol

Flow Direction Symbols on Body



Applicable tubing O.D. [mm]	Connection thread	Model			
		Elbow type		Universal type	
		Meter-out	Meter-in	Meter-out	Meter-in
3.2	M5 x 0.8	AS1201FG-M5-23	AS1211FG-M5-23	AS1301FG-M5-23	AS1311FG-M5-23
	R1/8	AS2201FG-01-23S	AS2211FG-01-23S	AS2301FG-01-23S	AS2311FG-01-23S
4	M5 x 0.8	AS1201FG-M5-04	AS1211FG-M5-04	AS1301FG-M5-04	AS1311FG-M5-04
	R1/8	AS2201FG-01-04S	AS2211FG-01-04S	AS2301FG-01-04S	AS2311FG-01-04S
	R1/4	-02-04S	-02-04S	-02-04S	-02-04S
6	M5 x 0.8	AS1201FG-M5-06	AS1211FG-M5-06	AS1301FG-M5-06	AS1311FG-M5-06
	R1/8	AS2201FG-01-06S	AS2211FG-01-06S	AS2301FG-01-06S	AS2311FG-01-06S
	R1/4	-02-06S	-02-06S	-02-06S	-02-06S
		AS3201FG-02-06S	AS3211FG-02-06S	AS3301FG-02-06S	AS3311FG-02-06S
	R3/8	-03-06S	-03-06S	-03-06S	-03-06S
8	R1/8	AS2201FG-01-08S	AS2211FG-01-08S	AS2301FG-01-08S	AS2311FG-01-08S
	R1/4	-02-08S	-02-08S	-02-08S	-02-08S
		AS3201FG-02-08S	AS3211FG-02-08S	AS3301FG-02-08S	AS3311FG-02-08S
	R3/8	-03-08S	-03-08S	-03-08S	-03-08S
	R1/8	AS2201FG-01-10S	AS2211FG-01-10S	—	—
10	R1/4	-02-10S	-02-10S	AS2301FG-02-10S	AS2311FG-02-10S
		AS3201FG-02-10S	AS3211FG-02-10S	AS3301FG-02-10S	AS3311FG-02-10S
	R3/8	-03-10S	-03-10S	-03-10S	-03-10S
	R1/2	AS4201FG-04-10S	AS4211FG-04-10S	AS4301FG-04-10S	AS4311FG-04-10S
12	R1/4	AS3201FG-02-12S	AS3211FG-02-12S	AS3301FG-02-12S	AS3311FG-02-12S
	R3/8	-03-12S	-03-12S	-03-12S	-03-12S
	R1/2	AS4201FG-04-12S	AS4211FG-04-12S	AS4301FG-04-12S	AS4311FG-04-12S

For inch size, refer to the Web Catalog.



Made to Order

1 Lubricant: Vaseline X12

Example) AS1201FG-M5-23-X12

2 Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve) X21

Example) AS1201FG-M5-23-X21

- * Not particle-free
- * The restrictor is only compatible with the part number of the meter-out type.

3 Restrictor (Without check valve) X214

Example) AS1201FG-M5-23-X214

- * The restrictor is only compatible with the part number of the meter-out type.

4 Clean Series 10-

Lubricant: Fluorine grease, Double packaging

Example) 10-AS1201FG-M5-23

- AS
- AS-1F
- AS-FS
- AS-W2
- AS-X737
- AS-F
- AS-P
- AS-2F
- AS-2FS
- AS-1F-3
- AS-DPP
- ASD
- AS-FE
- AS-FG
- AS-1FG
- AS-FSG
- AS-2FG
- AS□1FG
- AS-2FSG
- ASD-FG
- AS-PPQ
- AS-FPM
- ASD-FM
- AS-F-D
- ASD-F-D
- AS-F-T
- ASD-F-T
- ASP
- ASV
- AS-R
- AS-Q
- ASR
- ASQ
- Related

Stainless Steel: Speed Controller with Indicator

Push-lock type

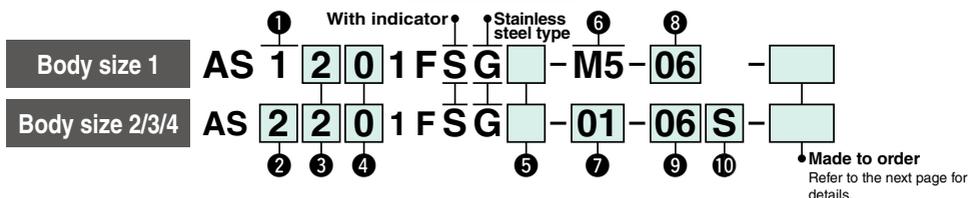
Elbow Type/Universal Type

AS-FSG Series

Applicable tubing O.D.: Metric Size Connection thread: M5, R

Corrosion Resistant

How to Order



1 Body size

1	M5 x 0.8
---	----------

2 Body size

2	1/8, 1/4
3	3/8
4	1/2

3 Type

2	Elbow
3	Universal

4 Control type*1

0	Meter-out
1	Meter-in

*1 Meter-out and meter-in types can be visually identified by the color of the knob. Meter-out: Gray Meter-in: Light blue

5 Indicator window direction

		Elbow	Universal
NII	0°	●	—
1	180°	●	●
2	90°	●	—
3	270°	●	—

6 Port size

M5	M5 x 0.8
----	----------

7 Port size

01	R1/8
02	R1/4
03	R3/8
04	R1/2

8 Applicable tubing O.D.*1

02	ø2	04	ø4
23	ø3.2*2	06	ø6

9 Applicable tubing O.D.*1

23	ø3.2*2	10	ø10
04	ø4	12	ø12
06	ø6	16	ø16
08	ø8		

*1 For selecting applicable tubing O.D., refer to the model on the table below. The material can be visually identified by the color of the release button. Stainless steel type: White

*2 Use ø1/8" tubing.

10 Seal method

NII	Without sealant
S	With sealant

* Orientation of indicator direction is fixed when manufacturing, and cannot be changed by the user. In addition, the universal type is only available with 180° setting.



Model

Port size	Applicable tubing O.D.						Elbow type		Universal type			
	2*1	3.2	4	6	8	10	12	16	Meter-out	Meter-in		
M5 x 0.8	ø2	●	●	●	●	●	●		AS1201FSG□-M5	AS1211FSG□-M5	AS1301FSG1-M5E	AS1311FSG1-M5E
R1/8	ø2	●	●	●	●	●	ø2		AS2201FSG□-01	AS2211FSG□-01	AS2301FSG1-01	AS2311FSG1-01
R1/4	ø2	●	●	●	●	●	●		AS2201FSG□-02	AS2211FSG□-02	AS2301FSG1-02	AS2311FSG1-02
R1/4			●	●	●	●	●		AS3201FSG□-02	AS3211FSG□-02	AS3301FSG1-02	AS3311FSG1-02
R3/8				●	●	●	●		AS3201FSG□-03	AS3211FSG□-03	AS3301FSG1-03	AS3311FSG1-03
R1/2					●	●	ø2		AS4201FSG□-04	AS4211FSG□-04	AS4301FSG1-04	AS4311FSG1-04

*1 Only polyurethane tubing is applicable for ø2.

*2 Universal type is not available.

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane, FEP, PFA

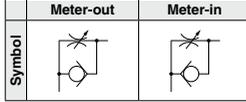
*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

Elbow Type/Universal Type

AS-FSG

Symbol

Flow Direction Symbols on Body



Applicable tubing O.D. [mm]	Connection thread	Model			
		Elbow type		Universal type	
		Meter-out	Meter-in	Meter-out	Meter-in
2	M5 x 0.8	AS1201FSG□-M5-02	AS1211FSG□-M5-02	—	—
3.2	M5 x 0.8	AS1201FSG□-M5-23	AS1211FSG□-M5-23	AS1301FSG1-M5-23	AS1311FSG1-M5-23
	R1/8	AS2201FSG□-01-23S	AS2211FSG□-01-23S	AS2301FSG1-01-23S	AS2311FSG1-01-23S
	R1/4	-02-23S	-02-23S	—	—
4	M5 x 0.8	AS1201FSG□-M5-04	AS1211FSG□-M5-04	AS1301FSG1-M5-04	AS1311FSG1-M5-04
	R1/8	AS2201FSG□-01-04S	AS2211FSG□-01-04S	AS2301FSG1-01-04S	AS2311FSG1-01-04S
	R1/4	-02-04S	-02-04S	-02-04S	-02-04S
6	M5 x 0.8	AS1201FSG□-M5-06	AS1211FSG□-M5-06	AS1301FSG1-M5-06	AS1311FSG1-M5-06
	R1/8	AS2201FSG□-01-06S	AS2211FSG□-01-06S	AS2301FSG1-01-06S	AS2311FSG1-01-06S
	R1/4	-02-06S	-02-06S	-02-06S	-02-06S
		AS3201FSG□-02-06S	AS3211FSG□-02-06S	AS3301FSG1-02-06S	AS3311FSG1-02-06S
	R3/8	-03-06S	-03-06S	-03-06S	-03-06S
	R1/8	AS2201FSG□-01-08S	AS2211FSG□-01-08S	AS2301FSG1-01-08S	AS2311FSG1-01-08S
8	R1/4	-02-08S	-02-08S	-02-08S	-02-08S
		AS3201FSG□-02-08S	AS3211FSG□-02-08S	AS3301FSG1-02-08S	AS3311FSG1-02-08S
	R3/8	-03-08S	-03-08S	-03-08S	-03-08S
10	R1/8	AS2201FSG□-01-10S	AS2211FSG□-01-10S	—	—
	R1/4	-02-10S	-02-10S	AS2301FSG1-02-10S	AS2311FSG1-02-10S
		AS3201FSG□-02-10S	AS3211FSG□-02-10S	AS3301FSG1-02-10S	AS3311FSG1-02-10S
	R3/8	-03-10S	-03-10S	-03-10S	-03-10S
	R1/2	AS4201FSG□-04-10S	AS4211FSG□-04-10S	AS4301FSG1-04-10S	AS4311FSG1-04-10S
12	R1/4	AS3201FSG□-02-12S	AS3211FSG□-02-12S	AS3301FSG1-02-12S	AS3311FSG1-02-12S
	R3/8	-03-12S	-03-12S	-03-12S	-03-12S
16	R1/2	AS4201FSG□-04-12S	AS4211FSG□-04-12S	AS4301FSG1-04-12S	AS4311FSG1-04-12S
	R1/2	AS4201FSG□-04-16S	AS4211FSG□-04-16S	—	—

For inch size, refer to the Web Catalog.



Made to Order

1 Lubricant: Vaseline X12

Example) AS2201FSG-01-04S-X12

2 Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve) X21

Example) AS2201FSG-01-04S-X21

- * Not particle-free
- * The restrictor is only compatible with the part number of the meter-out type.
- * Only the needle and O-ring are fluorine-coated.

3 Restrictor (Without check valve) X214

Example) AS2201FSG-01-04S-X214

- * The restrictor is only compatible with the part number of the meter-out type.

4 Clean Series 10-

Example) 10-AS2201FSG-01-04S

- * Fluorine grease is used.
- * The cleanliness class (ISO class) is 5.

- AS
- AS-1F
- AS-FS
- AS-W2
- AS-X737
- AS-F
- AS-P
- AS-2F
- AS-2FS
- AS-1F-3
- AS-DPP
- ASD
- AS-FE
- AS-FG
- AS-1FG
- AS-FSG
- AS-2FG
- AS□1FG
- AS-2FSG
- ASD-FG
- AS-PPQ
- AS-PPQ
- AS-FM
- ASD-FM
- AS-F-D
- ASD-F-D
- AS-F-T
- ASD-F-T
- ASP
- ASV
- AS-R
- AS-Q
- ASR
- ASQ
- Related

Stainless Steel: Speed Controller with One-touch Fittings

Push-lock type

In-line Type

AS□2FG Series

Applicable tubing O.D.: Metric Size

Corrosion Resistant

How to Order

AS 200 2FG - 06 A

Body size

100	M5 standard
200	1/8 standard
205	1/4 standard
300	3/8 standard
400	1/2 standard

Push-lock type

Applicable tubing O.D.*1

23	ø3.2 ^{*2}
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

With One-touch fittings

Stainless steel specifications
(Stainless steel 303)

* The material can be visually identified by the color of the release button.
Stainless steel type: White

*1 For selecting applicable tubing O.D., refer to the model on the table below.

*2 Use ø1/8" tubing.

Model

Model	Applicable tubing O.D.					
	Metric size					
	3.2	4	6	8	10	12
AS1002FG	●	●	●			
AS2002FG		●	●			
AS2052FG			●	●		
AS3002FG				●	●	●
AS4002FG					●	●

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane, FEP, PFA

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

In-line Type

AS□2FG

Stainless steel 303 used for metal parts.



Symbol



Applicable tubing O.D. [mm]	Model
	In-line Type
3.2	AS1002FG-23A
	AS1002FG-04A
4	AS2002FG-04A
	AS1002FG-06A
6	AS2002FG-06A
	AS2052FG-06A
	AS3002FG-06A

Applicable tubing O.D. [mm]	Model
	In-line Type
8	AS2052FG-08A
	AS3002FG-08A
10	AS3002FG-10A
	AS4002FG-10A
12	AS3002FG-12A
	AS4002FG-12A

For inch size, refer to the Web Catalog.

Stainless Steel: Speed Controller with One-touch Fittings

AS□1FG Series

In-line Type

Applicable tubing O.D.: Metric Size

Corrosion Resistant

How to Order

AS 200 1 FG - 06 - [] - []

Body size

100	M5 standard
200	1/8 standard
205	1/4 standard
300	3/8 standard
400	1/2 standard

With One-touch fittings

Stainless steel specifications (Stainless steel 303)

Applicable tubing O.D.*1

23	ø3.2 ^{#2}
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

Lock nut option

NII	Hexagon lock nut
J	Round lock nut

Made to order
Refer to the below for details.

*1 For selecting applicable tubing O.D., refer to the model on the table below.
*2 Use ø1/8" tubing.

Model

Model	Applicable tubing O.D.					
	Metric size					
	3.2	4	6	8	10	12
AS1001FG	●	●	●			
AS2001FG		●	●			
AS2051FG			●	●		
AS3001FG			●	●	●	●
AS4001FG					●	●

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

In-line Type

AS□1FG

Stainless steel 303 used for metal parts.



Symbol



Applicable tubing O.D. [mm]	Model
	In-line Type
3.2	AS1001FG-23
	AS1001FG-04
4	AS2001FG-04
	AS1001FG-06
	AS2001FG-06
6	AS2051FG-06
	AS3001FG-06
	AS4001FG-06

Applicable tubing O.D. [mm]	Model
	In-line Type
8	AS2051FG-08
	AS3001FG-08
10	AS3001FG-10
	AS4001FG-10
12	AS3001FG-12
	AS4001FG-12

For inch size, refer to the Web Catalog.

Made to Order

1 Lubricant: Vaseline

X12

Example) AS1001FG-04-X12

2 Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve)

X21

Example) AS1001FG-04-X21

* Not particle-free

3 Restrictor (Without check valve)

X214

Example) AS1001FG-04-X214

4 Clean Series

10-

Lubricant: Fluorine grease, Double packaging

Example) 10-AS1001FG-04

Stainless Steel: Speed Controller with Indicator

Push-lock type

In-line Type

AS□2FSG Series Applicable tubing O.D.: Metric Size

Corrosion Resistant

How to Order

AS **200** 2 F S G **1** - **06**

Body size

100	M5 standard
200	1/8 standard
205	1/4 standard
300	3/8 standard
400	1/2 standard

With indicator

Stainless steel specifications
(Stainless steel 303)

* The material can be visually identified by the color of the release button.
Stainless steel type: White

Applicable tubing O.D.*1

23	ø3.2*2
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

*1 For selecting applicable tubing O.D., refer to the model on the table below.

*2 Use ø1/8" tubing.

Indicator window direction

Nil	0°		2	90°	
	1	180°			3

Model

Model	Applicable tubing O.D.					
	Metric size					
	3.2	4	6	8	10	12
AS1002FSG	●	●	●			
AS2002FSG		●	●			
AS2052FSG			●	●		
AS3002FSG				●	●	●
AS4002FSG					●	●

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane, FEP, PFA

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

In-line Type

AS□2FSG

Stainless steel 303 used for metal parts.



Symbol



Applicable tubing O.D. [mm]	Model
	In-line Type
3.2	AS1002FSG□-23
4	AS1002FSG□-04
	AS2002FSG□-04
	AS1002FSG□-06
6	AS2002FSG□-06
	AS2052FSG□-06
	AS3002FSG□-06

Applicable tubing O.D. [mm]	Model
	In-line Type
8	AS2052FSG□-08
	AS3002FSG□-08
10	AS3002FSG□-10
	AS4002FSG□-10
12	AS3002FSG□-12
	AS4002FSG□-12

For inch size, refer to the Web Catalog.

Stainless Steel: Dual Speed Controller with One-touch Fittings

ASD□30FG Series

Universal Type

Applicable tubing O.D.: Metric Size Connection thread: M5, R

Corrosion
Resistant

Lurch Prevention

How to Order

ASD 3 3 0 FG - 01 - 06 S -

Body size

2	M5 standard
3	1/8 standard
4	1/4 standard
5	3/8 standard
6	1/2 standard

Universal

With One-touch fitting

Stainless steel specifications (Stainless steel 303)

Port size

M5	M5 x 0.8
01	R1/8
02	R1/4
03	R3/8
04	R1/2

Applicable tubing O.D.*1

04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

Made to order

X12 Lubricant: Vaseline
Example) ASD330FG-01-06S-X12

Lock nut option

Nil	Hexagon lock nut
J	Round lock nut

With seal

* M5 is not available with seals.

Model

Model	Port size	Applicable tubing O.D.				
		4	6	8	10	12
ASD230FG-M5	M5 x 0.8	●	●			
ASD330FG-01	R1/8		●	●		
ASD430FG-02	R1/4		●	●	●	
ASD530FG-02	R1/4		●	●	●	●
ASD530FG-03	R3/8		●	●	●	●
ASD630FG-04	R1/2				●	●

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 AirMPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

Universal Type

ASD□30FG

Stainless steel 303 used for metal parts.
Prevention of stick-slip phenomenon, and speed control of a single acting cylinder.



Applicable tubing O.D. (mm)	Connection thread	Model
		Universal Type
4	M5 x 0.8	ASD230FG-M5-04
	M5 x 0.8	ASD230FG-M5-06
6	R1/8	ASD330FG-01-06S
	R1/4	ASD430FG-02-06S
	R1/4	ASD530FG-02-06S
	R3/8	-03-06S
8	R1/8	ASD330FG-01-08S
	R1/4	ASD430FG-02-08S
	R1/4	ASD530FG-02-08S
	R3/8	-03-08S

For inch size, refer to the Web Catalog.

Applicable tubing O.D. (mm)	Connection thread	Model
		Universal Type
10	R1/4	ASD430FG-02-10S
	R1/4	ASD530FG-02-10S
	R3/8	-03-10S
12	R1/2	ASD630FG-04-10S
	R1/4	ASD530FG-02-12S
	R3/8	-03-12S
	R1/2	ASD630FG-04-12S

Made to Order



1 Lubricant: Vaseline

X12

2 Clean Series

10-

Example) ASD230FG-M5-04-X12

Lubricant: Fluorine grease, Double packaging

Example) 10-ASD230FG-M5-04

Clean Speed Controller with One-touch Fitting

AS-FPQ/FPG Series

Elbow Type

Applicable tubing O.D.: Metric Size Connection thread: M5, R

Clean

How to Order

AS 2 2 1 1 FP Q - 01 - 06 - □

Body size

1	M5 standard
2	1/8, 1/4 standard
3	3/8 standard
4	1/2 standard

Elbow

Control type

0	Meter-out
1	Meter-in

With One-touch fitting

Clean specifications

Metal parts material

Q	Brass (electroless nickel plating)
G	Stainless steel 304

Lock nut option

NH	Hexagon lock nut
J	Round lock nut

Applicable tubing O.D.*1

04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

*1 For selecting applicable tubing O.D., refer to the model on the table below.

Port size

M5	M5 x 0.8
01	R1/8
02	R1/4
03	R3/8
04	R1/2

AS-FPQ/Brass (electroless nickel plating)
Release button color: Light gray



AS-FPG/Stainless steel 304
Release button color: Light blue



Model

Port size	Applicable tubing O.D.					Elbow type	
	Metric size					Meter-out	Meter-in
	4	6	8	10	12		
M5 x 0.8	●	●				AS1201FP□-M5	AS1211FP□-M5
R1/8	●	●	●			AS2201FP□-01	AS2211FP□-01
R1/4	●	●	●	●		AS2201FP□-02	AS2211FP□-02
R3/8		●	●	●	●	AS3201FP□-03	AS3211FP□-03
R1/2				●	●	AS4201FP□-04	AS4211FP□-04

Specifications

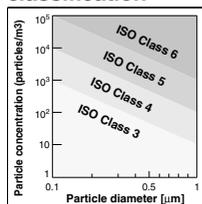
Fluid	Air
Cleanliness class (ISO class)	Class 3*1
Proof pressure (20°C)	1.5 MPa*2
Max. operating pressure (20°C)	1 MPa*3
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Oil	Fluorine grease

*1 Refer to particle generation classification.

*2 Proof pressure is 1.5 times higher than maximum operating pressure.

*3 The value of the maximum operating pressure is at a temperature of 20°C. In other cases, refer to "Relationship between Operating Temperature and Max. Operating Pressure" in the **Web Catalog**.

Particle generation classification



* Refer to the **Web Catalog** for details.

Recommended Applicable Tubing

Tubing material	Clean series polyurethane tubing: 10- series
Tubing O.D.	ø4, ø6, ø8, ø10, ø12

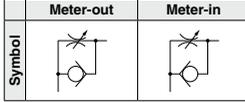
Polyurethane tubing: TU series, Nylon tubing: T series, and Soft nylon tubing: TS series can also be used. However, the degree of clean performance will decline.

Elbow Type

AS-FPQ/FPG

Symbol

Flow Direction Symbols on Body



AS-FPQ/Brass (electroless nickel plating)

Applicable tubing O.D. [mm]	Connection thread	Model	
		Elbow Type	
		Meter-out	Meter-in
4	M5 x 0.8	AS1201FPQ-M5-04	AS1211FPQ-M5-04
	R1/8	AS2201FPQ-01-04	AS2211FPQ-01-04
	R1/4	-02-04	-02-04
6	M5 x 0.8	AS1201FPQ-M5-06	AS1211FPQ-M5-06
	R1/8	AS2201FPQ-01-06	AS2211FPQ-01-06
	R1/4	-02-06	-02-06
	R3/8	AS3201FPQ-03-06	AS3211FPQ-03-06
8	R1/8	AS2201FPQ-01-08	AS2211FPQ-01-08
	R1/4	-02-08	-02-08
	R3/8	AS3201FPQ-03-08	AS3211FPQ-03-08
10	R1/4	AS2201FPQ-02-10	AS2211FPQ-02-10
	R3/8	AS3201FPQ-03-10	AS3211FPQ-03-10
	R1/2	AS4201FPQ-04-10	AS4211FPQ-04-10
12	R3/8	AS3201FPQ-03-12	AS3211FPQ-03-12
	R1/2	AS4201FPQ-04-12	AS4211FPQ-04-12

AS-FPG/Stainless steel 304

Applicable tubing O.D. [mm]	Connection thread	Model	
		Elbow Type	
		Meter-out	Meter-in
4	M5 x 0.8	AS1201FPG-M5-04	AS1211FPG-M5-04
	R1/8	AS2201FPG-01-04	AS2211FPG-01-04
	R1/4	-02-04	-02-04
6	M5 x 0.8	AS1201FPG-M5-06	AS1211FPG-M5-06
	R1/8	AS2201FPG-01-06	AS2211FPG-01-06
	R1/4	-02-06	-02-06
	R3/8	AS3201FPG-03-06	AS3211FPG-03-06
8	R1/8	AS2201FPG-01-08	AS2211FPG-01-08
	R1/4	-02-08	-02-08
	R3/8	AS3201FPG-03-08	AS3211FPG-03-08
10	R1/4	AS2201FPG-02-10	AS2211FPG-02-10
	R3/8	AS3201FPG-03-10	AS3211FPG-03-10
	R1/2	AS4201FPG-04-10	AS4211FPG-04-10
12	R3/8	AS3201FPG-03-12	AS3211FPG-03-12
	R1/2	AS4201FPG-04-12	AS4211FPG-04-12



AS

AS-1F

AS-FS

AS-W2

AS-X737

AS-F

AS-P

AS-2F

AS-2FS

AS-1F-3

AS-DPP

ASD

AS-FE

AS-FG

AS-1FG

AS-FSG

AS-2FG

AS□1FG

AS-2FSG

ASD-FG

AS-FPQ AS-FPG

AS-FM

ASD-FM

AS-F-D

ASD-F-D

AS-F-T

ASD-F-T

ASP

ASV

AS-R AS-Q

ASR ASQ

Related

Speed Controller for Low Speed Operation with One-touch Fitting

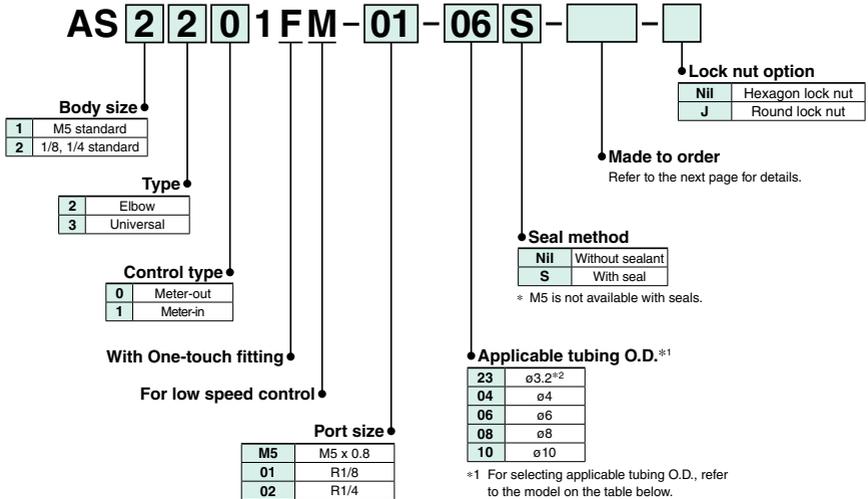
AS□□□1FM Series

Elbow Type/Universal Type

Applicable tubing O.D.: **Metric Size** Connection thread: **M5, R**

Low Speed Control

How to Order



Ideal for low speed control at 10 to 50 mm/s

Elbow type



Universal type



Model

Port size	Applicable tubing O.D.					Elbow type		Universal type	
	Metric size					Meter-out	Meter-in	Meter-out	Meter-in
	3.2	4	6	8	10				
M5 x 0.8	●	●	●	●	●	AS1201FM-M5	AS1211FM-M5	AS1301FM-M5	AS1311FM-M5
R1/8	●	●	●	●	●	AS2201FM-01	AS2211FM-01	AS2301FM-01	AS2311FM-01
R1/4		●	●	●	●	AS2201FM-02	AS2211FM-02	AS2301FM-02	AS2311FM-02

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane
Option*2	With seal

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

*2 M5 type port is not available with seal.

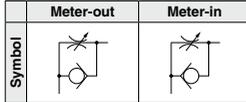
* Brass parts are all electroless nickel plated. The lock nut of the meter-out type is zinc chromate plated (the round lock nut is electroless nickel plated), then, the knob of the M5 type and the lock nut of the meter-in type are black zinc chromate plated.

Elbow Type/Universal Type

AS□□□1FM

Symbol

Flow Direction Symbols on Body



Applicable tubing O.D. [mm]	Connection thread	Model			
		Elbow type		Universal type	
		Meter-out	Meter-in	Meter-out	Meter-in
3.2	M5 x 0.8	AS1201FM-M5-23	AS1211FM-M5-23	AS1301FM-M5-23	AS1311FM-M5-23
	R1/8	AS2201FM-01-23S	AS2211FM-01-23S	AS2301FM-01-23S	AS2311FM-01-23S
4	M5 x 0.8	AS1201FM-M5-04	AS1211FM-M5-04	AS1301FM-M5-04	AS1311FM-M5-04
	R1/8	AS2201FM-01-04S	AS2211FM-01-04S	AS2301FM-01-04S	AS2311FM-01-04S
6	R1/4	-02-04S	-02-04S	-02-04S	-02-04S
	M5 x 0.8	AS1201FM-M5-06	AS1211FM-M5-06	AS1301FM-M5-06	AS1311FM-M5-06
	R1/8	AS2201FM-01-06S	AS2211FM-01-06S	AS2301FM-01-06S	AS2311FM-01-06S
8	R1/4	-02-06S	-02-06S	-02-06S	-02-06S
	R1/8	AS2201FM-01-08S	AS2211FM-01-08S	AS2301FM-01-08S	AS2311FM-01-08S
10	R1/4	-02-08S	-02-08S	-02-08S	-02-08S
	R1/4	AS2201FM-02-10S	AS2211FM-02-10S	AS2301FM-02-10S	AS2311FM-02-10S

For inch size, refer to the [Web Catalog](#).



Made to Order

1 Lubricant: Vaseline

X12

Example) AS1201FM-M5-23-X12

2 Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve)

X21

Example) AS1201FM-M5-23-X21

- * Not particle-free
- * The restrictor is only compatible with the part number of the meter-out type.

3 Restrictor (Without check valve)

X214

Example) AS1201FM-M5-23-X214

- * The restrictor is only compatible with the part number of the meter-out type.

4 Clean Series

10-

Lubricant: Fluorine grease, Double packaging

Example) 10-AS1201FM-M5-23

- AS
- AS-1F
- AS-FS
- AS-W2
- AS-X737
- AS-F
- AS-P
- AS-2F
- AS-2FS
- AS-1F-3
- AS-DPP
- ASD
- AS-FE
- AS-FG
- AS-1FG
- AS-FSG
- AS-2FG
- AS□1FG
- AS-2FSG
- ASD-FG
- AS-PPQ
- AS-PPG
- AS-FM
- ASD-FM
- AS-F-D
- ASD-F-D
- AS-F-T
- ASD-F-T
- ASP
- ASV
- AS-R
- AS-Q
- ASR
- ASQ
- Related

Speed Controller for Low Speed Operation

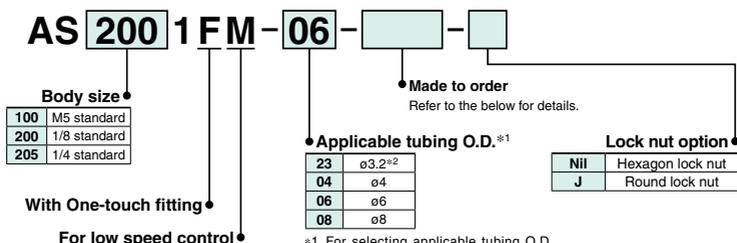
AS□1FM Series

In-line Type

Applicable tubing O.D.: Metric Size

Low Speed Control

How to Order



*1 For selecting applicable tubing O.D., refer to the model on the table below.

*2 Use ø1/8" tubing.

Model

Model	Applicable tubing O.D.			
	Metric size			
	3.2	4	6	8
AS1001FM	●	●	●	
AS2001FM		●	●	
AS2051FM			●	●

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

* Brass parts are all electroless nickel plated.

The knob of the M5 type is black zinc chromate plated.

In-line Type

AS□1FM

Ideal for low speed control at 10 to 50 mm/s



Symbol



Applicable tubing O.D. [mm]	Model
	In-line Type
3.2	AS1001FM-23
	AS1001FM-04
4	AS2001FM-04
	AS1001FM-06
6	AS2001FM-06
	AS2051FM-06
8	AS2051FM-08

For inch size, refer to the Web Catalog.



Made to Order

1 Lubricant: Vaseline

X12

Example) AS2001FM-04-X12

2 Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve)

X21

Example) AS2001FM-04-X21

* Not particle-free

3 Restrictor (Without check valve)

X214

Example) AS2001FM-04-X214

4 Clean Series

10-

Lubricant: Fluorine grease, Double packaging

Example) 10-AS2001FM-04

Dual Speed Controller for Low Speed Operation

ASD□30FM Series

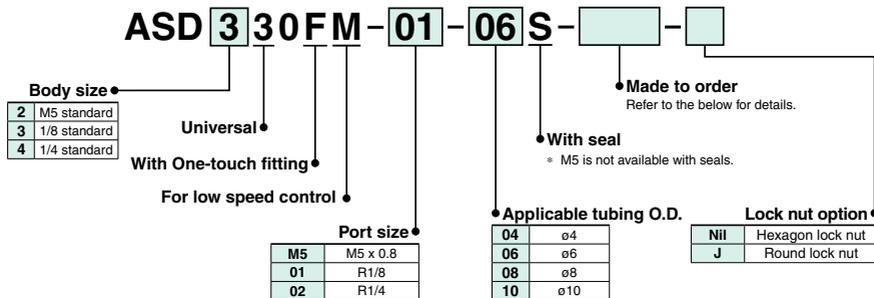
Universal Type

Applicable tubing O.D.: Metric Size Connection thread: M5, R

How to Order

Low Speed Control

Lurch Prevention



Model

Model	Port size	Applicable tubing O.D.			
		Metric size			
		4	6	8	10
ASD230FM-M5	M5 x 0.8	●	●		
ASD330FM-01	R1/8		●	●	
ASD430FM-02	R1/4		●	●	●

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material^{*1}	Nylon, Soft nylon, Polyurethane

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)
* Brass parts are all electroless nickel plated. The lock nut of the meter-out type is zinc chromate plated (the round lock nut is electroless nickel plated), then, the knob of the M5 type and the lock nut of the meter-in type are black zinc chromate plated.

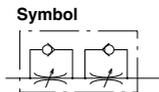
Universal Type

ASD□30FM

Two flow control valves and check valves integrated. Prevention of a stick-slip phenomenon, and speed control of a single acting cylinder.

Stable speed control is achievable even with load fluctuations.

Low speed control for small bore cylinders.



Applicable tubing O.D. [mm]	Connection thread	Model
		Universal type
4	M5 x 0.8	ASD230FM-M5-04
	M5 x 0.8	ASD230FM-M5-06
6	R1/8	ASD330FM-01-06S
	R1/4	ASD430FM-02-06S
8	R1/8	ASD330FM-01-08S
	R1/4	ASD430FM-02-08S
10	R1/4	ASD430FM-02-10S

For inch size, refer to the **Web Catalog**.



Made to Order

1 Lubricant: Vaseline

X12

2 Clean Series

10-

Example) ASD230FM-M5-X12

Lubricant: Fluorine grease, Double packaging

Example) 10-ASD230FM-M5

Speed Controller Adjustable by Flat Head Screwdriver

AS□□□1F-D Series

Elbow Type/Universal Type

Applicable tubing O.D.: **Metric Size** Connection thread: **M5, R**

How to Order

AS 2 2 1 1 F - 01 - 06 SD -

Body size

1	M5 standard
2	1/8, 1/4 standard
3	3/8 standard
4	1/2 standard

Type

2	Elbow
3	Universal

Control type

0	Meter-out
1	Meter-in

With One-touch fitting

Type adjustable by flat head screwdriver

With seal

* In case that connecting port is either M5 thread, it is not available with seal. With gasket is provided as standard.

Applicable tubing O.D.*1

23	ø3.2 ^{*2}
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

Port size

M5	M5 x 0.8
01	R1/8
02	R1/4
03	R3/8
04	R1/2

Made to order
Refer to the next page for details.

*1 For selecting applicable tubing O.D., refer to the model on the table below.
*2 Use ø1/8" tubing.

Flow adjustable by flat head screwdriver
For safety measures

Elbow type



Universal type



Model

Port size	Applicable tubing O.D.						Elbow type		Universal type	
	Metric size						Meter-out	Meter-in	Meter-out	Meter-in
	3.2	4	6	8	10	12				
M5 x 0.8	●	●	●				AS1201F-M5	AS1211F-M5	AS1301F-M5	AS1311F-M5
R1/8	●	●	●	●	● ^{*1}		AS2201F-01	AS2211F-01	AS2301F-01	AS2311F-01
R1/4		●	●	●	●		AS2201F-02	AS2211F-02	AS2301F-02	AS2311F-02
R1/4			●	●	●	●	AS3201F-02	AS3211F-02	AS3301F-02	AS3311F-02
R3/8			●	●	●	●	AS3201F-03	AS3211F-03	AS3301F-03	AS3311F-03
R1/2					●	●	AS4201F-04	AS4211F-04	AS4301F-04	AS4311F-04

*1 Elbow type only

* Meter-out and meter-in types can be visually differentiated by the flow direction symbol on the resin body.

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material^{*1}	Nylon, Soft nylon, Polyurethane

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

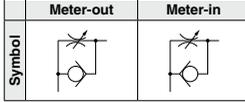
* Brass parts are all electroless nickel plated, provided as standard.

Elbow Type/Universal Type

AS□□□1F-D

Symbol

Flow Direction Symbols on Body



Applicable tubing O.D. [mm]	Connection thread	Model			
		Elbow type		Universal type	
		Meter-out	Meter-in	Meter-out	Meter-in
3.2	M5 x 0.8	AS1201F-M5-23D	AS1211F-M5-23D	AS1301F-M5-23D	AS1311F-M5-23D
	R1/8	AS2201F-01-23SD	AS2211F-01-23SD	AS2301F-01-23SD	AS2311F-01-23SD
4	M5 x 0.8	AS1201F-M5-04D	AS1211F-M5-04D	AS1301F-M5-04D	AS1311F-M5-04D
	R1/8	AS2201F-01-04SD	AS2211F-01-04SD	AS2301F-01-04SD	AS2311F-01-04SD
6	R1/4	-02-04SD	-02-04SD	-02-04SD	-02-04SD
	M5 x 0.8	AS1201F-M5-06D	AS1211F-M5-06D	AS1301F-M5-06D	AS1311F-M5-06D
	R1/8	AS2201F-01-06SD	AS2211F-01-06SD	AS2301F-01-06SD	AS2311F-01-06SD
	R1/4	-02-06SD	-02-06SD	-02-06SD	-02-06SD
		AS3201F-02-06SD	AS3211F-02-06SD	AS3301F-02-06SD	AS3311F-02-06SD
	R3/8	-03-06SD	-03-06SD	-03-06SD	-03-06SD
8	R1/8	AS2201F-01-08SD	AS2211F-01-08SD	AS2301F-01-08SD	AS2311F-01-08SD
	R1/4	-02-08SD	-02-08SD	-02-08SD	-02-08SD
		AS3201F-02-08SD	AS3211F-02-08SD	AS3301F-02-08SD	AS3311F-02-08SD
	R3/8	-03-08SD	-03-08SD	-03-08SD	-03-08SD
10	R1/8	AS2201F-01-10SD	AS2211F-01-10SD	—	—
	R1/4	-02-10SD	-02-10SD	AS2301F-02-10SD	AS2311F-02-10SD
		AS3201F-02-10SD	AS3211F-02-10SD	AS3301F-02-10SD	AS3311F-02-10SD
	R3/8	-03-10SD	-03-10SD	-03-10SD	-03-10SD
12	R1/2	AS4201F-04-10SD	AS4211F-04-10SD	AS4301F-04-10SD	AS4311F-04-10SD
	R1/4	AS3201F-02-12SD	AS3211F-02-12SD	AS3301F-02-12SD	AS3311F-02-12SD
	R3/8	-03-12SD	-03-12SD	-03-12SD	-03-12SD
	R1/2	AS4201F-04-12SD	AS4211F-04-12SD	AS4301F-04-12SD	AS4311F-04-12SD

For inch size, refer to the [Web Catalog](#).



Made to Order

1 Lubricant: Vaseline

X12

Example) AS1201F-M5-23D-X12

2 Grease-free (Saeal: Fluorine coating) + Restrictor (Without check valve)

X21

Example) AS1201F-M5-23D-X21

- * Not particle-free
- * The restrictor is only compatible with the part number of the meter-out type.

3 Restrictor (Without check valve)

X214

Example) AS1201F-M5-23D-X214

- * The restrictor is only compatible with the part number of the meter-out type.

- AS
- AS-1F
- AS-FS
- AS-W2
- AS-X737
- AS-F
- AS-P
- AS-2F
- AS-2FS
- AS-1F-3
- AS-DPP
- ASD
- AS-FE
- AS-FG
- AS-1FG
- AS-FSG
- AS-2FG
- AS□1FG
- AS-2FSG
- ASD-FG
- AS-PPQ
- AS-FPM
- ASD-FM
- AS-F-D
- ASD-F-D
- AS-F-T
- ASD-F-T
- ASP
- ASV
- AS-R
- AS-Q
- ASR
- ASQ
- Related

Speed Controller Adjustable by Flat Head Screwdriver

AS□1F-D Series

In-line Type

Applicable tubing O.D.: Metric Size

How to Order

AS **200** 1 F - **06** D -

Body size

100	M5 standard
200	1/8 standard
205	1/4 standard
300	3/8 standard
400	1/2 standard

With One-touch fittings

Type adjustable by flat head screwdriver

Applicable tubing O.D.*1

23	ø3.2#2
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

Made to order
Refer to the below for details.

*1 For selecting applicable tubing O.D., refer to the model on the table below.
*2 Use ø1/8" tubing.

Model

Model	Applicable tubing O.D.					
	Metric size					
	3.2	4	6	8	10	12
AS1001F	●	●	●			
AS2001F		●	●			
AS2051F			●	●		
AS3001F			●	●	●	●
AS4001F					●	●

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing.
(Refer to pages 285 and 287 for details.)

* Brass parts are all electroless nickel plated.

In-line Type

AS□1F-D

Flow adjustable by flat head screwdriver
For safety measures



Symbol



Applicable tubing O.D. [mm]	Model
	In-line Type
3.2	AS1001F-23D
	AS1001F-04D
4	AS2001F-04D
	AS1001F-06D
	AS2001F-06D
6	AS2051F-06D
	AS3001F-06D
	AS3001F-06D

Applicable tubing O.D. [mm]	Model
	In-line Type
8	AS2051F-08D
	AS3001F-08D
10	AS3001F-10D
	AS4001F-10D
12	AS3001F-12D
	AS4001F-12D

For inch size, refer to the Web Catalog.

Made to Order

Made to Order

1 Lubricant: Vaseline

X12

Example) AS1001F-23D-X12

2 Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve)

X21

Example) AS1001F-23D-X21

* Not particle-free

3 Restrictor (Without check valve)

X214

Example) AS1001F-23D-X214

Dual Speed Controller Adjustable by Flat Head Screwdriver

ASD□30F-D Series

Universal Type

Applicable tubing O.D.: Metric Size Connection thread: M5, R

AS

AS-1F

AS-FS

AS-W2

AS-X737

AS-F

AS-P

AS-2F

AS-2FS

AS-1F-3

AS-DPP

ASD

AS-FE

AS-1FG

AS-FSG

AS-2FG

AS□1FG

AS-2FSG

ASD-FG

AS-FM

ASD-FM

AS-F-D

ASD-F-D

AS-FPG

AS-FM

ASD-FM

AS-F-D

ASD-F-D

AS-F-T

ASD-F-T

ASP

ASV

AS-R

AS-Q

ASR

ASQ

Related

Lurch Prevention

How to Order

ASD **3** 30F-**01**-**06** SD-

Body size

2	M5 standard
3	1/8 standard
4	1/4 standard
5	3/8 standard
6	1/2 standard

Universal

With One-touch fittings

Port size

M5	M5 x 0.8
01	R1/8
02	R1/4
03	R3/8
04	R1/2

Type adjustable by flat head screwdriver

With seal

* In case that connecting port is either M5 thread, it is not available with seal. With gasket is provided as standard.

Applicable tubing O.D.*1

04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

Made to order

Refer to the below for details.

*1 For selecting applicable tubing O.D., refer to the model on the table below.

Model

Model	Port size	Applicable tubing O.D.				
		Metric size				
		4	6	8	10	12
ASD230F-M5	M5 x 0.8	●	●			
ASD330F-01	R1/8		●	●		
ASD430F-02	R1/4		●	●	●	
ASD530F-02	R1/4		●	●	●	●
ASD530F-03	R3/8		●	●	●	●
ASD630F-04	R1/2				●	●

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

* Brass parts are all electroless nickel plated, provided as standard.

Universal Type

ASD□30F-D

Prevention of stick-slip phenomenon, and speed control of a single acting cylinder.

Flow adjustable by flat head screwdriver.

For safety measures

Symbol



Applicable tubing O.D. (mm)	Connection thread	Model
		Universal type
4	M5 x 0.8	ASD230F-M5-04D
	M5 x 0.8	ASD230F-M5-06D
	R1/8	ASD330F-01-06SD
6	R1/4	ASD430F-02-06SD
	R1/4	ASD530F-02-06SD
	R3/8	-03-06SD
8	R1/8	ASD330F-01-08SD
	R1/4	ASD430F-02-08SD
	R3/8	ASD530F-02-08SD
	R3/8	-03-08SD

For inch size, refer to the Web Catalog.

Applicable tubing O.D. (mm)	Connection thread	Model
		Universal type
10	R1/4	ASD430F-02-10SD
	R1/4	ASD530F-02-10SD
	R3/8	-03-10SD
12	R1/2	ASD630F-04-10SD
	R1/4	ASD530F-02-12SD
	R3/8	-03-12SD
	R1/2	ASD630F-04-12SD



Made to Order

1 Lubricant: Vaseline

X12

Example) ASD230F-M5-04D-X12

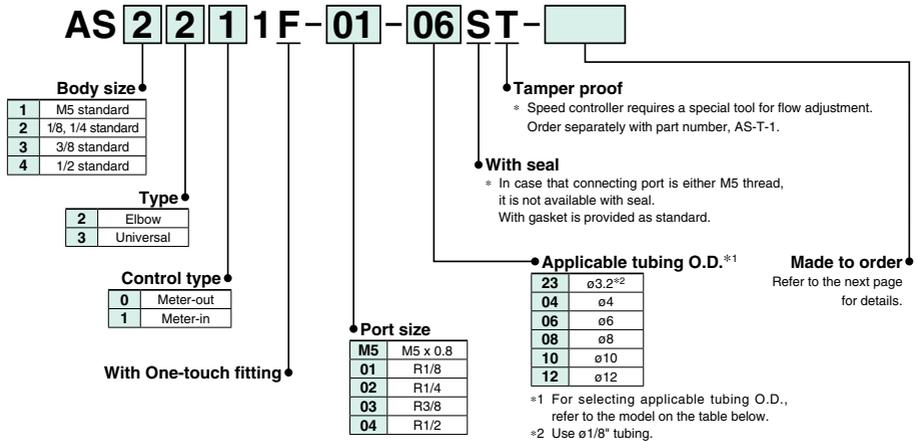
Tamper Proof Speed Controller

AS□□□1F-T Series

Elbow Type/Universal Type

Applicable tubing O.D.: **Metric Size** Connection thread: **M5, R**

How to Order



Able to adjust flow by a special tool
For safety measures

Elbow type



Universal type



Special tool (AS-T-1)



Model

Port size	Applicable tubing O.D.						Elbow type		Universal type	
	Metric size						Meter-out	Meter-in	Meter-out	Meter-in
	3.2	4	6	8	10	12				
M5 x 0.8	●	●	●	●	●	●	AS1201F-M5	AS1211F-M5	AS1301F-M5	AS1311F-M5
R1/8	●	●	●	●	●	*1	AS2201F-01	AS2211F-01	AS2301F-01	AS2311F-01
R1/4		●	●	●	●	●	AS2201F-02	AS2211F-02	AS2301F-02	AS2311F-02
R1/4			●	●	●	●	AS3201F-02	AS3211F-02	AS3301F-02	AS3311F-02
R3/8			●	●	●	●	AS3201F-03	AS3211F-03	AS3301F-03	AS3311F-03
R1/2					●	●	AS4201F-04	AS4211F-04	AS4301F-04	AS4311F-04

*1 Elbow type only

* Meter-out and meter-in types can be visually differentiated by the flow direction symbol on the resin body.

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

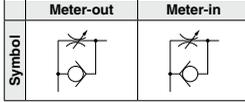
* Brass parts are all electroless nickel plated, provided as standard.

Elbow Type/Universal Type

AS□□□1F-T

Symbol

Flow Direction Symbols on Body



Applicable tubing O.D. [mm]	Connection thread	Model			
		Elbow type		Universal type	
		Meter-out	Meter-in	Meter-out	Meter-in
3.2	M5 x 0.8	AS1201F-M5-23T	AS1211F-M5-23T	AS1301F-M5-23T	AS1311F-M5-23T
	R1/8	AS2201F-01-23ST	AS2211F-01-23ST	AS2301F-01-23ST	AS2311F-01-23ST
4	M5 x 0.8	AS1201F-M5-04T	AS1211F-M5-04T	AS1301F-M5-04T	AS1311F-M5-04T
	R1/8	AS2201F-01-04ST	AS2211F-01-04ST	AS2301F-01-04ST	AS2311F-01-04ST
6	R1/4	-02-04ST	-02-04ST	-02-04ST	-02-04ST
	M5 x 0.8	AS1201F-M5-06T	AS1211F-M5-06T	AS1301F-M5-06T	AS1311F-M5-06T
	R1/8	AS2201F-01-06ST	AS2211F-01-06ST	AS2301F-01-06ST	AS2311F-01-06ST
	R1/4	-02-06ST	-02-06ST	-02-06ST	-02-06ST
	R3/8	-03-06ST	-03-06ST	-03-06ST	-03-06ST
	R1/8	AS2201F-01-08ST	AS2211F-01-08ST	AS2301F-01-08ST	AS2311F-01-08ST
8	R1/4	-02-08ST	-02-08ST	-02-08ST	-02-08ST
	R3/8	-03-08ST	-03-08ST	-03-08ST	-03-08ST
	R1/8	AS2201F-01-10ST	AS2211F-01-10ST	—	—
	R1/4	-02-10ST	-02-10ST	AS2301F-02-10ST	AS2311F-02-10ST
10	R3/8	-03-10ST	-03-10ST	AS3301F-02-10ST	AS3311F-02-10ST
	R1/2	AS4201F-04-10ST	AS4211F-04-10ST	AS4301F-04-10ST	AS4311F-04-10ST
	R1/4	AS3201F-02-12ST	AS3211F-02-12ST	AS3301F-02-12ST	AS3311F-02-12ST
12	R3/8	-03-12ST	-03-12ST	-03-12ST	-03-12ST
	R1/2	AS4201F-04-12ST	AS4211F-04-12ST	AS4301F-04-12ST	AS4311F-04-12ST

For inch size, refer to the Web Catalog.



Made to Order

1 Lubricant: Vaseline

X12

Example) AS1201F-M5-23T-X12

2 Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve)

X21

Example) AS1201F-M5-23T-X21

- * Not particle-free
- * The restrictor is only compatible with the part number of the meter-out type.

3 Restrictor (Without check valve)

X214

Example) AS1201F-M5-23T-X214

- * The restrictor is only compatible with the part number of the meter-out type.

- AS
- AS-1F
- AS-FS
- AS-W2
- AS-X737
- AS-F
- AS-P
- AS-2F
- AS-2FS
- AS-1F-3
- AS-DPP
- ASD
- AS-FE
- AS-FG
- AS-1FG
- AS-FSG
- AS-2FG
- AS□1FG
- AS-2FSG
- ASD-FG
- AS-FPG
- AS-FM
- ASD-FM
- AS-F-D
- ASD-F-D
- AS-F-T
- ASD-F-T
- ASP
- ASV
- AS-R
- AS-Q
- ASR
- ASQ
- Related

Tamper Proof Speed Controller

AS□1F-T Series

In-line Type

Applicable tubing O.D.: Metric Size

How to Order

AS **200** 1 F - **06** T -

Body size

100	M5 standard
200	1/8 standard
205	1/4 standard
300	3/8 standard
400	1/2 standard

With One-touch fittings

Made to order
Refer to the below for details.

Tamper proof
* Speed controller requires a special tool for flow adjustment.
Order separately with part number, AS-T-1.

Applicable tubing O.D.*1

23	ø3.2*2	08	ø8
04	ø4	10	ø10
06	ø6	12	ø12

*1 For selecting applicable tubing O.D., refer to the model on the table below.
*2 Use ø1/8" tubing.

Model

Model	Applicable tubing O.D.					
	Metric size					
	3.2	4	6	8	10	12
AS1001F	●	●	●			
AS2001F		●	●			
AS2051F			●	●		
AS3001F			●	●	●	●
AS4001F					●	●

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing.
(Refer to pages 285 and 287 for details.)
* Brass parts are all electroless nickel plated.

In-line Type

AS□1F-T

Able to adjust flow by a special tool
For safety measures



Applicable tubing O.D. [mm]	Model
	In-line Type
3.2	AS1001F-23T
	AS1001F-04T
4	AS2001F-04T
	AS1001F-06T
	AS2001F-06T
6	AS2051F-06T
	AS3001F-06T
	AS3001F-06T

Applicable tubing O.D. [mm]	Model
	In-line Type
8	AS2051F-08T
	AS3001F-08T
10	AS3001F-10T
	AS4001F-10T
12	AS3001F-12T
	AS4001F-12T

For inch size, refer to the Web Catalog.

Made to Order

1 Lubricant: Vaseline

X12

Example) AS1001F-23T-X12

2 Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve)

X21

Example) AS1001F-23T-X21

* Not particle-free

3 Restrictor (Without check valve)

X214

Example) AS1001F-23T-X214

Tamper Proof Dual Speed Controller

ASD□30F-T Series

Universal Type

Applicable tubing O.D.: Metric Size Connection thread: M5, R

Lurch Prevention

How to Order

ASD 3 30F-01-06ST-□

Body size

2	M5 standard
3	1/8 standard
4	1/4 standard
5	3/8 standard
6	1/2 standard

Universal
With One-touch fitting

Port size

M5	M5 x 0.8
01	R1/8
02	R1/4
03	R3/8
04	R1/2

Tamper proof

* Speed controller requires a special tool for flow adjustment. Order separately with part number, AS-T-1.

With seal

* In case that connecting port is either M5 thread, it is not available with seal. With gasket is provided as standard.

Applicable tubing O.D.*1

04	φ4
06	φ6
08	φ8
10	φ10
12	φ12

Made to order

X12 Lubricant: Vaseline
Example) ASD330F-01-06ST-X12

*1 For selecting applicable tubing O.D., refer to the model on the table below.

Model

Model	Port size	Applicable tubing O.D.				
		Metric size				
		4	6	8	10	12
ASD230F-M5	M5 x 0.8	●	●			
ASD330F-01	R1/8		●	●		
ASD430F-02	R1/4		●	●	●	
ASD530F-02	R1/4		●	●	●	●
ASD530F-03	R3/8		●	●	●	●
ASD630F-04	R1/2				●	●

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

* Brass parts are all electroless nickel plated, provided as standard.

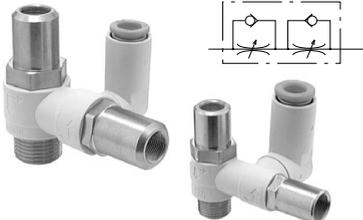
Universal Type

ASD□30F-T

Prevention of stick-slip phenomenon, and speed control of a single acting cylinder.

Able to adjust flow by a special tool
For safety measures

Symbol



Applicable tubing O.D. [mm]	Connection thread	Model	
		Universal type	
4	M5 x 0.8	ASD230F-M5-04T	
	M5 x 0.8	ASD230F-M5-06T	
6	R1/8	ASD330F-01-06ST	
	R1/4	ASD430F-02-06ST	
8	R1/4	ASD530F-02-06ST	
	R3/8	-03-06ST	
	R1/8	ASD330F-01-08ST	
	R1/4	ASD430F-02-08ST	
10	R1/4	ASD530F-02-08ST	
	R3/8	-03-08ST	

For inch size, refer to the Web Catalog.

Applicable tubing O.D. [mm]	Connection thread	Model	
		Universal type	
10	R1/4	ASD430F-02-10ST	
	R3/8	ASD530F-02-10ST	
12	R1/2	-03-10ST	
	R1/2	ASD630F-04-10ST	
12	R1/4	ASD530F-02-12ST	
	R3/8	-03-12ST	
12	R1/2	ASD630F-04-12ST	

Made to Order

Made to Order

1 Lubricant: Vaseline

X12

Example) ASD230F-M5-04T-X12

Speed Controller with Pilot Check Valve

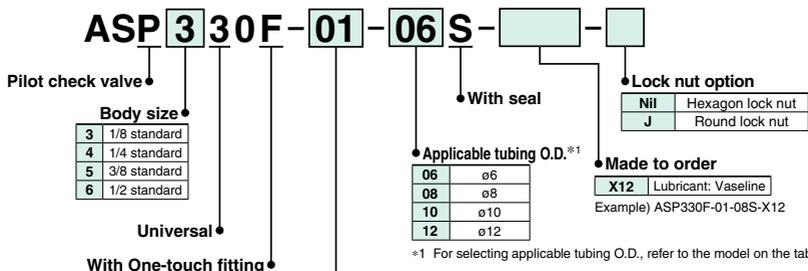
ASP 30F Series

Universal Type

Applicable tubing O.D.: Metric Size Connection thread: R

Drop Prevention

How to Order



Port size

Symbol	Cylinder side	Pilot port
01	R1/8	M5 x 0.8
02	R1/4	Rc1/8
03	R3/8	Rc1/8
04	R1/2	Rc1/4

Model

Model	Port size	Pilot port	Applicable tubing O.D.			
			6	8	10	12
ASP330F-01	R1/8	M5 x 0.8	●	●		
ASP430F-02	R1/4	Rc1/8	●	●		
ASP530F-03	R3/8	Rc1/8		●	●	
ASP630F-04	R1/2	Rc1/4			●	●

* Brass parts are all electroless nickel plated.

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Pilot check valve operating pressure	More than 50% the operating pressure (Over 0.1 MPa)
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Applicable tubing material*1	Nylon, Soft nylon, Polyurethane

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

Universal Type

ASP 30F

Built-in pilot check valve for drop prevention. Temporary intermediate stop. Emergency stop



Applicable tubing O.D. [mm]	Connection thread (A) (Cylinder side)	Connection thread (B) (Pilot port)	Model
			Universal type
6	R1/8	M5 x 0.8	ASP330F-01-06S
	R1/4	Rc1/8	ASP430F-02-06S
8	R1/8	M5 x 0.8	ASP330F-01-08S
	R1/4	Rc1/8	ASP430F-02-08S
	R3/8	Rc1/8	ASP530F-03-08S
10	R3/8	Rc1/8	ASP530F-03-10S
	R1/2	Rc1/4	ASP630F-04-10S
12	R1/2	Rc1/4	ASP630F-04-12S

For inch size, refer to the **Web Catalog**.

Made to Order

Made to Order

1 Lubricant: Vaseline

X12

Example) ASP330F-01-06S-X12

Speed Exhaust Controller

ASV Series

Elbow Type/Tee Type

Applicable tubing O.D.: Metric Size Connection thread: M, R

Spatter Proof

Quick Exhaust

How to Order

(Tee type only)

ASV 3 1 0F - 01 - 06 S

Speed exhaust controller

Body size

1	M3 standard
2	M5 standard
3	1/8 standard
4	1/4 standard
5	3/8 standard

Type

1	Tee
2	Elbow* ¹

*1 Elbow: M3, M5 only

Port size

M3	M3 x 0.5
M5	M5 x 0.8
01	R1/8
02	R1/4
03	R3/8
04	R1/2

Option

NII	None
C	With spatter cover

* Available only for ASV310F, 410F, and 510F.

Lock nut option

NII	Hexagon lock nut
J	Round lock nut

Made to order

X12	Lubricant: Vaseline
-----	---------------------

Example) ASV220F-M5-06-X12

Applicable tubing O.D.*1

04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

Seal

Symbol	Seal	Applicable model
NII	Without seal	ASV120F/220F
S	With seal	ASV310F/410F/510F

*1 For selecting applicable tubing O.D., refer to the model on the table below.

Model

Model	Port size	Applicable tubing O.D.				
		4	6	8	10	12
ASV120F-M3	M3 x 0.5					
ASV220F-M5	M5 x 0.8	●	●			
ASV310F-01	R1/8		●	●		
ASV310F-02	R1/4		●	●		
ASV410F-01	R1/8		●	●	●	
ASV410F-02	R1/4		●	●	●	
ASV410F-03	R3/8		●	●	●	
ASV510F-02	R1/4		●	●	●	●
ASV510F-03	R3/8		●	●	●	●
ASV510F-04	R1/2		●	●	●	●

Specifications

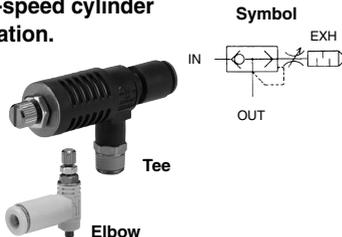
Series	ASV120F	ASV220F	ASV310F/410F	ASV510F
Fluid	Air			
Proof pressure	1.5 MPa			
Max. operating pressure	1 MPa			
Min. operating pressure	0.1 MPa			
Ambient and fluid temperatures	-5 to 60°C (No freezing)			
Applicable tubing material* ¹	Nylon, Soft nylon, Polyurethane			
Option	Round lock nut		With spatter cover, Round lock nut	

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

Elbow Type/Tee Type

ASV

Integration of a quick exhaust valve and an exhaust restrictor permits high-speed cylinder operation.



Applicable tubing O.D. (mm)	Connection thread	Model
		Elbow
4	M3 x 0.5	ASV120F-M3-04
	M5 x 0.8	ASV220F-M5-04
	M5 x 0.8	ASV220F-M5-06
6	R1/8	ASV310F-01-06S
		-02-06S
	R1/4	ASV310F-01-08S
		-02-08S
8	R1/4	ASV410F-01-08S
	R1/8	ASV410F-01-08S

Applicable tubing O.D. (mm)	Connection thread	Model
		Tee
8	R1/4	ASV410F-02-08S
	R3/8	-03-08S
	R1/8	ASV410F-01-10S
10	R1/4	-02-10S
	R3/8	-03-10S
	R1/4	ASV510F-02-10S
	R3/8	-03-10S
12	R1/2	ASV510F-02-12S
	R3/8	-03-12S
	R1/2	-04-12S

Made to Order

Made to Order

1 Lubricant: Vaseline

X12

Example) ASV120F-M3-04-X12

* Only for ASV120F and ASV220F



Air Saving Speed Controller

Push-lock type

With Pressure Reduction Function/With Rapid Supply and Exhaust Function

AS-R/AS-Q Series

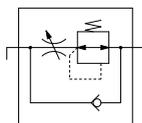
Applicable tubing O.D.: Metric Size Connection thread: R

Air Saving

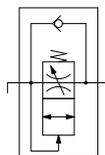
Air Saving 25*1% reduction

By reducing the pressure on the return stroke to 0.2 MPa, the air consumption can be reduced.

*1 The air consumption reduction rate indicates the rate for one cycle of the cylinder.



With pressure reduction function



With rapid supply and exhaust function

How to Order

With pressure reduction function

AS 2 2 R - 02 - 06

* Knob color: White

With rapid supply and exhaust function

AS 2 2 Q - 02 - 06

* Knob color: Light blue

Body size

2	1/4 standard
3	3/8 standard
4	1/2 standard

Port size

02	R1/4
03	R3/8
04	R1/2

Port size

01	R1/8
02	R1/4
03	R3/8
04	R1/2

Applicable tubing O.D.

06	ø6
08	ø8
10	ø10
12	ø12

* For selecting applicable tubing O.D., refer to the model on the table below.

* Only meter-in type is available. The meter-out version is not available and therefore is not shown in this How to Order.

Model

Model		Port size	Applicable tubing O.D.			
			Metric size			
With pressure reduction function	With rapid supply and exhaust function		6	8	10	12
AS22R-01	—	R1/8	●	●	●	
AS22R-02	AS22Q-02	R1/4	●	●	●	
AS32R-02	AS32Q-02	R1/4	●	●	●	
AS32R-03	AS32Q-03	R3/8	●	●	●	
AS42R-03	AS42Q-03	R3/8			●	●
AS42R-04	AS42Q-04	R1/2			●	●

* Elbow type only

* Meter-out and meter-in types can be visually differentiated by the flow direction symbol on the resin body.

Specifications

Item		With pressure reduction function AS-R	With rapid supply and exhaust function AS-Q
Fluid		Air	
Proof pressure		1.05 MPa	
Maximum operating pressure		0.7 MPa	
Minimum operating pressure		0.3 MPa	
Set pressure	Set pressure for pressure reduction function	0.2 MPa	—
(Supply pressure at 0.5 MPa)	Minimum pressure for rapid supply function initiation	—	0.2 MPa
Ambient and fluid temperatures		-5 to 60°C (No freezing)	
Applicable tubing material*1		Nylon, Soft nylon, Polyurethane, FEP, PFA	

*1 Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

With Pressure Reduction Function/With Rapid Supply and Exhaust Function AS-R/AS-Q

With Pressure Reduction Function: AS-R



Applicable tubing O.D. [mm]	Connection thread	Model
6	R1/8	AS22R-01-06
	R1/4	AS22R-02-06
	R1/4	AS32R-02-06
	R3/8	AS32R-03-06
8	R1/8	AS22R-01-08
	R1/4	AS22R-02-08
	R1/4	AS32R-02-08
	R3/8	AS32R-03-08
10	R1/8	AS22R-01-10
	R1/4	AS22R-02-10
	R1/4	AS32R-02-10
	R3/8	AS32R-03-10
	R3/8	AS42R-03-10
	R1/2	AS42R-04-10
12	R3/8	AS42R-03-12
	R1/2	AS42R-04-12

With Rapid Supply and Exhaust Function: AS-Q



Applicable tubing O.D. [mm]	Connection thread	Model
6	R1/4	AS22Q-02-06
	R1/4	AS32Q-02-06
	R3/8	AS32Q-03-06
8	R1/4	AS22Q-02-08
	R1/4	AS32Q-02-08
	R3/8	AS32Q-03-08
10	R1/4	AS22Q-02-10
	R1/4	AS32Q-02-10
	R3/8	AS32Q-03-10
	R3/8	AS42Q-03-10
12	R1/2	AS42Q-04-10
	R3/8	AS42Q-03-12
	R1/2	AS42Q-04-12

- AS
- AS-1F
- AS-FS
- AS-W2
- AS-X737
- AS-F
- AS-P
- AS-2F
- AS-2FS
- AS-1F-3
- AS-DPP
- ASD
- AS-FE
- AS-FG
- AS-1FG
- AS-FSG
- AS-2FG
- AS□1FG
- AS-2FSG
- ASD-FG
- AS-PPQ
- AS-FPG
- AS-FM
- ASD-FM
- AS-F-D
- ASD-F-D
- AS-F-T
- ASD-F-T
- ASP
- ASV
- AS-R
- AS-Q
- ASR
- ASQ
- Related

Air Saving Valve

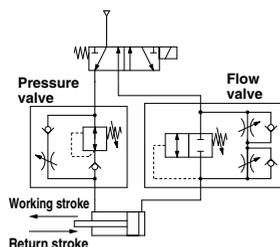
ASR/ASQ Series

Pressure Valve/Flow Valve

Applicable tubing O.D.: Metric Size Connection thread: R

40% reduction in air consumption

It is not necessary to supply high pressure to both sides of the piston operation. It is enough to supply pressure (0.2 MPa) that ensures only smooth operation within the set time to the non-working side. Reduction system with the PFC valve and QFC valve cuts the consumption amount by 40%, reducing running costs and equipment costs greatly.

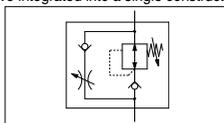


Pressure Valve ASR Series

Regulator with check valve
Speed controller



Regulator with check valve and flow control valve integrated into a single construction

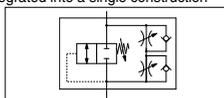


Flow Valve ASQ Series

Quick supply and exhaust valve
+
Speed controller
(Meter-in, Meter-out)



Pilot valve and two-way flow control valve integrated into a single construction



How to Order

ASR 4 3 0 F - 02 - 06 S - F20 -

- Model**
 - ASR Pressure valve
 - ASQ Flow valve
- Body size**
 - 4 1/4 standard
 - 5 3/8 standard
 - 6 1/2 standard
- Type**
 - 3 Universal
- With One-touch fitting**
- Port size**
 - 02 R1/4
 - 03 R3/8
 - 04 R1/2
- Lock nut option**
 - J Hexagon lock nut
 - N Round lock nut
- Option**
 - Nil Variable set pressure type (0.1 to 0.3 MPa)
 - F20 Fixed set pressure type (0.2 MPa)
- With seal**
- Applicable tubing O.D.*1**
 - 06 6 mm
 - 08 8 mm
 - 10 10 mm
 - 12 12 mm

*1 For selecting applicable tubing O.D., refer to the model on the table below.

Model

Model		Port size	Applicable tubing O.D. [mm]			
Pressure valve	Flow valve		6	8	10	12
ASR430F-02	ASQ430F-02	R1/4	●	●	●	
ASR530F-02	ASQ530F-02	R1/4	●	●	●	●
ASR530F-03	ASQ530F-03	R3/8	●	●	●	●
ASR630F-03	ASQ630F-03	R3/8			●	●
ASR630F-04	ASQ630F-04	R1/2			●	●

Specifications

Fluid		Air
Proof pressure		1.5 MPa
Maximum operating pressure		1 MPa
Set pressure range	Variable	0.1 to 0.3 MPa
	Fixed (option)	0.2 MPa
Ambient and fluid temperatures		-5 to 60°C (No freezing)
Applicable tubing material*1		Nylon, Soft nylon, Polyurethane

* Use caution at the max. operating pressure when using soft nylon or polyurethane tubing. (Refer to pages 285 and 287 for details.)

Pressure Valve/Flow Valve

ASR/ASQ

Pressure valve: **ASR**

Variable Set Pressure Type



Applicable tubing O.D. [mm]	Connection thread	Model
6	R1/4	ASR430F-02-06S
	R1/4	ASR530F-02-06S
	R3/8	-03-06S
8	R1/4	ASR430F-02-08S
	R1/4	ASR530F-02-08S
	R3/8	-03-08S
10	R1/4	ASR430F-02-10S
	R1/4	ASR530F-02-10S
	R3/8	-03-10S
	R3/8	ASR630F-03-10S
	R1/2	-04-10S
12	R1/4	ASR530F-02-12S
	R3/8	-03-12S
	R3/8	ASR630F-03-12S
	R1/2	-04-12S

Pressure valve: **ASR**

Fixed Set Pressure Type



Applicable tubing O.D. [mm]	Connection thread	Model
6	R1/4	ASR430F-02-06S-F20
	R1/4	ASR530F-02-06S-F20
	R3/8	-03-06S-F20
8	R1/4	ASR430F-02-08S-F20
	R1/4	ASR530F-02-08S-F20
	R3/8	-03-08S-F20
10	R1/4	ASR430F-02-10S-F20
	R1/4	ASR530F-02-10S-F20
	R3/8	-03-10S-F20
	R3/8	ASR630F-03-10S-F20
	R1/2	-04-10S-F20
12	R1/4	ASR530F-02-12S-F20
	R3/8	-03-12S-F20
	R3/8	ASR630F-03-12S-F20
	R1/2	-04-12S-F20

Flow valve: **ASQ**

Variable Set Pressure Type



Applicable tubing O.D. [mm]	Connection thread	Model
6	R1/4	ASQ430F-02-06S
	R1/4	ASQ530F-02-06S
	R3/8	-03-06S
8	R1/4	ASQ430F-02-08S
	R1/4	ASQ530F-02-08S
	R3/8	-03-08S
10	R1/4	ASQ430F-02-10S
	R1/4	ASQ530F-02-10S
	R3/8	-03-10S
	R3/8	ASQ630F-03-10S
	R1/2	-04-10S
12	R1/4	ASQ530F-02-12S
	R3/8	-03-12S
	R3/8	ASQ630F-03-12S
	R1/2	-04-12S

Flow valve: **ASQ**

Fixed Set Pressure Type



Applicable tubing O.D. [mm]	Connection thread	Model
6	R1/4	ASQ430F-02-06S-F20
	R1/4	ASQ530F-02-06S-F20
	R3/8	-03-06S-F20
8	R1/4	ASQ430F-02-08S-F20
	R1/4	ASQ530F-02-08S-F20
	R3/8	-03-08S-F20
10	R1/4	ASQ430F-02-10S-F20
	R1/4	ASQ530F-02-10S-F20
	R3/8	-03-10S-F20
	R3/8	ASQ630F-03-10S-F20
	R1/2	-04-10S-F20
12	R1/4	ASQ530F-02-12S-F20
	R3/8	-03-12S-F20
	R3/8	ASQ630F-03-12S-F20
	R1/2	-04-12S-F20

- AS
- AS-1F
- AS-FS
- AS-W2
- AS-X737
- AS-F
- AS-P
- AS-2F
- AS-2FS
- AS-1F-3
- AS-DPP
- ASD
- AS-FE
- AS-FG
- AS-1FG
- AS-FSG
- AS-2FG
- ASQ 1FG
- AS-2FSG
- ASD-FG
- AS-FPG
- AS-FM
- ASD-FM
- AS-F-D
- ASD-F-D
- AS-F-T
- ASD-F-T
- ASP
- ASV
- AS-R
- AS-Q
- ASR
- ASQ

Related

Made to Order

Restrictor AS-X214/X21 Series

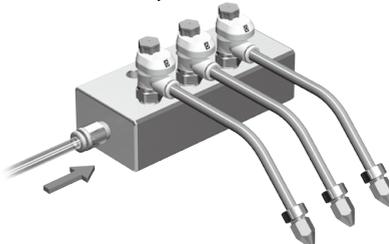
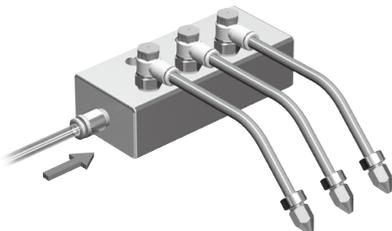
-X214: Restrictor (Without check valve)

-X21 : Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve)



For air purge and air blow flow control

With indicator
Flow control by numerical values



Variations (The following products are speed controllers without check valves.)

For how-to-order examples, refer to the Made to Order section of each series.

	Push-lock type Elbow type/Universal type AS-X214/X21	From p. 214
	Elbow type/Universal type AS-X214/X21	p. 221
	With indicator/Push-lock type AS-FS-X214/X21	p. 226
	In-line type AS-X214/X21	p. 238
	In-line/Panel mount type AS-3-X214/X21	p. 240
	Metal body/Elbow type AS-X214/X21	p. 234
	With residual pressure release valve AS-FE-X214/X21	p. 244

	Stainless steel Push-lock type Elbow type/Universal type AS-FG-X214/X21	p. 246
	Stainless steel AS-FG-X214/X21	p. 248, 252
	Stainless steel With indicator/Push-lock type AS-FSG-X214/X21	p. 250
	For low-speed operation AS-FM-X214/X21	From p. 258
	Adjustable by flat head screwdriver AS-D-X214/X21	From p. 262
	Tamper proof AS-T-X214/X21	From p. 266

Residual Pressure Release Valve with One-touch Fitting KE□ Series

Residual pressure in the cylinder can be easily released with a single push of the push button.

Residual Pressure Exhaust

With One-touch fitting
Without a push button guard



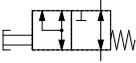
With One-touch fitting
With a push button guard



Rc thread
With a push button guard



Symbol



Applicable tubing O.D. [mm]	Model
6	KEA06
8	KEA08
10	KEA10
12	KEA12

Applicable tubing O.D. [mm]	Model
6	KEB06
8	KEB08
10	KEB10
12	KEB12

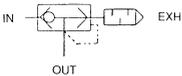
Connection thread	Model
Rc1/4	KEC-02
Rc3/8	KEC-03

Quick Exhaust Valve with One-touch Fittings AQ□F Series

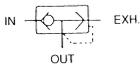
Space saving: Rectilinear IN-OUT tubing connections

Quick Exhaust

Symbol



With silencer



With exhaust port fitting

With silencer



With exhaust port fitting



Applicable tubing O.D. [mm]	Model
4	AQ240F-04-00
6	AQ240F-06-00
6	AQ340F-06-00

Applicable tubing O.D. [mm]	Model
4	AQ240F-04-04
6	AQ240F-06-06
6	AQ340F-06-06

- AS
- AS-1F
- AS-FS
- AS-W2
- AS-X737
- AS-F
- AS-P
- AS-2F
- AS-2FS
- AS-1F-3
- AS-DPP
- ASD
- AS-FE
- AS-FG
- AS-1FG
- AS-FSG
- AS-2FG
- AS□1FG
- AS-2FSG
- ASD-FG
- AS-FPG
- AS-FM
- ASD-FM
- AS-F-D
- ASD-F-D
- AS-F-T
- ASD-F-T
- ASP
- ASV
- AS-R
- AS-Q
- ASR
- ASQ

Related

Related Products

Metering Valve with Silencer **ASN2 Series**

Superior sound reducing performance

Over 20 dB at max. flow rate

Cylinder speed easily set

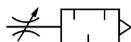
Shape of needle is the same as that of speed controller

Retainer prevents accidental loss of needle

<Example of mounting> Connection to the EXH port of the cylinder with valve



Symbol



Model

Model	Port size
ASN2-M5	M5 x 0.8
ASN2-U10/32	10-32UNF
ASN2-01	1/8
ASN2-02	1/4
ASN2-03	3/8
ASN2-04	1/2

Bushing Type Check Valve with One-touch Fittings **AKH/AKB Series**

Drop Prevention

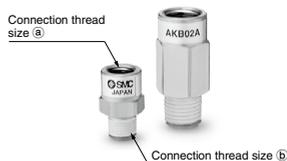
Straight type: AKH



Male connector type: AKH



Bushing type: AKB



Applicable tubing O.D. [mm]	Model
4	AKH04-00
6	AKH06-00
8	AKH08-00
10	AKH10-00
12	AKH12-00

Applicable tubing O.D. [mm]	Connection thread	Model	
			
4	M5 x 0.8	AKH04 A-M5	AKH04 B-M5
	R1/8	-01S	-01S
6	M5 x 0.8	AKH06 A-M5	AKH06 B-M5
	R1/8	-01S	-01S
	R1/4	-02S	-02S
8	R1/8	AKH08 A-01S	AKH08 B-01S
	R1/4	-02S	-02S
	R3/8	-03S	-03S
	R1/4	AKH10 A-02S	AKH10 B-02S
10	R3/8	-03S	-03S
	R1/2	-04S	-04S
12	R3/8	AKH12 A-03S	AKH12 B-03S
	R1/2	-04S	-04S

Connection thread size		Model	
a	b		
Rc1/8	R1/8	AKB01 A-01S	AKB01 B-01S
Rc1/4	R1/4	AKB02 A-02S	AKB02 B-02S
Rc3/8	R3/8	AKB03 A-03S	AKB03 B-03S
Rc1/2	R1/2	AKB04 A-04S	AKB04 B-04S

Made to Order

Check Valve INA/XTO Series

INA-14-290



INA-14-□



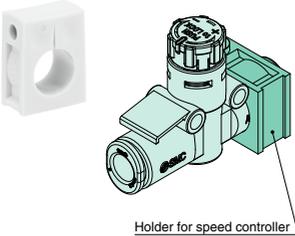
XTO-674-□□



Model	Port size	Specifications					Rubber material	Fluid	Operating temperature range [°C]	Min. operating pressure [MPa]	Application
		Body Brass	All stainless steel	Low cracking pressure 0.01 MPa	Main parts: Stainless steel						
INA-14-290	Rc1/8	●			●		NBR	Air, Water	-5 to 60	0.02	
INA-14-47-□	□: Port size 02: Rc1/4 03: Rc3/8 04: Rc1/2		●				NBR	Air, Water	-5 to 60	0.05	Anti-corrosion
INA-14-85-□			●				FKM	Air, Water	-5 to 80	0.05	Anti-corrosion
XTO-674-□			●				NBR	Air	-5 to 60	0.05	Basic type
XTO-674-□A			●			●	NBR	Air, Water	-5 to 60	0.05	For water
XTO-674-□E			●		●		NBR	Air	-5 to 60	0.01	For vacuum, oscillation measures
XTO-674-□H			●				FKM	Air	-5 to 80	0.05	For high temperature
XTO-674-□L			●				CR	Air	-30 to 60	0.05	For low temperature
XTO-674-□AE			●		●	●	NBR	Air, Water	-5 to 60	0.01	
XTO-674-□AH			●			●	FKM	Air, Water	-5 to 80	0.05	
XTO-674-□AL			●			●	CR	Air	-30 to 60	0.05	
XTO-674-□EH			●		●		FKM	Air	-5 to 80	0.01	
XTO-674-□EL			●		●		CR	Air	-30 to 60	0.01	
XTO-674-□AEH			●		●	●	FKM	Air, Water	-5 to 80	0.01	
XTO-674-□AEL			●		●	●	CR	Air	-30 to 60	0.01	

Holder TMH Series

A holder for securing a speed controller with One-touch fittings (In-line type)



Holder for speed controller

In-line Speed Controllers and Holders

Body size	Tubing size	Applicable tubing					
		23	04	06	08	10	12
		ø3.2	ø4	ø6	ø8	ø10	ø12
AS1002F	TMH-23J		TMH-04J	TMH-06J			
AS2002F							
AS2052F				TMH-06			
AS3002F				TMH-07	TMH-08		
AS4002F						TMH-10	TMH-12 TMH-13

* The applicable TMH for AS1002F-02 is not available.

Multi-holder TMA Series

Can be used to secure the KE□ series exhaust valve with One-touch fitting.

One-touch fitting New KQ2, union tee, elbow, and straight can also be secured.



Model

Model	Stations	Applicable exhaust valve	Applicable One-touch fitting		
			Union tee	Union elbow	Straight union
TMA-04	10	—	KQ2T06-00A	KQ2L06-00A	KQ2H06-00A
TMA-06	8	KEA06	KQ2T08-00A	KQ2L08-00A	KQ2H08-00A
		KEB06			
TMA-08	8	KEA08	KQ2T10-00A	KQ2L10-00A	KQ2H10-00A
		KEB08			
		KEC-02			
TMA-10	6	KEA10	KQ2T12-00A	KQ2L12-00A	KQ2H12-00A
		KEB10			
TMA-12	6	KEA12	—	—	—
		KEB12			
		KEC-03			

- AS
- AS-1F
- AS-FS
- AS-W2
- AS-X737
- AS-F
- AS-P
- AS-2F
- AS-2FS
- AS-1F-3
- AS-DPP
- ASD
- AS-FE
- AS-FG
- AS-1FG
- AS-FSG
- AS-2FG
- AS□1FG
- AS-2FSG
- ASD-FG
- AS-PPQ
- AS-PPQ
- AS-FM
- ASD-FM
- AS-F-D
- ASD-F-D
- AS-F-T
- ASD-F-T
- ASP
- ASV
- AS-R
- AS-SQ
- ASR
- ASQ
- Related

Tubing

Tubing

General Information	Color	Tubing O.D. [mm]							Applicable fluid: Temperature [°C]	Page	
		ø2	ø3.2	ø4 (ø $\frac{1}{2}$)	ø6	ø8 (ø $\frac{3}{4}$)	ø10	ø12			ø16
General tubing 3.3 MPa max. at 20°C¹⁾ Nylon Tubing T Series *1 It varies according to each size.	Black (Opaque) White (Material color) Red (Opaque) Blue (Opaque) Yellow (Opaque) Green (Opaque)	•	•	•	•	•	•	•	•	Air: -40 to 100 Water: 0 to 70	283
Slightly flexible 2.0 MPa max. at 20°C Soft Nylon Tubing TS Series * It varies according to each size.	Black (Opaque) White (Material color) Red (Opaque) Blue (Opaque) Yellow (Opaque) Green (Opaque)	•	•	•	•	•	•	•	•	Air: -40 to 100 Water: 0 to 50	285
Flexible 0.8 MPa max. at 20°C Polyurethane Tubing TU Series Multi-core, Multi-color Specification Flat Tubing D. 285 Tubing O.D. ø2 to ø12 Color Black, White, Red, Blue, Yellow, Green, Clear, Orange Number of cores 2 to 6	Black (Opaque) White (Opaque) Red (Translucent) Blue (Translucent) Yellow (Opaque) Green (Opaque) Clear (Material color) Orange (Opaque) Solid blue (Opaque) Clear blue (Translucent) Medium blue (Opaque) Brown (Opaque) Solid green (Opaque) Clear green (Translucent) Neon green (Opaque) Dark green (Opaque) Gray (Opaque) Light gray (Opaque) Neon pink (Opaque) Solid purple (Opaque) Clear purple (Translucent) Solid red (Opaque) Clear red (Translucent) Silver (Opaque) Solid yellow (Opaque) Clear yellow (Translucent) Neon yellow (Opaque) Clear orange (Translucent) Neon orange (Opaque)	•	•	•	•	•	•	•	•	Air: -20 to 60 Water: 0 to 40	287
Extremely flexible 0.6 MPa max. at 20°C Soft Polyurethane Tubing TUS Series Multi-core, Multi-color Specification Flat Tubing D. 295 Tubing O.D. ø4 to ø12 Color Black, White, Red, Blue, Yellow, Green, Translucent, Yellow brown Number of cores 2 to 5	Black (Opaque) White (Opaque) Red (Opaque) Blue (Opaque) Yellow (Opaque) Green (Opaque) Translucent (Material color) Yellow brown (Opaque)	•	•	•	•	•	•	•	•	Air: -20 to 60	293
0.8 MPa standard type, 1.0 MPa for high pressure type Hard Polyurethane Tubing TUH Series	Black (Opaque) White (Opaque) Blue (Translucent) Translucent (Material color)	•	•	•	•	•	•	•	•	Air: -20 to 60	297
Improved abrasion resistance Wear Resistant Tubing TUZ Series Multi-core, Multi-color Specification Flat Tubing D. 301 Tubing O.D. ø4 to ø12 Color Black, White, Red, Blue, Yellow, Green Number of cores 2 to 6	Black White Red Blue Yellow Green	•	•	•	•	•	•	•	•	Air: -20 to 60 Water: 0 to 40	299
For flexible and moving applications Polyurethane Coil Tubing TCU Series	1 core 2 cores 3 cores	•	•	•	•	•	•	•	•	Air: -20 to 60	303

T
TS
TU
TUS
TUH
TUZ
TCU
TFU
TRS
TRB
TRBU
TRTU
TQ
TAS
TAU
TL/
TIL
TLM/
TILM
TH/
TIH
TD/
TID
TPH
TPS
IDK
Related

Tubing

Tubing

	Color	Tubing O.D. [mm]										Applicable fluid: Temperature [°C]	Page		
		ø2	ø3	ø4 (ø½)	ø6	ø8 (ø⅝)	ø10	ø12	ø16	ø19	ø25				
Compact piping Polyurethane Flat Tubing TFU Series 	2 cores 3 cores			●	●	●								Air: -20 to 60	304
Use in spatter generating atmosphere/Flame-resistant material FR Soft Nylon Tubing TRS Series  Flame resistant (Equivalent to UL-94 Standard V-0)	Black (Opaque) White (Metal color) Red (Opaque) Blue (Opaque) Green (Opaque)			●	●	●	●	●	●	●	●	●	●	Air: -20 to 60 Water: 0 to 60	305
FR Double Layer Tubing TRB Series  Flame resistant (Equivalent to UL-94 Standard V-0)	Black White Red Blue Yellow Green			●	●	●	●	●	●	●	●	●	●	Air: -20 to 60 Water: 0 to 60	307
FR Double Layer Polyurethane Tubing TRBU Series  Flame resistant (Equivalent to UL-94 Standard V-0)	Black White Red Blue Yellow Green			●	●	●	●	●	●	●	●	●	●	Air: -20 to 60 Water: 0 to 40	309
FR Three-layer Polyurethane Tubing TRTU Series  Flame resistant (Equivalent to UL-94 Standard V-0)	Black White Red Blue Yellow Green			●	●	●	●	●	●	●	●	●	●	Air: -20 to 60 Water: 0 to 40	311
2-Layer Soft Fluoropolymer Tubing TQ Series 	Translucent			●	●	●	●	●	●	●	●	●	●	Air: -20 to 100 Water: 0 to 70	313
For preventing static electricity Antistatic Tubing TA□ Series 	Black			●	●	●	●	●	●	●	●	●	●	Air: 0 to 40	315
For preventing condensation Moisture Control Tube IDK Series 	Linear shape Clear Coil shape	●		●	●	●	●	●	●	●	●	●	●		335
Material: Super PFA Fluoropolymer Tubing TL/TIL Series 	Translucent													Refer to the applicable fluid on page 356: 260	317 / 319
Material: PFA Fluoropolymer Tubing (PFA) TLM/TILM Series 	Translucent (Material color) Red (Translucent) Blue (Translucent) Black (Opaque)													Air, Water (DI water (Pure water)), Inert gas: 260	321 / 323
Compatible with the Food Sanitation Law and dissolution test approved by FDA FEP Tubing (Fluoropolymer) TH/TH Series 	Translucent (Material color) Red (Translucent) Blue (Translucent) Black (Opaque)													Air, Inert gas: -20 to 200 Water: 0 to 100	325 / 327

Tubing

Color	Tubing O.D. [mm]						Applicable fluid: Temperature [°C]	Page
	ø2	ø4 (ø ^{5/32})	ø6	ø8 (ø ^{5/16})	ø10 *1 Inch size	ø12		
Translucent		*1 1/8"	3/8"	1/4"	3/8"	1/2"	Air, Water, Inert gas: 260	329

Compatible with the Food Sanitation Law and dissolution test approved by FDA

Soft Fluoropolymer Tubing (Modified PTFE)
TD/TID Series



Clean Series Tubing

Color	Tubing O.D. [mm]						Applicable fluid: Temperature [°C]	Page
	ø2	ø4 (ø ^{5/32})	ø6	ø8 (ø ^{5/16})	ø10	ø12		
Black (Opaque) White (Opaque) Red (Translucent) Blue (Translucent) Yellow (Opaque) Green (Opaque) Clear (Material color) Orange (Opaque)								288
1 core 2 cores 3 cores								303
2 cores 3 cores								304
Black (Opaque) White (Material color) Red (Opaque) Blue (Opaque) Yellow (Opaque) Green (Opaque)							Air, Nitrogen gas: -20 to 80 Water (DI water (Pure water)): 5 to 80	331 333

* For details, refer to the **Web Catalog**.

Related Products

Color	Tubing O.D. [mm]						Page
	ø4 (ø ^{5/32})	ø6	ø8 (ø ^{5/16})	ø10	ø12	ø16	
Orange Yellow Blue Green							308
							336
							336
							337
							337

The outer layer for double layer tubing TRB/TRBU series is peeled off easily.

Double Layer Tube Stripper
TKS Series



Multi-tube Holder
TM Series



Tube Cutter
TK Series



Tube Releasing Tool
TG Series



Tube Stand & Tube Reel
TB/TBR Series



How to Order



T0425 **B** - **20**

Tubing model

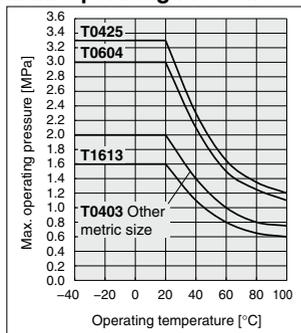
Length per roll

Symbol	Length
20	20 m roll
100	100 m roll (Black and white only)

Color

Symbol	Color
B	Black (Opaque)
W	White (Material color)
R	Red (Opaque)
BU	Blue (Opaque)
Y	Yellow (Opaque)
G	Green (Opaque)

Max. Operating Pressure



Model

● -20 m roll □ -100 m roll (T1613 is reel.)

Model	Tubing size							
	Metric size (T series)							
	T0425	T0403	T0604	T0645	T0806	T1075	T1209	T1613
Tubing O.D. [mm]	4	4	6	6	8	10	12	16
Tubing I.D. [mm]	2.5	3	4	4.5	6	7.5	9	13
Black (B)	●	●	●	●	●	●	●	●
White (W)	□	□	□	□	□	□	□	□
Red (R)	●	●	●	●	●	●	●	●
Blue (BU)	●	●	●	●	●	●	●	●
Yellow (Y)	●	●	●	●	●	●	●	●
Green (G)	●	●	●	●	●	●	●	●

Specifications

Fluid		Air, Water							
Max. operating pressure*1 [MPa]	20°C or less	3.3	2.0	3.0	2.0	2.0	2.0	2.0	1.6
	40°C	2.3	1.4	2.1	1.4	1.4	1.4	1.4	1.1
	60°C	1.65	1.0	1.5	1.0	1.0	1.0	1.0	0.8
	80°C	1.35	0.8	1.25	0.8	0.8	0.8	0.8	0.65
	100°C	1.2	0.75	1.1	0.75	0.75	0.75	0.75	0.6
Applicable fittings*1, 2		One-touch fittings, Insert fittings, Self-align fittings, Miniature fittings							
Min. bending radius [mm]*3	Min. bending radius	13	20	24	30	40	50	60	100
	Tube close bend radius (Reference)	10	15	18	23	30	40	45	75
Operating temperature*1		-40 to +100°C, Water: 0 to +70°C (No freezing)							
Material		Nylon 12							

*1 Be sure to operate under the maximum operating pressure and operating temperature conditions using the lower specifications of either the tubing or fittings.

*2 Mount an inner sleeve when using metal One-touch fittings in high-temperature environments of 60°C or more. Use self-align fittings at a temperature of 60°C or less.

*3 The minimum bending radius is the representative value measured as shown in the figure on the right.

• Use a tube above the recommended minimum bending radius.

• The tubing may kink if used under the recommended minimum bending radius.

Therefore, refer to the tube close bend radius and make sure that the tubing has not kinked or flattened.

• Please note that the tube close bend radius is not warranted because it is the value at which the tubing kinks, is flattened, etc., when 2R is measured by the method in the figure on the next page.

Length per roll **20 m** roll

O.D.	I.D.	Color (Symbol)	Model
4	2.5	Black (B)	T0425 [Color symbol] -20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
		Green (G)	
6	3	Black (B)	T0403 [Color symbol] -20
		White (W)	
6	4	Black (B)	T0604 [Color symbol] -20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
		Green (G)	
6	4.5	Black (B)	T0645 [Color symbol] -20
		White (W)	
8	6	Black (B)	T0806 [Color symbol] -20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
		Green (G)	
10	7.5	Black (B)	T1075 [Color symbol] -20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
		Green (G)	
12	9	Black (B)	T1209 [Color symbol] -20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
		Green (G)	
16	13	Black (B)	T1613 [Color symbol] -20
		White (W)	

Length per roll **100 m** roll

O.D.	I.D.	Color (Symbol)	Model
4	2.5	Black (B)	T0425 [Color symbol] -100
		White (W)	
6	4	Black (B)	T0604 [Color symbol] -100
		White (W)	
6	4.5	Black (B)	T0645 [Color symbol] -100
		White (W)	
8	6	Black (B)	T0806 [Color symbol] -100
		White (W)	
10	7.5	Black (B)	T1075 [Color symbol] -100
		White (W)	
12	9	Black (B)	T1209 [Color symbol] -100
		White (W)	
16	13	Black (B)	T1613 [Color symbol] -100*1
		White (W)	

*1 T1613 is reel.



Made to Order

1 Reel X3

O.D.	I.D.	Model	Length per roll [m]
4	2.5	T0425 [Color symbol] -100-X3	100
		T0425 [Color symbol] -500-X3	500
6	4	T0604 [Color symbol] -100-X3	100
		T0604 [Color symbol] -500-X3	500
8	6	T0806 [Color symbol] -100-X3	100
		T0806 [Color symbol] -200-X3	200
10	7.5	T1075 [Color symbol] -100-X3	100
		T1075 [Color symbol] -150-X3	150
12	9	T1209 [Color symbol] -100-X3	100

Color symbol-B: Black, W: White, R: Red, BU: Blue, Y: Yellow, G: Green

2 Reinforced Corrugated Cardboard Specification/Longer Length Reel X64

O.D.	I.D.	Model	Length per roll [m]
6	4	T0604 [Color symbol] -250-X64	250
		T0604 [Color symbol] -500-X64	500

Color symbol-B: Black, W: White

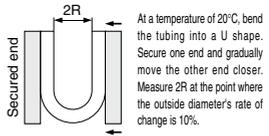
⚠ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

⚠ Caution

1. Applicable for general industrial water. Please consult with SMC if using for the other kind of fluid. Also, the surge pressure must not exceed the maximum operating pressure. If the surge pressure exceeds the maximum operating pressure, it will result in damage to fittings and tubes.
2. Please exercise caution when using this item in a clean room. There is a possibility of plasticizer and other materials precipitating on the tube surface and detracting from the cleanliness level of the room.

How to measure the minimum bending radius



Soft Nylon Tubing

TS Series

Tubing size: Metric Size

Slightly flexible tubing



How to Order

TS0604 **W** - **20**

Tubing model

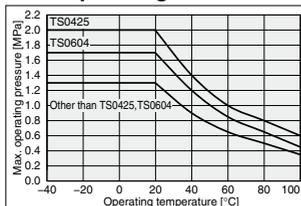
Color

Symbol	Color
B	Black (Opaque)
W	White (Material color)
R	Red (Opaque)
BU	Blue (Opaque)
Y	Yellow (Opaque)
G	Green (Opaque)

Length per roll

Symbol	Length
20	20 m roll
100	100 m roll (Black and white only)

Max. Operating Pressure



Model

● -20 m roll □ -100 m roll (TS1612 is reel.)

Model	Tubing size					
	Metric size					
	TS0425	TS0604	TS0806	TS1075	TS1209	TS1612
Tubing O.D. [mm]	4	6	8	10	12	16
Tubing I.D. [mm]	2.5	4	6	7.5	9	12
Black (B)	●	●	●	●	●	●
White (W)	□	□	□	□	□	□
Red (R)	●	●	●	●	●	●
Blue (BU)	●	●	●	●	●	●
Yellow (Y)	●	●	●	●	●	●
Green (G)	●	●	●	●	●	●

Specifications

Fluid		Air, Water *1				
Max. operating pressure [MPa]*2	20°C or less	2.0	1.7	1.3	1.3	1.3
	40°C	1.4	1.2	0.9	0.9	0.9
	60°C	1.0	0.85	0.65	0.65	0.65
	80°C	0.8	0.65	0.5	0.5	0.5
	100°C	0.6	0.45	0.35	0.35	0.4
Applicable fittings*2, 3		One-touch fittings, Insert fittings, Self-align fittings, Miniature fittings				
Min. bending radius [mm]*4	Min. bending radius	15	23	45	65	90
	Tube close bend radius (Reference)	12	17	34	42	50
Operating temperature*2		-40 to +100°C, Water: 0 to +50°C (No freezing)				
Material		Nylon 12				

*1 Refer to the "Printing/Fluid."

*2 Be sure to operate under the maximum operating pressure and operating temperature conditions using the lower specifications of either the tubing or fittings.

*3 Mount an inner sleeve when using metal One-touch fittings in high-temperature environments of 60°C or more. Use self-align fittings at a temperature of 60°C or less.

*4 The minimum bending radius is the representative value measured as shown in the figure on the right.

• Use a tube above the recommended minimum bending radius.

• The tubing may kink if used under the recommended minimum bending radius. Therefore, refer to the tube close bend radius and make sure that the tubing has not kinked or flattened.

• Please note that the tube close bend radius is not warranted because it is the value at which the tubing kinks, is flattened, etc., when 2R is measured by the method in the figure on the next page.

Printing/Fluid

		Print code	Fluid
Previous		SMC TS 0604 SOFTNYLON 6 x 4	Air
NEW	●	SMC TS 0604 SOFTNYLON 6 x 4	Air, Water

Length per roll **20** m roll

O.D.	I.D.	Color (Symbol)	Model
4	2.5	Black (B)	TS0425 [Color symbol]-20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
6	4	Black (B)	TS0604 [Color symbol]-20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
8	6	Black (B)	TS0806 [Color symbol]-20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
10	7.5	Black (B)	TS1075 [Color symbol]-20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
12	9	Black (B)	TS1209 [Color symbol]-20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
16	12	Black (B)	TS1612 [Color symbol]-20
		White (W)	

Length per roll **100** m roll

O.D.	I.D.	Color (Symbol)	Model
4	2.5	Black (B)	TS0425 [Color symbol]-100
		White (W)	
6	4	Black (B)	TS0604 [Color symbol]-100
		White (W)	
8	6	Black (B)	TS0806 [Color symbol]-100
		White (W)	
10	7.5	Black (B)	TS1075 [Color symbol]-100
		White (W)	
12	9	Black (B)	TS1209 [Color symbol]-100
		White (W)	
16	12	Black (B)	TS1612 [Color symbol]-100
		White (W)	

* TS1612 is reel.



Made to Order

1 Reel

X3

O.D.	I.D.	Model	Length per roll [m]
4	2.5	TS0425 [Color symbol]-100-X3	100
		TS0425 [Color symbol]-500-X3	500
6	4	TS0604 [Color symbol]-100-X3	100
		TS0604 [Color symbol]-500-X3	500
8	6	TS0806 [Color symbol]-100-X3	100
		TS0806 [Color symbol]-200-X3	200
10	7.5	TS1075 [Color symbol]-100-X3	100
		TS1075 [Color symbol]-150-X3	150
12	9	TS1209 [Color symbol]-100-X3	100

Color symbol-B: Black, W: White, R: Red, BU: Blue, Y: Yellow, G: Green

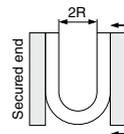
⚠ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

⚠ Caution

- Compatible with water due to a change in materials. Compatible fluid types are printed on the tube body for differentiation, so please be sure to check this. Note) If using the previous TS/TISA series with "water", the tube may shrink and cause air leakage or the tube may fall out.
- The products which changed the material are applicable for general industrial water. Please contact SMC if using other kinds of fluid.
Surge pressure must be under the max. operating pressure. If the surge pressure exceeds the maximum operating pressure, it will result in damage to fittings and tubes.
- Please exercise caution when using this item in a clean room. There is a possibility of plasticizer and other materials precipitating on the tube surface and detracting from the cleanliness level of the room.

How to measure the minimum bending radius



At a temperature of 20°C, bend the tubing into a U shape. Secure one end and gradually move the other end closer. Measure 2R at the point where the outside diameter's rate of change is 10%.

How to Order



TU0425 BU - 20

Tubing model

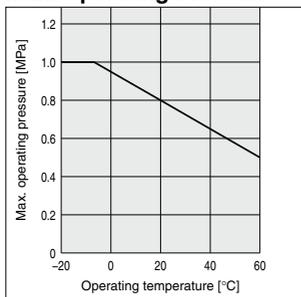
Length per roll

Symbol	Length
20	20 m roll
100	100 m roll

Color

Symbol	Color	Symbol	Color	Symbol	Color
B	Black (Opaque)	BU1	Solid blue (Opaque)	P1	Neon pink (Opaque)
W	White (Opaque)	BU2	Clear blue (Translucent)	PU1	Solid purple (Opaque)
R	Red (Translucent)	BU3	Medium blue (Opaque)	PU2	Clear purple (Translucent)
BU	Blue (Translucent)	BR1	Brown (Opaque)	R1	Solid red (Opaque)
Y	Yellow (Opaque)	G1	Solid green (Opaque)	R2	Clear red (Translucent)
G	Green (Opaque)	G2	Clear green (Translucent)	S1	Silver (Opaque)
C	Clear (Material color)	G3	Neon green (Opaque)	Y1	Solid yellow (Opaque)
YR	Orange (Opaque)	G4	Dark green (Opaque)	Y2	Clear yellow (Translucent)
		GR1	Gray (Opaque)	Y3	Neon yellow (Opaque)
		GR2	Light gray (Opaque)	YR1	Clear orange (Translucent)
				YR2	Neon orange (Opaque)

Max. Operating Pressure



Specifications

Model	TU0212	TU0425	TU0604	TU0805	TU1065	TU1208	TU1610
Fluid	Air, Water						
Max. operating pressure [MPa]	20°C	0.8					
	40°C	0.65					
	60°C	0.5					
Applicable fittings	One-touch fittings, Insert fittings, Miniature fittings						
Min. bending radius [mm]	4	10	15	20	27	35	45
Operating temperature	-20 to +60°C, Water: 0 to 40°C (No freezing)						
Material	Polyurethane						

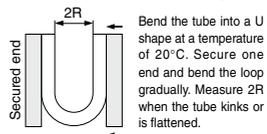
⚠ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

⚠ Caution

- Applicable for general industrial water. Please consult with SMC if using for the other kind of fluid. Also, the surge pressure must not exceed the maximum operating pressure. If the surge pressure exceeds the maximum operating pressure, it will result in damage to fittings and tubes.
- Abnormal temperature rises caused by adiabatic compression may result in the tube bursting.
- The value of the minimum bending radius is measured at the temperature of 20°C as shown in the figure on the right.

How to measure the minimum bending radius



● -20 m roll □ -100 m roll (TU1610 is reel.) ◇ -100 m roll, 200 m roll ■ Manufactured upon receipt of order (Please consult with SMC.)

Model	Tubing size						
	Metric size						
	TU0212	TU0425	TU0604	TU0805	TU1065	TU1208	TU1610
Tubing O.D. [mm]	2	4	6	8	10	12	16
Tubing I.D. [mm]	1.2	2.5	4	5	6.5	8	10
Black (B)	●	◇	◇	◇	◇	◇	◇
White (W)	●	◇	◇	◇	◇	◇	◇
Red (R)	●	◇	◇	◇	◇	◇	◇
Blue (BU)	●	◇	◇	◇	◇	◇	◇
Yellow (Y)	●	◇	◇	◇	◇	◇	◇
Green (G)	●	◇	◇	◇	◇	◇	◇
Clear (C)	●	◇	◇	◇	◇	◇	◇
Orange (YR)	●	◇	◇	◇	◇	◇	◇
Solid blue (BU1)	■	■	■	■	■	■	■
Clear blue (BU2)	■	■	■	■	■	■	■
Medium blue (BU3)	■	■	■	■	■	■	■
Brown (BR1)	■	■	■	■	■	■	■
Solid green (G1)	■	■	■	■	■	■	■
Clear green (G2)	■	■	■	■	■	■	■
Neon green (G3)	■	■	■	■	■	■	■
Dark green (G4)	■	■	■	■	■	■	■
Gray (GR1)	■	■	■	■	■	■	■
Light gray (GR2)	■	■	■	■	■	■	■
Neon pink (P1)	■	■	■	■	■	■	■
Solid purple (PU1)	■	■	■	■	■	■	■
Clear purple (PU2)	■	■	■	■	■	■	■
Solid red (R1)	■	■	■	■	■	■	■
Clear red (R2)	■	■	■	■	■	■	■
Silver (S1)	■	■	■	■	■	■	■
Solid yellow (Y1)	■	■	■	■	■	■	■
Clear yellow (Y2)	■	■	■	■	■	■	■
Neon yellow (Y3)	■	■	■	■	■	■	■
Clear orange (YR1)	■	■	■	■	■	■	■
Neon orange (YR2)	■	■	■	■	■	■	■

- T
- TS
- TU
- TUS
- TUH
- TUZ
- TCU
- TFU
- TRS
- TRB
- TRBU
- TRTU
- TQ
- TAS
- TAU
- TL/TIL
- TLM/TILM
- TH/THI
- TD/TID
- TPH
- TPS
- IDK
- Related



Made to Order

1 Reel X3

O.D.	I.D.	Model	Length per roll [m]
4	2.5	TU0425 [Color symbol]-100-X3	100
		TU0425 [Color symbol]-500-X3	500
6	4	TU0604 [Color symbol]-100-X3	100
		TU0604 [Color symbol]-400-X3	400
8	5	TU0805 [Color symbol]-100-X3	100
		TU0805 [Color symbol]-200-X3	200
10	6.5	TU1065 [Color symbol]-100-X3	100
12	8	TU1208 [Color symbol]-100-X3	100

[Color symbol]-B: Black, W: White, R: Red, BU: Blue, Y: Yellow, G: Green, C: Clear, YR: Orange

2 Clean Series 10-

O.D.	I.D.	Model
2	1.2	10-TU0212 [Color symbol]-20
4	2.5	10-TU0425 [Color symbol]-20
6	4	10-TU0604 [Color symbol]-20
8	5	10-TU0805 [Color symbol]-20
10	6.5	10-TU1065 [Color symbol]-20
12	8	10-TU1208 [Color symbol]-20

[Color symbol]-B: Black, W: White, R: Red, BU: Blue, Y: Yellow, G: Green, C: Clear, YR: Orange. Except e2 for YR (orange)

3 Compatible with the Food Sanitation Law X217*1

O.D.	I.D.	Model
4	2.5	TU0425 [Color symbol]-20-X217
6	4	TU0604 [Color symbol]-20-X217
8	5	TU0805 [Color symbol]-20-X217
10	6.5	TU1065 [Color symbol]-20-X217
12	8	TU1208 [Color symbol]-20-X217

[Color symbol]-B: Black, W: White, BU: Blue, C: Clear
 *1 Note that the model number is not printed on the tube body.

Polyurethane Flat Tubing

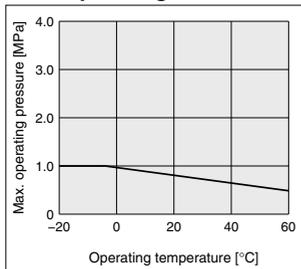
Multi-core, Multi-color Specification

TU Series

Tubing size: Metric Size



Max. Operating Pressure



Specifications

Model	Tubing size					
	Metric size					
	TU0212	TU0425	TU0604	TU0805	TU1065	TU1208
Tubing O.D. [mm]	2	4	6	8	10	12
Tubing I.D. [mm]	1.2	2.5	4	5	6.5	8
Black (B)	●	●	●	●	●	●
White (W)	●	●	●	●	●	●
Red (R)	●	●	●	●	●	●
Blue (BU)	●	●	●	●	●	●
Yellow (Y)	●	●	●	●	●	●
Green (G)	●	●	●	●	●	●
Clear (C)	●	●	●	●	●	●
Orange (YR)	●	●	●	●	●	●
Number of cores*1	2 cores	X169 (Roll)/X200 (Reel)				
	3 cores	X170 (Roll)/X201 (Reel)				
	4 cores	X171 (Roll)/X202 (Reel)				
	5 cores	X172 (Roll)/X203 (Reel)				
	6 cores	X204 (Roll)/X207 (Reel)				
Fluid	Air					
Max. operating pressure [MPa]	20°C	0.8				
	40°C	0.65				
	60°C	0.5				
Applicable fittings	One-touch fittings, Insert fittings, Miniature fittings					
Min. bending radius [mm]	4	10	15	20	27	35
Operating temperature	-20 to +60°C					
Material	Polyurethane					

*1 Refer to "How to Order" for the combination of tubing size and the number of cores.

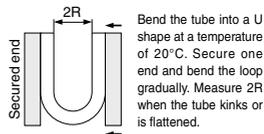
⚠ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

⚠ Caution

1. Please consult with SMC if using for any fluids other than air.
2. Abnormal temperature rises caused by adiabatic compression may result in the tube bursting.
3. The value of the minimum bending radius is measured at the temperature of 20°C as shown in the figure on the right.
4. As a result of product design characteristics, there are cases of very slight leakage.

How to measure the minimum bending radius



How to Order

Roll

Please contact SMC for delivery.

Tube length per roll: **1, 2, 3, 4, 5, 10, 20** m

TU 0425 - 12345 A - X172

Tubing model → TU 0425 - 12345 A - X172

Tubing size

Symbol	O.D. x I.D.
0212	ø2 x ø1.2
0425	ø4 x ø2.5
0604	ø6 x ø4
0805	ø8 x ø5
1065	ø10 x ø6.5
1208	ø12 x ø8

Color*^{#1}

Symbol	Color	Symbol	Color
1	Black	5	Yellow
2	White	6	Green
3	Red	7	Clear
4	Blue	8	Orange ^{#2}

*1 Colors of the example (12345)
 *2 Except TU0212

Multi-core, multi-color specification

Symbol	Number of cores
X169	2 cores
X170	3 cores
X171	4 cores
X172	5 cores
X204	6 cores

Tube length per roll [m]

Symbol	Length	Symbol	Length
A	1	E	5
B	2	F	10
C	3	G	20
D	4		

Tube length per roll: **50** m

TU 0425 - 12345 H - X172

Tubing model → TU 0425 - 12345 H - X172

Tubing size

Symbol	O.D. x I.D.
0425	ø4 x ø2.5
0604	ø6 x ø4
0805	ø8 x ø5
1065	ø10 x ø6.5
1208	ø12 x ø8

Color*^{#1}

Symbol	Color	Symbol	Color
1	Black	5	Yellow
2	White	6	Green
3	Red	7	Clear
4	Blue	8	Orange

*1 Colors of the example (12345)

Multi-core, multi-color specification

Symbol	Number of cores	Applicable tubing O.D.				
		ø4	ø6	ø8	ø10	ø12
X169	2 cores	•	•			
X170	3 cores	•	•	•		
X171	4 cores	•	•	•	•	
X172	5 cores	•	•	•	•	•
X204	6 cores	•	•	•	•	•

Tube length per roll [m]

Symbol	Length
H	50

Tube length per roll: **100** m

TU 0425 - 12345 J - X172

Tubing model → TU 0425 - 12345 J - X172

Tubing size

Symbol	O.D. x I.D.
0425	ø4 x ø2.5
0604	ø6 x ø4
0805	ø8 x ø5

Color*^{#1}

Symbol	Color	Symbol	Color
1	Black	5	Yellow
2	White	6	Green
3	Red	7	Clear
4	Blue	8	Orange

*1 Colors of the example (12345)

Multi-core, multi-color specification

Symbol	Number of cores	Applicable tubing O.D.			
		ø4	ø6	ø8	ø8
X169	2 cores	•	•		
X170	3 cores	•	•	•	
X171	4 cores	•	•	•	•
X172	5 cores	•	•	•	•
X204	6 cores	•	•	•	•

Tube length per roll [m]

Symbol	Length
J	100

- T
- TS
- TU**
- TUS
- TUH
- TUZ
- TCU
- TFU
- TRS
- TRB
- TRBU
- TRTU
- TQ
- TAS
- TAU
- TL/TIL
- TLM/TILM
- TH/THH
- TD/TID
- TPH
- TPS
- IDK
- Related

How to Order

Reel

Please contact SMC for delivery.

Tube length per roll: **10, 20** m

TU 0212 - 12345 F - X203

Color*1

Symbol	Color	Symbol	Color
1	Black	5	Yellow
2	White	6	Green
3	Red	7	Clear
4	Blue	8	Orange ¹²

*1 Colors of the example (12345)
*2 Except TU0212

Color*1

Symbol	Color	Symbol	Color
1	Black	5	Yellow
2	White	6	Green
3	Red	7	Clear
4	Blue	8	Orange

*1 Colors of the example (12345)

Inside of the roll

Yellow
Blue
Red
White
Black

Multi-core, multi-color specification

Symbol	Number of cores	Applicable tubing O.D.
X200	2 cores	ø2 ø4 ø6 ø8 ø10 ø12
X201	3 cores	
X202	4 cores	
X203	5 cores	
X207	6 cores	

• Tube length per roll [m]

Symbol	Length
F	10
G	20

Tube length per roll: **50** m

TU 0425 - 12345 H - X203

Color*1

Symbol	Color	Symbol	Color
1	Black	5	Yellow
2	White	6	Green
3	Red	7	Clear
4	Blue	8	Orange

*1 Colors of the example (12345)

Color*1

Symbol	Color	Symbol	Color
1	Black	5	Yellow
2	White	6	Green
3	Red	7	Clear
4	Blue	8	Orange

*1 Colors of the example (12345)

Inside of the roll

Yellow
Blue
Red
White
Black

Multi-core, multi-color specification

Symbol	Number of cores	Applicable tubing O.D.
X200	2 cores	ø4 ø6 ø8 ø10
X201	3 cores	
X202	4 cores	
X203	5 cores	
X207	6 cores	

• Tube length per roll [m]

Symbol	Length
H	50

Tube length per roll: **100** m

TU 0425 - 12345 J - X203

Color*1

Symbol	Color	Symbol	Color
1	Black	5	Yellow
2	White	6	Green
3	Red	7	Clear
4	Blue	8	Orange

*1 Colors of the example (12345)

Color*1

Symbol	Color	Symbol	Color
1	Black	5	Yellow
2	White	6	Green
3	Red	7	Clear
4	Blue	8	Orange

*1 Colors of the example (12345)

Inside of the roll

Yellow
Blue
Red
White
Black

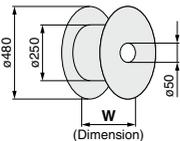
Multi-core, multi-color specification

Symbol	Number of cores	Applicable tubing O.D.
X200	2 cores	ø4 ø6 ø8
X201	3 cores	
X202	4 cores	
X203	5 cores	
X207	6 cores	

• Tube length per roll [m]

Symbol	Length
J	100

Tube reel dimensions



Model	W [mm]	Tube length per roll [m]			
		10	20	50	100
X200 (2 cores)	TU0212	51	51	—	—
	TU0425	51	51	51	51
	TU0604	51	51	81	156
	TU0805	81	81	156	156
	TU1065	156	156	156	—
X201 (3 cores)	TU1208	156	156	—	—
	TU0212	51	51	—	—
	TU0425	51	51	51	51
	TU0604	81	81	156	156
	TU0805	156	156	156	—

Model	W [mm]	Tube length per roll [m]			
		10	20	50	100
X202 (4 cores)	TU0212	51	51	—	—
	TU0425	51	51	81	81
	TU0604	81	81	156	205
	TU0805	156	156	—	—
X203 (5 cores)	TU0212	51	51	—	—
	TU0425	51	51	81	156
	TU0604	156	156	156	—
X207 (6 cores)	TU0212	51	51	—	—
	TU0425	51	51	81	156
	TU0604	156	156	156	—

T

TS

TU

TUS

TUH

TUZ

TCU

TFU

TRS

TRB

TRBU

TRTU

TQ

TAS

TAU

TL/
TILTLM/
TILMTH/
TIHTD/
TID

TPH

TPS

IDK

Related

Soft Polyurethane Tubing

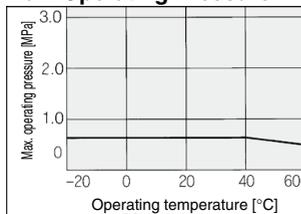
TUS Series

Tubing size: Metric Size

Extremely flexible



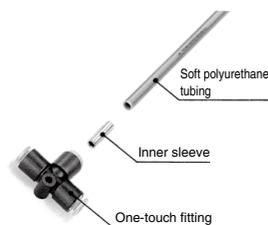
Max. Operating Pressure



TUS related accessories

Inner sleeve TJ Series

Reinforces soft polyurethane tubing.
Insert an inner sleeve into soft polyurethane tubing when used with a One-touch fitting.



Model

Model	Applicable tubing model	Length
TJ-0425	TUS0425	18
TJ-0604	TUS0604	19
TJ-0805	TUS0805	20.5
TJ-1065	TUS1065	23
TJ-1208	TUS1208	24

Specifications

Material	C2700T (Electroless nickel plating)
Wall thickness	0.2 mm

How to Order

TUS1065 B - 100

Tubing model

Length per roll

Symbol	Length
20	20 m roll
100	100 m reel (Black and blue only)

Color

Symbol	Color
B	Black (Opaque)
W	White (Opaque)
R	Red (Opaque)
BU	Blue (Opaque)
Y	Yellow (Opaque)
G	Green (Opaque)
N	Translucent (Material color)
YB	Yellow brown (Opaque)

Model

● -20 m roll □ -100 m reel

Model	Tubing size				
	Metric size				
	TUS0425	TUS0604	TUS0805	TUS1065	TUS1208
Tubing O.D. [mm]	4	6	8	10	12
Tubing I.D. [mm]	2.5	4	5	6.5	8
Black (B)	●	□	●	□	●
White (W)	●	□	●	□	●
Red (R)	●	□	●	□	●
Blue (BU)	●	□	●	□	●
Yellow (Y)	●	□	●	□	●
Green (G)	●	□	●	□	●
Translucent (N) ^{*1}	●	□	●	□	●
Yellow brown (YB)	●	□	●	□	●

Specifications

Fluid	Air					
Max. operating pressure [MPa]	20°C	0.6				
	40°C	0.6				
	60°C	0.4				
Applicable fittings	One-touch fittings ^{*3} , Insert fittings, Miniature fittings (Hose nipple type)					
Min. bending radius ^{*2} [mm]	8	15	15	22	29	
Operating temperature	-20 to +60°C (No freezing)					
Material	Polyurethane					
Tube drawing strength [N] (Using One-touch fitting)	Without inner sleeve	15	60	60	85	110
	With inner sleeve	80	230	250	300	480

^{*1} Not clear, but translucent due to material

^{*2} Min. bending radius is measured as shown in the next page.

^{*3} Always use inner sleeve (TJ series) in safety circuit or critical area.

Length per roll **20 m roll**

O.D.	I.D.	Color (Symbol)	Model
4	2.5	Black (B)	TUS0425 Color symbol -20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
		Green (G)	
		Translucent (N) ^{*1}	
6	4	Black (B)	TUS0604 Color symbol -20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
		Green (G)	
		Translucent (N) ^{*1}	
8	5	Black (B)	TUS0805 Color symbol -20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
		Green (G)	
		Translucent (N) ^{*1}	
10	6.5	Black (B)	TUS1065 Color symbol -20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
		Green (G)	
		Translucent (N) ^{*1}	
12	8	Black (B)	TUS1208 Color symbol -20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
		Green (G)	
		Translucent (N) ^{*1}	
Yellow brown (YB)			

*1 Not clear, but translucent due to material

Length per roll **100 m reel**

O.D.	I.D.	Color (Symbol)	Model
4	2.5	Black (B)	TUS0425 Color symbol -100
		Blue (BU)	
6	4	Black (B)	TUS0604 Color symbol -100
		Blue (BU)	
8	5	Black (B)	TUS0805 Color symbol -100
		Blue (BU)	
10	6.5	Black (B)	TUS1065 Color symbol -100
		Blue (BU)	
12	8	Black (B)	TUS1208 Color symbol -100
		Blue (BU)	

Made to Order

Made to Order

Multi-core, Multi-color
Specification Flat Tubing

Refer to page 295 and after for details.

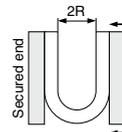
⚠ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

⚠ Caution

1. Use a nylon or polyurethane tubing for general industrial water, otherwise the tube may result in being fallen out or bursted when the max. operating pressure is lower and the surge pressure is occurred.
2. Abnormal temperature rises caused by adiabatic compression may result in the tube bursting.
3. The value of the minimum bending radius is measured at the temperature of 20°C as shown in the figure on the right.
4. Use inner sleeve, taking the removing force into consideration when used with One-touch fittings.

How to measure the minimum bending radius



Bend the tube into a U shape at a temperature of 20°C. Secure one end and bend the loop gradually. Measure 2R when the tube kinks or is flattened.

Soft Polyurethane Flat Tubing

Multi-core, Multi-color Specification

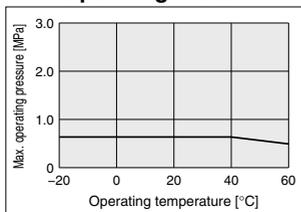
TUS Series

Tubing size: Metric Size

Extremely flexible



Max. Operating Pressure

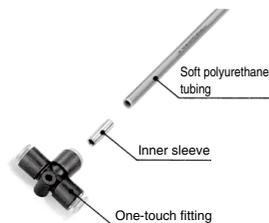


TUS related accessories

Inner sleeve

TJ Series

Reinforces soft polyurethane tubing.
Insert an inner sleeve into soft polyurethane tubing when used with a One-touch fitting.



Model

Model	Applicable tubing model	Length
TJ-0425	TUS0425	18
TJ-0604	TUS0604	19
TJ-0805	TUS0805	20.5
TJ-1065	TUS1065	23
TJ-1208	TUS1208	24

Specifications

Material	C2700T (Electroless nickel plating)
Wall thickness	0.2 mm

Specifications

		Tubing size				
		Metric size				
Model		TUS0425	TUS0604	TUS0805	TUS1065	TUS1208
Tubing O.D. [mm]		4	6	8	10	12
Tubing I.D. [mm]		2.5	4	5	6.5	8
Black (B)		●	●	●	●	●
White (W)		●	●	●	●	●
Red (R)		●	●	●	●	●
Blue (BU)		●	●	●	●	●
Yellow (Y)		●	●	●	●	●
Green (G)		●	●	●	●	●
Translucent (N)		●	●	●	●	●
Yellow brown (YB)		●	●	●	●	●
Number of cores	2 cores	X169 (Roll)				
	3 cores	X170 (Roll)				
	4 cores	X171 (Roll)				
	5 cores	X172 (Roll)				
Fluid		Air				
Max. operating pressure [MPa]	20°C	0.6				
	40°C	0.6				
	60°C	0.4				
Applicable fittings	One-touch fittings*2, Insert fittings, Miniature fittings (Hose nipple type)					
Min. bending radius*1 [mm]		8	15	15	22	29
Operating temperature		-20 to +60°C				
Material		Polyurethane				
Tube drawing strength [N] (Using One-touch fitting)	Without inner sleeve	15	60	60	85	110
	With inner sleeve	80	230	250	300	480

*1 Min. bending radius is measured as shown in the figure below.

* Always use inner sleeve (TJ series) in safety circuit or critical area.

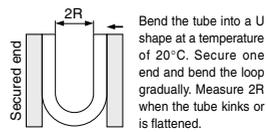
⚠ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

⚠ Caution

- Abnormal temperature rises caused by adiabatic compression may result in the tube bursting.
- The value of the minimum bending radius is measured at the temperature of 20°C as shown in the figure on the right.
- Use inner sleeve, taking the removing force into consideration when used with One-touch fittings.
- As a result of product design characteristics, there are cases of very slight leakage.

How to measure the minimum bending radius



How to Order

Roll

Please contact SMC for delivery.

Tube length per roll: **1, 2, 3, 4, 5, 10, 20** m**TUS 0425 - 12345 A - X172**

Tubing model •

Tubing size •

Symbol	O.D. x I.D.
0425	ø4 x ø2.5
0604	ø6 x ø4
0805	ø8 x ø5
1065	ø10 x ø6.5
1208	ø12 x ø8

Multi-core,
• multi-color specification

Symbol	Number of cores
X169	2 cores
X170	3 cores
X171	4 cores
X172	5 cores

• Tube length per roll [m]

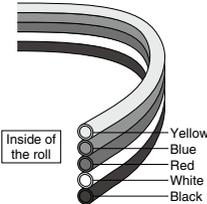
Symbol	Length
A	1
B	2
C	3
D	4
E	5
F	10
G	20

Color*1 •

Symbol	Color	Symbol	Color
1	Black	5	Yellow
2	White	6	Green
3	Red	7	Translucent*2
4	Blue	8	Yellow brown

*1 Colors of the example (12345)

*2 Not clear, but translucent due to material



Yellow
Blue
Red
White
Black

Hard Polyurethane Tubing

TUH Series

Tubing size: Metric Size

Standard type



Effective area is improved up to approx. 44%.
TUH/Standard type

TUH/Standard type

(When compared to the polyurethane tubing TU0805 (O.D.: 8 mm, Length: 1 m))

High pressure type

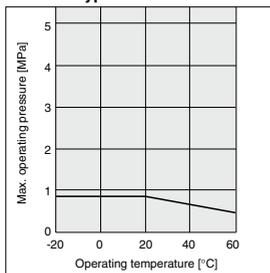


Operating pressure: 1 MPa (at 20°C)
TUH/High pressure type

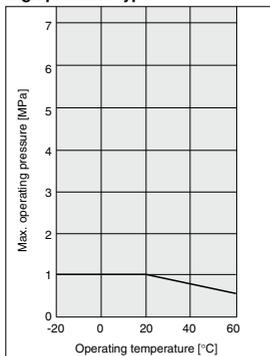
Bending radius equivalent to the polyurethane tubing TU series at the same operating pressure as soft nylon tubing TS series

Max. Operating Pressure

Standard type



High pressure type



How to Order

Standard type **TUH0644** **B** - **20**

High pressure type **TUH0604** **B** - **20**

Tubing model

Color

Symbol	Color
B	Black (Opaque)
W	White (Opaque)
BU	Blue (Translucent)
N	Translucent (Material color)

Length per roll

Symbol	Length
20	20 m roll
100	100 m roll

Model

● -20 m roll □ -100 m roll

		Tubing size				
		Metric size				
		TUH0428	TUH0644	TUH0858	TUH1073	TUH1288
Standard type	Model					
	O.D. [mm]	4	6	8	10	12
High pressure type	Model	TUH0425	TUH0604	TUH0805	TUH1065	TUH1208
	O.D. [mm]	4	6	8	10	12
	I.D. [mm]	2.5	4	5	6.5	8
	Black (B)	●	□	●	□	●
	White (W)	●	□	●	□	●
	Blue (BU)	●	□	●	□	●
	Translucent (N)	●	□	●	□	●

Specifications

Fluid		Air				
Max. operating pressure [MPa]	Standard type	20°C	0.8			
		40°C	0.65			
		60°C	0.5			
	High pressure type	20°C	1.0			
		40°C	0.85			
	60°C	0.7				
Applicable fittings	Standard type	One-touch fittings				
	High pressure type	One-touch fittings, Insert fittings, Miniature fittings				
Min. bending radius [mm]	Standard type	10	18	24	30	36
	High pressure type	10	15	20	27	35
Operating temperature	-20 to 60°C (No freezing)					
Material	Polyurethane					

Length per roll **20** m roll

Length per roll **100** m roll

Standard Type

O.D.	I.D.	Color (Symbol)	Model
4	2.8	Black (B)	TUH0428 Color symbol -20
		White (W)	
		Blue (BU)	
		Translucent (N)	
6	4.4	Black (B)	TUH0644 Color symbol -20
		White (W)	
		Blue (BU)	
		Translucent (N)	
8	5.8	Black (B)	TUH0858 Color symbol -20
		White (W)	
		Blue (BU)	
		Translucent (N)	
10	7.3	Black (B)	TUH1073 Color symbol -20
		White (W)	
		Blue (BU)	
		Translucent (N)	
12	8.8	Black (B)	TUH1288 Color symbol -20
		White (W)	
		Blue (BU)	
		Translucent (N)	

O.D.	I.D.	Color (Symbol)	Model
4	2.8	Black (B)	TUH0428 Color symbol -100
		White (W)	
		Blue (BU)	
		Translucent (N)	
6	4.4	Black (B)	TUH0644 Color symbol -100
		White (W)	
		Blue (BU)	
		Translucent (N)	
8	5.8	Black (B)	TUH0858 Color symbol -100
		White (W)	
		Blue (BU)	
		Translucent (N)	
10	7.3	Black (B)	TUH1073 Color symbol -100
		White (W)	
		Blue (BU)	
		Translucent (N)	
12	8.8	Black (B)	TUH1288 Color symbol -100
		White (W)	
		Blue (BU)	
		Translucent (N)	

High Pressure Type

O.D.	I.D.	Color (Symbol)	Model
4	2.5	Black (B)	TUH0425 Color symbol -20
		White (W)	
		Blue (BU)	
		Translucent (N)	
6	4	Black (B)	TUH0604 Color symbol -20
		White (W)	
		Blue (BU)	
		Translucent (N)	
8	5	Black (B)	TUH0805 Color symbol -20
		White (W)	
		Blue (BU)	
		Translucent (N)	
10	6.5	Black (B)	TUH1065 Color symbol -20
		White (W)	
		Blue (BU)	
		Translucent (N)	
12	8	Black (B)	TUH1208 Color symbol -20
		White (W)	
		Blue (BU)	
		Translucent (N)	

O.D.	I.D.	Color (Symbol)	Model
4	2.5	Black (B)	TUH0425 Color symbol -100
		White (W)	
		Blue (BU)	
		Translucent (N)	
6	4	Black (B)	TUH0604 Color symbol -100
		White (W)	
		Blue (BU)	
		Translucent (N)	
8	5	Black (B)	TUH0805 Color symbol -100
		White (W)	
		Blue (BU)	
		Translucent (N)	
10	6.5	Black (B)	TUH1065 Color symbol -100
		White (W)	
		Blue (BU)	
		Translucent (N)	
12	8	Black (B)	TUH1208 Color symbol -100
		White (W)	
		Blue (BU)	
		Translucent (N)	

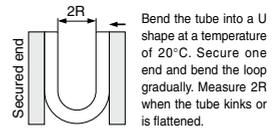
⚠ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

⚠ Caution

1. Please consult with SMC regarding other fluids. Because ester polyurethane is used, water cannot be used due to the occurrence of hydrolysis.
2. Abnormal temperature rises caused by adiabatic compression may result in the tube bursting.
3. The value of the minimum bending radius is measured at the temperature of 20°C as shown in the figure on the right.

How to measure the minimum bending radius



Wear Resistant Tubing

TUZ Series

Tubing size: Metric Size



How to Order

TUZ0425 BU - 20

Tubing model

Model	O.D. x I.D. [mm]
TUZ0212	2 x 1.2
TUZ3220	3.2 x 2
TUZ0425	4 x 2.5
TUZ0604	6 x 4
TUZ0805	8 x 5
TUZ1065	10 x 6.5
TUZ1208	12 x 8
TUZ1610	16 x 10

Color

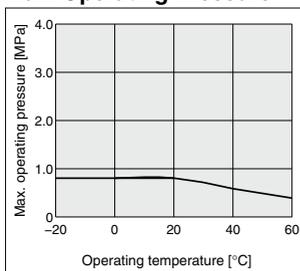
Symbol	Color
B	Black
W	White
R	Red
BU	Blue
Y	Yellow
G	Green

Length per roll

Symbol	Length
20	20 m roll
100	100 m roll

* Not clear, but opaque due to material

Max. Operating Pressure



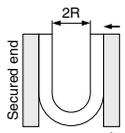
⚠ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions. For specific product precautions, refer to the Web Catalog.

⚠ Caution

- Abnormal temperature rises caused by adiabatic compression may result in the tube bursting.
- The value of the minimum bending radius is measured at the temperature of 20°C as shown in the figure below.

How to measure the minimum bending radius



Bend the tube into a U shape at a temperature of 20°C. Secure one end and bend the loop gradually. Measure 2R when the tube kinks or is flattened.

Model

Model	Tubing size						
	Metric size						
	TUZ0212	TUZ3220	TUZ0425	TUZ0604	TUZ0805	TUZ1065	TUZ1208
O.D. [mm]	2	3.2	4	6	8	10	12
I.D. [mm]	1.2	2	2.5	4	5	6.5	8
Black (B)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
White (W)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
Red (R)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
Blue (BU)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
Yellow (Y)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
Green (G)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					

Specifications

Fluid	Air, Water						
Applicable fittings	One-touch fittings KQ2 series, Insert fittings KF series, Stainless steel 316 insert fittings KFG2 series, Miniature fittings M/MS series (hose nipple type)						
Max. operating pressure [MPa]	20°C	0.8					
	40°C	0.6					
	60°C	0.4					
Burst pressure	Refer to the burst pressure characteristics curve.						
Min. bending radius [mm]	4	10	10	15	20	27	35
Operating temperature	-20 to +60°C, Water: 0 to 40°C (No freezing)						
Material	Special polyurethane						

- * The minimum bending radius is the value at which the tube kinks at a temperature of 20°C as measured by the method shown in the figure on the left. The minimum bending radius assumes static piping. If the tube is used in a moving part, provide extra length to the tube. If using in a flexible protection tube, be sure to check the bending radius recommended by the flexible protection tube manufacturer.
- * Applicable for general industrial water. Please consult with SMC if using any other kind of fluid. Also, the surge pressure must not exceed the maximum operating pressure. If the surge pressure exceeds the maximum operating pressure, it will result in damage to fittings and tubes.
- * Abnormal temperature rises caused by adiabatic compression may result in the tube bursting.

Length per roll **20** m roll

O.D.	I.D.	Color (Symbol)	Model
3.2	2	Black (B)	TUZ3220 [Color symbol]-20
		White (W)	
		Blue (BU)	
4	2.5	Black (B)	TUZ0425 [Color symbol]-20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
		Green (G)	
6	4	Black (B)	TUZ0604 [Color symbol]-20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
8	5	Black (B)	TUZ0805 [Color symbol]-20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
10	6.5	Black (B)	TUZ1065 [Color symbol]-20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
12	8	Black (B)	TUZ1208 [Color symbol]-20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
		Green (G)	

Length per roll **100** m roll

O.D.	I.D.	Color (Symbol)	Model
2	1.2	Black (B)	TUZ0212 [Color symbol]-100
3.2	2	Black (B)	TUZ3220 [Color symbol]-100
		White (W)	
		Blue (BU)	
4	2.5	Black (B)	TUZ0425 [Color symbol]-100
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
		Green (G)	
6	4	Black (B)	TUZ0604 [Color symbol]-100
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
8	5	Black (B)	TUZ0805 [Color symbol]-100
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
10	6.5	Black (B)	TUZ1065 [Color symbol]-100
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
12	8	Black (B)	TUZ1208 [Color symbol]-100
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
		Green (G)	
16	10	Black (B)	TUZ1610 [Color symbol]-100



Made to Order

1 Flat Type **X73**

Wear Resistant Flat Tubing: Multi-core, same color specification
Flat type of the TUZ series
 The identification line is not shown.
 Please contact SMC for detailed specifications, dimensions, and delivery.

Multi-core, multi-color specification
TUZ-X169 to X172, -X204
 Number of cores: 2 to 6 cores
 Specification: **Multi-color**
 Refer to page 301 for details.

How to Order

TFU0425 BU - 2 - 20 - X73

- Tubing model**

Model	O.D. x I.D. [mm]
TFU0425	4 x 2.5
TFU0604	6 x 4
TFU0805	8 x 5
TFU1065	10 x 6.5
TFU1208	12 x 8
- Number of cores 2 to 12**
- Color**

Symbol	Color
B	Black
W	White
R	Red
BU	Blue
Y	Yellow
G	Green
- Special polyurethane (Multi-core, same color specification)**
- Length per roll**

Nil	10 m
n	n m ⁿ⁻¹

*1 It is also available in lengths other than 10 m. Enter the length you need (1, 2, 3, 4, 5, 20).

Example) **TFU0425BU - 2 - 20 - X73**

* Not clear, but opaque due to material



Wear Resistant Flat Tubing

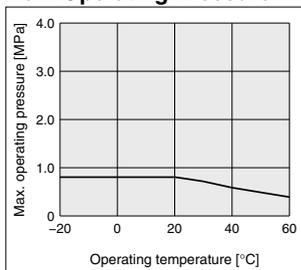
Multi-core, Multi-color Specification

TUZ Series

Tubing size: Metric Size



Max. Operating Pressure



Specifications

Model	TUZ0425	TUZ0604	TUZ0805	TUZ1065	TUZ1208
Tubing O.D. [mm]	4	6	8	10	12
Tubing I.D. [mm]	2.5	4	5	6.5	8
Black (B)	●	●	●	●	●
White (W)	●	●	●	●	●
Red (R)	●	●	●	●	●
Blue (BU)	●	●	●	●	●
Yellow (Y)	●	●	●	●	●
Green (G)	●	●	●	●	●
Number of cores	2 cores	X169 (Roll)			
	3 cores	X170 (Roll)			
	4 cores	X171 (Roll)			
	5 cores	X172 (Roll)			
	6 cores	X204 (Roll)			
Fluid	Air				
Max. operating pressure [MPa]	20°C	0.8			
	40°C	0.6			
	60°C	0.4			
Applicable fittings	One-touch fittings, Insert fittings, Miniature fittings (Hose nipple type)				
Min. bending radius*1 [mm]	10	15	20	27	35
Operating temperature	-20 to +60°C				
Material	Special polyurethane				

*1 The minimum bending radius is the value at which the tube kinks at a temperature of 20°C as measured by the method shown in the figure below. The minimum bending radius assumes static piping. If the tube is used in a moving part, provide extra length to the tube. If using in a flexible protection tube, be sure to check the bending radius recommended by the flexible protection tube manufacturer. In addition, refer to the **Web Catalog** for abrasion.

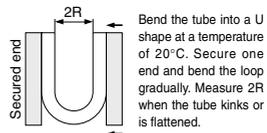
⚠ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions. For specific product precautions, refer to the **Web Catalog**.

⚠ Caution

1. Please consult with SMC if using for any fluids other than air.
2. Abnormal temperature rises caused by adiabatic compression may result in the tube bursting.
3. The value of the minimum bending radius is measured at the temperature of 20°C as shown in the figure on the right.
4. As a result of product design characteristics, there are cases of very slight leakage.

How to measure the minimum bending radius



How to Order

Roll

Please contact SMC for delivery.

Tube length per roll: **1, 2, 3, 4, 5, 10, 20** m

TUZ 0425 - 12345 A - X172

Multi-core, multi-color specification

Symbol	Number of cores
X169	2 cores
X170	3 cores
X171	4 cores
X172	5 cores
X204	6 cores

Tube length per roll [m]

Symbol	Length	Symbol	Length
A	1	E	5
B	2	F	10
C	3	G	20
D	4		

Tubing size

Symbol	O.D. x I.D.
0425	ø4 x ø2.5
0604	ø6 x ø4
0805	ø8 x ø5
1065	ø10 x ø6.5
1208	ø12 x ø8

Color*1, 2

Symbol	Color	Symbol	Color
1	Black	4	Blue
2	White	5	Yellow
3	Red	6	Green

*1 Colors of the example (12345)
*2 Not clear, but opaque due to material

Tube length per roll: **50** m

TUZ 0425 - 12345 H - X172

Multi-core, multi-color specification

Symbol	Number of cores	Applicable tubing O.D.				
		ø4	ø6	ø8	ø10	ø12
X169	2 cores	•	•	•	•	•
X170	3 cores	•	•	•	•	•
X171	4 cores	•	•	•	•	•
X172	5 cores	•	•	•	•	•
X204	6 cores	•	•	•	•	•

Tube length per roll [m]

Symbol	Length
H	50

Tubing size

Symbol	O.D. x I.D.
0425	ø4 x ø2.5
0604	ø6 x ø4
0805	ø8 x ø5
1065	ø10 x ø6.5
1208	ø12 x ø8

Color*1, 2

Symbol	Color	Symbol	Color
1	Black	4	Blue
2	White	5	Yellow
3	Red	6	Green

*1 Colors of the example (12345)
*2 Not clear, but opaque due to material

Tube length per roll: **100** m

TUZ 0425 - 12345 J - X172

Multi-core, multi-color specification

Symbol	Number of cores	Applicable tubing O.D.		
		ø4	ø6	ø8
X169	2 cores	•	•	•
X170	3 cores	•	•	•
X171	4 cores	•	•	•
X172	5 cores	•	•	•
X204	6 cores	•	•	•

Tube length per roll [m]

Symbol	Length
J	100

Tubing size

Symbol	O.D. x I.D.
0425	ø4 x ø2.5
0604	ø6 x ø4
0805	ø8 x ø5

Color*1, 2

Symbol	Color	Symbol	Color
1	Black	4	Blue
2	White	5	Yellow
3	Red	6	Green

*1 Colors of the example (12345)
*2 Not clear, but opaque due to material

Polyurethane Coil Tubing

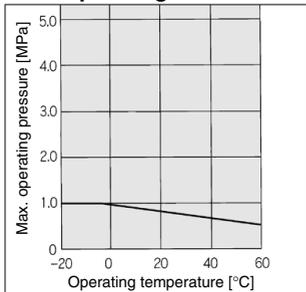
TCU Series

Tubing size: Metric Size

Compact piping possible



Max. Operating Pressures



Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

Caution

- Please consult with SMC if using for any fluids other than air.
- Abnormal temperature rises caused by adiabatic compression may result in the tube bursting.
- Please do not cut the coil and insert it into the fitting. This may cause air leakage, or tubing to come out after installation.
- Very slight leakage may occur in the multi-core tubing due to its characteristics.

Specifications

Model	TCU 0425B-1	TCU 0425B-2	TCU 0425B-3	TCU 0604B-1	TCU 0604B-2	TCU 0604B-3	TCU 0805B-1
Number of cores	1 core	2 cores	3 cores	1 core	2 cores	3 cores	1 core
Tubing O.D. [mm]	4			6			8
Tubing I.D. [mm]	2.5			4			5
Fluid	Air						
Max. operating pressure [MPa]	20°C			0.8			
	40°C			0.65			
	60°C			0.5			
Applicable fittings	One-touch fittings, Insert fittings, Miniature fittings						
Operating temperature	-20 to +60°C						
Material	Polyurethane						
Color	Black (Opaque)						

Coil Tubing

O.D.	I.D.	Color	Number of cores	Max. operating length [m]	Model
4	2.5	Black (B)	1	1.5	TCU0425B-1
		Black (B)	2		TCU0425B-2
		Black (B)	3		TCU0425B-3
6	4	Black (B)	1	2	TCU0604B-1
		Black (B)	2	1.5	TCU0604B-2
		Black (B)	3	1	TCU0604B-3
8	5	Black (B)	1	2	TCU0805B-1



Made to Order

1 Change of Coil Turns, Change of Color

X6

O.D.	I.D.	Number of cores	No. of coil windings per tube length	Model
4	2.5	1	3 to 90	TCU0425 [Color symbol] -1- [No. of coil windings per tube length] -X6
		2	3 to 90	TCU0425 [Color symbol] -2- [No. of coil windings per tube length] -X6
		3	3 to 63	TCU0425 [Color symbol] -3- [No. of coil windings per tube length] -X6
6	4	1	3 to 90	TCU0604 [Color symbol] -1- [No. of coil windings per tube length] -X6
		2	3 to 66	TCU0604 [Color symbol] -2- [No. of coil windings per tube length] -X6
		3	3 to 44	TCU0604 [Color symbol] -3- [No. of coil windings per tube length] -X6
8	5	1	3 to 90	TCU0805 [Color symbol] -1- [No. of coil windings per tube length] -X6
		2	3 to 40	TCU0805 [Color symbol] -2- [No. of coil windings per tube length] -X6
10	6.5	1	3 to 45	TCU1065 [Color symbol] -1- [No. of coil windings per tube length] -X6
		2	3 to 35	TCU1065 [Color symbol] -2- [No. of coil windings per tube length] -X6
12	8	1	3 to 35	TCU1208 [Color symbol] -1- [No. of coil windings per tube length] -X6
		2	3 to 30	TCU1208 [Color symbol] -2- [No. of coil windings per tube length] -X6

[Color symbol]: B: Black, W: White, R: Red, BU: Blue, Y: Yellow, G: Green, C: Clear, YR: Orange

2 Clean Series

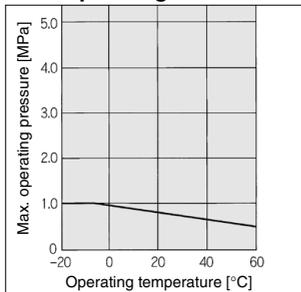
10-

Example) 10-TCU0425B-1

Compact piping possible



Max. Operating Pressures



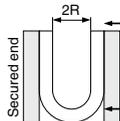
⚠️ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

⚠️ Caution

1. Please consult with SMC if using for any fluids other than air.
2. Abnormal temperature rises caused by adiabatic compression may result in the tube bursting.
3. The value of the minimum bending radius is measured at the temperature of 20°C as shown in the figure below.
4. As a result of product design characteristics, there are cases of very slight leakage.

How to measure the minimum bending radius



Bend the tube into a U shape at a temperature of 20°C. Secure one end and bend the loop gradually. Measure 2R when the tube kinks or is flattened.

How to Order

TFU0425 B - 2

Tubing model

Color

No. of tubes

Symbol	Color
B	Black (Opaque)

Symbol	Number of cores
2	2 cores
3	3 cores

Specifications

Model	TFU 0425B-2	TFU 0425B-3	TFU 0604B-2	TFU 0604B-3	TFU 0805B-2	TFU 0805B-3
Number of cores	2 cores	3 cores	2 cores	3 cores	2 cores	3 cores
Tubing O.D. [mm]	4		6		8	
Tubing I.D. [mm]	2.5		4		5	
Fluid	Air					
Max. operating pressure [MPa]	20°C		0.8			
	40°C		0.65			
	60°C		0.5			
Applicable fittings	One-touch fittings, Insert fittings, Miniature fittings					
Operating temperature	-20 to +60°C (No freezing)					
Material	Polyurethane					
Color	Black					
Min. bending radius [mm]	10		15		20	
Tube length per roll [m]	10					

Length per roll 10 m roll

O.D.	I.D.	Color (Symbol)	Number of cores	Model
4	2.5	Black (B)	2	TFU0425B-2
		Black (B)	3	TFU0425B-3
6	4	Black (B)	2	TFU0604B-2
		Black (B)	3	TFU0604B-3
8	5	Black (B)	2	TFU0805B-2
		Black (B)	3	TFU0805B-3



Made to Order

1 No. of Cores, Change of Color X4

Length per roll 10 m roll

O.D.	I.D.	Number of cores	Model
4	2.5	2 to 8	TFU0425 [Color symbol]-[Number of cores]-10-X4
6	4	2 to 8	TFU0604 [Color symbol]-[Number of cores]-10-X4
8	5	2 to 6	TFU0805 [Color symbol]-[Number of cores]-10-X4
10	6.5	2 to 4	TFU1065 [Color symbol]-[Number of cores]-10-X4
12	8	2 to 3	TFU1208 [Color symbol]-[Number of cores]-10-X4

[Color symbol]-W: White, R: Red, BU: Blue, Y: Yellow, G: Green, C: Clear, YR: Orange (All tubes are the same color.)

2 Reel X3

Length per roll 50 m

O.D.	I.D.	Number of cores	Model
4	2.5	2	TFU0425 [Color symbol]-2-50-X3
		3	TFU0425 [Color symbol]-3-50-X3
6	4	2	TFU0604 [Color symbol]-2-50-X3
		3	TFU0604 [Color symbol]-3-50-X3
8	5	2	TFU0805 [Color symbol]-2-50-X3
		3	TFU0805 [Color symbol]-3-50-X3

[Color symbol]-B: Black, W: White, R: Red, BU: Blue, Y: Yellow, G: Green, C: Clear, YR: Orange

3 Clean Series 10-

Example) 10-TFU0425B-2

Length per roll 100 m

O.D.	I.D.	Number of cores	Model
4	2.5	2	TFU0425 [Color symbol]-2-100-X3
		3	TFU0425 [Color symbol]-3-100-X3
6	4	2	TFU0604 [Color symbol]-2-100-X3
		3	TFU0604 [Color symbol]-3-100-X3
8	5	2	TFU0805 [Color symbol]-2-100-X3

[Color symbol]-B: Black, W: White, R: Red, BU: Blue, Y: Yellow, G: Green, C: Clear, YR: Orange

TRS Series

Tubing size: Metric Size

Suitable for air and water piping in environments where sparks from spot welders, etc., may be a problem.

Flame-resistant tubing



Spatter Proof

How to Order

TRS1065 **B** - **100**

Tubing model

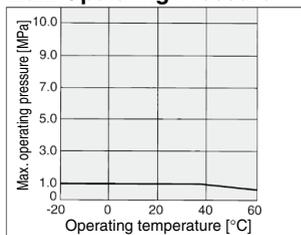
Length per roll

Symbol	Length
20	20 m roll
100	100 m reel

Color

Symbol	Color
B	Black (Opaque)
W	White (Material color)
R	Red (Opaque)
BU	Blue (Opaque)
G	Green (Opaque)

Max. Operating Pressure



Model

● -20 m roll □ -100 m reel

Model	Tubing size			
	Metric size			
	TRS0603	TRS0805	TRS1065	TRS1208
Tubing O.D. [mm]	6	8	10	12
Tubing I.D. [mm]	3	5	6.5	8
Black (B)	●	●	●	●
White (W)	●	●	●	●
Red (R)	●	●	●	●
Blue (BU)	●	●	●	●
Green (G)	●	●	●	●

Specifications

Fluid	Air, Water			
Max. operating pressure [MPa]	20°C	1.2		
	40°C	1.2		
	60°C	0.7		
Applicable fittings	FR One-touch fittings KR-W2 series			
Min. bending radius [mm]	17	19	27	32
Operating temperature	-20 to +60°C, Water: 0 to 60°C (No freezing)			
Material	Flame-resistant nylon (Equivalent to UL-94 Standard V-0)			

⚠ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

⚠ Caution

1. Applicable for general industrial water. Please consult with SMC if using for the other kind of fluid. Also, the surge pressure must not exceed the maximum operating pressure. If the surge pressure exceeds the maximum operating pressure, it will result in damage to fittings and tubes.
2. Abnormal temperature rises caused by adiabatic compression may result in the tube bursting.

Length per roll **20** m roll

O.D.	I.D.	Color (Symbol)	Model
6	3	Black (B)	TRS0603 [Color symbol] -20
		White (W)	
		Red (R)	
		Blue (BU)	
		Green (G)	
8	5	Black (B)	TRS0805 [Color symbol] -20
		White (W)	
		Red (R)	
		Blue (BU)	
		Green (G)	
10	6.5	Black (B)	TRS1065 [Color symbol] -20
		White (W)	
		Red (R)	
		Blue (BU)	
		Green (G)	
12	8	Black (B)	TRS1208 [Color symbol] -20
		White (W)	
		Red (R)	
		Blue (BU)	
		Green (G)	

Length per roll **100** m reel

O.D.	I.D.	Color (Symbol)	Model
6	3	Black (B)	TRS0603 [Color symbol] -100
		White (W)	
		Red (R)	
		Blue (BU)	
		Green (G)	
8	5	Black (B)	TRS0805 [Color symbol] -100
		White (W)	
		Red (R)	
		Blue (BU)	
		Green (G)	
10	6.5	Black (B)	TRS1065 [Color symbol] -100
		White (W)	
		Red (R)	
		Blue (BU)	
		Green (G)	
12	8	Black (B)	TRS1208 [Color symbol] -100
		White (W)	
		Red (R)	
		Blue (BU)	
		Green (G)	

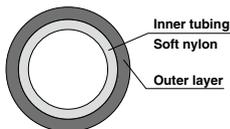
- T
- TS
- TU
- TUS
- TUH
- TUZ
- TCU
- TFU
- TRS**
- TRB
- TRBU
- TRTU
- TQ
- TAS
- TAU
- TL/TIL
- TLM/TILM
- TH/TIH
- TD/TID
- TPH
- TPS
- IDK
- Related

TRB Series

Tubing size: Metric Size

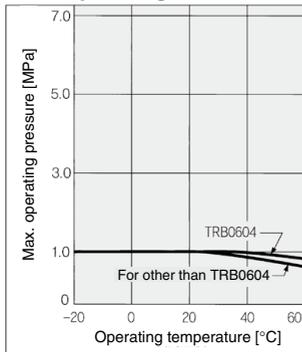
Spatter Proof

Suitable for air and water piping in environments where sparks from spot welders, etc., may be a problem. Double layer design using flame-resistant resin (equivalent to UL-94 Standard V-0) for outer layer.



Sectional view of FR double layer tubing

Max. Operating Pressure



How to Order

TRB1075 B - 100

Tubing model

Length per roll

Symbol	Length
20	20 m roll
100	100 m reel

Color

Symbol	Color
B	Black
W	White
R	Red
BU	Blue
Y	Yellow
G	Green

Model

● -20 m roll □ -100 m reel

Model	Tubing size			
	Metric size			
	TRB0604	TRB0806	TRB1075	TRB1209
Inner tubing O.D. [mm]	6	8	10	12
Inner tubing I.D. [mm]	4	6	7.5	9
Outer layer thickness [mm]	1	1	1	1

External layer color*1	Black (B)	●	□	●	□
	White (W)	●	□	●	□
	Red (R)	●	□	●	□
	Blue (BU)	●	□	●	□
	Yellow (Y)	●	□	●	□
	Green (G)	●	□	●	□

Specifications

Fluid		Air, Water			
Max. operating pressure [MPa]	20°C	1.0	1.0	1.0	1.0
	40°C	1.0	0.8	0.8	0.8
	60°C	0.8	0.6	0.6	0.6
Recommended fittings		FR One-touch fittings KR-W2 series			
Ambient and fluid temperatures		-20 to +60°C Water: 0 to 60°C (No freezing)			
Material	Inner tubing	Nylon 12			
	Outer layer	PVC (Equivalent to UL-94 Standard V-0)			

*1 The color of all inner tubing is black.

Length per roll **20** m roll

O.D.	I.D.	Color (Symbol)	Model
6	4	Black (B)	TRB0604 Color symbol -20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
8	6	Black (B)	TRB0806 Color symbol -20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
10	7.5	Black (B)	TRB1075 Color symbol -20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
12	9	Black (B)	TRB1209 Color symbol -20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	

Length per roll **100** m reel

O.D.	I.D.	Color (Symbol)	Model
6	4	Black (B)	TRB0604 Color symbol -100
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
8	6	Black (B)	TRB0806 Color symbol -100
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
10	7.5	Black (B)	TRB1075 Color symbol -100
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
12	9	Black (B)	TRB1209 Color symbol -100
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	

⚠ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

⚠ Caution

1. Applicable for general industrial water. Please consult with SMC if using for the other kind of fluid. Also, the surge pressure must not exceed the maximum operating pressure. If the surge pressure exceeds the maximum operating pressure, it will result in damage to fittings and tubes.
2. Abnormal temperature rises caused by adiabatic compression may result in the tube bursting.

Double Layer Tube Stripper

TKS Series

Allows easy stripping of the outer layer from double layer tubes.



Variations

Model	Tip color	Applicable tubing*1
TKS-06	Orange	TRB0604, TRBU0604
TKS-08	Yellow	TRB0806, TRBU0805
TKS-10	Blue	TRB1075, TRBU1065
TKS-12	Green	TRB1209, TRBU1208

*1 Inner tubing material/TRB: Soft nylon,
TRBU: Polyurethane

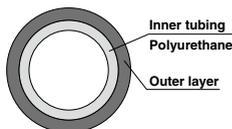
TRBU Series

Tubing size: Metric Size

Spatter Proof

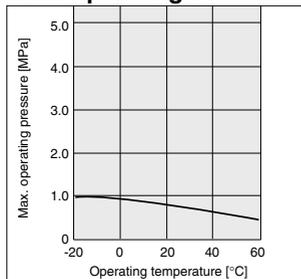
Suitable for air and water piping in environments where sparks from spot welders, etc., may be a problem.

Double layer design using flame-resistant resin (equivalent to UL-94 Standard V-0) for outer layer.



Sectional view of FR double layer polyurethane tubing

Max. Operating Pressure



Related Products: Tube Stripper

TKS Series

A special tool for stripping off outer tube layers



Refer to page 308 for details.

How to Order

TRBU1065 B - 100

Tubing model

Length per roll

Symbol	Length
20	20 m roll
100	100 m reel

Color

Symbol	Color	Symbol	Color
B	Black	BU	Blue
W	White	Y	Yellow
R	Red	G	Green

Model

● ~20 m roll □ ~100 m reel

		Tubing size			
		Metric size			
Model		TRBU0604	TRBU0805	TRBU1065	TRBU1208
Inner tubing O.D. [mm]		6	8	10	12
Inner tubing I.D. [mm]		4	5	6.5	8
Outer layer thickness [mm]		1	1	1	1
External layer color*1	Black (B)	●	□	□	□
	White (W)	●	□	□	□
	Red (R)	●	□	□	□
	Blue (BU)	●	□	□	□
	Yellow (Y)	●	□	□	□
	Green (G)	●	□	□	□

Specifications

Fluid		Air, Water			
Max. operating pressure [MPa]	20°C	0.8			
	40°C	0.65			
	60°C	0.5			
Applicable fittings		FR One-touch fittings KR-W2 series			
Min. bending radius [mm]		15	20	27	35
Ambient and fluid temperatures		-20 to +60°C, Water: 0 to 40°C (No freezing)			
Material	Inner tubing	Polyurethane			
	Outer layer	Polyolefin (Equivalent to UL-94 Standard V-0)			

*1 The color of all inner tubing is black.

Length per roll 20 m roll

O.D.	I.D.	Color (Symbol)	Model
6	4	Black (B)	TRBU0604 [Color symbol]-20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
8	5	Black (B)	TRBU0805 [Color symbol]-20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
10	6.5	Black (B)	TRBU1065 [Color symbol]-20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
12	8	Black (B)	TRBU1208 [Color symbol]-20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
		Green (G)	

Length per roll 100 m reel

O.D.	I.D.	Color (Symbol)	Model
6	4	Black (B)	TRBU0604 [Color symbol]-100
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
8	5	Black (B)	TRBU0805 [Color symbol]-100
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
10	6.5	Black (B)	TRBU1065 [Color symbol]-100
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
12	8	Black (B)	TRBU1208 [Color symbol]-100
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
		Green (G)	

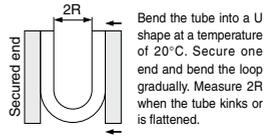
⚠ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

⚠ Caution

1. Applicable for general industrial water. Please consult with SMC if using for the other kind of fluid. Also, the surge pressure must not exceed the maximum operating pressure. If the surge pressure exceeds the maximum operating pressure, it will result in damage to fittings and tubes.
2. Abnormal temperature rises caused by adiabatic compression may result in the tube bursting.
3. The value of the minimum bending radius is measured at the temperature of 20°C as shown in the figure on the right.

How to measure the minimum bending radius



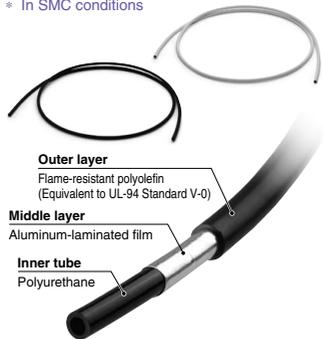
TRTU Series

Tubing size: Metric Size

Spatter Proof

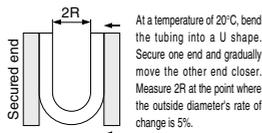
Improved spatter resistance
Spatter resistance is that of FR double layer polyurethane tubing TRBU series.

* In SMC conditions

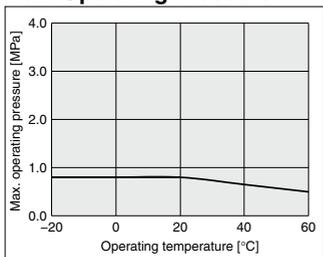


For general pneumatic and water piping in environments exposed to sparks from arc welding, etc.

How to measure the minimum bending radius



Max. Operating Pressure



Model

● -20 m roll □ -100 m reel

Model	TRTU0604	TRTU0805	TRTU1065	TRTU1208
Inner tubing O.D. [mm]	6	8	10	12
Inner tubing I.D. [mm]	4	5	6.5	8
Outer layer thickness [mm]	1	1	1	1

External layer color*3	Black (B)	●	□	●	□
	White (W)	●	□	●	□
	Red (R)	●	□	●	□
	Blue (BU)	●	□	●	□
	Yellow (Y)	●	□	●	□
	Green (G)	●	□	●	□

Specifications

Fluid *1	Air, Water			
Applicable fittings	FR One-touch fittings KR-W2 series Metal One-touch fittings KQB2 series			
Max. operating pressure [MPa]	20°C	0.8		
	40°C	0.65		
	60°C	0.5		
Min. bending radius [mm] *2	50	60	70	80
Ambient and fluid temperatures	-20 to +60°C, Water: 0 to 40°C (No freezing)			
Material	Inner tubing	Polyurethane		
	Middle layer	Aluminum-laminated film		
	Outer layer	Polyolefin (Equivalent to UL-94 Standard V-0)		

- *1 Applicable for general industrial water. Please consult with SMC if using for the other kind of fluid. Also, the surge pressure must not exceed the maximum operating pressure. If the surge pressure exceeds the maximum operating pressure, it will result in damage to fittings and tubes.
- *2 The minimum bending radius is the representative value measured as shown in the figure on the left. Allow extra length when piping since the tube may kink if used under the minimum bending radius.
- *3 The color of all inner tubing is black.
- * Abnormal temperature rises caused by adiabatic compression may result in the tube bursting.

How to Order

TRTU1065 B - 20

Model	Inner tube O.D. x I.D. [mm]
TRTU0604	6 x 4
TRTU0805	8 x 5
TRTU1065	10 x 6.5
TRTU1208	12 x 8

Symbol	Color
B	Black
W	White
R	Red
BU	Blue
Y	Yellow
G	Green

Symbol	Length
20	20 m roll
100	100 m reel

Length per roll 20 m roll

O.D.	I.D.	Color (Symbol)	Model
6	4	Black (B)	TRTU0604 [Color symbol]-20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
8	5	Black (B)	TRTU0805 [Color symbol]-20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
10	6.5	Black (B)	TRTU1065 [Color symbol]-20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
12	8	Black (B)	TRTU1208 [Color symbol]-20
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
		Green (G)	

Length per roll 100 m reel

O.D.	I.D.	Color (Symbol)	Model
6	4	Black (B)	TRTU0604 [Color symbol]-100
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
8	5	Black (B)	TRTU0805 [Color symbol]-100
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
10	6.5	Black (B)	TRTU1065 [Color symbol]-100
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
12	8	Black (B)	TRTU1208 [Color symbol]-100
		White (W)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
		Green (G)	

⚠ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

A tool for stripping off the outer layers of three layer tubing

Use a special tool for stripping off the outer layer.
 Part no.: **YS-100**
 * Refer to the Operation Manual for details of how to use the special tool.



2-Layer Soft Fluoropolymer Tubing

TQ Series

Tubing size: Metric Size

Carries fluid such as solvent with a soft and abrasion resistant tube.

Corrosion Resistant

Heat Resistant

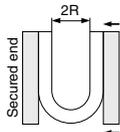


Model/Specifications

Model	TQ0425	TQ0604	TQ0806	TQ1008	TQ1209
Tubing O.D. [mm]	4	6	8	10	12
Tubing I.D. [mm]	2.5	4	6	8	9
Roll	20 m	●	●	●	●
	100 m	●	●	●	●
Color ^{*1}	Translucent (Material color)				
Fluid ^{*2}	Air, Water, Inert gas, Solvent				
Applicable fittings ^{*3, 7}	Insert fittings KF, KFG2, VCK series Miniature fittings M, MS series (Hose nipple type) Fluoropolymer fittings LQ1, LQ3 series ^{*6}				
Max. operating pressure [MPa] ^{*4}	20°C				
	2.0	1.9	1.5	1.1	1.2
Min. bending radius (tube close bend radius) ^{*5} [mm]	4	9	26	42	37
Fluid temperature (fixed usage)	Air, Inert gas: -20 to 100°C, Water, Solvent: 0 to 70°C (No freezing)				
Material	Inner layer: Special fluoropolymer, Outer layer: Special nylon resin				

- *1 There may be plasticizer (white powder) deposits on the external surface of the tube. Please be careful when the tube is used in clean rooms. Otherwise, the clean level may decrease.
- *2 When solvent is used, make sure to test in the same environment as the actual operating environment, and confirm that no problem will occur in the operating conditions. The standard value of the Applicable Fluid List below is the reference value based on the test result performed under specific conditions. The product can be physically affected by temperature, pressure, chemical density, etc, causing permeation or swelling, and this may cause some problems.
- *3 Perform periodic maintenance inspections. If leakage continues to occur after tightening, replace the tube with a new one. (Refer to "Maintenance" in the Specific Product Precautions on page 314.) When the tube rotates, perform a test to make sure no problem occur in the actual operating conditions. When the product is used with motion for a long time, or at a high temperature, the tubes may have leakage due to deterioration of the materials.
- *4 Operate under the maximum operating pressure of either the tubing or the fitting, whichever value is lower. The surge pressure must not exceed the maximum operating pressure. If the surge pressure exceeds the maximum operating pressure, it will result in damage to tubes and fittings. Furthermore, abnormal temperature rises caused by adiabatic compression may result in the tube bursting.
- *5 Minimum bend radius (tube close bend radius) is not guaranteed. The value of 2R in the figure is measured with a kinked or flattened tube.
- *6 For the installation of fluoropolymer fitting LQ1 and LQ3, please contact SMC.
- *7 A fitting that seals the outer diameter of the tube such as One-touch fitting is not applicable since it is in contact with the wetted part of the external layer nylon material.

How to measure the minimum bending radius



Bend the tube into a U shape at a temperature of 20°C. Secure one end and bend the loop gradually at 100 mm/min. Measure 2R when the tube kinks or is flattened.

How to Order

TQ0425 - **20**

Tubing model

Length per roll

Symbol	Length
20	20 m roll
100	100 m roll

Max. Operating Pressure Unit: MPa

Temperature [°C]	TQ0425	TQ0604	TQ0806	TQ1008	TQ1209
-20 to 20	2.0	1.9	1.5	1.1	1.2
30	1.7	1.6	1.2	0.9	1.0
40	1.4	1.4	1.0	0.8	0.9
50	1.2	1.1	0.8	0.6	0.8
60	1.1	1.0	0.7	0.5	0.7
70	1.0	0.9	0.6	0.4	0.6
80	0.9	0.8	0.5	0.4	0.5
90	0.8	0.7	0.4	0.3	0.4
100	0.7	0.6	0.4	0.3	0.3

Applicable Fluid List

Fluid in the list below are chemically inert^{*1}, to tubing material. Possible physical effects may occur such as penetration and swelling due to temperature, pressure and chemical density. To use tubing in a solvent environment, tests should be performed with the same environment to ensure no problem occurs with operating environment.

Chemical	Inner layer Special fluoropolymer	Outer layer Special nylon resin	Chemical	Inner layer Special fluoropolymer	Outer layer Special nylon resin
Hydrochloric acid	○	△	Citric acid	○	△
Sulfuric acid	○	△	Stearic acid	○	△
Nitric acid	○	×	Formic acid	○	△
Caustic soda	○	△	Ethyl acetate	○	○
Caustic potash	○	△	Butyl acetate	○	△
Ammonium hydroxide	○	○	Methyl alcohol	○	○
Hydrogen peroxide	○	△	Ethyl alcohol	○	○
Water	○	○	Butyl alcohol	○	○
Phenol	○	×	Isopropyl alcohol	○	○
Benzene	○	△	Cellosolve	△	△
Toluene	○	△	Hexane	○	△
Xylene	○	△	Cyclohexane	○	△
Carbon tetrachloride	○	×	Mineral oil ASTM No.3	○	○
Acetone	○	△	Naphtha	○	○
Methyl ethyl ketone	○	△			

- *1 "Chemically inert" means - not to cause any chemical reaction.
- * Criteria: ○Applicable, △Not recommended, ×Inapplicable
- * Applicable Fluid List shows the reference value based on test results performed under specific conditions. Application for products is not guaranteed.
- * Applicable Fluid List is for tube materials. For use in environments containing solvents, please contact SMC.

Length per roll **20** m roll

O.D.	I.D.	Color	Model
4	2.5	Translucent (Material color)	TQ0425-20
6	4		TQ0604-20
8	6		TQ0806-20
10	8		TQ1008-20
12	9		TQ1209-20

Length per roll **100** m roll

O.D.	I.D.	Color	Model
4	2.5	Translucent (Material color)	TQ0425-100
6	4		TQ0604-100
8	6		TQ0806-100
10	8		TQ1008-100
12	9		TQ1209-100

⚠ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

Selection

⚠ Warning

- Check the specifications.**
Give careful consideration to operating conditions such as the application, fluid and environment, and use within the operating ranges specified in this catalog. Tube may burst or lead to operation failure if operating conditions are out of the specification range. The specifications of the catalog are designed assuming the product is used with the fixed conditions.
- When using the product for medical care**
This product is designed for use with compressed fluid system applications for medical care purposes. Do not use in contact with human bodily fluids, body tissues or transfer applications to a human living body.
- Maintenance**
Perform periodic maintenance inspections, securing enough space for maintenance.
- Countermeasures for static electricity**
Since static electricity may be generated depending on the fluid being used, implement suitable countermeasures.

⚠ Caution

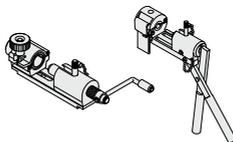
- When toxic solvent is used, make sure to test in the same environment as the actual operating environment, and confirm that no problem will occur in the operating conditions.
- When the joint of the tube or fitting rotates, make sure to test it in the same environment as the actual operating environment, and confirm that no problems will occur in the operating conditions.
- The surge pressure must not exceed the maximum operating pressure.
- There may be plasticizer (white powder) deposits on the external surface of the tube. Please be careful when the tube is used in clean rooms. Otherwise, the clean level may decrease.
- If fittings of brands other than SMC are used, be sure to confirm that no problem will occur with the operating conditions.
- Trademark, product number, the material of inner/outer layer, O.D. x I.D. size, production lot number, and country of origin are printed in 500 mm intervals on the outer surface of the tube. Printed letters may be erased depending on fluid.

Mounting

⚠ Caution

- Check the model number, size, etc. before installing. Check tubing for damage, gouges, cracks, etc.**
- Before piping, perform air blow (flushing) or cleaning to remove any dust, etc. from the piping.**
- There may be plasticizer (white powder) deposits on the surface of the tube, but there is no impact on performance.**
- Cut the tube perpendicularly using a tube cutter.**
If the tube is cut incorrectly, fluid can leak or the tube can fall out as a result.
- When connecting tubing, allow a sufficient margin considering the change of tube diameter and length due to pressure.**
- Do not apply unnecessary forces such as twisting, pulling, moment loads on fittings or tubing. It may cause leakage, the fitting to fracture or the tube to be crushed, burst or fall off.**
- Mount so that tubing is not damaged due to tangling and abrasion. This can cause flattening, bursting or disconnection of tubing, etc. If the LQ1 or LQ3 fitting is used, connect the tube with the specialized tool.**

Refer to the pamphlet "High-Purity Fluoropolymer Fittings HYPER FITTING/LQ1, 2 Series Work Procedure Instructions" (M-E05-1) or "High Purity Fluoropolymer Fittings Hyper Fitting/Flare Type LQ3 Series Fitting Procedure" (M-E06-4A) for connecting tubing and special tools. (Downloadable from our website)



Operating Environment

⚠ Warning

- Do not use in locations having an explosive atmosphere.
- When vibration or impact is applied, make sure to test in the same environment as the actual operating environment, and confirm that no problem will occur in the operating conditions.
- In locations near heat sources, block off radiated heat.

Maintenance

⚠ Caution

- Check the following after the initial installation and for each periodic inspection. If any problem is confirmed, replace the tube with a new product or reconsider the customer's operating conditions.**
 - Cracks, gouges, wearing, corrosion
 - Leakage, penetration, dislocation
 - Twists or crushing of tubing
 - Hardening, deterioration, softening of tubing
 - * There may be plasticizer (white powder) deposits on the surface of the tube, but there is no impact on performance.
- The two layers of the tube are completely bonded. If separation is confirmed between them, replace the tube with a new one or reconsider the customer's operating conditions.
- If the tube and the fitting are removed or replaced, eliminate the residual fluid with air or water.
- When using insert, miniature or fluoropolymer fittings over a long period, some leakage may occur due to age deterioration of the materials. If any leakage is detected, correct the problem by additional tightening. If tightening becomes ineffective, replace the fittings with a new product immediately.
- Do not repair or patch the replaced tubing or fittings for reuse.

Antistatic Soft Nylon Tubing

TAS Series

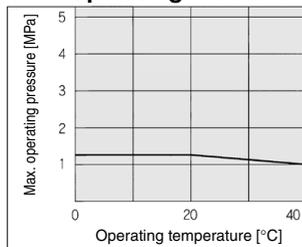
Tubing size: Metric Size

For pneumatic piping and applications which require the measures against antistatic electricity.

Flame-resistant tubing
(Equivalent to UL-94
Standard V-0)



Max. Operating Pressure



⚠ Precautions

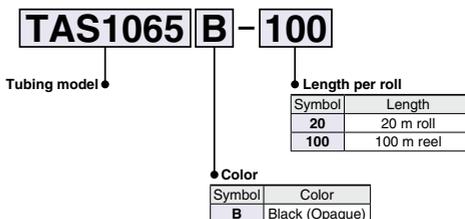
Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

⚠ Caution

- Abnormal temperature rises caused by adiabatic compression may result in the tube bursting.
- The minimum bending radius indicates the value at a temperature of 20°C with an outside diameter rate of change of 10% or less.
- Please exercise caution when using this item in a clean room. There is a possibility of plasticizer and other materials precipitating on the tube surface and detracting from the cleanliness level of the room.

Antistatic Measures

How to Order



Model

Model	Tubing size					
	Metric size					
	TAS3222	TAS0425	TAS0604	TAS0805	TAS1065	TAS1208
Tubing O.D. [mm]	3.2	4	6	8	10	12
Tubing I.D. [mm]	2.2	2.5	4	5	6.5	8
Color	Black (B)					

● -20 m roll □ -100 m reel

Specifications

Fluid	Air					
Max. operating pressure [MPa]	20°C	1.2				
	40°C	1.0				
Recommended fittings	Antistatic One-touch fittings KA series Miniature fittings M, MS series*1					
Min. bending radius [mm]	12	12	15	19	27	32
Operating temperature	0 to 40°C					
Material	Conductive nylon + Flame-resistant nylon (Equivalent to UL-94 Standard V-0)					
Surface resistance	10 ⁴ to 10 ⁷ Ω					

*1 Miniature fittings: Only the following types are available for the M and MS series

M series	MS series
M-3AU-3, M-3AU-4, M-5AU-3, M-5AU-4	MS-5AU-3, MS-5AU-4, MS-5AU-6
M-5AU-6, M-5H-4, M-5H-6	MS-5H-4, MS-5H-6

Length per roll 20 m roll

O.D.	I.D.	Color (Symbol)	Model
3.2	2.2	Black (B)	TAS3222B-20
4	2.5	Black (B)	TAS0425B-20
6	4	Black (B)	TAS0604B-20
8	5	Black (B)	TAS0805B-20
10	6.5	Black (B)	TAS1065B-20
12	8	Black (B)	TAS1208B-20

Length per roll 100 m reel

O.D.	I.D.	Color (Symbol)	Model
3.2	2.2	Black (B)	TAS3222B-100
4	2.5	Black (B)	TAS0425B-100
6	4	Black (B)	TAS0604B-100
8	5	Black (B)	TAS0805B-100
10	6.5	Black (B)	TAS1065B-100
12	8	Black (B)	TAS1208B-100

Antistatic Polyurethane Tubing

TAU Series

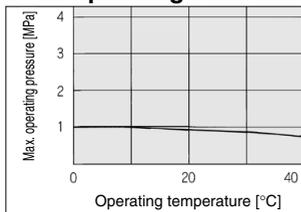
Tubing size: Metric Size

For pneumatic piping and applications which require the measures against antistatic electricity.

Flexible tubing



Max. Operating Pressure



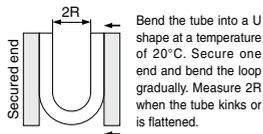
⚠️ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

⚠️ Caution

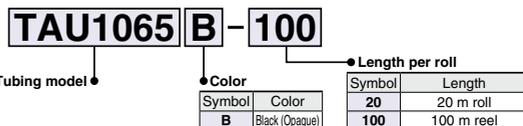
- Abnormal temperature rises caused by adiabatic compression may result in the tube bursting.
- The value of the minimum bending radius is measured at the temperature of 20°C as shown in the figure below.
- Because ester polyurethane is adopted, water cannot be used due to the occurrence of hydrolysis.

How to measure the minimum bending radius



Antistatic Measures

How to Order



Model

Model	Tubing size					
	Metric size					
TAU3220	TAU0425	TAU0604	TAU0805	TAU1065	TAU1208	
Tubing O.D. [mm]	3.2	4	6	8	10	12
Tubing I.D. [mm]	2	2.5	4	5	6.5	8

-20 m roll -100 m reel

Specifications

Fluid	Air					
Max. operating pressure [MPa]	0.9					
	0.7					
Recommended fittings	Antistatic One-touch fittings KA series, Miniature fittings M, MS series*1					
Min. bending radius [mm]	10	10	15	20	27	35
Operating temperature	0 to 40°C					
Material	Antistatic polyurethane					
Surface resistance	10 ⁹ to 10 ⁹ Ω					

*1 Miniature fittings: Only the following types are available for the M and MS series

M series				MS series			
M-3AU-3, M-3AU-4, M-5AU-3, M-5AU-4				MS-5AU-3, MS-5AU-4, MS-5AU-6			
M-5AU-6, M-5H-4, M-5H-6				MS-5H-4, MS-5H-6			

Length per roll 20 m roll

O.D.	I.D.	Color (Symbol)	Model
3.2	2	Black (B)	TAU3220B-20
4	2.5	Black (B)	TAU0425B-20
6	4	Black (B)	TAU0604B-20
8	5	Black (B)	TAU0805B-20
10	6.5	Black (B)	TAU1065B-20
12	8	Black (B)	TAU1208B-20

Length per roll 100 m reel

O.D.	I.D.	Color (Symbol)	Model
3.2	2	Black (B)	TAU3220B-100
4	2.5	Black (B)	TAU0425B-100
6	4	Black (B)	TAU0604B-100
8	5	Black (B)	TAU0805B-100
10	6.5	Black (B)	TAU1065B-100
12	8	Black (B)	TAU1208B-100



Made to Order

1 Change of Color, Surface Resistance 10⁹ Ω

X100

Specifications

Fluid	Air	
Max. operating pressure (at 20°C)	0.8 MPa	
Ambient and fluid temperatures	0 to 40°C	
Material	Antistatic polyurethane	
Surface resistance	10 ⁹ Ω	
Recommended fittings	Antistatic One-touch fittings KA series Miniature fittings M, MS series*1	

*1 Miniature fittings: Only the following types are available for the M and MS series

M series		MS series	
M-3AU-2, M-3AU-4, M-5AU-2			MS-5AU-4, MS-5AU-6
M-5AU-4, M-5AU-6, M-5H-4, M-5H-6			MS-5H-4, MS-5H-6

O.D.	I.D.	Model
2	1.2	TAU0212 [Color symbol] -20-X100
4	2.5	TAU0425 [Color symbol] -20-X100
6	4	TAU0604 [Color symbol] -20-X100
8	5	TAU0805 [Color symbol] -20-X100
10	6.5	TAU1065 [Color symbol] -20-X100
12	8	TAU1208 [Color symbol] -20-X100

[Color symbol] -B: Black, W: White, BU: Blue, G: Green, C: Clear

Material: Super PFA



Corrosion Resistant

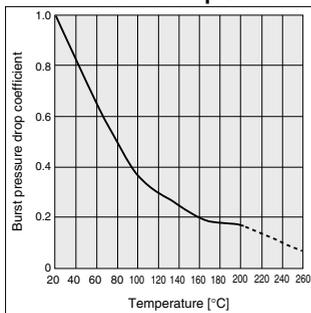
Heat Resistant

Clean

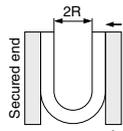
Model/Specifications

		Metric size (TL series)					
Tubing model		TL0403	TL0604	TL0806	TL1008	TL1210	TL1916
Nominal diameter		—	—	—	—	—	—
Tubing size		ø4 x ø3	ø6 x ø4	ø8 x ø6	ø10 x ø8	ø12 x ø10	ø19 x ø16
O.D. [mm]	Basic diameter	4	6	8	10	12	19
	Tolerance	±0.1				+0.2 -0.1	
Thickness [mm]	Basic diameter	0.5	1			1.5	
	Tolerance	±0.05		±0.1			±0.15
Bundle	10 m	—	—	—	●	●	●
	20 m	●	●	●	●	●	●
	50 m	●	●	●	●	●	●
	100 m	●	●	●	●	●	●
Straight pipe		2 m	●	●	●	●	●
Color		Translucent (Material color)					
Applicable fluid		Refer to the "Applicable Fluid List" on page 356.					
Applicable fittings		Fluoropolymer fittings LQ series					
Max. operating pressure [MPa]	20°C	1.0	1.0	1.0	0.9	0.7	0.6
	100°C	0.45	0.64	0.43	0.33	0.27	0.24
	200°C	0.21	0.29	0.20	0.15	0.12	0.11
	260°C	0.09	0.12	0.08	0.06	0.05	0.05
Burst pressure (at 20°C) [MPa]		4.9	6.9	4.7	3.6	2.9	2.6
Min. bending radius [mm]	Recommended radius	35	35	60	100	130	220
	Tube close bend radius	20	20	40	65	110	160
Max. operating temperature (Fixed use)		260°C					
Material		Super PFA					

Burst Pressure Drop Curve



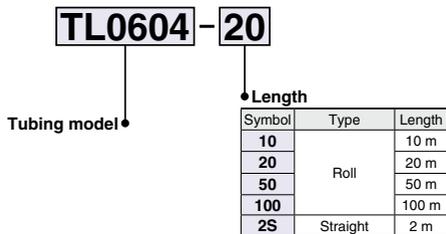
How to measure the minimum bending radius



Bend the tube into a U shape at a temperature of 20°C. Secure one end and bend the loop gradually. Measure 2R when the tube kinks or is flattened.

- When using the product at a temperature other than those shown in the table above, use it at a maximum operating pressure or less that is calculated from the following formula.
(Max. operating pressure) = 1/4 x (burst pressure drop coefficient) x (burst pressure at 20°C)
- When using a liquid fluid, the surge pressure must not exceed the maximum operating pressure. If the surge pressure exceeds the maximum operating pressure, it will result in damage to fittings and tubes. Furthermore, abnormal temperature rises caused by adiabatic compression may result in the tube bursting.
- Do not use this product in a manner in which the tube is not secured. Operate under the maximum operating pressure of either the tubing or the fitting, whichever value is lower. A material change over a long duration or due to high temperatures may cause leakage. Perform periodic maintenance and replace with a new product immediately when abnormalities are detected. (Refer to "Maintenance" in the tubing precautions on page 359.) For other precautions, refer to "Fittings & Tubing Precautions" on pages 349 to 353. When using the fluoropolymer fittings, refer to the precautions in the **Web Catalog**.
- The minimum bending radius is the representative value measured as shown in the figure on the left.
 - Use a tube above the recommended minimum bending radius.
 - The tube may kink if used under the recommended minimum bending radius. Therefore, refer to the tube close bend radius and make sure that the tube has not kinked or flattened.
 - Please note that the tube close bend radius is not warranted because it is the value at which the tubing kinks, is flattened, etc., when 2R is measured by the method in the figure on the left.
 - The minimum bending radius shown above does not apply to the straight pipe (2 m).
- As for other commercial items, there are some cases it is not able to connect due to tolerance of dimensions.

How to Order



Eluting fluorine ion amount*¹ [μg/g]

Type	Fluorine ion
Eluting amount	0.1 or less

A 15 g piece of fluororesin tubing is cut off, washed in DI water (pure water) and immersed in 15 mL of 25% methyl alcohol extract at room temperature for 24 hours. Then the extract is diluted with DI water (pure water) to be subjected to a quantitative analysis of fluorine ions.

Eluting metal ion amount*¹ [ng/cm²]

Type	Al	Fe	Ni	Na	Ca
Eluting amount	4.5	0.3	0.2	7.1	1.3

The interior of the fluororesin tubing is washed with super deionized water. Approximately 20 g of super high purity hydrofluoric acid (48%) is measured and injected into the tubing. The interior wall of the tubing is immersed at normal temperature for one week with both ends of the tubing plugged. Then the extract was diluted with super deionized water to be subjected to a quantitative analysis on Al, Fe, Ni, Na and Ca by the stripping method.

*¹ Figures shown in tables are representative values, not guaranteed values.

Length per roll **10 m roll**

O.D.	I.D.	Model
10	8	TL1008-10
12	10	TL1210-10
19	16	TL1916-10

Length per roll **50 m roll**

O.D.	I.D.	Model
4	3	TL0403-50
6	4	TL0604-50
8	6	TL0806-50
10	8	TL1008-50
12	10	TL1210-50
19	16	TL1916-50

Straight **2 m**

O.D.	I.D.	Model
4	3	TL0403-2S
6	4	TL0604-2S
8	6	TL0806-2S
10	8	TL1008-2S
12	10	TL1210-2S
19	16	TL1916-2S

Length per roll **20 m roll**

O.D.	I.D.	Model
4	3	TL0403-20
6	4	TL0604-20
8	6	TL0806-20
10	8	TL1008-20
12	10	TL1210-20
19	16	TL1916-20

Length per roll **100 m roll**

O.D.	I.D.	Model
4	3	TL0403-100
6	4	TL0604-100
8	6	TL0806-100
10	8	TL1008-100
12	10	TL1210-100
19	16	TL1916-100

Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions, pages 349 to 353 for fittings and tubing precautions, and page 359 for tubing precautions.

Fluoropolymer Tubing

TIL Series

Tubing size: Inch Size

Material: Super PFA



Corrosion Resistant

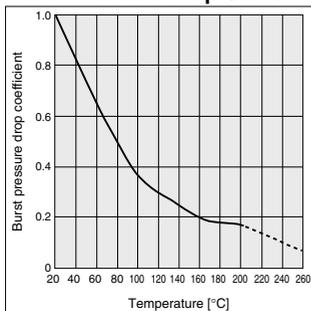
Heat Resistant

Clean

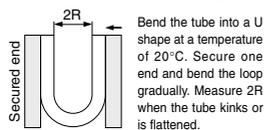
Model/Specifications

		Inch size (TIL series)							
Tubing model		TIL01	TILB01	TIL05	TIL07	TIL11	TIL13	TIL19	TIL25
Nominal diameter		1/8"	1/8"	3/16"	1/4"	3/8"	1/2"	3/4"	1"
Tubing size		1/8" x 0.086"	1/8" x 1/16"	3/16" x 1/8"	1/4" x 5/32"	3/8" x 1/4"	1/2" x 3/8"	3/4" x 5/8"	1" x 7/8"
O.D. [mm]	Basic diameter	3.18	3.18	4.75	6.35	9.53	12.7	19.05	25.4
	Tolerance	±0.1						+0.2 -0.1	
Thickness [mm]	Basic diameter	0.5	0.8	0.8	1.2	1.6			
	Tolerance	±0.05	±0.08	±0.08	±0.12	±0.15			
Bundle	10 m	—	—	—	—	●	●	—	—
	20 m	●	—	●	●	●	●	●	●
	50 m	●	—	●	●	●	●	●	●
	100 m	●	—	●	●	●	●	●	—
	16 m (50 ft)	●	●	●	●	●	●	●	●
	33 m (100 ft)	●	●	●	●	●	●	●	●
Straight pipe	2 m	●	—	●	●	●	●	●	●
Color		Translucent (Material color)							
Applicable fluid		Refer to the "Applicable Fluid List" on page 356.							
Applicable fittings		Fluoropolymer fittings LQ series							
Max. operating pressure [MPa]	20°C	1.0	1.0	1.0	1.0	1.0	1.0	0.7	0.5
	100°C	0.59	0.92	0.62	0.73	0.62	0.43	0.26	0.19
	200°C	0.27	0.42	0.28	0.34	0.28	0.20	0.12	0.09
	260°C	0.11	0.17	0.12	0.14	0.12	0.08	0.05	0.04
Burst pressure (at 20°C) [MPa]		6.4	9.9	6.7	7.9	6.7	4.6	2.8	2.0
Min bending radius [mm]	Recommended radius	20	10	25	35	60	95	220	400
	Tube close bend radius	12	6	20	20	30	60	160	290
Max. operating temperature (Fixed use)		260°C							
Material		Super PFA							

Burst Pressure Drop Curve



How to measure the minimum bending radius



- When using the product at a temperature other than those shown in the table above, use it at a maximum operating pressure or less that is calculated from the following formula.
(Max. operating pressure) = 1/4 x (burst pressure drop coefficient) x (burst pressure at 20°C)
- When using a liquid fluid, the surge pressure must not exceed the maximum operating pressure. If the surge pressure exceeds the maximum operating pressure, it will result in damage to fittings and tubes. Furthermore, abnormal temperature rises caused by adiabatic compression may result in the tube bursting.
- Do not use this product in a manner in which the tube is not secured. Operate under the maximum operating pressure of either the tubing or the fitting, whichever value is lower. A material change over a long duration or due to high temperatures may cause leakage. Perform periodic maintenance and replace with a new product immediately when abnormalities are detected. (Refer to "Maintenance" in the tubing precautions on page 359.) For other precautions, refer to "Fittings & Tubing Precautions" on pages 349 to 353. When using the fluoropolymer fittings, refer to the precautions in the **Web Catalog**.
- The minimum bending radius is the representative value measured as shown in the figure on the left.
 - Use a tube above the recommended minimum bending radius.
 - The tube may kink if used under the recommended minimum bending radius. Therefore, refer to the tube close bend radius and make sure that the tube has not kinked or flattened.
 - Please note that the tube close bend radius is not warranted because it is the value at which the tubing kinks, is flattened, etc., when 2R is measured by the method in the figure on the left.
 - The minimum bending radius shown above does not apply to the straight pipe (2 m).
- As for other commercial items, there are some cases it is not able to connect due to tolerance of dimensions.

How to Order

TIL01-20

Tubing model

Length

Symbol	Type	Length
10	Roll	10 m
16		16 m (50 ft)
20		20 m
33		33 m (100 ft)
50		50 m
100		100 m
2S	Straight	2 m

Eluting fluorine ion amount*1 [µg/g]

Type	Fluorine ion
Eluting amount	0.1 or less

A 15 g piece of fluororesin tubing is cut off, washed in DI water (pure water) and immersed in 15 mL of 25% methyl alcohol extract at room temperature for 24 hours. Then the extract is diluted with DI water (pure water) to be subjected to a quantitative analysis of fluorine ions.

Eluting metal ion amount*1 [ng/cm²]

Type	Al	Fe	Ni	Na	Ca
Eluting amount	4.5	0.3	0.2	7.1	1.3

The interior of the fluororesin tubing is washed with super deionized water. Approximately 20 µg of super high purity hydrofluoric acid (48%) is measured and injected into the tubing. The interior wall of the tubing is immersed at normal temperature for one week with both ends of the tubing plugged. Then the extract was diluted with super deionized water to be subjected to a quantitative analysis on Al, Fe, Ni, Na and Ca by the stripping method.

Refer to the "Model/Specifications" as the tubing length differs depending on each size.

*1 Figures shown in tables are representative values, not guaranteed values.

Length per roll 10 m roll

O.D.	I.D.	Model
3/8"	1/4"	TIL11-10
1/2"	3/8"	TIL13-10

Length per roll 100 m roll

O.D.	I.D.	Model
1/8"	0.086"	TIL01-100
3/16"	1/8"	TIL05-100
1/4"	5/32"	TIL07-100
3/8"	1/4"	TIL11-100
1/2"	3/8"	TIL13-100
3/4"	5/8"	TIL19-100

Length per roll 50 Ft (16 m) roll

O.D.	I.D.	Model
1/8"	0.086"	TIL01-16
	1/16"	TILB01-16
3/16"	1/8"	TIL05-16
1/4"	5/32"	TIL07-16
3/8"	1/4"	TIL11-16
1/2"	3/8"	TIL13-16
3/4"	5/8"	TIL19-16
1"	7/8"	TIL25-16

Length per roll 20 m roll

O.D.	I.D.	Model
1/8"	0.086"	TIL01-20
3/16"	1/8"	TIL05-20
1/4"	5/32"	TIL07-20
3/8"	1/4"	TIL11-20
1/2"	3/8"	TIL13-20
3/4"	5/8"	TIL19-20
1"	7/8"	TIL25-20

Straight 2 m

O.D.	I.D.	Model
1/8"	0.086"	TIL01-2S
3/16"	1/8"	TIL05-2S
1/4"	5/32"	TIL07-2S
3/8"	1/4"	TIL11-2S
1/2"	3/8"	TIL13-2S
3/4"	5/8"	TIL19-2S
1"	7/8"	TIL25-2S

Length per roll 50 m roll

O.D.	I.D.	Model
1/8"	0.086"	TIL01-50
3/16"	1/8"	TIL05-50
1/4"	5/32"	TIL07-50
3/8"	1/4"	TIL11-50
1/2"	3/8"	TIL13-50
3/4"	5/8"	TIL19-50
1"	7/8"	TIL25-50

Length per roll 100 Ft (33 m) roll

O.D.	I.D.	Model
1/8"	0.086"	TIL01-33
	1/16"	TILB01-33
3/16"	1/8"	TIL05-33
1/4"	5/32"	TIL07-33
3/8"	1/4"	TIL11-33
1/2"	3/8"	TIL13-33
3/4"	5/8"	TIL19-33
1"	7/8"	TIL25-33

⚠ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions, pages 349 to 353 for fittings and tubing precautions, and page 359 for tubing precautions.

Fluoropolymer Tubing (PFA)

TLM Series

Tubing size: Metric Size

Material: PFA

How to Order

Corrosion Resistant

Heat Resistant



TLM0425 **N** - **20**

Symbol	Color
N	Translucent (Material color)
R	Red (Translucent)
BU	Blue (Translucent)
B	Black (Opaque)

Length per roll

Symbol	Type	Length
10	Roll	10 m
20		20 m
50		50 m
100		100 m
2S	Straight	2 m

* Refer to the "Model" below as the tubing length differs depending on each size.

Model

Size			Metric size														
Model			TLM0201	TLM0302	TLM0425	TLM0403	TLM0604	TLM0806	TLM1075	TLM1008	TLM1209	TLM1210	TLM1613	TLM1916	TLM2522		
Tubing size			ø2 x ø1	ø3 x ø2	ø4 x ø2.5	ø4 x ø3	ø6 x ø4	ø8 x ø6	ø10 x ø7.5	ø10 x ø8	ø12 x ø9	ø12 x ø10	ø16 x ø13	ø19 x ø16	ø25 x ø22		
Tubing O.D. [mm]			2	3	4	4	6	8	10	10	12	12	16	19	25		
Tubing I.D. [mm]			1	2	2.5	3	4	6	7.5	8	9	10	13	16	22		
Length per roll	Color	Symbol															
		Symbol															
Roll	10 m	Translucent	N	●	●	●	●	●	●	●	●	●	●	●	●	●	
		Translucent	N	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	20 m	Red (Translucent)	R	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Blue (Translucent)	BU	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Black (Opaque)	B	●	●	●	●	●	●	●	●	●	●	●	●	●	●
50 m	Translucent	N	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Translucent	N	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
100 m	Translucent	N	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Translucent	N	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Straight	2 m	Translucent	N	●	●	●	●	●	●	●	●	●	●	●	●	●	

Inch O.D. size
5/32"

Inch O.D. size
5/16"

O.D. 3.2 mm is available in ø1/8 inch (3.18 mm) tubing. For details, refer to the "Model" on page 323.

Specifications

Fluid ^{*1, 2, 3}	Fluid: Refer to "Applicable Fluid List" on page 357. Fittings: Fluoropolymer fittings LQ series
and applicable fittings ^{*1, 2, 3}	Fluid: Air, Water, Inert gas Fittings: One-touch fittings KQ2, KQG2, KQB2, Clean One-touch fittings KP, KP□ Insert fittings KF, KFG2, Miniature fittings M, MS (Hose nipple type)
Max. operating pressure [MPa]	Refer to the max. operating pressure curve.
Min. bending radius [mm] ^{*4}	10 20 20 35 35 60 95 100 100 130 160 220 400
Tube close bend radius	7 15 15 20 20 40 60 65 65 65 110 130 160 290
Max. operating temperature	260°C
Material	PFA (Tetrafluoroethylene perfluoroalkoxy vinyl ether copolymer)

*1 Fluid varies depending on the applicable fittings.

*2 When using a liquid fluid, the surge pressure must not exceed the maximum operating pressure. If the surge pressure exceeds the maximum operating pressure, it will result in damage to fittings and tubes. Furthermore, abnormal temperature rises caused by adiabatic compression may result in the tube bursting.

*3 Do not use this product in a manner in which the tube is not secured. Operate under the maximum operating pressure of either the tubing or the fitting, whichever value is lower. A material change over a long duration or due to high temperatures may cause leakage. Perform periodic maintenance and replace with a new product immediately when abnormalities are detected. (Refer to "Maintenance" in the tubing precautions on page 359.) For other precautions, refer to "Fittings & Tubing Precautions" on pages 349 to 353. When using the fluoropolymer fittings, refer to the precautions in the **Web Catalog**.

*4 The minimum bending radius using is the representative value measured as shown in the figure on the right.

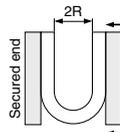
• Use a tube above the recommended minimum bending radius.

• The tube may kink if used under the recommended minimum bending radius. Therefore, refer to the tube close bend radius and make sure that the tube has not kinked or flattened.

• Please note that the tube close bend radius is not warranted because it is the value at which the tubing kinks, is flattened, etc., when 2R is measured by the method in the figure on the right.

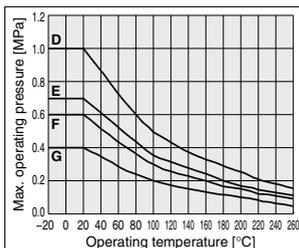
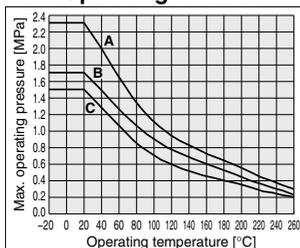
• The minimum bending radius shown above does not apply to the straight pipe (2 m).

How to measure the minimum bending radius



At a temperature of 20°C, bend the tubing into a U shape. Secure one end and gradually move the other end closer. Measure 2R at the point where the outside diameter's rate of change is 5%.

Max. Operating Pressure



Group	Model	Max. operating pressure [MPa]			
		20°C	100°C	200°C	260°C
A	TLM0201	2.3	1.1	0.55	0.3
B	TLM0425	1.7	0.9	0.45	0.23
C	TLM0302 TLM0604	1.5	0.7	0.35	0.2
D	TLM0403 TLM0806 TLM1075 TLM1209	1	0.5	0.25	0.15
E	TLM1008 TLM1613	0.7	0.35	0.17	0.11
F	TLM1210 TLM1916	0.6	0.3	0.15	0.1
G	TLM2522	0.4	0.2	0.1	0.05

Length per roll 10 m roll

O.D.	I.D.	Color (Symbol)	Model
10	7.5	Translucent (N)	TLM1075N-10
10	8		TLM1008N-10
12	9		TLM1209N-10
12	10		TLM1210N-10
16	13		TLM1613N-10
19	16		TLM1916N-10

Length per roll 20 m roll

O.D.	I.D.	Model
2	1	TLM0201 Color symbol -20
3	2	TLM0302 Color symbol -20
4	2.5	TLM0425 Color symbol -20
4	3	TLM0403 Color symbol -20
6	4	TLM0604 Color symbol -20
8	6	TLM0806 Color symbol -20
10	7.5	TLM1075 Color symbol -20
10	8	TLM1008 Color symbol -20
12	9	TLM1209 Color symbol -20
12	10	TLM1210 Color symbol -20
16	13	TLM1613 Color symbol -20
19	16	TLM1916 Color symbol -20
25	22	TLM2522 Color symbol -20

Color symbol -N: Translucent, R: Red/Translucent, BU: Blue/Translucent, B: Black/Opaque

Length per roll 50 m roll

O.D.	I.D.	Color (Symbol)	Model
2	1	Translucent (N)	TLM0201N-50
3	2		TLM0302N-50
4	2.5		TLM0425N-50
4	3		TLM0403N-50
6	4		TLM0604N-50
8	6		TLM0806N-50
10	7.5		TLM1075N-50
10	8		TLM1008N-50
12	9		TLM1209N-50
12	10		TLM1210N-50
16	13		TLM1613N-50
19	16		TLM1916N-50
25	22		TLM2522N-50

Length per roll 100 m roll

O.D.	I.D.	Color (Symbol)	Model
2	1	Translucent (N)	TLM0201N-100
3	2		TLM0302N-100
4	2.5		TLM0425N-100
4	3		TLM0403N-100
6	4		TLM0604N-100
8	6		TLM0806N-100
10	7.5		TLM1075N-100
10	8		TLM1008N-100
12	9		TLM1209N-100
12	10		TLM1210N-100
16	13		TLM1613N-100
19	16		TLM1916N-100

Straight 2 m

O.D.	I.D.	Color (Symbol)	Model
2	1	Translucent (N)	TLM0201N-2S
3	2		TLM0302N-2S
4	2.5		TLM0425N-2S
4	3		TLM0403N-2S
6	4		TLM0604N-2S
8	6		TLM0806N-2S
10	7.5		TLM1075N-2S
10	8		TLM1008N-2S
12	9		TLM1209N-2S
12	10		TLM1210N-2S
16	13		TLM1613N-2S
19	16		TLM1916N-2S
25	22		TLM2522N-2S

⚠ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions, pages 349 to 353 for fittings and tubing precautions, and page 359 for tubing precautions.

Fluoropolymer Tubing (PFA)

TILM Series

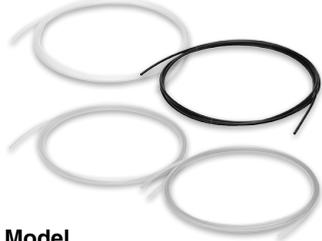
Tubing size: Inch Size

Corrosion Resistant

Heat Resistant

Material: PFA

How to Order



TILM01 N - 20

Tubing model

Color

Symbol	Color
N	Translucent (Material color)
R	Red (Translucent)
BU	Blue (Translucent)
B	Black (Opaque)

Length per roll

Symbol	Type	Length
10	Roll	10 m
20		20 m
50		50 m
100		100 m
16		16 m (50 ft)
33		33 m (100 ft)
2S	Straight	2 m

* Refer to the "Model" below as the tubing length differs depending on each size.

Model

Model	Size	Inch size								
	TILM01	TILMB01	TILM05	TILM07	TILM11	TILM13	TILM19	TILM25	TILM32	
Tubing size	1/8" x 0.086"	1/8" x 1/16"	3/16" x 1/8"	1/4" x 5/32"	3/8" x 1/4"	1/2" x 3/8"	3/4" x 5/8"	1" x 7/8"	1 1/4" x 1 1/10"	
Tubing O.D.	inch	1/8"	1/8"	3/16"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"
	mm	3.18	3.18	4.75	6.35	9.53	12.7	19.05	25.4	31.75
Tubing I.D.	inch	0.086"	1/16"	1/8"	5/32"	1/4"	3/8"	5/8"	7/8"	1 1/10"
	mm	2.18	1.58	3.15	3.95	6.33	9.5	15.85	22.2	27.95

Length per roll	Color	Symbol											
			TILM01	TILMB01	TILM05	TILM07	TILM11	TILM13	TILM19	TILM25	TILM32		
Roll	10 m	Translucent	N	●	●	●	●	●	●	●	●	●	●
		Red (Translucent)	R	●	●	●	●	●	●	●	●	●	●
	20 m	Blue (Translucent)	BU	●	●	●	●	●	●	●	●	●	●
		Black (Opaque)	B	●	●	●	●	●	●	●	●	●	●
Roll	50 m	Translucent	N	●	●	●	●	●	●	●	●	●	●
		Red (Translucent)	R	●	●	●	●	●	●	●	●	●	●
	100 m	Blue (Translucent)	BU	●	●	●	●	●	●	●	●	●	●
		Black (Opaque)	B	●	●	●	●	●	●	●	●	●	●
Roll	16 m (50 ft)	Translucent	N	●	●	●	●	●	●	●	●	●	●
		Red (Translucent)	R	●	●	●	●	●	●	●	●	●	●
	33 m (100 ft)	Translucent	N	●	●	●	●	●	●	●	●	●	●
		Red (Translucent)	R	●	●	●	●	●	●	●	●	●	●
Straight	2 m	Translucent	N	●	●	●	●	●	●	●	●	●	

Metric O.D. size
3.2

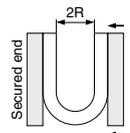
O.D. 5/32" is available in ø4 metric tubing, and O.D. 5/16" is available in ø8 metric tubing. For details, refer to the "Model" on page 321.

Specifications

Fluid*1, 2, 3 and applicable fittings*1, 2, 3	Fluid: Refer to "Applicable Fluid List" on page 357. Fittings: Fluoropolymer fittings LQ series									
Max. operating pressure [MPa]	Fluid: Air, Water, Inert gas	Fittings: One-touch fittings KQ2, KQG2, KQB2, Insert fittings KFG2								
Min. bending radius [mm]**	Refer to the max. operating pressure curve.									
Tube close bend radius	20	10	25	35	60	95	220	400	500	
Max. operating temperature	260°C									
Material	PFA (Tetrafluoroethylene perfluoroalkoxy vinyl ether copolymer)									

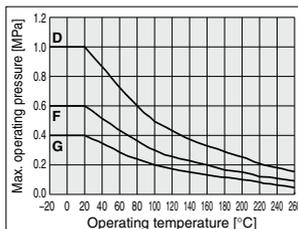
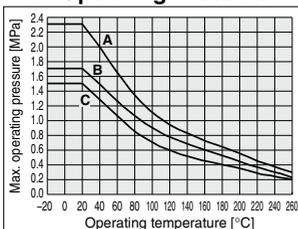
- Fluid varies depending on the applicable fittings.
- When using a liquid fluid, the surge pressure must not exceed the maximum operating pressure. If the surge pressure exceeds the maximum operating pressure, it will result in damage to fittings and tubes. Furthermore, abnormal temperature rises caused by adiabatic compression may result in the tube bursting.
- Do not use this product in a manner in which the tube is not secured. Operate under the maximum operating pressure of either the tubing or the fitting, whichever value is lower. A material change over a long duration or due to high temperatures may cause leakage. Perform periodic maintenance and replace with a new product immediately when abnormalities are detected. (Refer to "Maintenance" in the tubing precautions on page 359.) For other precautions, refer to "Fittings & Tubing Precautions" on pages 349 to 353. When using the fluoropolymer fittings, refer to the precautions in the [Web Catalog](#).
- The minimum bending radius is the representative value measured as shown in the figure on the right.
 - Use a tube above the recommended minimum bending radius.
 - The tube may kink if used under the recommended minimum bending radius. Therefore, refer to the tube close bend radius and make sure that the tube has not kinked or flattened.
 - Please note that the tube close bend radius is not warranted because it is the value at which the tubing kinks, is flattened, etc., when 2R is measured by the method in the figure on the right.
 - The minimum bending radius shown above does not apply to the straight pipe (2 m).

How to measure the minimum bending radius



At a temperature of 20°C, bend the tubing into a U shape. Secure one end and gradually move the other end closer. Measure 2R at the point where the outside diameter's rate of change is 5%.

Max. Operating Pressure



Group	Model	Max. operating pressure [MPa]			
		20°C	100°C	200°C	260°C
A	TILMB01	2.3	1.1	0.55	0.3
B	TILM07	1.7	0.9	0.45	0.23
C	TILM05	1.5	0.7	0.35	0.2
	TILM11				
D	TILM01	1	0.5	0.25	0.15
	TILM13				
F	TILM19	0.6	0.3	0.15	0.1
G	TILM25	0.4	0.2	0.1	0.05
	TILM32				

Length per roll 10 m roll

O.D.	I.D.	Color (Symbol)	Model
3/8"	1/4"	Translucent (N)	TILM11N-10
1/2"	3/8"		TILM13N-10

Length per roll 20 m roll

O.D.	I.D.	Model
1/8"	0.086"	TILM01 <small>[Color symbol]</small> -20
1/8"	1/16"	TILMB01 <small>[Color symbol]</small> -20
3/16"	1/8"	TILM05 <small>[Color symbol]</small> -20
1/4"	5/32"	TILM07 <small>[Color symbol]</small> -20
3/8"	1/4"	TILM11 <small>[Color symbol]</small> -20
1/2"	3/8"	TILM13 <small>[Color symbol]</small> -20
3/4"	5/8"	TILM19 <small>[Color symbol]</small> -20
1"	7/8"	TILM25 <small>[Color symbol]</small> -20
1 1/4"	1 1/10"	TILM32 <small>[Color symbol]</small> -20

[Color symbol]-N: Translucent, R: Red/Translucent, BU: Blue/Translucent, B: Black/Opaque

Length per roll 50 m roll

O.D.	I.D.	Color (Symbol)	Model
1/8"	0.086"	Translucent (N)	TILM01N-50
3/16"	1/8"		TILM05N-50
1/4"	5/32"		TILM07N-50
3/8"	1/4"		TILM11N-50
1/2"	3/8"		TILM13N-50
3/4"	5/8"		TILM19N-50
1"	7/8"		TILM25N-50
1 1/4"	1 1/10"		TILM32N-50

Length per roll 100 m roll

O.D.	I.D.	Color (Symbol)	Model
1/8"	0.086"	Translucent (N)	TILM01N-100
3/16"	1/8"		TILM05N-100
1/4"	5/32"		TILM07N-100
3/8"	1/4"		TILM11N-100
1/2"	3/8"		TILM13N-100
3/4"	5/8"		TILM19N-100

Straight 2 m

O.D.	I.D.	Color (Symbol)	Model
1/8"	0.086"	Translucent (N)	TILM01N-2S
3/16"	1/8"		TILM05N-2S
1/4"	5/32"		TILM07N-2S
3/8"	1/4"		TILM11N-2S
1/2"	3/8"		TILM13N-2S
3/4"	5/8"		TILM19N-2S
1"	7/8"		TILM25N-2S
1 1/4"	1 1/10"		TILM32N-2S

Length per roll 50 Ft (16 m) roll

O.D.	I.D.	Color (Symbol)	Model
1/8"	0.086"	Translucent (N)	TILM01N-16
1/8"	1/16"		TILMB01N-16
3/16"	1/8"		TILM05N-16
1/4"	5/32"		TILM07N-16
3/8"	1/4"		TILM11N-16
1/2"	3/8"		TILM13N-16
3/4"	5/8"		TILM19N-16
1"	7/8"		TILM25N-16
1 1/4"	1 1/10"		TILM32N-16

Length per roll 100 Ft (33 m) roll

O.D.	I.D.	Color (Symbol)	Model
1/8"	0.086"	Translucent (N)	TILM01N-33
1/8"	1/16"		TILMB01N-33
3/16"	1/8"		TILM05N-33
1/4"	5/32"		TILM07N-33
3/8"	1/4"		TILM11N-33
1/2"	3/8"		TILM13N-33
3/4"	5/8"		TILM19N-33
1"	7/8"		TILM25N-33
1 1/4"	1 1/10"		TILM32N-33

⚠ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions, pages 349 to 353 for fittings and tubing precautions, and page 359 for tubing precautions.

FEP Tubing (Fluoropolymer)

TH Series

Tubing size: Metric Size

Corrosion Resistant

Heat Resistant

Operating temperature: Max. 200°C

It varies depending on the operating pressure. Refer to the graph for the maximum operating pressure.

Compatible with the Food Sanitation Law

- Compatible with the test conforming to the Food Sanitation Law based on the 370th notice given by the Ministry of Health and Welfare in 1959.
- Complies with FDA (Food and Drug Administration) §177-1550 dissolution test.



How to Order

TH0604 N - 20

Tubing model

Color

Symbol	Color
N	Translucent (Material color)
R	Red (Translucent)
BU	Blue (Translucent)
B	Black (Opaque)

Length per roll

Symbol	Length
20	20 m roll
100 ^{*1}	100 m roll

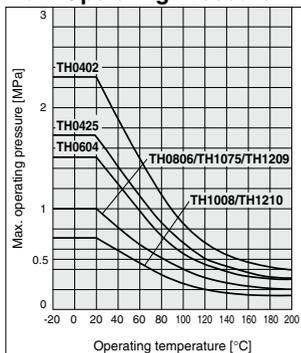
*1 100 m roll is available with translucent (color indication: N) only.

Model

● - 20 m roll □ - 100 m roll

Model	Metric size							
	TH0402	TH0425	TH0604	TH0806	TH1075	TH1008	TH1209	TH1210
Tubing O.D. [mm]	4		6	8	10		12	
Tubing I.D. [mm]	2	2.5	4	6	7.5	8	9	10
Translucent (N)	●	●	●	●	●	●	●	●
Red (Translucent) (R)	●	●	●	●	●	●	●	●
Blue (Translucent) (BU)	●	●	●	●	●	●	●	●
Black (Opaque) (B)	●	●	●	●	●	●	●	●
Inch nominal size	5/32"				5/16"			

Max. Operating Pressure



* The maximum operating pressure varies dependent on the I.D. bore size even if the O.D. is the same.

Specifications

Applicable fluid	Refer to the "Applicable Fluid List" on page 358.							
Fluid	Air, Water* ¹ , Inert gas							
Applicable fittings* ²	One-touch fittings, Insert fittings, Fluoropolymer fittings LQ* ³ series, Miniature fittings M, MS series (Hose nipple type)							
Max. operating pressure [MPa]	20°C	2.3	1.7	1.5	1	0.7	1	0.7
	100°C	0.85	0.6	0.55	0.4	0.25	0.4	0.25
	200°C	0.4	0.3	0.3	0.2	0.1	0.2	0.1
Refer to the max. operating pressure curve.								
Min. bending radius [mm] ⁴	Recommended radius	15	20	35	60	95	100	130
	Tube close bend radius	10	15	20	40	60	65	110
Operating temperature	Air, Inert gas: -20 to 200°C Water: 0 to 100°C (No freezing)							
Material	FEP (Fluorinated Ethylene Propylene Resin)							

*1 When using a liquid fluid, the surge pressure must not exceed the maximum operating pressure. If the surge pressure exceeds the maximum operating pressure, it will result in damage to fittings and tubes. Furthermore, abnormal temperature rises caused by adiabatic compression may result in the tube bursting.

*2 Do not use in locations where the FEP tubing will move. Be sure to operate under the maximum operating pressure conditions using the lower maximum operating specification of either the tubing or fittings. After long term use or under high temperatures, some fittings leakage may occur due to material deterioration with age. Perform periodic inspections, and if any leakage is detected, replace with a new product immediately.

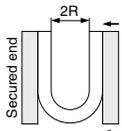
When the insert and miniature fittings are used over extended periods of time, it may cause leakage due to the material deterioration of age. In such a case, give an additional tightening to the tube connection part. If leakage still occurs after giving an additional tightening, replace the fitting with a new product. For other precautions, refer to "Fittings & Tubing Precautions." When using fluoropolymer fittings, refer to the precautions in the **Web Catalog**. Also, please select an applicable tubing size while carefully checking the O.D. and I.D. sizes.

*3 TH0402, TH0425, TH1075, and TH1209 are not available because of different internal diameters.

*4 The minimum bending radius is the representative value measured as shown in the figure on the left.

- Use a tube above the recommended minimum bending radius.
- The tube may kink if used under the recommended minimum bending radius. Therefore, refer to the tube close bend radius and make sure that the tube has not kinked or flattened.
- Please note that the tube close bend radius is not warranted because it is the value at which the tubing kinks, is flattened, etc., when 2R is measured by the method in the figure on the left.

How to measure the minimum bending radius



At a temperature of 20°C, bend the tubing into a U shape. Secure one end and gradually move the other end closer. Measure 2R at the point where the outside diameter's rate of change is 5%.

Length per roll **20** m roll

O.D.	I.D.	Color (Symbol)	Model		
4	2	Translucent (N)	TH0402 Color symbol -20		
		Red (R)			
		Blue (BU)			
		Black (B)			
	2.5	Translucent (N)	TH0425 Color symbol -20		
		Red (R)			
		Blue (BU)			
		Black (B)			
		6		Translucent (N)	TH0604 Color symbol -20
				Red (R)	
				Blue (BU)	
				Black (B)	
8	Translucent (N)	TH0806 Color symbol -20			
	Red (R)				
	Blue (BU)				
	Black (B)				
10	7.5	Translucent (N)	TH1075 Color symbol -20		
		Red (R)			
		Blue (BU)			
		Black (B)			
	8	Translucent (N)	TH1008 Color symbol -20		
		Red (R)			
		Blue (BU)			
		Black (B)			
	12	9	Translucent (N)	TH1209 Color symbol -20	
			Red (R)		
			Blue (BU)		
			Black (B)		
10		Translucent (N)	TH1210 Color symbol -20		
		Red (R)			
		Blue (BU)			
		Black (B)			

Red and blue are translucent. Black is opaque.

Length per roll **100** m roll

O.D.	I.D.	Color (Symbol)	Model
4	2	Translucent (N)	TH0402N-100
	2.5		TH0425N-100
6	TH0604N-100		
8	TH0806N-100		
10	7.5		TH1075N-100
	8		TH1008N-100
12	9		TH1209N-100
	10		TH1210N-100



Made to Order

1 Reinforced Corrugated Cardboard Specification/Longer Length Reel **X64**

O.D.	I.D.	Model	Length per roll [m]
6	4	TH0604N-250-X64	250
		TH0604N-500-X64	500

N: Translucent

⚠ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions, pages 349 to 353 for fittings and tubing precautions, and page 359 for tubing precautions.

FEP Tubing (Fluoropolymer)

TIH Series

Tubing size: Inch Size

Corrosion Resistant

Heat Resistant

Operating temperature: Max. 200°C

It varies depending on the operating pressure. Refer to the graph for the maximum operating pressure.

Compatible with the Food Sanitation Law

- Compatible with the test conforming to the Food Sanitation Law based on the 370th notice given by the Ministry of Health and Welfare in 1959.
- Complies with FDA (Food and Drug Administration) §177-1550 dissolution test.



How to Order

TIHA01 N - 16

Tubing model

Color

Length per roll

Symbol	Color
N	Translucent (Material color)
R	Red (Translucent)
BU	Blue (Translucent)
B	Black (Opaque)

Symbol	Length
16	16 m (50 ft) roll
33 ^{*1}	33 m (100 ft) roll

*1 33 m (100 ft) roll is available with translucent (color indication: N) only.

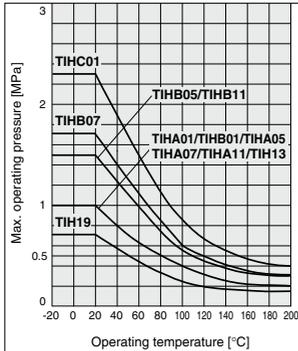
Model

● -50Ft (16 m) roll □ -100 Ft (33 m) roll

Model	Inch size										
	TIHA01	TIHB01	TIHC01	TIHA05	TIHB05	TIHA07	TIHB07	TIHA11	TIHB11	TIH13	TIH19
Tubing O.D.	1/8"		3/16"		1/4"		3/8"		1/2"		3/4"
	3.18		4.75		6.35		9.53		12.7		19.05
Tubing I.D.	0.093"	0.086"	0.065"	0.137"	0.124"	0.18"	0.156"	0.275"	0.25"	0.374"	0.624"
	2.36	2.18	1.65	3.48	3.15	4.57	3.95	6.99	6.33	9.5	15.85

Translucent (N)	●	●	●	●	●	●	●	●	●	●	●
Red (Translucent) (R)	●	●	●	●	●	●	●	●	●	●	●
Blue (Translucent) (BU)	●	●	●	●	●	●	●	●	●	●	●
Black (Opaque) (B)	●	●	●	●	●	●	●	●	●	●	●

Max. Operating Pressure



* The maximum operating pressure varies dependant on the I.D. bore size even if the O.D. is the same.

Specifications

Applicable fluid	Refer to the "Applicable Fluid List" on page 358.											
Fluid	Air, Water ^{*1} , Inert gas											
Applicable fittings ^{*2}	One-touch fittings, Insert fittings, Fluoropolymer fittings LQ ^{*3} series											
Max. operating pressure [MPa]	20°C	1	2.3	1	1.5	1	1.7	1	1.5	1	0.7	
	100°C	0.4	0.85	0.4	0.55	0.4	0.6	0.4	0.55	0.4	0.25	
	200°C	0.2	0.4	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.1	
Refer to the max. operating pressure curve.												
Min. bending radius [mm] ¹⁴	Recommended radius	25	20	10	35	25	55	35	85	60	95	220
	Tube close bend radius	20	12	7	25	20	35	20	55	30	60	160
Operating temperature	Air, Inert gas: -20 to 200°C Water: 0 to 100°C (No freezing)											
Material	FEP (Fluorinated Ethylene Propylene Resin)											

*1 When using a liquid fluid, the surge pressure must not exceed the maximum operating pressure. If the surge pressure exceeds the maximum operating pressure, it will result in damage to fittings and tubes. Furthermore, abnormal temperature rises caused by adiabatic compression may result in the tube bursting.

*2 Do not use in locations where the FEP tubing will move. Be sure to operate under the maximum operating pressure conditions using the lower maximum operating specification of either the tubing or fittings. After long term use or under high temperatures, some fittings leakage may occur due to material deterioration with age. Perform periodic inspections, and if any leakage is detected, replace with a new product immediately.

When the insert and miniature fittings are used over extended periods of time, it may cause leakage due to the material deterioration of age. In such a case, give an additional tightening to the tube connection part. If leakage still occurs after giving an additional tightening, replace the fitting with a new product.

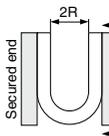
For other precautions, refer to "Fittings & Tubing Precautions." When using fluoropolymer fittings, refer to the precautions in the **Web Catalog**. Also, please select an applicable tubing size while carefully checking the O.D. and I.D. sizes.

*3 TIHA01, TIHC01, TIHA05, TIHA07, and TIHA11 are not available because of different internal diameters.

*4 The minimum bending radius is the representative value measured as shown in the figure on the left.

- Use a tube above the recommended minimum bending radius.
- The tube may kink if used under the recommended minimum bending radius. Therefore, refer to the tube close bend radius and make sure that the tube has not kinked or flattened.
- Please note that the tube close bend radius is not warranted because it is the value at which the tubing kinks, is flattened, etc., when 2R is measured by the method in the figure on the left.

How to measure the minimum bending radius



At a temperature of 20°C, bend the tubing into a U shape. Secure one end and gradually move the other end closer. Measure 2R at the point where the outside diameter's rate of change is 5%.

Length per roll **50 Ft (16 m)** roll

O.D.	I.D.	Color (Symbol)	Model
1/8"	0.093"	Translucent (N)	TIHA01 [Color symbol]-16
		Red (R)	
		Blue (BU)	
		Black (B)	
	0.086"	Translucent (N)	TIHB01 [Color symbol]-16
		Red (R)	
		Blue (BU)	
		Black (B)	
	0.065"	Translucent (N)	TIHC01 [Color symbol]-16
		Red (R)	
		Blue (BU)	
		Black (B)	
3/16"	0.137"	Translucent (N)	TIHA05 [Color symbol]-16
		Red (R)	
		Blue (BU)	
		Black (B)	
	0.124" (1/8")	Translucent (N)	TIHB05 [Color symbol]-16
		Red (R)	
		Blue (BU)	
		Black (B)	
1/4"	0.18"	Translucent (N)	TIHA07 [Color symbol]-16
		Red (R)	
		Blue (BU)	
		Black (B)	
	0.156" (5/32")	Translucent (N)	TIHB07 [Color symbol]-16
		Red (R)	
		Blue (BU)	
		Black (B)	
3/8"	0.275"	Translucent (N)	TIHA11 [Color symbol]-16
		Red (R)	
		Blue (BU)	
		Black (B)	
	0.25" (1/4")	Translucent (N)	TIHB11 [Color symbol]-6
		Red (R)	
		Blue (BU)	
		Black (B)	
1/2"	0.374" (3/8")	Translucent (N)	TIH13 [Color symbol]-16
		Red (R)	
		Blue (BU)	
		Black (B)	
3/4"	0.624" (5/8")	Translucent (N)	TIH19 [Color symbol]-16
		Red (R)	
		Blue (BU)	
		Black (B)	

Red and blue are translucent. Black is opaque.

Length per roll **100 Ft (33 m)** roll

O.D.	I.D.	Color (Symbol)	Model
1/8"	0.093"	Translucent (N)	TIHA01N-33
	0.086"		TIHB01N-33
	0.065"		TIHC01N-33
3/16"	0.137"	Translucent (N)	TIHA05N-33
	0.124" (1/8")		TIHB05N-33
1/4"	0.18"	Translucent (N)	TIHA07N-33
	0.156" (5/32")		TIHB07N-33
3/8"	0.275"	Translucent (N)	TIHA11N-33
	0.25" (1/4")		TIHB11N-33
1/2"	0.374" (3/8")	Translucent (N)	TIH13N-33
3/4"	0.624" (5/8")	Translucent (N)	TIH19N-33

⚠ Precautions

Be sure to read this before handling the products. Refer to page 347 for safety instructions, pages 349 to 353 for fittings and tubing precautions, and page 359 for tubing precautions.

- T
- TS
- TU
- TUS
- TUH
- TUZ
- TCU
- TFU
- TRS
- TRB
- TRBU
- TRTU
- TQ
- TAS
- TAU
- TL/TIL
- TLM/TILM
- TH/TIH
- TD/TID
- TPH
- TPS
- IDK
- Related

Soft Fluoropolymer Tubing

TD/TID Series

Tubing size: Metric Size, Inch Size

Flexibility: Improved by approx. 20%

* SMC comparison (Fluoropolymer tubing TL/TIL series)

Applications: Food, Semiconductor, Medical, Automobile, Machine tools

Compatible with the Food Sanitation Law

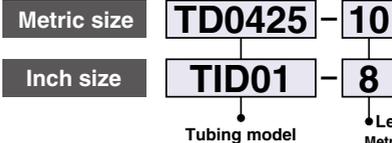
- Compatible with the test conforming to the Food Sanitation Law based on the 370th notice given by the Ministry of Health and Welfare in 1959.
- Complies with FDA (Food and Drug Administration) §177-1550 dissolution test.



Corrosion Resistant

Heat Resistant

How to Order



• Length per roll
Metric size

Symbol	Length
10	10 m roll
20	20 m roll

Inch size

Symbol	Length
8	8 m (25 ft) roll
16	16 m (50 ft) roll

Model

● -10 m roll □ -20 m roll

● -25 Ft (8 m) roll □ -50 Ft (16 m) roll

Model	Tubing size					Tubing size					
	Metric size					Inch size					
	TD0425	TD0604	TD0806	TD1075	TD1209	TID01	TID05	TID07	TID11	TID13	
Tubing O.D.	inch	—					1/8"	3/16"	1/4"	3/8"	1/2"
	mm	4	6	8	10	12	3.18	4.75	6.35	9.53	12.7
Tubing I.D.	inch	—					0.086"	0.124"	0.156"	0.25"	0.374"
	mm	2.5	4	6	7.5	9	2.18	3.15	3.95	6.33	9.5
Translucent (Material color)	□	□	□	□	□	□	□	□	□	□	

Specifications

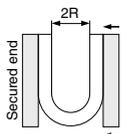
Applicable fluid	Refer to the "Applicable Fluid List" on page 356.					Refer to the "Applicable Fluid List" on page 356.					
Fluid	Air, Water*1, Inert gas					Air, Water*1, Inert gas					
Applicable fittings*2	Insert fittings KF series Stainless steel 316 insert fittings KFG2 series Miniature fittings M, MS series (Hose nipple type) Fluoropolymer fittings LQ series					Stainless steel 316 insert fittings KFG2 series Fluoropolymer fittings LQ series					
	Max. operating pressure [MPa]	20°C	1.6	1.4	0.9	0.9	0.9	1.4	1.4	1.6	1.4
Min. bending radius [mm] ³	100°C	0.9	0.7	0.5	0.5	0.5	0.7	0.7	0.9	0.7	0.5
	200°C	0.45	0.35	0.25	0.25	0.25	0.35	0.35	0.45	0.35	0.25
Max. operating temperature (Fluid use)	260°C	0.23	0.2	0.15	0.15	0.15	0.2	0.2	0.23	0.2	0.15
	Recommended radius	15	25	45	55	75	15	20	25	40	75
Material	Tube close bend radius	8	16	31	35	41	9	10	15	23	42
	Modified PTFE (Polytetrafluoroethylene resin)	260°C					260°C				



Precautions

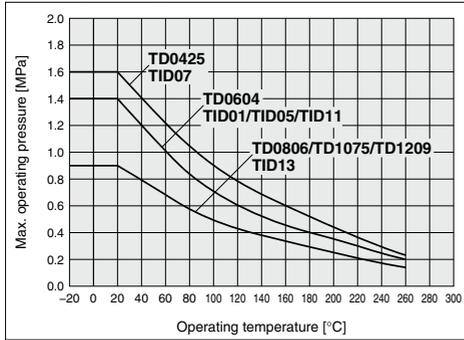
Be sure to read this before handling the products. Refer to page 347 for safety instructions, pages 349 to 353 for fittings and tubing precautions, and page 359 for tubing precautions.

How to measure the minimum bending radius



At a temperature of 20°C, bend the tubing into a U shape. Secure one end and gradually move the other end closer. Measure 2R at the point where the outside diameter's rate of change is 5%.

- *1 When using a liquid fluid, the surge pressure must not exceed the maximum operating pressure. If the surge pressure exceeds the maximum operating pressure, it will result in damage to fittings and tubes. Furthermore, abnormal temperature rises caused by adiabatic compression may result in the tube bursting.
- *2 Do not use this product in a manner in which the tube is not secured. Operate under the maximum operating pressure of either the tubing or the fitting, whichever value is lower. A material change over a long duration or due to high temperatures may cause leakage. Perform periodic maintenance and replace with a new product immediately when abnormalities are detected. (Refer to "Maintenance" in the tubing precautions on page 359.) For other precautions, refer to "Fittings & Tubing Precautions" on pages 349 to 353. When using the fluoropolymer fittings, refer to the precautions in the **Web Catalog**.
- *3 The minimum bending radius is the representative value measured as shown in the figure on the left.
 - Use a tube above the recommended minimum bending radius.
 - The tube may kink if used under the recommended minimum bending radius. Therefore, refer to the tube close bend radius and make sure that the tube has not kinked or flattened.
 - Please note that the tube close bend radius is not warranted because it is the value at which the tubing kinks, is flattened, etc., when 2R is measured by the method in the figure on the left.

Max. Operating Pressure**Metric Size****Length per roll 10 m roll**

O.D.	I.D.	Color	Model
4	2.5	Translucent (Material color)	TD0425-10
6	4		TD0604-10
8	6		TD0806-10
10	7.5		TD1075-10
12	9		TD1209-10

Length per roll 20 m roll

O.D.	I.D.	Color	Model
4	2.5	Translucent (Material color)	TD0425-20
6	4		TD0604-20
8	6		TD0806-20
10	7.5		TD1075-20
12	9		TD1209-20

Inch Size**Length per roll 25 Ft (8 m) roll**

O.D.	I.D.	Color	Model
1/8"	0.086"	Translucent (Material color)	TID01-8
3/16"	0.124" (1/8")		TID05-8
1/4"	0.156" (5/32")		TID07-8
3/8"	0.25" (1/4")		TID11-8
1/2"	0.374" (3/8")		TID13-8

Length per roll 50 Ft (16 m) roll

O.D.	I.D.	Color	Model
1/8"	0.086"	Translucent (Material color)	TID01-16
3/16"	0.124" (1/8")		TID05-16
1/4"	0.156" (5/32")		TID07-16
3/8"	0.25" (1/4")		TID11-16
1/2"	0.374" (3/8")		TID13-16

Clean Tubing: Polyolefin Tubing

TPH Series

Tubing size: Metric Size

Clean

How to Order



TPH0604 B - 20

Tubing model

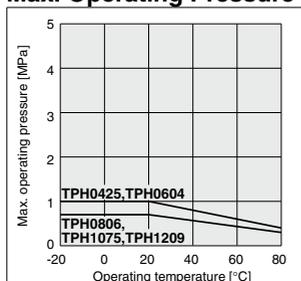
Color

Length per roll

Symbol	Color
W	White (Material color)
B	Black (Opaque)
R	Red (Opaque)
BU	Blue (Opaque)
Y	Yellow (Opaque)
G	Green (Opaque)

Symbol	Length
20	20 m roll
100	100 m roll

Max. Operating Pressure



Model

● -20 m roll □ -100 m roll

Model	Tubing size				
	Metric size				
	TPH0425	TPH0604	TPH0806	TPH1075	TPH1209
Tubing O.D. [mm]	4	6	8	10	12
Tubing I.D. [mm]	2.5	4	6	7.5	9
White (W)	●	●	●	●	●
Black (B)	●	●	●	●	●
Red (R)	●	●	●	●	●
Blue (BU)	●	●	●	●	●
Yellow (Y)	●	●	●	●	●
Green (G)	●	●	●	●	●

Specifications

Fluid		Air, Nitrogen gas, Water, DI water (Pure water)*1				
Max. operating pressure [MPa]	20°C	1	1	0.7	0.7	0.7
	40°C	0.8	0.8	0.57	0.57	0.57
	60°C	0.6	0.6	0.43	0.43	0.43
	80°C	0.4	0.4	0.3	0.3	0.3
Min. bending radius [mm]		15	25	35	45	55
Applicable fittings		Clean One-touch fittings Metal One-touch fittings KQB2 series Stainless steel 316 One-touch fittings KQG2 series Insert fittings				
Operating temperature		-20 to 80°C, Water: 5 to 80°C				
Material		Polyolefin resin				

- *1 Please consult with SMC regarding other fluids.
- * Abnormal temperature rises caused by adiabatic compression may result in the tube bursting.
- * The minimum bending radius indicates the value at a temperature of 20°C with an outside diameter rate of change of 10% or less.
- * Polyolefin resin is not suitable for regular pneumatic equipment piping because it is not resistant to mineral oil.

Length per roll **20** m roll

O.D.	I.D.	Color (Symbol)	Model
4	2.5	White (W)	TPH0425 [Color symbol]-20
		Black (B)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
6	4	Green (G)	TPH0604 [Color symbol]-20
		White (W)	
		Black (B)	
		Red (R)	
		Blue (BU)	
8	6	Yellow (Y)	TPH0806 [Color symbol]-20
		Green (G)	
		White (W)	
		Black (B)	
		Red (R)	
10	7.5	Blue (BU)	TPH1075 [Color symbol]-20
		Yellow (Y)	
		Green (G)	
		White (W)	
		Black (B)	
12	9	Red (R)	TPH1209 [Color symbol]-20
		Blue (BU)	
		Yellow (Y)	
		Green (G)	
		White (W)	

Length per roll **100** m roll

O.D.	I.D.	Color (Symbol)	Model
4	2.5	White (W)	TPH0425 [Color symbol]-100
		Black (B)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
6	4	Green (G)	TPH0604 [Color symbol]-100
		White (W)	
		Black (B)	
		Red (R)	
		Blue (BU)	
8	6	Yellow (Y)	TPH0806 [Color symbol]-100
		Green (G)	
		White (W)	
		Black (B)	
		Red (R)	
10	7.5	Blue (BU)	TPH1075 [Color symbol]-100
		Yellow (Y)	
		Green (G)	
		White (W)	
		Black (B)	
12	9	Red (R)	TPH1209 [Color symbol]-100
		Blue (BU)	
		Yellow (Y)	
		Green (G)	
		White (W)	

- T
- TS
- TU
- TUS
- TUH
- TUZ
- TCU
- TFU
- TRS
- TRB
- TRBU
- TRTU
- TQ
- TAS
- TAU
- TL/TIL
- TLM/TILM
- TH/TIH
- TD/TID
- TPH**
- TPS
- IDK
- Related

Clean Tubing: Soft Polyolefin Tubing

TPS Series

Tubing size: Metric Size

Clean

How to Order



TPS0604 **B** - **20**

Tubing model

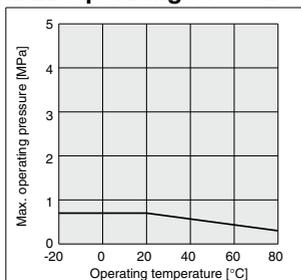
Color

Length per roll

Symbol	Color
W	White (Material color)
B	Black (Opaque)
R	Red (Opaque)
BU	Blue (Opaque)
Y	Yellow (Opaque)
G	Green (Opaque)

Symbol	Length
20	20 m roll
100	100 m roll

Max. Operating Pressure



Model

● -20 m roll □ -100 m roll

Model	Tubing size				
	Metric size				
	TPS0425	TPS0604	TPS0805	TPS1065	TPS1208
Tubing O.D. [mm]	4	6	8	10	12
Tubing I.D. [mm]	2.5	4	5	6.5	8
White (W)	●	●	●	●	●
Black (B)	●	●	●	●	●
Red (R)	□	□	□	□	□
Blue (BU)	●	●	●	●	●
Yellow (Y)	●	●	●	●	●
Green (G)	●	●	●	●	●

Specifications

Fluid		Air, Nitrogen gas, Water, DI water (Pure water)*1				
Max. operating pressure [MPa]	20°C	0.7				
	40°C	0.58				
	60°C	0.46				
	80°C	0.33				
Min. bending radius [mm]		10	20	25	30	40
Applicable fittings		Clean One-touch fittings Metal One-touch fittings KQB2 series Stainless steel 316 One-touch fittings KQG2 series Insert fittings				
Operating temperature		-20 to 80°C, Water: 5 to 80°C				
Material		Polyolefin resin				

*1 Please consult with SMC regarding other fluids.

* Abnormal temperature rises caused by adiabatic compression may result in the tube bursting.

* The minimum bending radius indicates the value at a temperature of 20°C with an outside diameter rate of change of 10% or less.

* Polyolefin resin is not suitable for regular pneumatic equipment piping because it is not resistant to mineral oil.

Length per roll **20** m roll

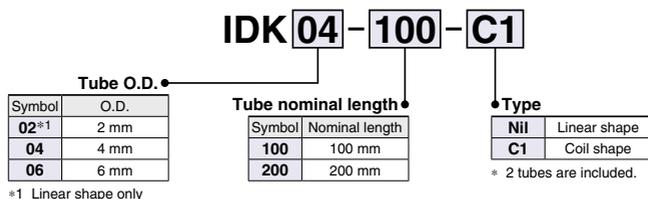
O.D.	I.D.	Color (Symbol)	Model
4	2.5	White (W)	TPS0425 Color symbol -20
		Black (B)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
6	4	Green (G)	TPS0604 Color symbol -20
		White (W)	
		Black (B)	
		Red (R)	
		Blue (BU)	
8	5	Yellow (Y)	TPS0805 Color symbol -20
		Green (G)	
		White (W)	
		Black (B)	
		Red (R)	
10	6.5	Blue (BU)	TPS1065 Color symbol -20
		Yellow (Y)	
		Green (G)	
		White (W)	
		Black (B)	
12	8	Red (R)	TPS1208 Color symbol -20
		Blue (BU)	
		Yellow (Y)	
		Green (G)	
		White (W)	

Length per roll **100** m roll

O.D.	I.D.	Color (Symbol)	Model
4	2.5	White (W)	TPS0425 Color symbol -100
		Black (B)	
		Red (R)	
		Blue (BU)	
		Yellow (Y)	
6	4	Green (G)	TPS0604 Color symbol -100
		White (W)	
		Black (B)	
		Red (R)	
		Blue (BU)	
8	5	Yellow (Y)	TPS0805 Color symbol -100
		Green (G)	
		White (W)	
		Black (B)	
		Red (R)	
10	6.5	Blue (BU)	TPS1065 Color symbol -100
		Yellow (Y)	
		Green (G)	
		White (W)	
		Black (B)	
12	8	Red (R)	TPS1208 Color symbol -100
		Blue (BU)	
		Yellow (Y)	
		Green (G)	
		White (W)	

- T
- TS
- TU
- TUS
- TUH
- TUZ
- TCU
- TFU
- TRS
- TRB
- TRBU
- TRTU
- TQ
- TAS
- TAU
- TL/TIL
- TLM/TILM
- TH/TIH
- TD/TID
- TPH
- TPS**
- IDK
- Related

How to Order



Specifications

Model	IDK02	IDK04	IDK06	IDK04-□-C1	IDK06-□-C1
Type	Linear shape			Coil shape	
Fluid*1	Compressed air				
Max. operating pressure	0.7 MPa				
Fluid temperature	0 to 60°C (No freezing)				
Operating environment*2	Indoors, where product is not exposed to water (0 to 40°C, 0 to 75% RH)				
Min. bending radius*3 [mm]	10	20	40	—	—
Quantity	2 pcs.				
Color	Transparent (Color will change to brown over time, but this does not affect its function.)				
Applicable fittings*4	KQ2				
Material	Fluoropolymer				

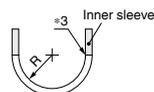
*1 Use the product in a compressed air line with a refrigerated air dryer and a mist separator installed on the upstream side. The condensation prevention performance may be lowered depending on the quality of the supplied compressed air (oil, dew point).

*2 Use the product in environments with low humidity. If the ambient humidity is higher, condensation prevention may not be possible.

*3 The minimum bending radius is the value at which the moisture control tube kinks or is flattened at a temperature of 20°C. During actual operation, be careful not to allow the tube and the inner sleeve to kink or flatten.

*4 The inner sleeve is already mounted and cannot be removed. If the inner sleeve comes off, re-insert the inner sleeve before mounting it to the fitting.

* Do not cut the tube.



Linear Shape

O.D. [mm]	I.D. [mm]	Model	Tube nominal length [mm]
2	1.2	IDK02-100	100
		IDK02-200	200
4	2.5	IDK04-100	100
		IDK04-200	200
6	4	IDK06-100	100
		IDK06-200	200

* 2 tubes are included.

* The dimensions may change depending on the relative humidity.



Coil Shape

O.D. [mm]	I.D. [mm]	Model	Tube nominal length [mm]
4	2.5	IDK04-100-C1	100
		IDK04-200-C1	200
6	4	IDK06-100-C1	100
		IDK06-200-C1	200

* 2 tubes are included.

* The dimensions may change depending on the relative humidity.

Multi-tube Holder TM Series

Can separate options depending on number of connection tubes
Uses flame-resistant resin (Equivalent to UL-94 Standard V-0)



Model

Applicable tubing O.D. [mm]	Model	No. of connecting tubes (Max.)			Accessory	
		6	8	12	For mounting	
					Cross recessed head countersunk tapping screw (Zinc chromated)	
Size (Nominal x Length)			No. of tubes		4	
4	TM-04			●		2 x 6
6	TM-06			●		2.6 x 8
8	TM-08		●			
10	TM-10	●				3 x 8
12	TM-12	●				

How to Use



Caution

1. Cut the multi-tube holder depending on the number of tubes to be connected.

<Cutting method>
Cut the groove for separation with side cutters.



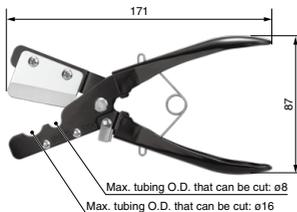
2. Install the multi-tube holder to the equipment with the cross recessed head countersunk tapping screw.
3. Lay the tube across the gripper and push on the tube.
4. To remove the tubes, pull the tubes up from the gripper.

Tube Cutter TK Series

* Do not use it to cut metallic materials such as electric wires.

TK-6 Applicable tubing O.D.: 16 mm or less

Perpendicular cutting
Air leakage due to cutting failure reduced
Replaceable blade
Built-in safety lock



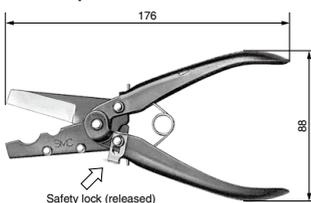
TK-1 Applicable tubing O.D.: 13 mm or less

Perpendicular cutting
Reduced operating force
Built-in safety lock



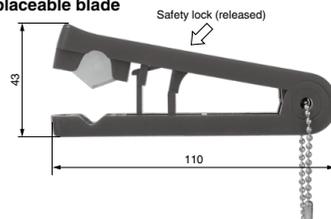
TK-2 Applicable tubing O.D.: 18 mm or less

Can cut tubes up to 18 mm



TK-3 (Useful type) Applicable tubing O.D.: 12 mm or less

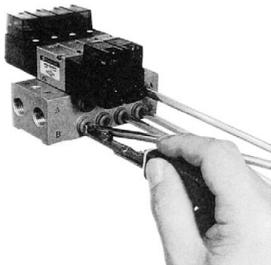
Built-in safety lock
Replaceable blade



Related Products

Tube Releasing Tool **TG Series**

Removal of the tube in a narrow space or the tube of the manifold One-touch fittings



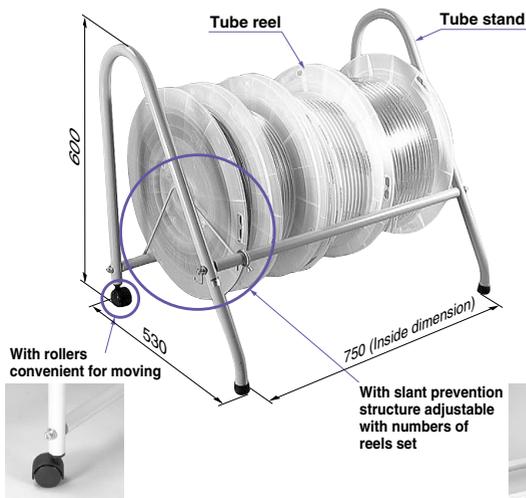
Model	TG-1
Applicable size	ø4, ø6
Applicable tubing material	Nylon, Soft nylon, Polyurethane
Color	Blue
Weight	33 g

Tube Stand & Tube Reel **TB/TBR Series**

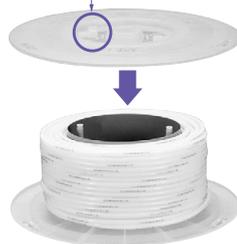
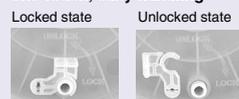
■ Compact size without taking up space

■ Easy installment just by putting tube reel

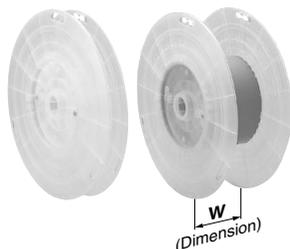
■ Allows easy refilling and replacing tubes.



Employs snap fit method with one-touch, easy handling



Tube Reel



Applicable tubing size [mm]	Model	W
4, 6	TBR-1	90
		110 (when branch pipe is used)
8	TBR-2	140
10	TBR-3	190
12	TBR-4	240

Tube Stand: **TB-2**



Blow Guns

Blow Gun

Blow Gun
VMG Series



339

Nozzles for Blowing
KN Series



341

VMG
KN
AN

Silencers

Silencers

Series	Port size											Page	
	M3	M5	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2		
Compact Resin Type/Male Thread AN05 to 40 Series Compact, Lightweight Noise reduction: 30 dB(A)		●	●	●	●	●							343
Compact Resin Type/One-touch Fitting Connection AN10 to 30-C Series Can connect with One-touch fitting directly. Noise reduction: 30 dB(A)			○6 ○1/4	○8 ○10 ○3/8	○12								343
Metal Body Type AN□00 Series Low back pressure, Easy mounting Noise reduction: 30 dB(A)							●	●	●	●	●		344
Metal Case Type 25□□ Series Prevents scattering of mist and noise. Noise reduction: 19 dB(A)				●	●	●	●	●					344
BC Sintered Body Type AN Series Noise reduction: 13, 16, 18, 21 dB(A) Ambient and fluid temperatures: 5 to 150°C	●	●	●										345
High Noise Reduction Type AN□02 Series Uses a flame resistant material for the case. Noise reduction: 35 dB(A)				●	●	●							345
High Noise Reduction Type ANA1 Series Keeps the in-plant noise level below 85 dB(A). Noise reduction: 40 dB(A)		●	●	●	●	●	●	●	●	●	●	●	346
High Noise Reduction Type ANB1 Series Has a larger effective area than the ANA1 series, but with the same port size. Noise reduction: 38 dB(A)		●	●	●	●	●	●	●	●	●	●	●	346

Energy saving of the air blow is possible.

- 20% reduction in power consumption

* For details, refer to the **Web Catalog**.

- Pressure loss 1% or less (Nozzle size: $\phi 2.5$)



How to Order

VMG 1 1 W - 02 - 32 - C

Piping entry

1	Bottom
2	Top

Body color

W	White
BU	Dark blue

Connection size

Symbol	Piping connection method	Size and model no.	
02	Threaded	Thread size	Rc1/4
03			Rc3/8
N02			NPT1/4
N03			NPT3/8
F02			G1/4
F03			G3/8
11	S coupler plug	Model no. of coupler used	KK4P-02MS
12			KK130P-02MS
H06	Metric size One-touch fitting used	Model no. of fitting used	KQ2H06-02AS
H08			KQ2H08-02AS
H10	Inch size One-touch fitting used	Model no. of fitting used	KQ2H10-02AS
H07			KQ2H07-35AS
H09	Inch size One-touch fitting used	Model no. of fitting used	KQ2H09-35AS
H11			KQ2H11-35AS

*1 S coupler and fitting are included in the same package.

*2 Port size is Rc1/4 if using the S coupler plug.

*3 The blow gun port size is Rc1/4 if using the metric size One-touch fitting.

*4 The blow gun port size is NPT1/4 if using the inch size One-touch fitting.

- With nozzle cover (Only for male thread nozzle, $\phi 6$ extension nozzle)

Nil	None
C	With nozzle cover/HNBR
CF	With nozzle cover/Fluororubber

Nozzle

Symbol	Type	Nozzle size	Nozzle part no.
Nil	Without nozzle		
01	Male thread nozzle	$\phi 1$	KN-R02-100
02		$\phi 1.5$	KN-R02-150
03		$\phi 2$	KN-R02-200
04		$\phi 2.5$	KN-R02-250
05		$\phi 3$	VMG1-R02-300
06		$\phi 3.5$	VMG1-R02-350
07		$\phi 4$	VMG1-R02-400
11	High efficiency nozzle	$\phi 1$	KNH-R02-100
12		$\phi 1.5$	KNH-R02-150
13		$\phi 2$	KNH-R02-200
21	Low noise nozzle with male thread	$\phi 0.75 \times 4$	KNS-R02-075-4
22		$\phi 0.9 \times 8$	KNS-R02-090-8
23		$\phi 1 \times 4$	KNS-R02-100-4
24		$\phi 1.1 \times 8$	KNS-R02-110-8

Extension nozzle

Symbol	Type	Nozzle length	Nozzle size	Nozzle part no.
31	$\phi 6$ copper extension nozzle*1	300 mm	$\phi 1.5$	VMG1-06-150-300
32			$\phi 2$	VMG1-06-200-300
33			$\phi 1.5$	VMG1-06-150-600
34		600 mm	$\phi 2$	VMG1-06-200-600
35			$\phi 1.5$	VMG1-06-150-100
36			$\phi 2$	VMG1-06-200-100
37	$\phi 8$ copper extension nozzle*1	150 mm	$\phi 1.5$	VMG1-06-150-150
38			$\phi 2$	VMG1-06-200-150
41			$\phi 2.5$	VMG1-08-250-100
42		100 mm	$\phi 3$	VMG1-08-300-100
43			$\phi 3.5$	VMG1-08-350-100
44			$\phi 2.5$	VMG1-08-250-150
45	150 mm	$\phi 3$	VMG1-08-300-150	
46		$\phi 3.5$	VMG1-08-350-150	
47		$\phi 2.5$	VMG1-08-250-300	
48	300 mm	600 mm	$\phi 3$	VMG1-08-300-300
49			$\phi 3.5$	VMG1-08-350-300
50			$\phi 2.5$	VMG1-08-250-600
51	600 mm	600 mm	$\phi 3$	VMG1-08-300-600
52			$\phi 3.5$	VMG1-08-350-600

*1 Part number for set of extension nozzle and fitting. Extension nozzle and fitting are included in the same package. Refer to "How to attach extension nozzle" in the operation manual for assembly procedures.

Specifications

Fluid	Air
Operating pressure range	0 to 1.0 MPa
Proof pressure	1.5 MPa
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Flow rate characteristics (With nozzle removed)	C (dm ³ /s-bar): 6.0, b: 0.25 (Effective area: 30 mm ²)
Port size	Rc, NPT, G1/4, 3/8
Piping entry	Bottom Top
Nozzle port size	Rc1/4
Weight (Main unit only)	165 g
Operational force (when the valve is fully open)	7 N

Nozzles for Blowing

KN Series

Male thread nozzle/KN



Part no.	Nozzle size D	Connection thread
KN-R02-100	ø1	R1/4
KN-R02-150	ø1.5	
KN-R02-200	ø2	
KN-R02-250	ø2.5	
VMG1-R02-300	ø3	
VMG1-R02-350	ø3.5	
VMG1-R02-400	ø4	

* Reference dimensions after R thread installation

High efficiency nozzle/KNH



Part no.	Nozzle size D	Connection thread
KNH-R02-100	ø1	R1/4
KNH-R02-150	ø1.5	
KNH-R02-200	ø2	

* Reference dimensions after R thread installation

Low noise nozzle with male thread/KNS



Part no.	Nozzle size D	Connection thread
KNS-R02-075-4	ø0.75 x 4	R1/4
KNS-R02-090-8	ø0.9 x 8	
KNS-R02-100-4	ø1 x 4	
KNS-R02-110-8	ø1.1 x 8	

* Reference dimensions after R thread installation

Copper extension nozzle set



Part no.	Nozzle size D	O.D.	L ^{*1}
VMG1-06-150-100	ø1.5	ø6	106
VMG1-06-200-100	ø2		156
VMG1-06-150-150	ø1.5		306
VMG1-06-150-300	ø1.5		606
VMG1-06-200-300	ø2		
VMG1-06-150-600	ø1.5		
VMG1-08-250-100	ø2.5	ø8	106
VMG1-08-300-100	ø3		156
VMG1-08-350-100	ø3.5		306
VMG1-08-250-150	ø2.5		606
VMG1-08-300-150	ø3		
VMG1-08-350-150	ø3.5		
VMG1-08-250-300	ø2.5	ø8	306
VMG1-08-300-300	ø3		606
VMG1-08-350-300	ø3.5		
VMG1-08-250-600	ø2.5		
VMG1-08-300-600	ø3		
VMG1-08-350-600	ø3.5		

*1 Reference dimensions after installation

Cover for male thread nozzle



Nozzle cover part no.	Material	Applicable blow gun model	
		Model	Nozzle type
P5670129-01	HNBR	VMG1□□□□-01 to 04	Male thread nozzle ø1 to ø2.5
P5670129-01F	Fluororubber		
P5670129-02	HNBR	VMG1□□□□-05 to 07	Male thread nozzle ø3 to ø4
P5670129-02F	Fluororubber		

When cover is attached



Cover for copper extension nozzle



Nozzle cover part no.	Material	Applicable blow gun model	
		Model	Nozzle type
P5670129-11	HNBR	VMG1□□□□-31 to 38	ø6 copper extension nozzle
P5670129-11F	Fluororubber		

When cover is attached



Nozzles for Blowing

KN Series

Nozzle with self-align fitting/KN



Model	Nozzle size øD	Applicable tubing O.D.
KN-04-100	ø1	ø4
KN-04-150	ø1.5	ø4
KN-06-100	ø1	ø6
KN-06-150	ø1.5	ø6
KN-06-200	ø2	ø6
KN-08-150	ø1.5	ø8
KN-08-200	ø2	ø8
KN-10-250	ø2.5	ø10
KN-10-300	ø3	ø10
KN-10-350	ø3.5	ø10
KN-10-400	ø4	ø10
KN-10-600	ø6	ø10
KN-12-350	ø3.5	ø12
KN-12-400	ø4	ø12
KN-12-600	ø6	ø12
KN-16-400	ø4	ø16
KN-16-600	ø6	ø16
KN-20-400	ø4	ø20
KN-20-600	ø6	ø20

Nozzle with male thread/KN



Model	Nozzle size øD	Connection thread
KN-R01-100	ø1	R1/8
KN-R01-150	ø1.5	R1/8
KN-R02-100	ø1	R1/4
KN-R02-150	ø1.5	R1/4
KN-R02-200	ø2	R1/4
KN-R02-250	ø2.5	R1/4
KN-R02-600	ø6	R1/4
KN-R03-400	ø4	R3/8
KN-R03-600	ø6	R3/8
KN-R04-400	ø4	R1/2
KN-R04-600	ø6	R1/2
KN-R06-600	ø6	R3/4
KN-R06-800	ø8	R3/4
KN-R10-800	ø8	R1

* Reference dimensions after R thread installation

Copper extension nozzle/KNL



Model	Nozzle size øD	O.D.	L1
KNL3-06-150	ø1.5	ø6	300
KNL3-06-200	ø2	ø6	300
KNL3-08-200	ø2	ø8	300
KNL3-08-250	ø2.5	ø8	300
KNL3-10-250	ø2.5	ø10	300
KNL3-10-300	ø3	ø10	300
KNL6-06-150	ø1.5	ø6	600
KNL6-06-200	ø2	ø6	600
KNL6-08-200	ø2	ø8	600
KNL6-08-250	ø2.5	ø8	600
KNL6-10-250	ø2.5	ø10	600
KNL6-10-300	ø3	ø10	600

Nozzle for One-touch fitting/KN



Connecting products with metal rods
Products with metal rods cannot be connected to the KN2 series One-touch fittings. If connected, the metal rod cannot be retained by the chuck of the One-touch fitting and products with metal rods may project during pressurization, causing serious personal injury or accident. Please contact SMC for connectable One-touch fittings.

Model	Nozzle size øD	Applicable size ød
KN-Q06-100	ø1	ø6
KN-Q06-150	ø1.5	ø6
KN-Q06-200	ø2	ø6
KN-Q08-150	ø1.5	ø8
KN-Q08-200	ø2	ø8
KN-Q10-200	ø2	ø10
KN-Q10-250	ø2.5	ø10
KN-Q12-250	ø2.5	ø12
KN-Q12-300	ø3	ø12

Pivoting nozzle with self-align fitting/KNK



Model	Nozzle size øD	Applicable tubing O.D.
KNK-10-400	ø4	ø10
KNK-10-600	ø6	ø10
KNK-12-400	ø4	ø12
KNK-12-600	ø6	ø12
KNK-16-400	ø4	ø16
KNK-16-600	ø6	ø16
KNK-20-400	ø4	ø20
KNK-20-600	ø6	ø20

Pivoting nozzle with male thread/KNK



Model	Nozzle size øD	Connection thread
KNK-R02-400	ø4	R1/4
KNK-R02-600	ø6	R1/4
KNK-R03-400	ø4	R3/8
KNK-R03-600	ø6	R3/8
KNK-R04-400	ø4	R1/2
KNK-R04-600	ø6	R1/2

* Reference dimensions after R thread installation

High efficiency nozzle/KNH



Model	Nozzle size øD	Connection thread
KNH-R02-100	ø1	R1/4
KNH-R02-150	ø1.5	R1/4
KNH-R02-200	ø2	R1/4

* Reference dimensions after R thread installation

The air blow thrust is improved by 10%.

Low noise nozzle with self-align fitting/KNS



Model	Nozzle size øD	Applicable tubing O.D.
KNS-08-075-4	ø0.75 x 4	ø8
KNS-08-100-4	ø1 x 4	ø8
KNS-10-075-4	ø0.75 x 4	ø10
KNS-10-090-8	ø0.9 x 8	ø10
KNS-10-100-4	ø1 x 4	ø10

Low noise nozzle with male thread/KNS



Model	Nozzle size øD	Connection thread
KNS-R01-075-4	ø0.75 x 4	R1/8
KNS-R01-100-4	ø1 x 4	R1/8
KNS-R01-090-8	ø0.9 x 8	R1/8
KNS-R02-075-4	ø0.75 x 4	R1/4
KNS-R02-090-8	ø0.9 x 8	R1/4
KNS-R02-100-4	ø1 x 4	R1/4
KNS-R02-110-8	ø1.1 x 8	R1/4

* Reference dimensions after R thread installation

Compact Resin Type/Male Thread

AN

Compact, Lightweight
Noise reduction: 30 dB(A)



Specifications

Fluid	Compressed air
Max. operating pressure*1	1.0 MPa
Noise reduction	30 dB(A)*2
Ambient and fluid temperatures	5 to 60°C*3

*1 It indicates the inlet pressure for solenoid valve.

*2 The value may vary depending on the pneumatic circuit or pressure that is exhausted from the solenoid valve.

*3 The product can be used in temperatures -10 to 60°C if there is no risk of water droplets forming and freezing.

Performance

Model	Effective area [mm ²]	Sonic conductance C [dm ³ /(s·bar)]	Recommended flow [m ³ /min(ANR)]	Weight [g]
AN05-M5	5	1	0.4 or less	0.5
AN10-01	10	2	0.8 or less	1
AN15-02	15	3	1.0 or less	2.5
AN20-02	35	7	3.0 or less	4
AN30-03	60	12	5.0 or less	5.5
AN40-04	90	18	8.0 or less	8.5

* Recommended flow rate is the flow at 0.5 MPa in the inlet pressure.

Model

Model	Port size R, NPT	Dimensions [mm]	
		Full length	O.D. [ø]
AN05-M5	M5 x 0.8	15	6.5
AN10-01	1/8	23	11
AN15-02	1/4	32	16
AN20-02	1/4	45	16.5
AN30-03	3/8	58.5	20
AN40-04	1/2	68	24

Compact Resin Type/One-touch Fitting Connection

AN-C

Can connect with One-touch fitting directly.
Noise reduction: 30 dB(A)



Specifications

Fluid	Compressed air
Max. operating pressure*1	1.0 MPa
Noise reduction	30 dB(A)*2
Ambient and fluid temperatures	5 to 60°C*3

*1 It indicates the inlet pressure for solenoid valve.

*2 The value may vary depending on the pneumatic circuit or pressure that is exhausted from the solenoid valve.

*3 The product can be used in temperatures -10 to 60°C if there is no risk of water droplets forming and freezing.

Performance

Model	Effective area [mm ²]	Sonic conductance C [dm ³ /(s·bar)]	Recommended flow [m ³ /min(ANR)]	Weight [g]
AN10-C06	7	1.4	0.8 or less	1
AN10-C07				1
AN15-C08	20	4	3.0 or less	1.4
AN20-C10	30	6	5.0 or less	3.5
AN20-C11	25	5	3.0 or less	3.5
AN30-C12	41	8.2	5.0 or less	5

* Recommended flow rate is the flow at 0.5 MPa in the inlet pressure.

Model

Model	Dimensions [mm]	
	Full length	O.D. [ø]
AN10-C06	36.5	11
AN10-C07		
AN15-C08	45	13
AN20-C10	57.5	16.5
AN20-C11		
AN30-C12	71.5	20

Metal Body Type

AN□00

Low back pressure,
Easy mounting
Noise reduction: 30 dB(A)



Specifications

Fluid	Compressed air
Max. operating pressure*1	1.0 MPa
Noise reduction	30 dB(A)*2
Ambient and fluid temperatures	5 to 60°C*3

*1 It indicates the inlet pressure for solenoid valve.

*2 The value may vary depending on the pneumatic circuit or pressure that is exhausted from the solenoid valve.

*3 The product can be used in temperatures -10 to 60°C if there is no risk of water droplets forming and freezing.

Performance

Model	Effective area [mm ²]	Sonic conductance C [dm ³ /(s·bar)]	Recommended flow [m ³ /min(ANR)]	Weight [g]
AN500-06	160	32	12 or less	165
AN600-10	270	54	20 or less	220
AN700-12	440	88	30 or less	435
AN800-14	590	118	50 or less	510
AN900-20	960	192	80 or less	740

* Recommended flow rate is the flow at 0.5 MPa in the inlet pressure.

Model

Model	Port size R, NPT	Dimensions [mm]	
		Full length	O.D. [ø]
AN500-06	3/4	107	46
AN600-10	1	127	50
AN700-12	1 1/4	186	74
AN800-14	1 1/2	217	74
AN900-20	2	256	86

Metal Case Type

25

Prevents scattering of mist
and noise.
Noise reduction: 19 dB(A)



Specifications

Fluid	Compressed air
Max. operating pressure*1	1.0 MPa
Noise reduction	19 dB(A)*2
Ambient and fluid temperatures	5 to 60°C*3

*1 It indicates the inlet pressure for solenoid valve.

*2 The value may vary depending on the pneumatic circuit or pressure that is exhausted from the solenoid valve.

*3 The product can be used in temperatures -10 to 60°C if there is no risk of water droplets forming and freezing.

Model

Model	Port size R	Effective area [mm ²]	Sonic conductance C [dm ³ /(s·bar)]	Recommended flow [m ³ /min(ANR)]	Weight [g]	Dimensions [mm]	
						Full length	O.D. [ø]
2504-002	1/4	33.9	6.8	2.2 or less	111	62	30
2505-003	3/8	45.9	9.2	3.0 or less	106	64	30
2506-004	1/2	50.0	10.0	4.0 or less	113	68	30
2507-006	3/4	105.6	21.1	8.0 or less	310	88.5	48
2508-010	1	129.6	25.9	10.0 or less	514	97.5	60
2510-002	1/4	17.2	3.4	1.5 or less	57	54	22
2511-003	3/8	17.2	3.4	1.5 or less	55	56	22

* Recommended flow rate is the flow at 0.5 MPa in the inlet pressure.

BC Sintered Body Type

AN

Noise reduction:
13, 16, 18, 21 dB(A)
Ambient and fluid temperatures:
5 to 150°C



Specifications

Specifications	Model			
	AN101-01	AN110-01	AN120-M3	AN120-M5
Port size*1	R1/8	R1/8	M3	M5
Noise reduction [dB(A)]*3	16	21	13	18
Fluid	Compressed air			
Max. operating pressure*2	1.0 MPa			
Ambient and fluid temperatures	5 to 150°C*4			
Effective area [mm ²]	20	35	1	5
Sonic conductance C [dm ³ /(s·bar)]	4	7	0.2	1
Recommended flow [m ³ /min(ANR)]*5	1.6 or less	2.7 or less	0.08 or less	0.4 or less
Weight [g]	8.3	17	1	3.4

- *1 NPT thread for AN101 and AN110 is also available. Model no. of NPT thread is AN101-N01 and AN110-N01.
- *2 It indicates the inlet pressure for solenoid valve.
- *3 The value may vary depending on the pneumatic circuit or pressure that is exhausted from the solenoid valve.
- *4 The product can be used in temperatures -10 to 150°C if there is no risk of water droplets forming and freezing.
- *5 Recommended flow rate is the flow at 0.5 MPa in the inlet pressure.

Model

Model	Port size	Dimensions [mm]	
		Full length	O.D. [ø]
AN101-01	R1/8	21	11
AN110-01	R1/8	34	13
AN120-M3	M3	9	6
AN120-M5	M5	15.5	8

High Noise Reduction Type

AN

Case adopts flame resistant material
Noise reduction: 35 dB(A)



Specifications

Fluid	Compressed air
Max. operating pressure*1	1.0 MPa
Noise reduction	35 dB(A)*2
Ambient and fluid temperatures	5 to 60°C*3

- *1 It indicates the inlet pressure for solenoid valve.
- *2 The value may vary depending on the pneumatic circuit or pressure that is exhausted from the solenoid valve.
- *3 The product can be used in temperatures -10 to 60°C if there is no risk of water droplets forming and freezing.

Model

Model	Port size R	Effective area [mm ²]	Sonic conductance C [dm ³ /(s·bar)]	Recommended flow [m ³ /min(ANR)]	Weight [g]	Dimensions [mm]	
						Full length	O.D. [ø]
AN202-02	1/4	35	7	3 or less	16	64	22
AN302-03	3/8	60	12	5 or less	33	84	28
AN402-04	1/2	90	18	8 or less	47	95	34

- * Recommended flow rate is the flow at 0.5 MPa in the inlet pressure.

40 dB(A): High Noise Reduction Type

ANA1

Keeps the in-plant noise level below 85 dB(A).
Noise reduction: 40 dB(A)

Specifications

Fluid	Compressed air
Max. operating pressure*1	1.0 MPa
Noise reduction	40 dB(A)*2
Ambient and fluid temperatures	5 to 60°C

*1 It indicates the inlet pressure for solenoid valve.

*2 The value may vary depending on the pneumatic circuit or pressure that is exhausted from the solenoid valve.

*3 The product can be used in temperatures -10 to 60°C if there is no risk of water droplets forming and freezing.

Model (Screw-in connection)

Model	Port size R	Effective area [mm ²]	Sonic conductance C [dm ³ /(s·bar)]	Recommended flow [m ³ /min(ANR)]	Weight [g]	Dimensions [mm]	
						Full length	O.D. [ø]
ANA1-01	1/8	10	2	0.8 or less	4	37	16
ANA1-02	1/4	15	3	1.2 or less	14	64	22
ANA1-03	3/8	35	7	2.7 or less	22	84	25
ANA1-04	1/2	60	12	4.5 or less	36	98	30
ANA1-06	3/4	90	18	7.0 or less	110	111	46
ANA1-10	1	160	32	12.0 or less	180	132	50
ANA1-12	1 1/4	280	56	20.0 or less	544	200	74
ANA1-14	1 1/2	450	90	32.0 or less	612	230	74
ANA1-20	2	610	122	45.0 or less	873	271	86

* Recommended flow rate is the flow at 0.5 MPa in the inlet pressure.

Model (One-touch fitting connection)

Model	Applicable One-touch fitting size	Effective area [mm ²]	Recommended flow [m ³ /min(ANR)]	Weight [g]	Dimensions [mm]	
					Full length	O.D. [ø]
ANA1-C08	ø8	11	0.8 or less	5	58	16
ANA1-C10	ø10	15	1.2 or less	13	76	22
ANA1-C12	ø12	33	2.5 or less	19	95	25



38 dB(A): High Noise Reduction Type

ANB1

Has a larger effective area than the ANA1 series, but with the same port size.
Noise reduction: 38 dB(A)

Specifications

Fluid	Compressed air
Max. operating pressure*1	1 MPa
Noise reduction	38 dB(A)*2
Ambient and fluid temperatures	5 to 60°C

*1 It indicates the inlet pressure for solenoid valve.

*2 The value may vary depending on the pneumatic circuit or pressure that is exhausted from the solenoid valve.

*3 The product can be used in temperatures -10 to 60°C if there is no risk of water droplets forming and freezing.

Model (Screw-in connection)

Model	Port size R	Effective area [mm ²]	Sonic conductance C [dm ³ /(s·bar)]	Recommended flow [m ³ /min(ANR)]	Weight [g]	Dimensions [mm]	
						Full length	O.D. [ø]
ANB1-01	1/8	15	3	1.2 or less	10	51	22
ANB1-02	1/4	35	7	2.7 or less	22	81	25
ANB1-03	3/8	60	12	3.8 or less	35	93	30
ANB1-04	1/2	90	18	7.0 or less	94	107	46
ANB1-06	3/4	160	32	12.0 or less	175	133	50
ANB1-10	1	280	56	20.0 or less	462	190	74
ANB1-12	1 1/4	450	90	32.0 or less	612	230	74
ANB1-14	1 1/2	610	122	45.0 or less	871	271	86

* Recommended flow rate is the flow at 0.5 MPa in the inlet pressure.

Model (One-touch fitting connection)

Model	Applicable One-touch fitting size	Effective area [mm ²]	Recommended flow [m ³ /min(ANR)]	Weight [g]	Dimensions [mm]	
					Full length	O.D. [ø]
ANB1-C06	ø6	8	0.6 or less	5	52	16
ANB1-C08	ø8	13	1.0 or less	12	73	22
ANB1-C10	ø10	28	2.0 or less	28	94	25

* Recommended flow rate is the flow at 0.5 MPa in the inlet pressure.



Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “**Caution**,” “**Warning**” or “**Danger**.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)^{*1)}, and other safety regulations.

 **Caution:** Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

 **Warning:** Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

 **Danger :** Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

*1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines.
(Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots – Safety.
etc.

Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.

1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

Caution

1. The product is provided for use in manufacturing industries.

The product herein described is basically provided for peaceful use in manufacturing industries.

If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/ Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”.

Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.^(*)2)
Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.

^(*)2) Vacuum pads are excluded from this 1 year warranty.

A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.
Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

Caution

SMC products are not intended for use as instruments for legal metrology.

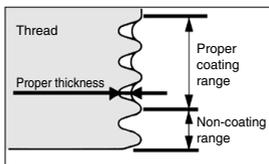
Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country. Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

 **Safety Instructions** Be sure to read the “Handling Precautions for SMC Products” (M-E03-3) and “Operation Manual” before use.

For Pneumatic Piping/Fittings & Tubing Prior to Use

Fittings with Sealant

Seal material (fluororesin) is coated on the thread part to the proper thickness and within the proper coating range, which reduces piping work, such as coating the seal on the thread.



Female Thread Conditions Applicable to Face Seals

1. Surface roughness of bearing surface: Rz 25 or less
2. Chamfer dimension: $\phi D1$, Seal bearing surface diameter: $\phi D2$ (Refer to the table below.)
3. Female thread inclination angle: 1° or less
4. Counterbore diameter when the female thread is counterbored: $\phi D3$
 - Models with hexagonal flats: Body width across flats x 1.1 or more
 - Models other than hexagon (Hexagon socket head male connector, etc.): Body dimensions + 0.2 mm or more
- * The width across flats and the body dimensions differ depending on the model even when the same thread size is used. Refer to the dimensions in the catalog.
5. If oil content or sealant is sticking to the female thread, this may cause damage to the product. Remove it before piping.

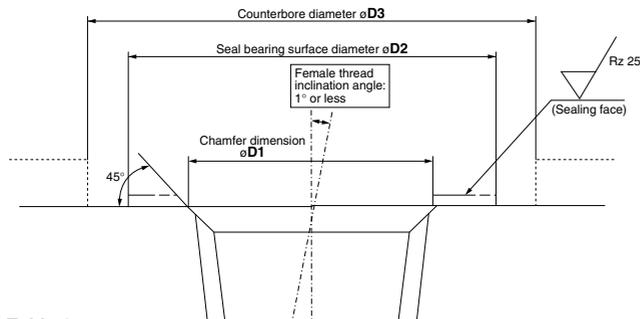


Table 1

Connection thread size	Chamfer dimension $\phi D1$ [mm]	Seal bearing surface diameter $\phi D2$ [mm]
R1/8	10.2 to 10.4	12 or more
R1/4	13.6 to 13.8	17 or more
R3/8	17.1 to 17.3	21 or more
R1/2	21.4 to 21.6	27 or more
NPT1/16	8.2 to 8.4	11.11 or more
NPT1/8	10.5 to 10.7	12.7 or more
NPT1/4	14.1 to 14.3	17.46 or more
NPT3/8	17.4 to 17.6	22 or more
NPT1/2	21.7 to 21.9	28.7 or more
G1/8	10.2 to 10.6	12 or more
G1/4	13.6 to 14.0	17 or more
G3/8	17.1 to 17.5	21 or more
G1/2	21.4 to 21.8	27 or more

⚠ Precautions

For products that do not satisfy the female thread conditions shown above and piping with a piping pitch narrower than the product dimension, use the current sealant type.

* The rubber parts of the face seal cannot be replaced.

* An air blow may cause the rubber parts of the face seal to fall off, and they cannot be remounted. Please refrain from performing an air blow.



Fittings & Tubing Precautions 1

Be sure to read this before handling products.

Design / Selection

⚠ Warning

1. Confirm the specifications.

Products represented in this catalog are designed only for use in compressed air systems (including vacuum). Do not operate at pressures, temperatures, etc., beyond the range of specifications, as this can cause damage or malfunction. (Refer to the specifications.)

Please contact SMC when using a fluid other than compressed air (including vacuum).

We do not guarantee against any damage if the product is used outside of the specification range.

2. Do not disassemble the product or make any modifications, including additional machining.

Doing so may cause human injury and/or an accident.

3. Check if PTFE can be used in the application.

PTFE powder (Polytetrafluoroethylene resin) is included in the sealant. Confirm that the use of it will not cause any adverse effect on the system.

⚠ Caution

1. Keep the connection part of fittings and tubing from rotating or oscillating movement. Use rotary One-touch fittings (KS or KX series) in these cases.

The fittings may be damaged if they are used in the above manner.

2. The tubing bending radius in the vicinity of the fitting should be at least the minimum bending radius of the tubing.

If the bending radius is less than the minimum value, fittings may be damaged, and tubing may crack or be crushed. The minimum bending radius of the FR soft nylon tubing (TRS series), FR double layer tubing (TRB series), antistatic soft nylon tubing (TAS series), polyolefin tubing (TPH series), and soft polyolefin tubing (TPS series) is measured as following in accordance with JIS B 8381.

The tubing deformation ratio at the minimum bending radius is obtained through the following formula, based on tubing diameter and mandrel diameter by winding the same radius mandrel tube.

$$\eta = \left(1 - \frac{L-D}{2d}\right) \times 100$$

Here, η : Deformation ratio [%]

d : Tubing diameter [mm]

L : Measured length [mm]

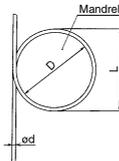
D : Mandrel diameter [mm]

(Twice against the minimum bending radius)

Test temperature: 20 ± 5°C

Relative humidity: 65 ± 5%

Tube deformation ratio at the minimum bending radius



3. Do not use fluids other than those listed on the specifications.

Applicable fluids are air and water. Please consult with SMC if using other fluids.

4. When used with water, the fittings or tubing may be damaged depending on the surge pressure.

Mounting / Piping

⚠ Warning

1. Operation manual

Install the products and operate them only after reading the operation manual carefully and understanding its contents. Also, keep the manual where it can be referred to as necessary.

2. Maintenance space

Allow sufficient space for maintenance and inspection.

3. Adhere to the thread tightening method.

Refer to the "Connection Thread Tightening Method" when mounting the product.

4. There may be cases in which the tubing detaches from the fitting and thrashes around uncontrollably due to tubing degradation or fitting breakage.

To prevent the situation from becoming uncontrollable, fit the tubing with a protective cover or secure it in place.

⚠ Caution

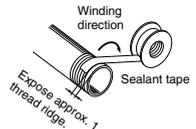
1. Preparation before piping

Before piping is connected, it should be thoroughly blown out with air (flushing) or washed to remove chips, cutting oil, and other debris from inside the pipe.

2. Winding of sealant tape

When screwing together pipes, fittings, etc., be certain that chips from the pipe threads and sealant do not get inside the pipe.

Also, if sealant tape is used, leave approx. 1 thread ridge exposed at the end of the threads.



3. Check the model, type, and size before installation. Also, confirm that there are no scratches, gouges, or cracks on the product.

4. When connecting the tubing, take pressure and possible changes to the tubing length into account, and allow a sufficient margin.

Failure to do so may result in fitting breakage or the detachment of the tubing. Refer to the recommended piping conditions.

5. Do not apply unnecessary forces, such as twisting, pulling, moment loads, vibration, impact, etc., on fittings or tubing.

This will cause damage to fittings and will crush, burst, or release tubing.

6. Tubing, with the exception of coiled tubing, requires stationary installation. Do not use standard tubing (non-coiled) in applications where tubing is required to travel inside the flexible protection tube. Tubing that travels may sustain abrasion, extension, or severance due to tensile force. The removal of tubing from the fitting may also occur. Use caution prior to use in an application.

7. To install the fitting, screw the fitting into the hexagonal face of the body, and tighten with a suitable wrench.

Affix the wrench at the base of the thread. If the size of the hexagonal face and wrench do not match, or tightening takes place near the tube side, it may cause the collapse or deformation of the hexagonal face, or damage to the equipment. After installing, confirm that there is no damage to the fitting, etc.



Fittings & Tubing Precautions 2

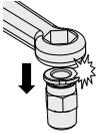
Be sure to read this before handling products.

Mounting / Piping

⚠ Caution

8. Interference in oval type release buttons

The following models cannot be used if a box wrench or socket wrench is used.



KQ2 Series

Model	Applicable tubing	Connection thread	Part number
Male connector	ø3.2	M3 x 0.5	KQ2H23-M3G1
	ø3.2	M5 x 0.8	KQ2H23-M5□1
	ø4	M3 x 0.5	KQ2H04-M3G1
	ø4	M5 x 0.8	KQ2H04-M5□1
	ø4	M6 x 1.0	KQ2H04-M6□1
	ø6	M5 x 0.8	KQ2H06-M5□1
	ø6	M6 x 1.0	KQ2H06-M6□1
	ø6	R1/8	KQ2H06-01□S1
	ø1/8	10-32UNF	KQ2H01-32□1
	ø5/32	10-32UNF	KQ2H03-32□1
	ø3/16	10-32UNF	KQ2H05-32□1
	ø5/32	NPT1/16	KQ2H03-33□S1
	ø1/8	M5 x 0.8	KQ2H01-M5□1
	ø3/16	M5 x 0.8	KQ2H05-M5□1
	ø3/16	R1/8	KQ2H05-01□S1
	Female connector	ø4	M3 x 0.5
ø4		M5 x 0.8	KQ2F04-M5□1
ø6		M5 x 0.8	KQ2F06-M5□1
ø1/8		10-32UNF	KQ2F01-32□1
ø5/32		10-32UNF	KQ2F03-32□1
ø1/8		M3 x 0.5	KQ2F23-M3□1
ø1/8	M5 x 0.8	KQ2F23-M5□1	

□: A (Brass), N (Brass + Electroless nickel plating)

KQ2-G Stainless Steel Series

Model	Applicable tubing	Connection thread	Part number
Male connector	ø4	M5 x 0.8	KQ2H04-M5G1
	ø6	M5 x 0.8	KQ2H06-M5G1
	ø6	R1/8	KQ2H06-01GS1

Air Supply

⚠ Warning

1. Type of fluids

Please consult with SMC when using the product in applications other than compressed air.

Regarding products for general fluids, please contact SMC concerning applicable fluids.

2. When there is a large amount of drainage

Compressed air containing a large amount of drainage can cause the malfunction of pneumatic equipment. An air dryer or water separator should be installed upstream from filters.

3. Drain flushing

If condensation in the drain bowl is not emptied on a regular basis, the bowl will overflow and allow the condensation to enter the compressed air lines. This causes the malfunction of pneumatic equipment.

If the drain bowl is difficult to check and remove, the installation of a drain bowl with an auto drain option is recommended.

For compressed air quality, refer to the Best Pneumatics No. 6 catalog.

4. Use clean air.

Do not use compressed air that contains chemicals, synthetic oils that include organic solvents, salt, corrosive gases, etc., as it can cause damage or malfunction.

Air Supply

⚠ Caution

1. Install an air filter.

Install an air filter on the upstream side of the valve. Select an air filter with a filtration size of 5 μm or smaller.

2. Install an aftercooler, air dryer, water separator, etc.

Compressed air containing a large amount of drainage can cause the malfunction of pneumatic equipment. Therefore, take appropriate measures to ensure air quality, such as by providing an aftercooler, air dryer, or water separator.

3. Ensure that the fluid and ambient temperatures are within the specified range.

If the fluid temperature is 5°C or less, the moisture in the circuit could freeze, causing damage to the seals or equipment malfunction. Therefore, take appropriate measures to prevent freezing.

For compressed air quality, refer to the Best Pneumatics No. 6 catalog.

Operating Environment

⚠ Warning

1. Do not use in an atmosphere where corrosive gases, chemicals, sea water, water, or water steam are present. Do not use in cases where there is direct contact with any of the above.

Refer to each construction drawing for information on the materials of fittings and tubing.

2. Do not expose the product to direct sunlight for an extended period of time.

3. Do not use in a place subject to heavy vibration and/or impact.

4. Do not mount the product in locations where it is exposed to radiant heat.

5. Do not use ordinary fittings and tubing in locations where static electricity would be problematic.

This may result in system failure or other problems. In such places, the use of antistatic fittings (KA series) and antistatic tubing (TA series) is recommended.

6. Do not use ordinary fittings and tubing in locations where spatter is generated.

Spattering may result in a fire hazard. In such places, the use of flame resistant fittings (KR/KRM series) and flame resistant tubing (TRS/TRB/TRBU/TRTU series) is recommended.

7. Do not use in an environment where the product is directly exposed to cutting oil, lubricant, coolant oil, etc.

Please contact SMC if using in an environment exposed to cutting oil, lubricant, coolant oil, etc.

8. Take caution when nylon tubing and soft nylon tubing are used in a clean room.

The antioxidant on the surface of the tubing may come off, thereby lowering the cleanliness level.

9. Do not use in environments where foreign matter may stick to the product or get mixed in the product's interior.

This may cause leakage or the disconnection of the tubing.



Fittings & Tubing Precautions 3

Be sure to read this before handling products.

Maintenance

⚠ Warning

- 1. Perform maintenance and inspections according to the procedures indicated in the operation manual.**
If handled improperly, malfunction or damage of machinery and equipment may occur.
- 2. Maintenance work**
If handled improperly, compressed air can be dangerous. The assembly, handling, repair, and element replacement of pneumatic systems should be performed by a knowledgeable and experienced person.
- 3. Drain flushing**
Remove drainage from air filters regularly.

4. Removal of equipment and supply/exhaust of compressed air

Before components are removed, first confirm that measures are in place to prevent workpieces from dropping, run-away equipment, etc. Then, cut off the supply pressure and electric power, and exhaust all compressed air from the system using the residual pressure release function.

When the equipment is restarted, proceed with caution after confirming that appropriate measures are in place to prevent sudden movement.

⚠ Caution

- 1. Be certain to wear safety glasses at all times during periodical inspections.**
- 2. Replace fittings or tubing having the following problems.**
 - 1) Cracks, gouges, wearing, corrosion
 - 2) Air leakage
 - 3) Twists or crushing of tubing
 - 4) Hardening, deterioration, softening of tubing
- 3. When replacing tubes or fittings, do not try to mend or repair and then reuse them.**

One-touch Fittings Mounting / Piping

⚠ Caution

- 1. Installation and removal of tubing for One-touch fittings**
 - 1) Installation of tubing**
 - (1) Cut the tubing perpendicularly, being careful not to damage the outside surface. Use an SMC tube cutter TK-1, 2, 3, 5, or 6. Do not cut the tubing with pliers, nippers, scissors, etc., otherwise the tubing will be deformed and problems may result.
 - (2) The outside diameter of the polyurethane tubing swells when internal pressure is applied to it. Therefore, it may be impossible to re-insert the tubing into the One-touch fitting. Check the tubing outside diameter, and when the accuracy of the outside diameter is +0.07 mm or larger for $\phi 2$, +0.15 mm or larger for other sizes, re-insert it into the One-touch fitting without cutting the tubing. When the tubing is re-inserted into the One-touch fitting, confirm that the tubing goes through the release button smoothly.

One-touch Fittings Mounting / Piping

⚠ Caution

- (3) Grasp the tubing, and slowly push it straight (0 to 5°) into the One-touch fitting until it comes to a stop.
- (4) Pull the tubing back gently to make sure it has a positive seal. Insufficient installation may cause air to leak or the tubing to release.

As a guide for checking if the tubing is pulled out or not, refer to the following table.

Tubing size	Tensile force of tubing [N]
$\phi 2$, 3.2, 1/8"	5
$\phi 4$, 5/32", 3/16"	8
$\phi 6$, 1/4"	12
$\phi 8$, 5/16"	20
$\phi 10$, 3/8"	30
$\phi 12$, 1/2"	35
$\phi 16$	50

2) Removal of tubing

- (1) Push the release button flange evenly and sufficiently to release the tube. Do not push in the tubing before pressing the release button.
- (2) Pull out the tubing while keeping the release button depressed. If the release button is not held down sufficiently, the tubing cannot be withdrawn.
- (3) To reuse the tubing, remove the previously lodged portion of the tubing. If the lodged portion is left on without being removed, it may result in air leakage and make the removal of the tubing difficult.

2. Connecting products with metal rods

Products with metal rods (KC series, previous KQ series, KN series, KM series, etc.) cannot be connected to KQ2 series One-touch fittings. If connected, the metal rod cannot be retained by the chuck of the One-touch fitting, and products with metal rods may project during pressurization, causing serious personal injury or accident.

Even when products with metal rods can be connected to other One-touch fittings, do not use any tube, resin plug, or reducer after connection. This may cause releasing.

For details about One-touch fittings that can connect to products with metal rods, contact SMC.



Fittings & Tubing Precautions 4

Be sure to read this before handling products.

Connection Thread Tightening Method

1. Connection thread: M3

First, tighten by hand, then use a suitable wrench to tighten the hexagonal portion of the body an additional 1/4 turn. The reference value for the tightening torque is 0.4 to 0.5 N-m.

2. Connection thread: M5 and 10-32UNF

First, tighten by hand, then use a suitable wrench to tighten the hexagonal portion of the body an additional 1/6 to 1/4 turn. The reference value for the tightening torque is 1 to 1.5 N-m.

3. Connection thread: M6

First, tighten by hand, then use a suitable wrench to tighten the hexagonal portion of the body an additional 1/6 to 1/4 turn. * Excessive tightening may damage the thread portion or deform the gasket and cause air leakage.

Insufficient tightening may loosen the threads or cause air leakage.

4. Fittings with sealant: R, NPT

1) First, tighten the fitting by hand, then use a suitable wrench to tighten the hexagonal portion of the body a further two or three turns.

To find the appropriate tightening torque, see the table below.

Connection thread size (R, NPT)	Tightening torque [N-m]
1/16, 1/8	3 to 5
1/4	8 to 12
3/8	15 to 20
1/2	20 to 25

2) If the fitting is tightened with excessive torque, a large amount of sealant will seep out. Remove the excess sealant.

3) Insufficient tightening may cause seal failure or loosen the threads.

4) For reuse

(1) Normally, fittings with a sealant can be reused up to 2 to 3 times.

(2) To prevent air leakage through the sealant, remove any loose sealant stuck to the fitting by blowing air over the threaded portion.

(3) If the sealant no longer provides effective sealing, wind sealant tape over the sealant before reusing. Do not use any form other than the tape type of sealant.

(4) Once the fitting has been tightened, backing it out to its original position often causes the sealant to become defective. Air leakage will occur.

5. Face seal fittings: R, NPT, G

1) Tighten fittings with sealant using the proper tightening torques in the table below.

Connection thread size (R, NPT, G)	Proper tightening torque [N-m]
1/16, 1/8	3 to 5
1/4	8 to 12
3/8	15 to 20
1/2	20 to 25

2) Insufficient tightening may cause seal failure or loosen the threads.

3) For reuse

(1) Normally, fittings with a sealant can be reused up to 6 to 10 times.

(2) The seal ring cannot be replaced.

6. Uni thread fittings

1) First, tighten the threaded portion by hand, then use a suitable wrench to tighten the hexagonal portion of the body further at the appropriate wrench tightening angle shown below. For the reference value for the tightening torque, refer to the table below.

Connection Female Thread: Rc, NPT, NPTF

Uni thread size	Wrench tightening angle after hand-tightening [deg]	Tightening torque [N-m]
1/8	30 to 60	3 to 5
1/4	30 to 60	8 to 12
3/8	15 to 45	14 to 16
1/2	15 to 30	20 to 22

Connection Female Thread: G

Uni thread size	Wrench tightening angle after hand-tightening [deg]	Tightening torque [N-m]
1/8	30 to 45	3 to 4
1/4	15 to 30	4 to 5
3/8	15 to 30	8 to 9
1/2	15 to 30	14 to 15

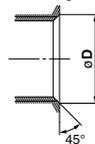
2) The gasket can be reused up to 6 to 10 times. It can be replaced easily when it has sustained damage. A broken gasket can be removed by holding it and then turning it in the same direction as loosening the thread. If the gasket is difficult to remove, cut it with nippers, etc. In such a case, use caution not to scratch the seat face because the seat face of the fitting's 45° gasket is the sealing face.

Chamfer Dimensions for Female Threads

⚠ Caution

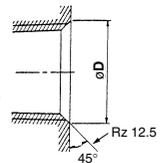
1. Chamfer dimensions for female connection threads M3, M5, 10-32UNF

In compliance with ISO 16030 Standards (air pressure fluid dynamics – connection – ports and stud ends), the chamfer dimensions shown below are recommended. By chamfering as shown in the following table, machining of threads is easier and effective for burr prevention.



Connection thread size	Chamfer dimension øD (Recommended value) [mm]
M3	3.1 to 3.4
M5	5.1 to 5.4
10-32UNF	5.0 to 5.3

2. Chamfer dimensions of R and NPT threads with sealant, and Uni threads



Connection thread size	Chamfer dimension øD (Recommended value)		
	G	Rc	NPT, NPTF
1/16	—	—	8.2 to 8.4
1/8	10.2 to 10.6	10.2 to 10.4	10.5 to 10.7
1/4	13.6 to 14.0	13.6 to 13.8	14.1 to 14.3
3/8	17.1 to 17.5	17.1 to 17.3	17.4 to 17.6
1/2	21.4 to 21.8	21.4 to 21.6	21.7 to 21.9

* For Uni threads, Rz 12.5 is necessary for sealing at the chamfered part.



Fittings & Tubing Precautions 5

Be sure to read this before handling products.

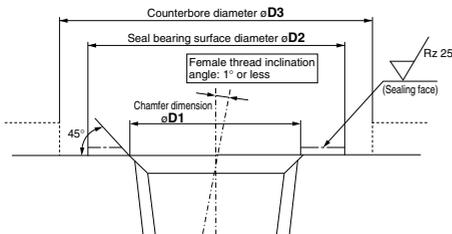
Chamfer Dimensions for Female Threads

⚠ Caution

3. Chamfer dimensions for female threads of face seal fittings (R, NPT, G)

- 1) Surface roughness of bearing surface: Rz 25 or less
- 2) Chamfer dimension: $\phi D1$, Seal bearing surface diameter: $\phi D2$ (Refer to the table below.)
- 3) Female thread inclination angle: 1° or less
- 4) Counterbore diameter when the female thread is counterbored: $\phi D3$
 - Models with hexagonal flats: Body width across flats x 1.1 or more
 - Models other than hexagon (Hexagon socket head male connector, etc.): Body dimensions + 0.2 mm or more
 - * The width across flats and the body dimensions differ depending on the model even when the same thread size is used. Refer to the dimensions in the catalog.
- 5) If oil content or sealant is sticking to the female thread, this may cause damage to the product. Remove it before piping.

Connection thread size	Chamfer dimension $\phi D1$ [mm]	Seal bearing surface diameter $\phi D2$ [mm]
R1/8	10.2 to 10.4	12 or more
R1/4	13.6 to 13.8	17 or more
R3/8	17.1 to 17.3	21 or more
R1/2	21.4 to 21.6	27 or more
NPT1/16	8.2 to 8.4	11.11 or more
NPT1/8	10.5 to 10.7	12.7 or more
NPT1/4	14.1 to 14.3	17.46 or more
NPT3/8	17.4 to 17.6	22 or more
NPT1/2	21.7 to 21.9	28.7 or more
G1/8	10.2 to 10.6	12 or more
G1/4	13.6 to 14.0	17 or more
G3/8	17.1 to 17.5	21 or more
G1/2	21.4 to 21.8	27 or more



Recommended Piping Conditions

1. When connecting piping to the One-touch fitting, use a pipe length with sufficient margin, in accordance with the piping conditions shown in Fig. 1.

Also, when using a tying band, etc., to bind the piping together, make sure that external force does not come to bear on the fitting. (See Fig. 2.)

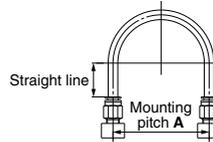


Fig. 1 Recommended piping

Tubing size	Mounting pitch A			Straight line length
	Nylon tubing	Soft nylon tubing	Polyurethane tubing	
$\phi 2$	—	—	13 or more	10 or more
$\phi 3.2, 1/8"$	44 or more	35 or more	25 or more	16 or more
$\phi 4, 5/32"$	56 or more	44 or more	26 or more	20 or more
$\phi 3/16"$	67 or more	52 or more	38 or more	24 or more
$\phi 6$	84 or more	66 or more	39 or more	30 or more
$\phi 1/4"$	89 or more	70 or more	57 or more	32 or more
$\phi 8, 5/16"$	112 or more	88 or more	52 or more	40 or more
$\phi 10$	140 or more	110 or more	69 or more	50 or more
$\phi 3/8"$	134 or more	105 or more	69 or more	48 or more
$\phi 12$	168 or more	132 or more	88 or more	60 or more
$\phi 1/2"$	178 or more	140 or more	93 or more	64 or more
$\phi 16$	224 or more	176 or more	114 or more	80 or more

Unit: [mm]

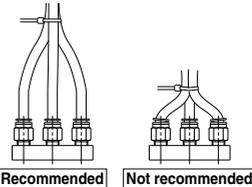


Fig. 2 When using a tying band to bind the piping together

Tubing Design / Selection

⚠ Caution

1. When using tubing from a manufacturer other than SMC, be careful of the tolerance of the tubing O.D. and tubing material.

- 1) Nylon tubing Within ± 0.1 mm
- 2) Soft nylon tubing Within ± 0.1 mm
- 3) Polyurethane tubing Within $+0.15$ mm, Within -0.2 mm

Do not use tubing which does not satisfy the specified tubing O.D. accuracy, or tubing with an I.D., material, hardness, or surface roughness that differs from SMC's tubing. Please consult SMC if anything is unclear. It may cause difficulty in connecting the tubing, leakage, disconnection of the tubing, or fitting damage.

When used with tubing other than those from SMC, due to their properties, the products listed below are not subject to warranty.

KQG2, KQB2, KFG2, KF, $\phi 2M$

2. When using fittings other than those from SMC, be certain to confirm that the operating conditions are such that no problems will arise.



KQ2C Series

Notes when Ordering Color Caps

In order to improve operability, the outside diameter of the release button has been enlarged for the **new KQ2** series. Therefore, the usable color caps will differ between pre-change and post-change products. Please contact SMC if anything is unclear.

Applicable Sizes and Models

	Applicable tubing O.D.	Model
Metric size	ø8, ø10, ø12, ø16	All models* ¹
Inch size	ø1/4", ø3/8", ø1/2"	

*1 Excluding models without release buttons

How to Identify Release Buttons Before and After Change

The release button for both the fitting/**KQ2** and color cap/**KQ2C** after the change can be identified by the protruding mark on the left side of the  SMC logo, and the release button before the change has no protruding mark. The same identification method is used for metric size and inch size.

- * Along with the change of the release button, the model of the color cap/**KQ2C** is changed from **KQ2C-□A** to **KQ2C-□B**.
- * There is no change of the model for the fitting/**KQ2**.

Before change



No protruding mark

Release button

After change



Protruding mark

Release button

Applicable color cap

Metric Size

Applicable tubing O.D. [mm]	Model	øD1	øD2	L	Weight [g]
ø8	KQ2C-08□A	12.8	9.2	2.6	0.1
ø10	KQ2C-10□A	15.2	11.2	2.7	0.1
ø12	KQ2C-12□A	17.6	13.2	2.7	0.1
ø16	KQ2C-16□A	22.4	17.2	3.2	0.2

□: B (Black), R (Red), YR (Orange), BR (Brown), Y (Yellow), G (Green), CB (Sky blue), GR (Gray), W (White), BU (Blue)

Inch Size

Applicable tubing O.D. [inch]	Model	øD1	øD2	L	Weight [g]
ø1/4	KQ2C-07□A	10.7	7.5	2.6	0.1
ø3/8	KQ2C-11□A	14.8	10.7	2.7	0.1
ø1/2	KQ2C-13□A	18.5	13.9	2.7	0.1

□: B (Black), R (Red), YR (Orange), BR (Brown), Y (Yellow), G (Green), CB (Sky blue), GR (Gray), W (White), BU (Blue)

Applicable color cap

Metric Size

Applicable tubing O.D. [mm]	Model	øD1	øD2	L	Weight [g]
ø8	KQ2C-08□B	13.6	9.2	2.6	0.1
ø10	KQ2C-10□B	16.2	11.2	2.7	0.1
ø12	KQ2C-12□B	18.8	13.2	2.7	0.2
ø16	KQ2C-16□B	24.2	17.2	3.2	0.3

□: B (Black), R (Red), YR (Orange), BR (Brown), Y (Yellow), G (Green), CB (Sky blue), GR (Gray), W (White), BU (Blue)

Inch Size

Applicable tubing O.D. [inch]	Model	øD1	øD2	L	Weight [g]
ø1/4	KQ2C-07□B	11.5	7.5	2.6	0.1
ø3/8	KQ2C-11□B	15.7	10.7	2.7	0.1
ø1/2	KQ2C-13□B	19.6	13.9	2.7	0.2

□: B (Black), R (Red), YR (Orange), BR (Brown), Y (Yellow), G (Green), CB (Sky blue), GR (Gray), W (White), BU (Blue)



KQ2C Series

Precautions for Color Caps Applicable to Products Other than the New KQ2

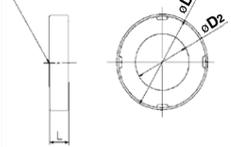
Please note that color cap models for products other than the **New KQ2** One-touch fittings are different.
 The table of applicable color caps is shown below.
 Please contact SMC for any questions.

Table of Applicable Color Caps

Metric Size

Description	Applicable series	Applicable tubing O.D. (mm)	Model	øD1	øD2	L	Weight [g]		
Rectangular Multi-connector	KDM	ø3.2	KQ2C-01□	9.1	4.35	2.9	0.1		
		ø4	KQ2C-04□	10.1	5.2	2.9	0.1		
		ø6	KQ2C-06□	12.1	7.2	2.9	0.1		
		ø8	KQ2C-08□	14.1	9.2	2.9	0.1		
Multi-connector with One-touch Fittings	DMK	ø3.2	KQ2C-01A-□	7.35	4.2	2.5	0.1		
		ø4	KQ2C-04A-□	8.5	5	2.2	0.1		
S Couplers Straight Type with One-touch Fitting KK2□-□H Bulkhead Type with One-touch Fitting KK2□-□E	KK2□-□H KK2□-□E	ø3.2	KQ2C-01A-□	7.35	4.2	2.5	0.1		
		ø4	KQ2C-04A-□	8.5	5	2.2	0.1		
		ø6	KQ2C-06A-□	10.5	7	2.2	0.1		
S Couplers Elbow Type with One-touch Fitting	KK2□-23L KK2□-04L KK2□-06L	ø3.2	KQ2C-01B-□	8.8	4.2	2.5	0.1		
		ø4	KQ2C-04B-□	9.7	5	2.2	0.1		
		ø6	KQ2C-06B-□	12	7	2.2	0.1		
S Couplers	KK3	ø4	KQ2C-04□	10.1	5.2	2.9	0.1		
		ø6	KQ2C-06□	12.1	7.2	2.9	0.1		
	KK3, KK4	ø8	KQ2C-08□	14.1	9.2	2.9	0.1		
		ø10	KQ2C-10□	17.1	11.2	2.9	0.2		
S Couplers	KK4, KK6	ø12	KQ2C-12□	19.1	13.2	2.9	0.2		
		ø4	KQ2C-04□	10.1	5.2	2.9	0.1		
	KM	ø6	KQ2C-06□	12.1	7.2	2.9	0.1		
		ø8	KQ2C-08□	14.1	9.2	2.9	0.1		
One-touch Fittings Manifold	KM	ø10	KQ2C-10□	17.1	11.2	2.9	0.2		
		ø4	KQ2C-04□	10.1	5.2	2.9	0.1		
		ø6	KQ2C-06□	12.1	7.2	2.9	0.1		
		ø8	KQ2C-08□	14.1	9.2	2.9	0.1		
		Self-seal Fittings Rotary One-touch Fittings	KC KS/KX	ø10	KQ2C-10□	17.1	11.2	2.9	0.2
				ø12	KQ2C-12□	19.1	13.2	2.9	0.2
ø4	KQ2C-04□			10.1	5.2	2.9	0.1		
ø6	KQ2C-06□			12.1	7.2	2.9	0.1		
Piping Module	KB	ø8	KQ2C-08□	14.1	9.2	2.9	0.1		
		ø10	KQ2C-10□	17.1	11.2	2.9	0.2		
		ø12	KQ2C-12□	19.1	13.2	2.9	0.2		
		ø16	KQ2C-16□	26.3	17.2	3.9	0.3		

Applicable tubing



□: B (Black), R (Red), YR (Orange), BR (Brown), Y (Yellow), G (Green), CB (Sky blue), GR (Gray), W (White), BU (Blue)



TL/TIL/TD/TID Series

Applicable Fluid List

Chemical resistance of Fluoropolymer Super PFA, modified PTFE material

Chemicals in the list below are chemically inert*1 to Super PFA, modified PTFE material. Possible physical effects may occur such as penetration and swelling due to temperature, pressure and chemical concentration. To use Super PFA, modified PTFE tube in a chemical environment, tests should be performed with the same environment to ensure no problem occurs with operating environment.

1,1,1-Trichloroethane	Formic acid	Trichloroethylene
1,1,2-Trichloroethane	Ethyl formate	Trichloroacetic acid
1,2,3-Trichloropropane	Propyl formate	Toluene
1,2-Dichlorobutane	Methyl formate	Naphtha
2,4-Dichlorotoluene	Xylene	Carbon dioxide
2-chloropropane	Glycol	Nitrogen dioxide
2-nitro-2-methylpropane	Glycerine	Nitrobenzene
2-nitrobutanol	Cresol	Nitromethane
Pentabasic benzamide	Chromic acid	Carbon disulfide
Hydrochlorofluorocarbon-22	Chloroacetic acid	Piperidine
N-octadecanol	Chlorosulfonic acid	Pyridine
N-butylamine	Chloroform	Pyrogallol
o-chlorotoluene	Paraffinum liquidum	Phenol
Isobutyl adipate	Acetate	Butanol
Acetyl chloride	Amyl acetate	Phthalic acid
Acetophenone	Ethyl acetate	Hydrofluoric acid
Acetone	Potassium	Furan
Aniline	Butyl acetate	Ethyl propionate
Sulfurous acid gas	Propyl acetate	Propyl propionate
Allyl chloride	Methyl acetate	Methylpropionate
Benzoic acid	Salicylic acid	Propylene chloride
Ammonium	Sodium hypochlorite	Bromobenzene
Sulfur	Diisobutyl ketone	Hexachlorethane
Isoamyl alcohol	Diethylamine	Hexane
Isooctane	Carbon tetrachloride	Heptane
Ethanol	Dioxane	Benzyl alcohol
Ethyl ether	Cyclohexanone	Benzaldehyde
Ethylene glycol	Cyclohexane	Benzene
Ethylene chloride	Dichloroethylene	Benzoyl chloride
Ethylenediamine	Dichloropropylene	Benzonitrile
Zinc chloride	Dibutyl phthalate	Pentachloroethane
Aluminum chloride	Dimethyl ether	Boric acid
Ammonium chloride	Dimethylsulfoxide	Sodium boric acid
Calcium chloride	Dimethylformamide	Formaldehyde
Ferrous chloride	Hydrobromic acid	Acetic anhydride
Mercuric chloride	Potassium dichromate	Methanol
Stannous chloride	Bromine	Methyl ether
Ferric chloride	DI water (Pure water)	Methyl ethyl ketone
Cupric chloride	Nitric acid	Methylene chloride
Sodium chloride	Ammonium hydroxide	Ethyl butyrate
Magnesium chloride	Potassium hydroxide	Methyl butyrate
Hydrochloric acid	Sodium hydroxide	Hydrogen sulfide
Chlorine	Soap, detergent	Sulphuric acid
Aqua regia	Diethyl carbonate	Zinc sulfate
Ozone	Sodium carbonate	Ammonium sulfate
Oleic acid	Tetrachloroethane	Ferrous sulfate
Perchlorate	Tetrachloroethylene	Copper sulfate
Hydrogen peroxide	Tetrahydrofuran	Phosphoric acid
Natrium peroxide	Tetrabromoethane	Sodium phosphate
Gasoline	Triethanolamine	
Potassium permanganate	Triethylamine	

*1 "Chemically inert" means – not to cause any chemical reaction.



TLM/TILM Series

Applicable Fluid List

Chemical resistance of Fluoropolymer PFA material

Chemicals in the list below are chemically inert*1, to PFA material. Possible physical effects may occur such as penetration and swelling due to temperature, pressure and chemical concentration.

To use PFA tube in a chemical environment, tests should be performed with the same environment to ensure no problem occurs with operating environment.

Acetate	Butyl stearate	Ethylene dicloride	Malic acid	Salicylic acid
Acetic anhydride	Calcium acetate	Ethylene glycol	Mercaptan	Silicate ester
Acetone	Calcium bisulfite	Ethylene oxide	Mercuric chloride	Silicone grease
Acetylene	Calcium chloride	Ethylenediamine	Mercury	Silicone oil
Acrylonitrile	Calcium hydroxide	Fatty acid	Methyl acetate	Silver nitrate
Aluminum acetate	Calcium hypochlorite	Ferric chloride	Methyl alcohol	Sodium bicarbonate
Aluminum nitrate	Calcium nitrate	Ferric nitrate	Methyl chloride	Sodium bisulfate
Aluminum bromide	Calcium sulfide	Ferric sulfate	Methyl ethyl ketone	Sodium bisulfite
Aluminum chloride	Carbon dioxide	Fluoroboric acid	Methyl isobutyl ketone	Sodium hypochlorite (5%)
Aluminum fluoride	Carbon disulfide	Fluorobenzene	Methyl methacrylate	Sodium metaphosphate
Aluminum sulfate	Carbonic acid	Fluosilicic acid	Methylene dichloride	Sodium nitrate
Ammonia gas	Castor oil	Formaldehyde	Mineral oil	Sodium perborate
Ammonium carbonate	Caustic soda (30%)	Formic acid	Monochloroacetic acid	Sodium phosphate
Ammonium chloride	Cellosolve	Furfural	Monochlorobenzene	Sodium sulfite
Ammonium hydroxide	Chlorosulfonic acid	Gasoline	Monoethanolamine	Sodium thiosulfate
Ammonium nitrate	Chlorotoluene	Gelatine	Naphtha	Soybean oil
Ammonium nitrite	Chromic acid	Glauber's salt	Naphthalene	Stannic chloride
Ammonium persulfate	Citric acid	Glucose	Naphthenic acid	Stearic acid
Ammonium phosphate	Coconut oil	Glue	Natrium peroxide	Styrene
Ammonium sulfate	Copper cyanide	Glycerine	Natural gas	Sucrose solution
Amyl acetate	Copper sulfate	Grease	Nickel acetate	Sulfur
Amyl alcohol	Corn oil	Hexaldehyde	Nickel chloride	Sulfur chloride
Amyl borate	Cottonseed oil	Hexane	Nickel sulfate	Sulfuric acid (98%)
Amyl naphthalene	Creosote oil	Hexyl alcohol	Nitric acid (60%)	Sulfurous acid gas
Aniline	Cresol	Hydrobromic acid	Nitrobenzene	Tannic acid
Aniline dye	Cupric chloride	Hydrochloric acid	Nitroethane	Tartaric acid
Animal oil (Lard oil)	Cyclohexane	Hydrocyanic acid	Nitromethane	Terpineol
Aqua regia	Cyclohexanol	Hydrofluoric acid (49%)	Nitropropane	Tetrachloroethane
Arsenic acid	Cyclohexanone (Anon)	Hydrofluoric acid anhydrous	Octyl alcohol	Tetraethyl lead
Asphalt	Dibutyl phthalate	Hydrogen peroxide (30%)	Oxalic acid	Tetrahydrofuran
Barium chloride	Dichlorobenzene	Hydrogen sulfide	Oxygen	Tetralin
Barium hydroxide	Diethyl sebacate	Hydroquinone	Ozone	Thionyl chloride
Barium sulfate	Diethylene glycol	Hypochlorous acid	Palmitic acid	Triacetin
Barium sulfide	Diisopropyl keton	Isobutyl alcohol	Perchlorate	Tributoxy ethyl phosphate
Beer	Diocetyl phthalate	Isocotane	Perchloroethylene	Tributyl phosphate
Beet sugar liquors	Diocetyl sebacate	Isopropyl acetate	Petroleum	Trichloroethylene
Benzaldehyde	Dipentene (Limonene)	Isopropyl alcohol	Phenol	Tricresyl phosphate
Benzene	Diphenyl	Isopropyl ether	Phosphoric acid (75%)	Triethanolamine
Benzene (Benzol)	Diphenyl oxide	Kerosene	Picric acid	Tung oil
Benzyl alcohol	Epichlorohydrin	Lead acetate	Piperidine	Turpentine oil
Benzyl benzoate	Ethanolamine	Lead nitrate	Potassium chloride	Vegetable oil
Benzyl chloride	Ethyl acetate	Lead sulfamate	Potassium dichromate	Vinegar
Borax	Ethyl acetoacetate	Linolenic acid	Potassium hydroxide	Water
Boric acid	Ethyl acrylate	Linseed oil	Potassium nitrate	Whiskey
Bromine	Ethyl alcohol	Liquid ammonia	Potassium permanganate	Xylene
Bunker oil	Ethyl benzene	LPG (Liquefied petroleum gas)	Potassium sulfate	Zeolite
Butane	Ethyl cellulose	Lubricating oil	Propyl acetate	Zinc acetate
Butter	Ethyl chloride	Magnesium chloride	Propyl alcohol	Zinc chloride
Butyl acetate	Ethyl oxalate	Magnesium hydroxide	Propylene	Zinc sulfide
Butyl acrylate	Ethyl silicate	Magnesium sulfate	Pyridine	
Butyl alcohol (Butanol)	Ethylene chlorohydrin	Maleic acid	Pyrrrole	

*1 "Chemically inert" means – not to cause any chemical reaction.



TH/TH Series

Applicable Fluid List

Chemical Resistance of Fluoropolymer FEP Material

Chemicals in the list below are chemically inert*1 to FEP material, however physical properties may be effected by temperature or pressure change.

Please make sure that operating conditions do not cause problems since the use of FEP tubing under chemical environment is unsecured.

2-nitro-2-methyl propanol	Chloroform	Nitromethane
2-nitrobutanol	Paraffinum liquidum	Perchloroethylene
Pentabasic benzamide	Allyl acetate	Perphloroxylene
N-butylamine	Ethyl acetate	Unsymmetrical dimethylhydrazine
N-octadecanol	Potassium	Hydrazine
N-butyl acetate	Butyl acetate	Pinene
O-cresol	Sodium hypochlorite	Piperidine
Di-isobutyl adipate	Carbon tetrachloride	Glacial acetic acid (Acetic acid)
Acetophenone	Dioxane	Pyridine
Acetone	Cyclohexanone	Phenol
Aniline	Cyclohexane	Phthalic acid
Abietic acid	Dimethyl ether	Dybutyl phthalate
Sulfuric chloride	Dimethylsulfoxide	Dimethyl phthalate
Isooctane	Dimethylformamide	Hydrofluoric acid
Liquid ammonia	Bromine	Naphthalene fluoride
Ethyl alcohol	DI water (Pure water)	Nitrobenzene fluoride
Ethyl ether	Nitric acid	Furan
Ethylene glycol	Mercury	Hexachlorethane
Ethylenediamine	Ammonium hydroxide	Hexane
Zinc chloride	Potassium hydroxide	Ethyl hexanoate
Aluminum chloride	Sodium hydroxide	Phenylcarbinol
Ammonium chloride	Cetane	Benzaldehyde
Calcium chloride	Soap, detergent	Benzonitrile
Sulfuric chloride	Dibutyl sebacate	Borax
Iron chloride (III)	Diethyl carbonate	Boric acid
Benzoyl chloride	Tetrachloroethylene	Formic aldehyde (Formalin)
Magnesium chloride	Tetrahydrofuran	Acrylic anhydride
Hydrochloric acid	Tetrabromoethane	Acetic anhydride
Chlorine (absolute)	Triethanolamine	Methacrylic acid
Aqua regia	Trichloroethylene	Allyl methacrylate
Ozone	Trichloroacetic acid	Vinyl methacrylate
Hydrogen peroxide	Toluene	Methyl alcohol
Natrium peroxide	Naphtha	Methyl ethyl ketone
Gasoline	Naphthalene	Methylene chloride
Permanganate	Naphthol	Sulphuric acid
Formic acid	Lead	Phosphoric acid
Xylene	Carbon dioxide	Iron phosphate (III)
Chromic acid	Nitrogen dioxide	Tri-n-butyl phosphate
Chlorosulfonic acid	Nitrobenzene	Tricresyl phosphate

*1 "Chemically inert" means – not to cause any chemical reaction.

Reference cited: Teflon®, the fluoropolymer handbook, Manual for the chemical applications of Teflon®. Du Pont-Mitsui Fluorochemicals Co., Ltd.

Teflon® is a registered trademark for the fluoropolymer produced by E.I du Pont de Nemours & Company (Inc.) and Du Pont-Mitsui Fluorochemicals Co., Ltd.



TL/TIL/TLM/TILM/TD/TID/TH/TH Series Tubing/Precautions

Be sure to read this before handling the products.

Selection

⚠ Warning

1. Confirm the specifications.

Products represented in this catalog are designed only for use in compressed air systems (including vacuum). Do not operate at pressures or temperatures, etc., beyond the range of specifications, as this can cause damage or malfunction. (Refer to the specifications.)

2. In case of using the product for medical care

This product is designed for use with compressed air system applications for medical care purposes. Do not use in contact with human bodily fluids, body tissues or transfer applications to a human living body.

⚠ Caution

1. Do not use in locations where the connecting threads and tubing connection will slide or rotate.

The connecting threads and tubing connection will come apart under these conditions.

2. Use tubing at or above the minimum bending radius. Using below the minimum bending radius can cause breakage or flattening of the tubing.

3. Never use the tubing for anything flammable, explosive or toxic such as gas, fuel gas, or cooling mediums etc.

Because the contents may penetrate outward.

4. Use the fittings applicable to the tubing size.

Mounting

⚠ Caution

1. Confirm model no., size, etc. before installing.

Check tubing for damage, gouges, cracks, etc.

The fluoropolymer tubing do not have the model number displayed on the product due to the resin material used. If tubing without a model label is mixed with other tubing which also does not have a model label, it is impossible to identify the model. Please avoid mixing the products with other models while it is being used and/or stored.

2. When tubing is connected, consider factors such as changes in the tubing length due to pressure, and allow sufficient leeway.

3. Do not apply unnecessary forces such as twisting, pulling, moment loads, etc. on fittings or tubing.

This will cause damage to fittings and will crush, burst or release tubing.

4. Mount so that tubing is not damaged due to tangling and abrasion.

This can cause flattening, bursting or disconnection of tubing, etc.

Piping

⚠ Caution

1. Preparation before piping

Before piping is connected, it should be thoroughly blown out with air (flushing) or washed to remove chips, cutting oil and other debris from inside the pipe. Not allowing chips of the piping thread or the seal material to go in.

Air Supply

⚠ Warning

1. Types of fluid

This product is designed for use with compressed air.

2. In case of excessive condensation

Excessive condensation in a compressed air system may cause pneumatic equipment to malfunction. Installation of an air dryer, water separator before filter is recommended.

3. Drain flushing

If condensation in the drain bowl is not emptied on a regular basis, the bowl will overflow and allow the condensation to enter the compressed air lines. It causes malfunction of pneumatic devices.

If the drain bowl is difficult to check and remove, installation of a drain bowl with an auto drain option is recommended.

For compressed air quality, refer to SMC's "Air Cleaning Equipment" catalog.

Operating Environment

⚠ Warning

1. Do not use in locations having an explosive atmosphere.

2. Do not operate in locations where vibration or impact occurs.

3. In locations near heat sources, block off radiated heat.

Maintenance

⚠ Caution

1. Reform periodic inspections to check the following problems and replace tubing, if necessary.

- 1) Cracks, gouges, wearing, corrosion
- 2) Air leakage
- 3) Twists or crushing of tubing
- 4) Hardening, deterioration, softening of tubing

2. Do not repair or patch the replaced tubing or fittings for reuse.

3. When using insert or miniature fittings over a long period, some leakage may occur due to age deterioration of the materials. If any leakage is detected, correct the problem by additional tightening.

If tightening becomes ineffective, replace the fittings with a new product immediately.



KK130 Series

Specific Product Precautions 1

Be sure to read this before handling the products.

Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

Selection

Warning

1. Make sure to confirm the specifications.

Do not use with pressures or temperatures outside the range of specifications, as this may result in damage and malfunction. (Refer to the specifications on page 121.) SMC takes no responsibility for damage incurred by use in excess of the specification range.

2. Prohibition of disassembly and modification

Do not disassemble or modify (including additional machining) the main body. False use may cause an injury or accident.

3. Confirm that PTFE can be used in application.

Thread sealant contains PTFE (polytetrafluoroethylene) powder. Confirm if the use of it may cause any adverse effect on the system.

4. Cannot be used as a stop valve that requires zero leakage.

A certain amount of leakage is allowed during operation.

5. Refer to the table below for whether the S coupler can be connected.

Series	KK	KKH	KKA	KKG	KK13	KK130
KK13	—	—	—	—	○	○
KK130	—	—	—	—	○	○

When the KK130 series is connected to other companies' products, confirm manufacturers and other information before using it.

Caution

1. When connecting the plug to the socket, select the series suitable for the connection.

If the series are not matched, they cannot be connected. Mismatches will cause leakage, damage, and disconnection of the plug. Inserting a plug other than the specialized plug into the socket may result in equipment damage.

2. Do not rotate or turn the S coupler and piping to which it is connected.

The connection of the piping might be damaged or come undone.

3. Do not use couplers with flammable, explosive, or toxic substances, such as gas, gas fuel, and refrigerant.

They may leak from the S coupler or from inside the tubing to the outside.

4. Operate with a surge pressure of no more than the maximum operating pressure.

If the surge pressure exceeds the maximum operating pressure, it will cause damage to couplers and tubing.

5. Do not use the S coupler with water or steam.

Corrosion of the metal material and deterioration of the sealing material may result from long-term use with water or steam.

6. The tube bending radius in the vicinity of the fitting should be at least the minimum bending radius of the tube.

If the bending radius is less than the minimum value, fittings may damage, or tube may crack or be crushed. The minimum bending radius, with the exception of TU polyurethane tube, TUH hard polyurethane tube, TUS soft polyurethane tube, TRBU FR double layer polyurethane tube, TH FEP tube, TL PFA tube, TD modified PTFE tube, is measured as following in accordance with JIS B 8381-1995.

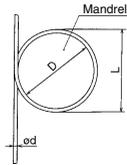
Tube deformation ratio at the minimum bending radius is obtained through the following formula, based on tube diameter and mandrel diameter by wrapping the same radius mandrel tube.

$$\eta = \left(1 - \frac{L - D}{2d}\right) \times 100$$

Here, η : Deformation ratio (%)
D: Tube O.D. [mm]
L: Measured length [mm]
D: Mandrel diameter [mm]
(Twice against the minimum bending radius)

Test temperature: 20 ±5°C
Relative humidity: 65 ±5%

Tube deformation ratio at the minimum bending radius



7. Applicable for air.

Consult with SMC if using other fluids.

Mounting

Warning

1. operation manual

Mount and operate the product after reading the operation manual carefully and understanding its contents. Also, keep the manual where it can be referred to as necessary.

2. Ensure sufficient space for maintenance.

Be sure to allow the space required for maintenance and inspection.

3. Tightening torque

When installing the products, tighten the screw with the recommended tightening torque.

4. During use, pipe deterioration or damage to S couplers can result in disconnection of the piping and uncontrollable behavior of the piping.

To stop the piping from going out of control, use a protective cover or fix the piping in place.

5. Do not use couplers where rotation normally occurs.

The couplers may be damaged.

6. Avoid applications in which vibration or shock is directly applied to the fittings.

When mounting the S coupler to a piece of equipment that generates impact or vibration, do not connect the S coupler to the equipment directly. In that case, connect a hose whose length is 300 mm or more between the S couplers.



KK130 Series

Specific Product Precautions 2

Be sure to read this before handling the products.

Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

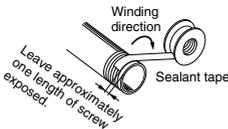
Mounting

⚠ Warning

- S couplers with sleeve lock mechanism must be locked during operation in order to prevent sudden disconnection.**
- Install a stop valve at the supply pressure side of the socket.**
Emergency shutdown may not be possible without it.

⚠ Caution

- Preparation before piping**
Before piping is connected, it should be thoroughly blown out by air (flushed) or washed to eliminate cutting chips, cutting oil, and other debris from inside the pipe.
- Before mounting, confirm the model and size, etc.**
Also, confirm that there are no blemishes, nicks or cracks in the product.
- When connecting a pipe, consider factors such as changes in the piping length due to pressure, and allow sufficient leeway.**
- Mount so that S couplers and piping are not subjected to twisting, pulling or moment loads.**
This can cause damage to S couplers and flattening, bursting or disconnection of piping, etc.
- Mount so that piping is not damaged due to tangling and abrasion.**
This can cause flattening, bursting or disconnection of piping, etc.
- When screwing in the pipes or fittings, make sure to prevent cutting chips or the sealing material on the threaded portion of the pipe from entering the piping.**
Also, if sealant tape is used, leave about 1 thread ridge exposed at the end of the threads.



Air Supply

⚠ Warning

- Excessive drainage**
Compressed air containing large amounts of drainage can cause malfunction of pneumatic equipment. As a countermeasure, install an air dryer or water separator before the filter.
- Drain flushing**
If the drain removal from air filter is missed, drain will be flown out to the outlet side and may result in malfunction of pneumatic equipment. When removing drain is difficult, use of a filter with an auto drain is recommended.
Refer to SMC's "Air Preparation Equipment" catalog for further details on compressed air quality.
- Use clean air.**
If the compressed air includes chemicals, synthetic oils containing organic solvents, salt or corrosive gases, etc., it can cause damage or malfunction in the system.

Air Supply

⚠ Caution

- Install an air filter.**
Install an air filter upstream, near the valve. Select an air filter with a filtration degree of 5 µm or finer.
- As a countermeasure, install an aftercooler, air dryer or water separator.**
Compressed air containing large amounts of drainage can cause malfunction of pneumatic equipment. As a countermeasure, install an aftercooler, air dryer or water separator.
- Ensure that the fluid and ambient temperature are within the specified range.**
If the fluid temperature is 5°C or below, the moisture in the circuit could freeze, causing damage to the seals and leading to equipment malfunction. Therefore, take appropriate measures to prevent freezing.
Refer to SMC's "Air Preparation Equipment" catalog for further details on compressed air quality.

Operating Environment

⚠ Warning

- Do not use in atmospheres of corrosive gases, chemicals, sea water, water, water steam, or where there is direct contact with any of these.**
- Do not use in direct sunlight.**
- In locations near heat sources, protect against radiated heat.**
- Do not use in locations where static electric charges will be a problem.**
This may cause system failure. Consult with SMC regarding use in this kind of environment.
- Do not use in locations where spatter occurs.**
There is a danger of spatter causing a fire. Consult with SMC regarding use in this kind of environment.
- Do not use in environments where there is direct contact with liquids such as cutting oil, lubricating oil, coolant oil, or paints, etc.**
This may cause connection and release failure and/or leakage. Consult with SMC regarding use in this kind of environment.
- Do not use in locations influenced by vibrations or impacts.**
This may cause air leakage and S couplers damage. Consult with SMC regarding use in this kind of environment.
- Do not use in an environment where foreign matter such as spatter, metal powder or sand splashes onto or enters the product.**
This may cause connection and release failure and/or leakage.
- Do not use in an environment where the product is constantly exposed to water.**
Rust may occur.
- When the socket and plug are stored or not in use, make sure dust does not get stuck to them.**
This may cause connection and release failure and/or leakage.



KK130 Series

Specific Product Precautions 3

Be sure to read this before handling the products.

Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

Operating Environment

Warning

1. **Do not use in places or environments where foreign matter sticks to the product or gets inside the product.**

It may cause air leakage or tube release.

Maintenance

Caution

1. **Maintenance work**

If handled improperly, compressed air can be dangerous. Assembly, handling, repair and element replacement of pneumatic systems should be performed by qualified personnel only.

2. **Drain flushing**

Remove drainage from air filters regularly.

3. **Removal of equipment, and supply/exhaust of compressed air**

When components are removed, first confirm that measures are in place to prevent workpieces from dropping, run-away equipment, etc. Then, cut the supply pressure and power, and exhaust all compressed air from the system using the residual pressure release function.

When machinery is restarted, proceed with caution after confirming that appropriate measures are in place to prevent cylinders from sudden movement.

4. **Be absolutely sure to wear safety glasses when conducting periodic inspections.**

5. **Check for the following during regular maintenance, and replace components as necessary.**

- a) Scratches, gouges, abrasion, corrosion, rust
- b) Leakage
- c) Twisting, flattening or distortion of tubes and hoses
- d) Hardening, deterioration or softening

6. **Do not repair or patch the replaced tubing, hoses or couplers for reuse.**

Do not disassemble the S coupler.

Handling

Warning

1. **When connecting the plug, hold the plug securely.**

The plug may be uncoupled due to reaction at the time of connection.

2. **When connecting the plug, pull out the sleeve straight and insert the plug completely until it stops.**

After the connection, gently pull the plug to see whether it will release. If not securely inserted, the plug may pop out due to the pressure.

3. **When connecting the plug, insert it straight into the socket.**

If not inserted straight, the socket and/or plug may be damaged or cause a disconnection.

4. **When releasing the plug, hold it securely.**

When releasing the plug, hold it securely. The connection pipe may go out of control due to reacting stress and/or residual pressure on the plug side.

5. **Do not press the inside of the socket with an incompatible plug and/or with a tool.**

The internal fluid may be ejected and cause a dangerous situation. Also, the ejecting internal fluid may cause the sealings to come apart resulting in the product not functioning.

6. **Do not connect and remove the coupler when it is pressurized and residual pressure exists.**

The coupler may fly out.

7. **Do not apply lateral load vertically to the connection direction of the plug or socket.**

This may cause leakage and damage the coupler.

8. **Never pressurize when the plug is removed.**

This may cause the connection piping to flap and be dangerous.

9. **When removing the plug, fluid in the piping leaks out.**

Handle the fluid carefully, especially when using dangerous fluids such as a fluid with high temperature and pressure. The use of a stop valve is recommended.

10. **When using a fluid with high temperature, the S coupler will be heated, too.**

Do not touch the coupler to prevent burning.

11. **When sleeve lock mechanism is provided, do not apply pressure when rotating the sleeve.**

If it is pressurized, the detent of the locked and released position may become unclear due to the pressure.

12. **Do not disassemble the S coupler.**



KK130 Series

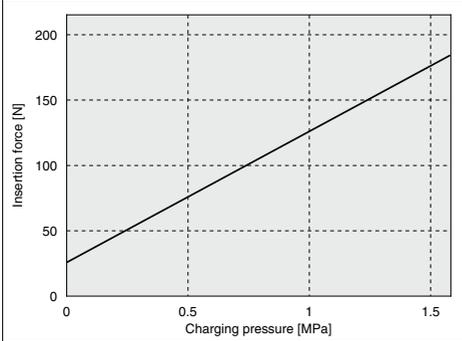
Specific Product Precautions 4

Be sure to read this before handling the products.

Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

Plug Insertion Force in Pressurized Condition

Insertion Force of KK130 Series



Handling of Barb Fittings and Nut Fittings

⚠ Caution

- 1. Prepare a hose band separately when using a barb fitting.**
If the hose band is not used, the hose may come off.
- 2. When using a nut fitting, insert the hose all the way to the end and securely tighten it with the nut.**
When the insertion of the hose or the tightening of the nut are not sufficient, the hose may come off.
- 3. Disconnection may occur depending on the material or the O.D. accuracy of the hose; therefore be sure to confirm the applicability of the hose.**

Handling of Thread Type

⚠ Caution

- 1. Screw the fitting into the hexagonal face of the S coupler, applying the appropriate wrench as close to the thread as possible.**

Place the wrench as close as possible to the thread. Do not apply pliers and pipe wrench to any other part other than the wrench flats. This may cause breakage or leakage.

- 2. Tightening torque**

Tighten fittings with sealant using the proper tightening torques in the table below. As a rule, they should be tightened 2 to 3 turns with a tool after first tightening by hand.

Connection thread size	Proper tightening torque [N·m]
NPT, R, Rc1/8	3 to 5
NPT, R, Rc1/4	8 to 12
NPT, R, Rc3/8	15 to 20
NPT, R, Rc1/2	20 to 25

- 3. When a fitting is over tightened, more of the sealant material is squeezed out.**

Remove the squeezed out sealant material.

- 4. When tightening is not sufficient, it will cause sealing failure or a loose fitting.**

- 5. Re-using**

- 1) Normally, a fitting with sealant can be re-used 2 to 3 times.
- 2) Remove the sealant material that is separated and adhering to a removed fitting with air blow, etc. If the separated sealant enters into nearby equipment, it will cause air leakage or malfunction.
- 3) When the sealant is no longer effective, wrap pipe tape over the sealant material and re-use the fitting. Do not use a sealant material other than pipe tape.

- 6. In cases where positioning is required, turning the fitting in the reverse direction after tightening will cause air leakage.**



KK130 Series

Specific Product Precautions 5

Be sure to read this before handling the products.

Refer to page 347 for safety instructions and pages 349 to 353 for fittings and tubing precautions.

Handling of One-touch Fittings

⚠ Caution

1. Do not use in locations where static electric charges will be a problem.

This may cause system failure. Consult with SMC regarding use in this kind of environment.

2. Do not use in locations where spatter occurs.

There is a danger of spatter causing a fire. Consult with SMC regarding use in this kind of environment.

3. Tube attachment/detachment for One-touch fittings

1) Attaching of tubing

- (1) Take a tube having no flaws on its periphery and cut it off at a right angle. When cutting the tube, use tube cutters TK-1, 2 or 3. Do not use pinchers, nippers or scissors, etc. If cutting is done with tools other than tube cutters, the tube may become flattened, etc. This can make a secure installation impossible, and cause problems such as the tube pulling out after installation or air leakage.
- (2) Polyurethane tube O.D. is swelled by applying internal pressure. As such, it may be that the tube cannot be re-inserted into a One-touch fitting. Make sure to confirm the tube O.D., and when the O.D. accuracy is more than +0.07 mm for $\phi 2$ and +0.15 mm for other sizes, insert into a One-touch fitting again without cutting the tube to use it. When the tube is re-inserted into a One-touch fitting, make sure to confirm that the tube is able to go through the release button smoothly.
- (3) Grasp the tube and push it in slowly, inserting it securely all the way into the fitting.
- (4) After inserting the tube, pull on it lightly to confirm that it will not come out. If it is not installed securely all the way into the fitting, this can cause problems such as air leakage or the tube pulling out.

2) Detaching of tubing

- (1) Push in the release button sufficiently. When doing this, push the collar evenly.
- (2) Pull out the tube while holding down the release button so that it does not come out. If the release button is not pressed down sufficiently, there will be increased bite on the tube and it will become more difficult to pull it out.
- (3) When the removed tube is to be used again, cut off the portion which has been chewed before re-using it. If the chewed portion of the tube is used as is, this can cause trouble such as air leakage or difficulty in removing the tube.

4. Connecting products with attached metal rods

After attaching products with attached metal rods such as the KC series, to the One-touch fitting, do not use tubes, resin plugs, or reducers, etc. This may cause releasing.

5. When mounting tubes, resin plugs, metal rods etc., do not press the release button.

Also, do not press the release button unnecessarily before mounting them. This may cause those parts to come off.

Recommended piping conditions

1. When installing piping in the One-touch fitting, make sure there is sufficient slack to the tube length as per the recommended piping conditions shown in Figure 1.

Also, when binding pipes together with a unifying band, etc., make sure piping is carried out without receiving external force. (See Fig. 2.)

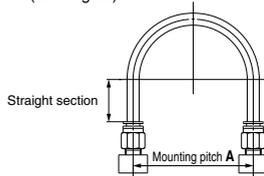


Fig. 1 Recommended piping

Unit: mm

Tube size	Mounting pitch A			Straight section
	Nylon tube	Soft nylon tube	Polyurethane tube	
$\phi 6$	84 or more	39 or more	39 or more	30 or more
$\phi 8$	112 or more	58 or more	52 or more	40 or more
$\phi 10$	140 or more	70 or more	69 or more	50 or more
$\phi 12$	168 or more	82 or more	88 or more	60 or more
$\phi 1/4"$	89 or more	56 or more	57 or more	32 or more
$\phi 5/16"$	112 or more	58 or more	52 or more	40 or more
$\phi 3/8"$	134 or more	76 or more	69 or more	48 or more
$\phi 1/2"$	178 or more	118 or more	93 or more	64 or more

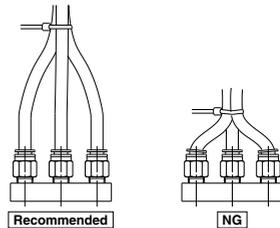


Fig. 2 When using a unifying band to bind together the pipes

Precautions on Other Tubing Brands

⚠ Caution

1. When using tubing brands other than SMC, confirm that the tube outside diameter tolerances satisfy the following specifications.

- 1) Nylon tube within ± 0.1 mm
- 2) Soft nylon tube within ± 0.1 mm
- 3) Polyurethane tube within +0.15 mm, within -0.2 mm

If the tube O.D. accuracy is satisfactory but measurement of the internal diameter dimensions does not match the dimensions provided by SMC, do not use.

The tube may not connect, or leaks, tube disconnection, or damage to fittings may occur.



Flow Control Equipment Precautions 1

Be sure to read this before handling products.

Design/Selection

⚠ Warning

1. Confirm the specifications.

Products represented in this catalog are designed only for use in compressed air systems (including vacuum).

Do not operate at pressures, temperatures, etc., beyond the range of specifications, as this can cause damage or malfunction. (Refer to the specifications.)

Please contact SMC when using a fluid other than compressed air (including vacuum).

We do not guarantee against any damage if the product is used outside of the specification range.

2. Products mentioned in this catalog are not designed for use as stop valves with zero air leakage.

A certain amount of leakage is allowed in the products' specifications. Tightening the needle to reduce leakage to zero may result in equipment damage.

3. Do not disassemble the product or make any modifications, including additional machining.

Doing so may cause human injury and/or an accident.

4. The flow rate characteristics for each product are representative values.

The flow rate characteristics are characteristics of each individual product. Actual values may differ depending on the piping, circuitry, pressure conditions, etc. Also, depending on product specifications, there may be variations in the zero needle rotations position of the flow rate characteristics.

5. Sonic conductance (C) and critical pressure ratio (b) values for products are representative values.

For controlled flow direction values the needle is fully open. For free flow direction values the needle is fully closed.

6. Check if PTFE can be used in the application.

PTFE powder (Polytetrafluoroethylene resin) is included in the seal material of the male thread type piping taper thread. Confirm that the use of it will not cause any adverse effects on the system. Please contact SMC if the Safety Data Sheet (SDS) is required.

7. Speed controllers are designed to control the speed of the actuator.

When it is used for adjusting the flow rate of the air blow, use a restrictor without a check valve function (X214 or X21).

Mounting

⚠ Warning

1. Operation manual

Install the product and operate it only after reading the operation manual carefully and understanding its contents. Also, keep the manual where it can be referred to as necessary.

2. Ensure sufficient space for maintenance activities.

When installing the products, allow access for maintenance and inspection.

3. Tighten threads with the proper tightening torque.

When installing the products, follow the listed torque specifications.

Mounting

⚠ Warning

4. Screw the R screw into the Rc thread and the NPT screw into the NPT thread.

5. Confirm that the lock nut is tightened.

A loose lock nut may cause speed changes in the actuator.

6. Check the degree of rotation of the needle valve.

Products mentioned in this catalog are retainer types, so the needle is not removed completely. Over rotation will cause damage.

7. Do not use tools, such as pliers, to rotate the knob.

This can cause the idle rotation of the knob or damage.

8. Confirm the air flow direction.

Mounting backwards is dangerous because the speed adjustment needle will not work, and the actuator may lurch suddenly.

9. Adjust the needle by opening the needle slowly after having closed it completely.

Loose needle valves may cause unexpected sudden actuator extension. When a needle valve is turned clockwise, it is closed and cylinder speed decreases. When a needle valve is turned counterclockwise, it is open and cylinder speed increases.

10. Do not apply excessive force or shock to the body or fittings with an impact tool.

This can cause damage or air leakage.

11. Refer to the Fittings and Tubing Precautions (pages 349 to 353) for handling One-touch fittings.

12. Tubing O.D. ϕ 2

Tubing other than that from SMC cannot be used because it may result in the inability to connect the tube, air leakage after connecting the tube, or disconnection of the tube.

13. To install/remove flow control equipment, use an appropriate wrench to tighten/loosen the supplied nut on body B as close to the thread as possible.

Do not apply torque to other points as this may cause damage to the product. Rotate body A manually to position it after installation.



14. Do not use body A and universal type fittings for applications involving continuous rotation.

Body A and the fitting section may be damaged.



Flow Control Equipment Precautions 2

Be sure to read this before handling products.

Mounting

⚠ Caution

1. Tightening the threaded portion of the connection thread M3, M5, 10-32 UNF

1) M3

First, tighten it by hand, then give it an additional 1/4 turn with a wrench. The reference value for the tightening torque is 0.4 to 0.5 N·m.

* AS12□1F-M3-02 should be given an approx. 1/6 turn after tightening by hand (reference value: 0.4 to 0.5 N·m).

2) M5 and 10-32UNF

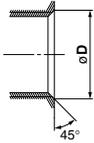
First, tighten it by hand, then give it an additional 1/6 turn to 1/4 turn with a wrench. The reference value for the tightening torque is 1 to 1.5 N·m.

* Excessive tightening may damage the thread portion or deform the gasket and cause air leakage.

If the screw is too shallowly screwed in, it may come loose or air may leak.

2. Chamfered female thread size of the connection thread M3, M5, 10-32UNF

In compliance with ISO16030 Standards (air pressure fluid dynamics – connection – ports and stud ends), the chamfered thread sizes shown below are recommended.



Female thread size	Chamfer dimension øD (Recommended value)
M3	3.1 to 3.4
M5	5.1 to 5.4
10-32UNF	5.0 to 5.3

3. The proper tightening torques for hexagon lock nuts are shown in the table below. For standard installation, turn 15 to 30° using a tool, after fastening by hand.

Pay attention not to over tighten the product. Check the dimensions for each product for the width across flats.

Body size	Proper tightening torque [N·m]	Lock nut width across flats
M3	0.07	5 ^{*1}
M5	0.3 ^{*2}	7 ^{*1}
1/8	1 ^{*3}	10 ^{*4}
1/4	1.2 ^{*3}	12 ^{*5}
3/8	2	14
1/2	6	17

*1 4.5 for AS12□1F-M3-02, AS12□1F-M5-02, and AS1200-M3

*2 0.07 N·m for AS12□1F-M5-02, AS1□□1FM, AS12□0M, and ASD230FM

*3 2 N·m for AS22□1FE-01 and AS22□1FE-02

*4 9 for AS2001F-□-3 and 12 for AS22□1FE-01

*5 14 for AS22□1FE-02

UNI Thread Type

Mounting

⚠ Caution

1. First, tighten the threaded portion by hand, then use a suitable wrench to tighten the hexagonal portion of the body further at the appropriate wrench tightening angle shown below. As a reference value for the tightening torque, refer to the table below.

Connection Female Thread: Rc, NPT, NPTF

Nominal size of UNI thread	Approx. wrench tightening angle after tightened by hand deg	Proper tightening torque [N·m]
1/8	30 to 60	3 to 5
1/4	30 to 60	8 to 12
3/8	15 to 45	14 to 16
1/2	15 to 30	20 to 22

Connection Female Thread: G

Nominal size of UNI thread	Approx. wrench tightening angle after tightened by hand deg	Proper tightening torque [N·m]
1/8	30 to 45	3 to 4
1/4	15 to 30	4 to 5
3/8	15 to 30	8 to 9
1/2	15 to 30	14 to 15

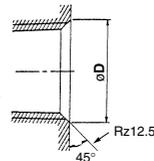
2. The gasket can be reused up to 6 to 10 times. It can be replaced easily when it has sustained damage. A broken gasket can be removed by holding it and then turning it in the same direction as loosening the thread. If the gasket is difficult to remove, cut it with nippers, etc. In such a case, use caution not to scratch the seat face because the seat face of the fitting's 45° gasket is the sealing face.

3. Please consult with SMC if using for fluids other than air.

4. Other precautions on handling, etc., are the same as those for One-touch fittings.

Chamfered area for female threads (Recommended value)

For easier thread machinability and effective burr prevention, chamfer using the following table as a reference.



Nominal thread size	Chamfer dimension øD (Recommended value)							
	G		Rc		NPT, NPTF			
	min	max	min	max	min	max	min	max
1/16	—	—	—	—	8.2	8.4		
1/8	10.2	10.6	10.2	10.4	10.5	10.7		
1/4	13.6	14.0	13.6	13.8	14.1	14.3		
3/8	17.1	17.5	17.1	17.3	17.4	17.6		
1/2	21.4	21.8	21.4	21.6	21.7	21.9		



Flow Control Equipment Precautions 3

Be sure to read this before handling products.

With Sealant Type

Piping

⚠ Caution

1. **First, tighten the fitting by hand, then use a suitable wrench to tighten the hexagonal portion of the body a further two or three turns. For the reference value for the tightening torque, refer to the table below. Check the dimensions of each product for the width across flats.**

Connection thread size (R, NPT)	[Reference value] Tightening torque [N·m]
1/8	3 to 5
1/4	8 to 12
3/8	15 to 20
1/2	20 to 25

2. **If the fitting is tightened with excessive torque, a large amount of sealant will seep out. Remove the excess sealant.**
3. **Insufficient tightening may loosen the threads or cause air leakage.**
4. **For reuse**
 - 1) Normally, fittings with a sealant can be reused up to 2 to 3 times.
 - 2) To prevent air leakage through the sealant, remove any loose sealant stuck to the fitting by blowing air over the threaded portion.
 - 3) If the sealant no longer provides effective sealing, wind sealant tape over the sealant before reusing. Do not use any form other than the tape type of sealant.
5. **Once the fitting has been tightened, backing it out to its original position often causes the sealant to become defective. Air leakage will occur.**

Piping

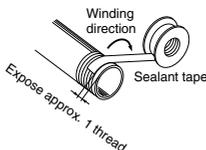
⚠ Caution

1. **Refer to the Fittings and Tubing Precautions (pages 349 to 353) for handling One-touch fittings.**
2. **Preparation before piping**

Before piping is connected, it should be thoroughly blown out with air (flushing) or washed to remove chips, cutting oil, and other debris from inside the pipe.

3. **Winding of sealant tape**

When screwing piping or fittings into ports, ensure that chips from the pipe threads or sealing material do not enter the piping. Also, if sealant tape is used, leave 1 thread ridge exposed at the end of the threads.



Air Supply

⚠ Warning

1. **Type of fluids**

Please consult with SMC when using the product in applications other than compressed air.

2. **When there is a large amount of drainage**

Compressed air containing a large amount of drainage can cause the malfunction of pneumatic equipment. An air dryer or water separator should be installed upstream from filters.

3. **Drain flushing**

If condensation in the drain bowl is not emptied on a regular basis, the bowl will overflow and allow the condensation to enter the compressed air lines. This causes the malfunction of pneumatic equipment.

If the drain bowl is difficult to check and remove, the installation of a drain bowl with an auto drain option is recommended.

For compressed air quality, refer to the Best Pneumatics No. 6 catalog.

4. **Use clean air.**

Do not use compressed air that contains chemicals, synthetic oils that include organic solvents, salt, corrosive gases, etc., as it can cause damage or malfunction.

⚠ Caution

1. **Install an air filter.**

Install an air filter upstream near the valve. Select an air filter with a filtration size of 5 μm or smaller.

2. **Take measures to ensure air quality, such as by installing an aftercooler, air dryer, or water separator.**

Compressed air that contains a large amount of drainage can cause the malfunction of pneumatic equipment, such as flow control equipment. Therefore, take appropriate measures to ensure air quality, such as by providing an aftercooler, air dryer, or water separator.

3. **Ensure that the fluid and ambient temperatures are within the specified range.**

If the fluid temperature is 5°C or less, the moisture in the circuit could freeze, causing damage to the seals or leading to equipment malfunction. Therefore, take appropriate measures to prevent freezing.

For compressed air quality, refer to the Best Pneumatics No. 6 catalog.



Flow Control Equipment Precautions 4

Be sure to read this before handling products.

Operating Environment

Warning

1. **Do not use in an atmosphere containing corrosive gases, chemicals, sea water, water, water steam, or where there is direct contact with any of these.**

Refer to each construction drawing for information on the materials of flow control equipment.

2. **Do not expose the product to direct sunlight for an extended period of time.**
3. **Do not use in a place subject to heavy vibration and/or shock.**
4. **Do not mount the product in locations where it is exposed to radiant heat.**
5. **Using a flat head screwdriver adjustable type tamper proof speed controller in locations where vibrations or impacts occur could lead to the loosening of the needle. So, please use a hexagon lock nut adjustable type speed controller.**

For reference, SMC has conducted vibration tests in 25G for 200 operations, and we have confirmed no loosening of the needle.

Maintenance

Warning

1. **Perform maintenance and inspection according to the procedures indicated in the operation manual.**

If handled improperly, malfunction or damage of machinery and equipment may occur.

2. **Maintenance work**

If handled improperly, compressed air can be dangerous. Assembly, handling, repair, and element replacement of pneumatic systems should be performed by a knowledgeable and experienced person.

3. **Drain flushing**

Remove drainage from air filters regularly.

4. **Removal of equipment, and supply/exhaust of compressed air**

Before components are removed, first confirm that measures are in place to prevent workpieces from dropping, run-away equipment, etc. Then, cut off the supply pressure and electric power, and exhaust all compressed air from the system using the residual pressure release function.

When machinery is restarted, proceed with caution after confirming that appropriate measures are in place to prevent sudden movement.



AS Series/AS-FS Series (Push-lock type) Specific Product Precautions 1

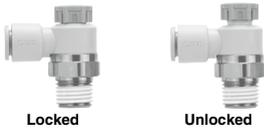
Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for flow control equipment precautions.

Mounting

Warning

1. After pushing the knob down to lock, confirm that it is locked.

It should not be possible to rotate the knob to the right or left. If the knob is pulled with force, it may break. Do not pull the knob with excessive force.



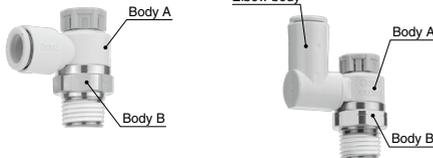
2. To install/remove the product, use an appropriate wrench to tighten/loosen the supplied nut on body B.

Do not apply torque to other points as this may cause damage to the product. Rotate body A manually to position it after installation.

3. Do not use body A and/or the elbow body for applications involving continuous rotation.

Body A and the fitting section may be damaged.

Elbow



Caution

For M5

Tightening method

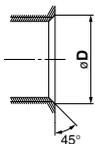
First, tighten it by hand, then give it an additional 1/6 to 1/4 turn with a wrench. The reference value for the tightening torque is from 1 to 1.5 N·m.

* Excessive tightening may damage the thread portion or deform the gasket and cause air leakage.

If the screw is too shallowly screwed in, it may come loose or air may leak.

Chamfered area for female threads

1. In order to comply with ISO 16030 (air pressure fluid dynamics – connection – ports and stud ends), the chamfered dimensions shown in the table below are recommended.



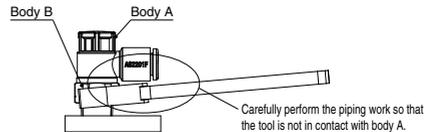
Female thread port size	Chamfered dimension ϕD (Recommended value)
M5	5.1 to 5.4

Caution

2. This product has a stopper that allows it to fully close in the rotating direction. Excess torque may break the stopper. The table below shows the maximum allowable torque of the knob.

Body size	Maximum allowable torque [N·m]
M5	0.05
1/8	0.07
1/4	0.16
3/8	0.2
1/2	0.4

3. When performing the piping work, turn the tightening tool horizontal to the surface of the hexagonal flats of body B so that moment is not applied to body A. If the tool is in contact with body A, this may cause body B to come off.



For R Thread (With sealant)

Tightening method

1. The proper tightening torques of the fittings are as shown in the table below. First, tighten it by hand, then turn it an additional two or three times with a wrench. Check the dimensions of each product for the width across the hexagonal flats.

Connection thread port size	Proper tightening torque [N·m]
R1/8	3 to 5
R1/4	8 to 12
R3/8	15 to 20
R1/2	20 to 25

Chamfered area for female threads

For easier thread machinability and effective burr prevention, chamfer using the following table as a reference.

Connection thread port size	Chamfered dimension ϕD (Recommended value)	
	Rc	
1/8	10.2 to 10.4	
1/4	13.6 to 13.8	
3/8	17.1 to 17.3	
1/2	21.4 to 21.6	

* For Uni threads, Rz 12.5 is necessary for sealing the chamfered part.



AS Series/AS-FS Series (Push-lock type) Specific Product Precautions 2

Be sure to read this before handling the products. Refer to page 347 for safety instructions and pages 349 to 353 for flow control equipment precautions.

Mounting

⚠ Caution

For R, G Thread (Face seal type)

Tightening method

First, tighten the threaded portion by hand, then use a wrench which is suitable for the width across the flats of the hexagon body to tighten it further at the wrench tightening angle shown in the table below. For tightening torque, refer to the table below. Check the dimensions of each product for the width across the hexagonal flats.

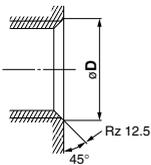
- 1) Tighten fittings with sealant using the proper tightening torques as shown in the table below.

Connection thread size (R, G)	Proper tightening torque [N·m]
1/16, 1/8	3 to 5
1/4	8 to 12
3/8	15 to 20
1/2	20 to 25

- 2) Insufficient tightening may cause seal failure or loosening of the threads.
- 3) For reuse
 - (1) Normally, fittings with sealant can be reused up to 6 to 10 times.
 - (2) The seal ring cannot be replaced.

Chamfered area for female threads (Recommended value)

1. In order to comply with ISO 16030-2001, the chamfered dimensions shown in the table below are recommended. For easier thread machinability and effective burr prevention, chamfer using the following table as a reference.



Nominal thread size	Chamfered dimension ϕD	
	min.	max.
1/8	9.8	10.2
1/4	13.3	13.7
3/8	16.8	17.2
1/2	21.0	21.4

2. Use G external threads with G internal threads.

How to distinguish G threads



⚠ Caution

For Uni Thread

Tightening method

1. First, tighten the threaded portion by hand, then use a wrench which is suitable for the width across the flats of the hexagon body to tighten it further at the wrench tightening angle shown in the table below. For tightening torque, refer to the table below.

Connection Female Thread: Rc, NPT, NPTF

Uni thread port size	Wrench tightening angle after tightened by hand [deg]	Tightening torque [N·m]
1/8	30 to 60	3 to 5
1/4	30 to 60	8 to 12
3/8	15 to 45	14 to 16
1/2	15 to 30	20 to 22

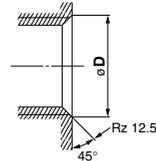
Connection Female Thread: G

Uni thread port size	Wrench tightening angle after tightened by hand [deg]	Tightening torque [N·m]
1/8	30 to 45	3 to 4
1/4	15 to 30	4 to 5
3/8	15 to 30	8 to 9
1/2	15 to 30	14 to 15

2. The gasket can be reused up to 6 to 10 times.

Chamfered area for female threads

For easier thread machinability and effective burr prevention, chamfer using the following table as a reference.



Connection thread port size	Chamfered dimension ϕD (Recommended value)		
	G	Rc	NPT, NPTF
1/8	10.2 to 10.6	10.2 to 10.4	10.5 to 10.7
1/4	13.6 to 14.0	13.6 to 13.8	14.1 to 14.3
3/8	17.1 to 17.5	17.1 to 17.3	17.4 to 17.6
1/2	21.4 to 21.8	21.4 to 21.6	21.7 to 21.9

* For Uni threads, Rz 12.5 is necessary for sealing the chamfered part.



AN Series

Specific Product Precautions (Silencers)

Be sure to read this before handling the products.

Design

⚠ Warning

1. The exhaust port could become blocked by the clogging of the exhaust cleaner.

Therefore, make sure to provide a safe design so as not to cause the whole system to malfunction.

⚠ Caution

1. The silencer is intended to reduce the noise of exhaust air of the compressed air emitted from pneumatic equipment.

Noises other than exhaust air (noise generated inside piping, noise generated by vibration of equipment, noise of switching valves, etc.) cannot be reduced.

Take appropriate measures to find the cause of noises other than those generated by exhaust air.

The product does not function as a filter. Do not use the product as a filter regardless of negative and positive pressures.

2. If the compressed air supply is contaminated with fluids such as oil and oil mist, such fluids will be dispersed to the environment.

In such a case, an exhaust cleaner is recommended to recover fluids and reduce noise.

3. The silencing effect could vary depending on the pneumatic circuit or the pressure that is used.

Selection

⚠ Caution

1. When selecting the silencer, the sonic conductance* (including combined sonic conductance) of the silencer should be larger than that of the solenoid valve.

* Sonic conductance C [dm³/(s·bar)] = Effective area [mm²] ÷ 5

2. Use within the range of specifications.

Operating Environment

⚠ Warning

1. Do not use in an atmosphere having corrosive gases, chemicals, sea water, water, water steam, or where there is direct contact with any of these.

Refer to the construction drawings for silencer materials.

2. Avoid exposure to direct sunlight.
3. Do not operate in locations where vibration or impact occurs.
4. Do not use the product in locations where it is near heat sources and exposed to radiation heat.
5. Do not use in an environment where the product is exposed to cutting oil, lubricating oil, or coolant, etc. If it is used in an environment where there is possible contact with cutting oil, lubricating oil, or coolant, exercise preventive measures.
6. Do not use in an environment where foreign matter may stick to the product or get mixed in the product's interior.

It may result in clogging at an early stage, coming off or causing damage.

Mounting

⚠ Caution

1. If the silencer body (case) is made of plastic and is tightened too much, the silencer may be damaged.
2. Tightening by using a pipe wrench or pliers may cause damage to the silencer. This method is not recommended.

Please follow the procedures below for mounting.

■ When the body (case) is made of resin

Hold the tip of the main body (the side without thread) and screw it in.

At the point where the thread begins to feel tight, use a wrench on the hexagonal flats to tighten an additional 1/4 turn.

For the model without the hexagonal flats, be sure to securely tighten by hand. For the model with the M-thread, tighten the tip of the main body securely by hand until it is in contact with the end face, and then retighten it by hand. At this time, note that the retightening amount should be 30° or less.

■ For BC elements

Hold the tip of the main body (the side without thread) with your fingers and screw it in tightly.

Do not hold the sintered metal part with a wrench, etc. to tighten.

■ When the main body is made of metal (Except BC elements)

Within the recommended tightening torque shown in the chart below, use a wrench on the hexagonal flats and tighten.

Tightening by using a pipe wrench or pliers may cause damage to the silencer. This method is not recommended.

Tightening Torques for Silencers

Connection thread	Tightening torque [N·m]
R 1/4	12 to 14
R 3/8	22 to 24
R 1/2	28 to 30
R 3/4	28 to 30
R 1	36 to 38
R 1 1/4	40 to 42
R 1 1/2	48 to 50
R2	48 to 50

3. Make sure not to apply a lateral load to the body during or after the installation.
4. When the silencer body is loosened by vibration, etc. of equipment on which a silencer is assembled, apply glue to threads to prevent loosening and reattach.

Maintenance

⚠ Caution

1. Never disassemble the silencer.
The silencing material is not replaceable.
2. If the exhaust speed drops and the system performance decreases due to clogging, replace with a new silencer.
Make sure to verify the operating conditions of the actuator at least once a day.
3. If operation continues when it is clogged, breakage can result.

A		
AKB	Check Valve/Bushing Type	p. 277
AKH	Check Valve with One-touch Fittings Straight Type	p. 277
AKH	Check Valve with One-touch Fittings Male Connector Type	p. 277
AN	Compact Resin Type/Male Thread	p. 343
AN-C	Compact Resin Type/One-touch Fitting Connection	p. 343
AN□00	Metal Body Type	p. 344
AN□02	High Noise Reduction Type	p. 345
AN1□□	BC Sintered Body Type	p. 345
ANA1	40 dB(A): High Noise Reduction Type	p. 346
ANB1	38 dB(A): High Noise Reduction Type	p. 346
AQ□F	Quick Exhaust Valve with One-touch Fittings	p. 276
AS-DPP00092	Speed Controller with One-touch Fittings (Made to Order)/Centralized Piping Type, Applicable Tubing O.D.: ø4	p. 241
AS-DPP00093	Speed Controller with One-touch Fittings (Made to Order)/Centralized Piping Type, Applicable Tubing O.D.: ø6	p. 241
AS-FG-A	Stainless Steel: Speed Controller with One-touch Fitting Elbow Type/Universal Type (Push-lock type)	p. 245
AS-FPG	Clean Speed Controller with One-touch Fitting Elbow Type (Stainless steel)	p. 255
AS-FPQ	Clean Speed Controller with One-touch Fitting Elbow Type (Brass)	p. 255
AS-FS	Speed Controller with Indicator Elbow Type/Universal Type (Push-lock type)	p. 225
AS-FSG	Stainless Steel: Speed Controller with Indicator Elbow Type/Universal Type (Push-lock type)	p. 249
AS-Q	Air Saving Speed Controller With Rapid Supply and Exhaust Function (Push-lock type)	p. 271
AS-R	Air Saving Speed Controller With Pressure Reduction Function (Push-lock type)	p. 271
AS-X21	Restrictor: Grease-free (Seal: Fluorine coating) + Restrictor (Without check valve)	p. 275
AS-X214	Restrictor (Without check valve)	p. 275
AS-X737	All Metal Exterior Speed Controller with One-touch Fitting Elbow Type	p. 231
AS□□□□P	Speed Controller with One-touch Fitting Plug-in Type Elbow Type	p. 235
AS□□□1-F	Metal Body: Speed Controller with One-touch Fitting Elbow Type	p. 233
AS□□□1F	Speed Controller with One-touch Fitting Elbow Type/Universal Type	p. 219
AS□□□1F-A	Speed Controller with One-touch Fitting Elbow Type/Universal Type (Push-lock type)	p. 213
AS□□□1F-D	Speed Controller Adjustable by Flat Head Screwdriver Elbow Type/Universal Type	p. 261
AS□□□1F-T	Tamper Proof Speed Controller Elbow Type/Universal Type	p. 265
AS□□□1F-U	Speed Controller with Uni One-touch Fitting Elbow Type/Universal Type	p. 223
AS□□□1F-U-A	Speed Controller with Uni One-touch Fitting Elbow Type/Universal Type (Push-lock type)	p. 217
AS□□□1FE	Speed Controller with Residual Pressure Release Valve Elbow Type/Universal Type	p. 243
AS□□□1FG	Stainless Steel: Speed Controller with One-touch Fitting Elbow Type/Universal Type	p. 247
AS□□□1FM	Speed Controller for Low Speed Operation with One-touch Fitting Elbow Type/Universal Type	p. 257
AS□1F-3	Speed Controller with One-touch Fittings In-line Type/Panel Mount Type	p. 240
AS□1F-D	Speed Controller Adjustable by Flat Head Screwdriver In-line Type	p. 263
AS□1F-T	Tamper Proof Speed Controller In-line Type	p. 267
AS□1FG	Stainless Steel: Speed Controller with One-touch Fittings In-line Type	p. 252
AS□1FM	Speed Controller for Low Speed Operation In-line Type	p. 259
AS□2□1F-PA	Speed Controller with One-touch Fitting Elbow Type (Push-lock type, Face seal)	p. 215
AS□2□1F-W2	Flame Resistant (Equivalent to UL-94 Standard V-0) Speed Controller with One-touch Fitting/Elbow Type	p. 229
AS□2□1FS-U	Speed Controller with Indicator/Uni Thread Type Elbow Type (Push-lock type)	p. 227
AS□2F	Speed Controller with One-touch Fittings In-line Type	p. 238
AS□2F-A	Speed Controller with One-touch Fittings In-line Type (Push-lock type)	p. 237
AS□2FG-A	Stainless Steel: Speed Controller with One-touch Fittings In-line Type (Push-lock type)	p. 251
AS□2FS	Speed Controller with Indicator In-line Type (Push-lock type)	p. 239
AS□2FSG	Stainless Steel: Speed Controller with Indicator In-line Type (Push-lock type)	p. 253
ASD□30F	Dual Speed Controller with One-touch Fitting Universal Type	p. 242
ASD□30F-D	Dual Speed Controller Adjustable by Flat Head Screwdriver Universal Type	p. 264
ASD□30F-T	Tamper Proof Dual Speed Controller Universal Type	p. 268
ASD□30FG	Stainless Steel: Dual Speed Controller with One-touch Fitting Universal Type	p. 254
ASD□30FM	Dual Speed Controller for Low Speed Operation Universal Type	p. 260
ASN2	Metering Valve with Silencer	p. 277
ASP□30F	Speed Controller with Pilot Check Valve Universal Type	p. 269
ASQ	Air Saving Valve/Flow Valve	p. 273
ASR	Air Saving Valve/Pressure Valve	p. 273
ASV	Speed Exhaust Controller Elbow Type/Tea Type	p. 270
D		
DL	Self-align Fittings (Metric size) Connection Thread: R, Rc	p. 110
DM	Multi-connector	p. 123
DMK	Multi-connector with One-touch Fittings	p. 125
H		
H	Self-align Fittings (Metric size) Connection Thread: R, Rc	p. 110
I		
IDK	Moisture Control Tube/Linear Shape	p. 335
IDK-C1	Moisture Control Tube/Coil Shape	p. 335
INA-14-□	Check Valve (All stainless steel)	p. 278
INA-14-290	Check Valve (Body material: Brass)	p. 278
K		
KA	Antistatic One-touch Fittings	p. 141
KB	Piping Module	p. 129
KC	Self-seal Fittings (Metric size) Connection Thread: M, R, Rc	p. 113
KDM	Rectangular Multi-connector	p. 127
KE□	Residual Pressure Release Valve with One-touch Fittings	p. 276
KF	Insert Fittings (Metric size) Connection Thread: R	p. 101
KFG2	Stainless Steel 316 Insert Fittings	p. 163
KG	Stainless Steel One-touch Fittings	p. 156
KK	S Couplers	p. 116
KK130	S Couplers	p. 121
KKA	S Couplers/Stainless Steel Type	p. 169
KKH	S Couplers	p. 119
KM	One-touch Fittings/Manifold (Metric size) Connection Thread: R, Rc	p. 98
KN	Nozzle with Self-align Fitting	p. 341
KN-Q	Nozzle for One-touch fitting	p. 341

K

KN-R	Male Thread Nozzle	p. 341
KNH	High Efficiency Nozzle	p. 341
KNK	Pivoting Nozzle with Self-align Fitting	p. 341
KNK-R	Pivoting Nozzle with Male Thread	p. 341
KNL	Copper Extension Nozzle	p. 341
KNS	Low Noise Nozzle with Self-align Fitting	p. 341
KNS-R	Low Noise Nozzle with Male Thread	p. 341
KP	Clean One-touch Fittings (for blowing)	p. 172
KPG	Clean One-touch Fittings (for drive system air piping: Stainless steel)	p. 175
KPQ	Clean One-touch Fittings (for drive system air piping: Brass)	p. 175
KQ2	Oval Type Release Button: One-touch Fittings (Metric size) Connection Thread: M, R, Rc	p. 44
KQ2	Oval Type Release Button: Face Seal One-touch fittings (Metric size) Connection Thread: R, Rc	p. 55
KQ2	Oval Type Release Button: Uni One-touch fittings (Metric size) Connection Thread: Rc, G, NPT, NPTF	p. 60
KQ2	Round Type Release Button: One-touch Fittings (Metric size) Connection Thread: M, R, Rc	p. 65
KQ2	Round Type Release Button: Face Seal One-touch fittings (Metric size) Connection Thread: R, Rc	p. 78
KQ2	Round Type Release Button: Uni One-touch fittings (Metric size) Connection Thread: Rc, G, NPT, NPTF	p. 86
KQ2-G	Stainless Steel One-touch Fittings	p. 149
KQB2	Metal One-touch Fittings (Metric size) Connection Thread: M5, R, Rc	p. 91
KQG2	Stainless Steel 316 One-touch Fittings	p. 144
KR-W2	Flame Resistant (Equivalent to UL-94 Standard V-0) FR One-touch Fittings	p. 134
KRM	Flame Resistant (Equivalent to UL-94 Standard V-0) FR One-touch Fittings Manifold	p. 139
KS	Rotary One-touch Fittings (Standard) Connection Thread: M, R	p. 96
KX	Rotary One-touch Fittings (High speed) Connection Thread: M, R	p. 96

L

L	Self-align Fittings (Metric size) Connection Thread: R, Rc	p. 110
LL	Self-align Fittings (Metric size) Connection Thread: R, Rc	p. 110
LQ1	Fluoropolymer Fittings	p. 178
LQ3	Fluoropolymer Fittings/Flare Type	p. 193
LQHB	Fluoropolymer Bore Through Connector	p. 204

M

M	Miniature Fittings (Metric size) Connection Thread: M3, M5, R1/8	p. 105
MS	Miniature Fittings/Stainless Steel 316	p. 166

T

T	Nylon Tubing	p. 283
TAS	Antistatic Soft Nylon Tubing	p. 315
TAU	Antistatic Polyurethane Tubing	p. 316
TB	Tube Stand	p. 337
TBR	Tube Reel	p. 337
TCU	Polyurethane Coil Tubing	p. 303
TD	Soft Fluoropolymer Tubing (Modified PTFE) Tubing size: Metric	p. 329
TFU	Polyurethane Flat Tubing	p. 304

TG	Tube Releasing Tool	p. 337
TH	FEP Tubing (Fluoropolymer) Tubing size: Metric	p. 325
TID	Soft Fluoropolymer Tubing (Modified PTFE) Tubing size: Inch	p. 329
TIH	FEP Tubing (Fluoropolymer) Tubing size: Inch	p. 327
TIL	Fluoropolymer Tubing Tubing size: Inch	p. 319
TILM	Fluoropolymer Tubing (PFA) Tubing size: Inch	p. 323
TK-1	Tube Cutter Applicable tubing O.D.: 13 mm or less	p. 336
TK-2	Tube Cutter Applicable tubing O.D.: 18 mm or less	p. 336
TK-3	Tube Cutter Applicable tubing O.D.: 12 mm or less (Useful type)	p. 336
TK-6	Tube Cutter Applicable tubing O.D.: 16 mm or less	p. 336
TKS	Double Layer Tube Stripper	p. 308
TL	Fluoropolymer Tubing Tubing size: Metric	p. 317
TLM	Fluoropolymer Tubing (PFA) Tubing size: Metric	p. 321
TM	Multi-tube Holder	p. 336
TMA	Multi-holder	p. 278
TMH	Holder for Speed Controller	p. 278
TPH	Clean Tubing: Polyolefin Tubing	p. 331
TPS	Clean Tubing: Soft Polyolefin Tubing	p. 333
TQ	2-Layer Soft Fluoropolymer Tubing	p. 313
TRB	Flame Resistant (Equivalent to UL-94 Standard V-0) FR Double Layer Tubing	p. 307
TRBU	Flame Resistant (Equivalent to UL-94 Standard V-0) FR Double Layer Polyurethane Tubing	p. 309
TRS	Flame Resistant (Equivalent to UL-94 Standard V-0) FR Soft Nylon Tubing	p. 305
TRTU	Flame Resistant (Equivalent to UL-94 Standard V-0) FR Three-layer Polyurethane Tubing	p. 311
TS	Soft Nylon Tubing	p. 285
TU	Polyurethane Tubing	p. 287
TU	Polyurethane Flat Tubing Multi-core, Multi-color Specification	p. 289
TUH	Hard Polyurethane Tubing	p. 297
TUS	Soft Polyurethane Tubing	p. 293
TUS	Soft Polyurethane Flat Tubing Multi-core, Multi-color Specification	p. 295
TUZ	Wear Resistant Tubing	p. 299
TUZ	Wear Resistant Flat Tubing Multi-core, Multi-color Specification	p. 301

V

VMG	Blow Gun	p. 339
------------	----------	---------------

X

XTO-674-□□	Check Valve (Body material: Brass)	p. 278
-------------------	------------------------------------	---------------

Y

YS-100	A Tool for Stripping Off the Outer Layers of Three Layer Tubing	p. 312
---------------	---	---------------

Other Products

25	Metal Case Type	p. 344
-----------	-----------------	---------------

Revision History

Edition D

- The stainless steel 316 One-touch fittings, KQG series has been added.
- The S couplers, KK series has been replaced with the New KK series (refreshed).
- The S couplers, KKH series has been replaced with the New KKH series (refreshed).
- The KKA7, 8, and 9 series have been added to the S couplers KKA series.
- The fluoropolymer One-touch fittings, LQ1/LQ2 series has been added.
- The ø2 tubing type has been added to the miniature fittings M series.
- The ø2 tubing type has been added to the One-touch fittings KJ series.
- New applicable tubing colors have been added to the polyurethane tubing TU series (Total of 29 colors).
- Tubing O.D. ø2, ø3.2, and ø16 have been added to the polyurethane tubing TU series.
- Tubing O.D. ø3.2 has been added to the nylon tubing T series and the soft nylon tubing TS series.
- The fluoropolymer tubing TL/TIL series has been added.
- The FEP tubing (Fluoropolymer) TH series has been added.
- The blow gun VMG series and the nozzles for blowing KN series have been added to related products.
- Front matter 16: XB13 has been corrected to XB12.
- Page 133: Suffix "U" at the end of the tubing part number has been deleted.
50 m roll has been deleted.
- Page 134: The  mark has been replaced with .

LP

Edition G

Fittings

- The S couplers KK13 series has been deleted.
- The S couplers KK130 series has been added.
- The fluoropolymer fittings LQ2 series has been deleted.
- The fluoropolymer fittings flare type LQ3 series has been added.
- The spare parts list of the multi-connector DM series has been changed.
- The One-touch fittings KJ/KQ series has been replaced with the New KQ2 series.
- The metal One-touch fittings KQB series has been replaced with the KQB2 series.
- The stainless steel 316 One-touch fittings KQG series has been replaced with the KQG2 series.
- The stainless steel 316 insert fittings KFG series has been replaced with the KFG2 series.
- ø2, ø10, and ø12 sizes have been added to the rectangular multi-connector KDM series.

Speed Controllers

- The flame-resistant speed controller elbow type AS□□1F-W2 series has been added.
- The speed controller with Uni One-touch fitting AS□□1F-U□ series has been added.
- The speed controller with One-touch fitting (Push-lock type) AS series has been added.
- The speed controller with indicator AS-FS series has been added.
- The speed controller with One-touch fitting, plug-in type AS□□0P series has been added.
- The speed controller with One-touch fitting, centralized piping type AS-DPP00092/00093 has been added.
- The check valve INA/XTO series has been added.

Tubing

- The wear-resistant tubing TUZ series has been added.
- The soft fluoropolymer tubing TD series has been added.
- The FR three-layer polyurethane tubing TRTU series has been added.
- The 2-layer soft fluoropolymer tubing TQ series has been added.
- The fluoropolymer tubing TLM/TILM series has been added.
 - X64 (Reinforced corrugated cardboard specification/Longer length reel) has been added to the nylon tubing T series.
 - X217 (Compatible with Food Sanitation Law) has been added to the polyurethane tubing TU series.
- The tube cutter TK-6 has been added.

Blow Gun

- The model with a KK130 series S coupler and the model with One-touch fitting have been added to the blow gun VMG series.

Silencers

- The AN series has been added.
- The full length, O.D., and material of the silencer AN-KM series have been changed.
- The silencer AN10□ to 40□ series has been replaced with the AN05 to 40 series.

TQ

Edition H

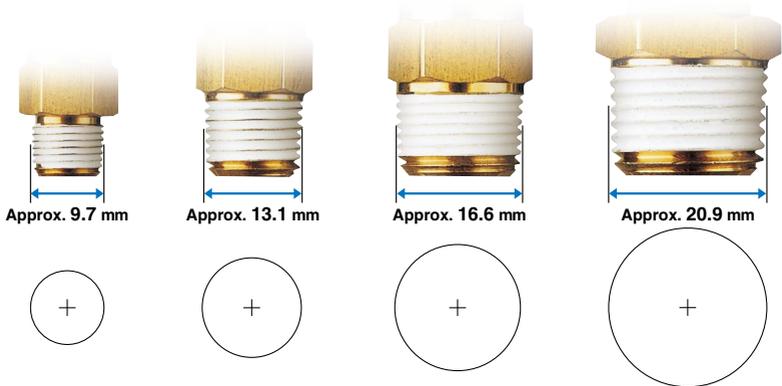
- Oval type release buttons have been added to the One-touch fittings KQ2 series.
- The One-touch fittings KQ2-G series has been added.
- New variations have been added to the fluoropolymer fittings LQ1/3 series.
- The fluoropolymer bore through connector LQHB series has been added.
- The universal type has been added to the speed controller with indicator and One-touch fitting AS-FS series.
- The in-line type has been added to the push-lock type speed controller with One-touch fitting AS series and the speed controller with indicator and One-touch fitting AS-FS series.
- The air saving speed controller AS-R/AS-Q series has been added.
- The all metal exterior speed controller with One-touch fitting AS-X737 series has been added.
- The M5 size has been added to the flame-resistant speed controller with One-touch fitting AS-W2 series.
- The multi-core, multi-color specification has been added to the flat tubing TU, TUS, and TUZ series.
- The moisture control tube IDK series has been added.

WQ

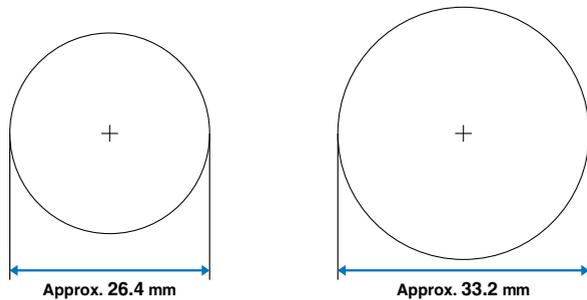
References for Thread Size and Tube Diameter

Thread size

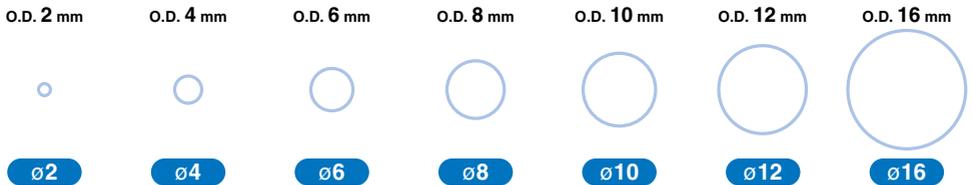
Nominal thread size	1/8	1/4	3/8	1/2
Nominal port size	6A	8A	10A	15A



Nominal thread size	3/4	1
Nominal port size	20A	25A



Tube diameter



SMC Corporation

Akihabara UDX 15F,
4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN
<http://www.smcworld.com>

Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.

© 2018 SMC Corporation All Rights Reserved

D-G 1st printing LP printing WQ 26750KS Printed in Japan.