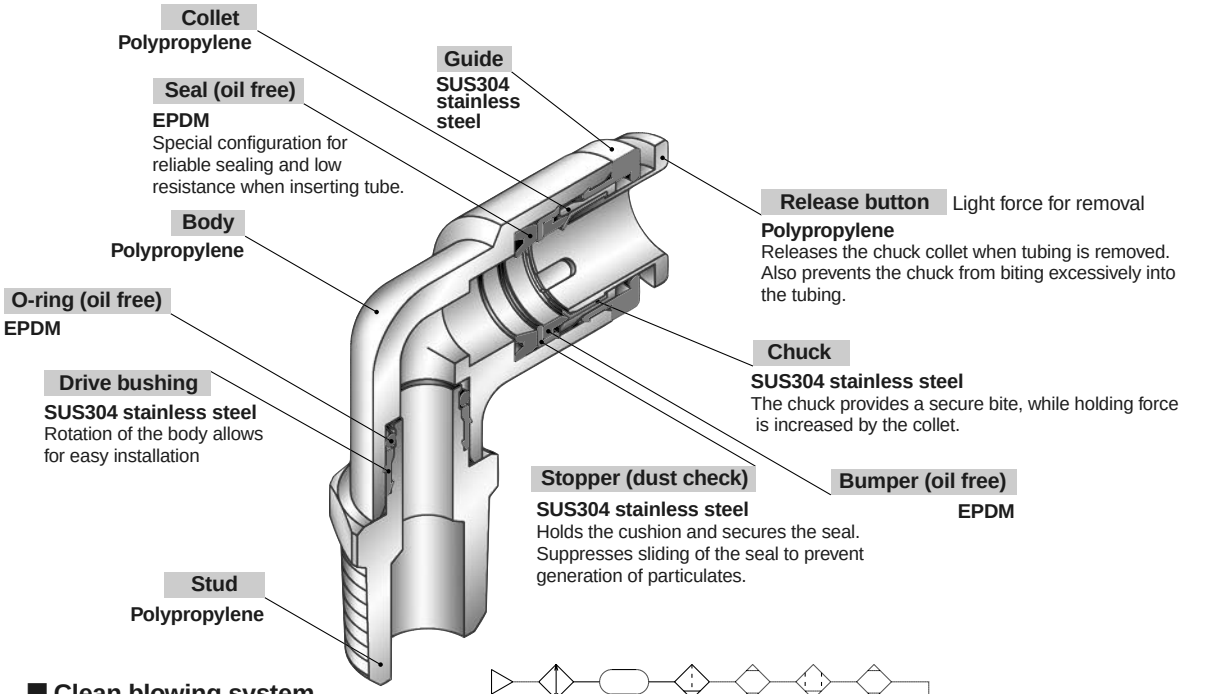
One-touch fittings and tubing for clean room blowing systems

One-touch fittings (for blowing)

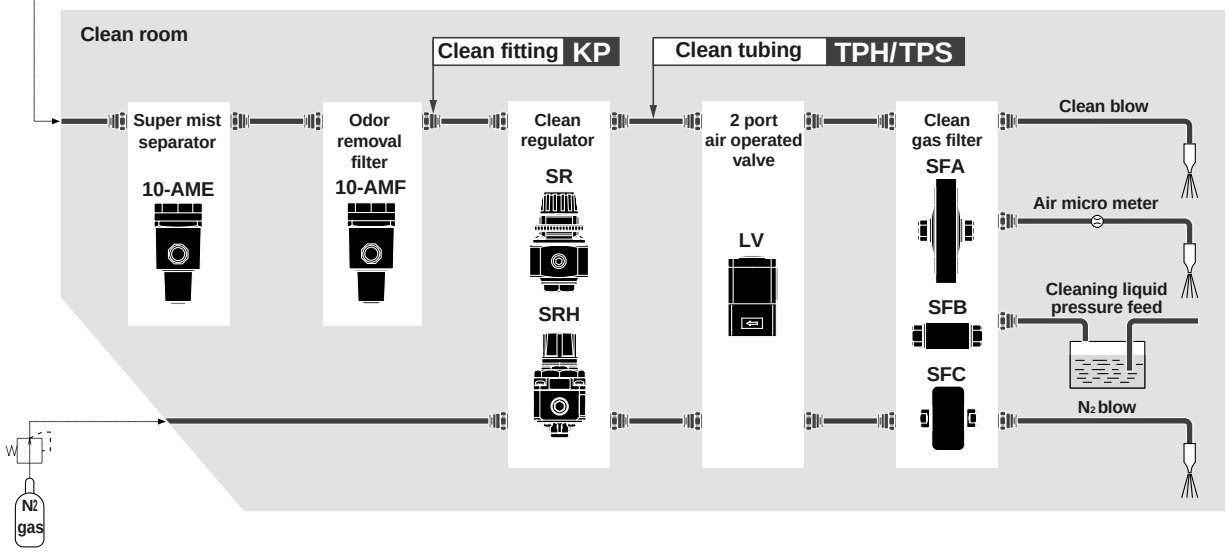
Series KP

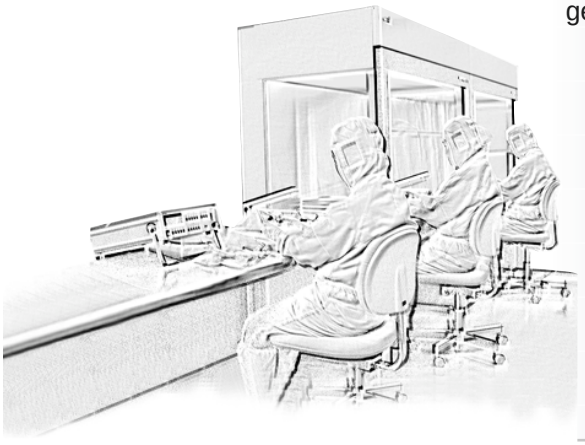
- Completely oil free
- Liquid-contact areas are non-metallic
- Parts cleaning, assembly and double packaging in a clean room
- Can be used for vacuum (–100kPa)

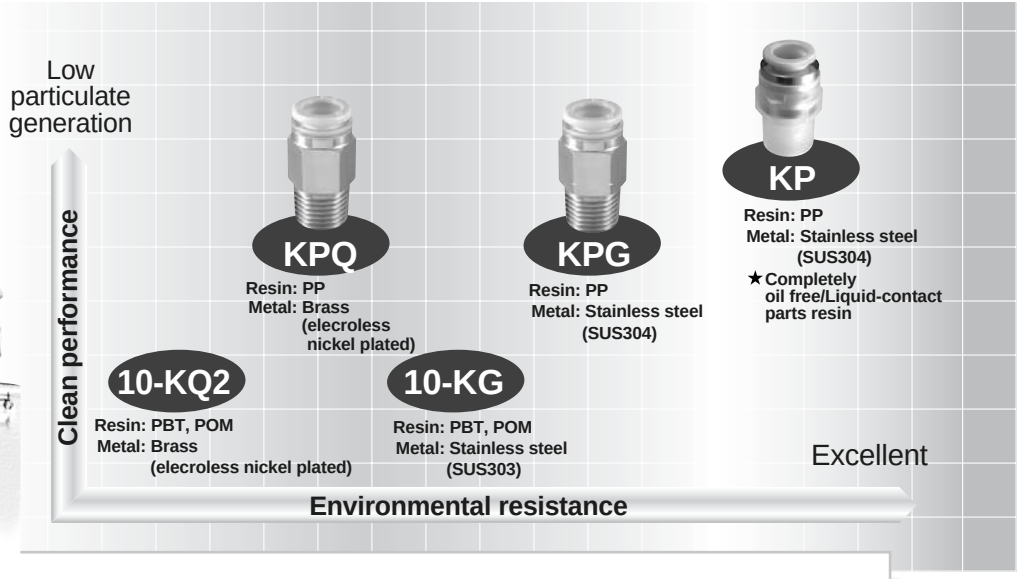
Series KP



■ Clean blowing system







One-touch fittings (for drive system air piping)

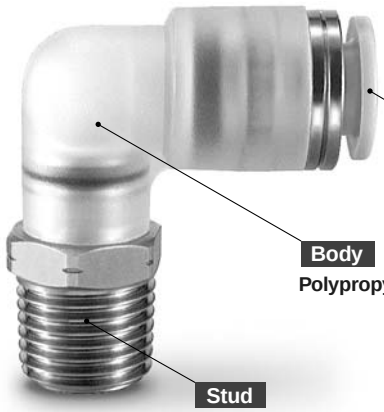
Series KPQ/KPG

Brass (electroless nickel plated) | Stainless steel (SUS304)

- M5 size standardized
- Resin parts are P.P. (polypropylene)

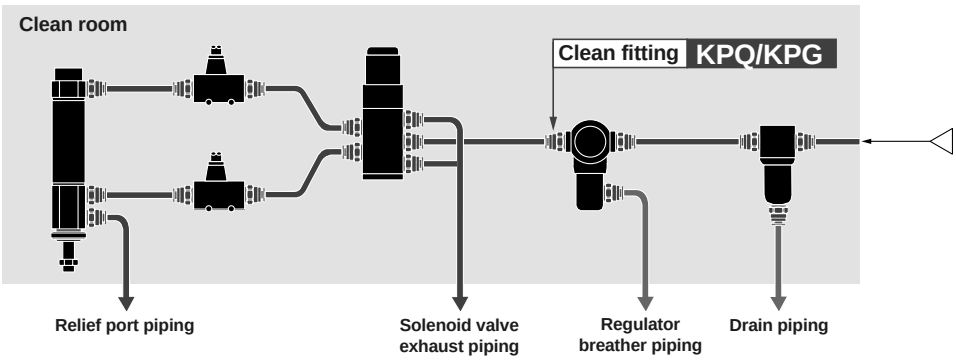
Series KPQ

Series KPG



Male connector

■ Drive air piping system



Polyolefin Tubing

Series TPH/TPS

Series	Material	Tubing O.D. mm					Colour	Tubing length m
		4	6	8	10	12		
TPH	Polyolefin	●	●	●	●	●	White, Black Red, Blue Yellow, Green	20
TPS	Soft Polyolefin	●	●	●	●	●		100

Clean
One-touch
Fittings

For Blowing
Series KP

⚠Caution

Series KP is a line of special One-touch fittings for use in clean room blowing and washing lines. Consult 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.

Recommended Applicable Tubing

Tubing material	Polyolefin: Series TPH Soft polyolefin: Series TPS
Tubing O.D.	ø4, ø6, ø8, ø10, ø12

Note 1) Polyurethane tubing: Series TU, Nylon tubing: Series T, and Soft nylon tubing: Series TS can also be used. However, the degree of clean performance will be reduced.

Note 2) 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

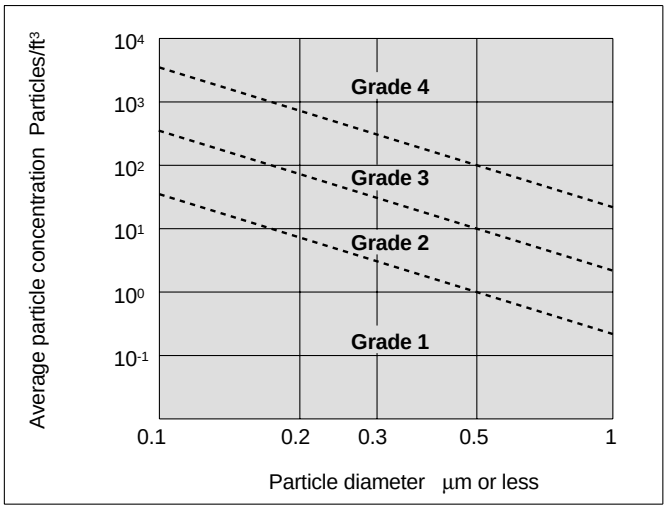
Particulate generation grade	Grade 1 Note 1)
Fluid	Air, Nitrogen gas, Water (pure water) Note 2)
Maximum operating pressure (20°C)	1MPa Note 3)
Operating vacuum pressure	–100kPa
Proof pressure (20°C)	3MPa
Ambient and fluid temperature	– 20°C to 80°C
Threads	JIS B0203 (taper threads for piping)

Note 1) Refer to particulate generation grade classifications.
Note 2) Consult SMC regarding other fluids.
Note 3) The maximum operating pressure is the value at 20°C. Refer to the operating pressure curve for other temperatures.

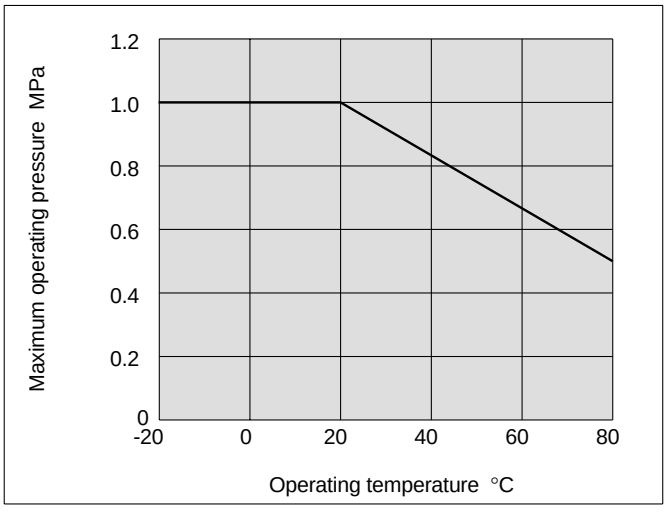
Principal Part Materials

Body	Polypropylene resin
Stud	Polypropylene resin
Chuck	SUS304 stainless steel
Guide, Stopper, Drive bushing	SUS304 stainless steel
Collet, Release button	Polypropylene resin
Seal, O-ring, Bumper	EPDM

Particulate Generation Grade Classifications



Relationship of Operating Temperature and Maximum Operating Pressure



How to Order

KP H 06 – 01

Clean One-touch fitting (for blowing)

Model

H	Male connector, Straight union
L	Union elbow, Male elbow
T	Male branch tee, Union tee
Y	Male run tee
U	Male branch, Union "Y"
R	Plug-in reducer

Applicable tubing O.D.

04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

Port size/Applicable tubing O.D.

Thread connection	**01**	R 1/8	
	02	R 1/4	
	03	R 3/8	
	04	R 1/2	
Tubing (rod) connection	**00**	Same dia. tubing	
	04	ø4	Different dia. tubing (plug-in reducer)
	06	ø6	
	08	ø8	
	10	ø10	
	12	ø12	

KP P 08

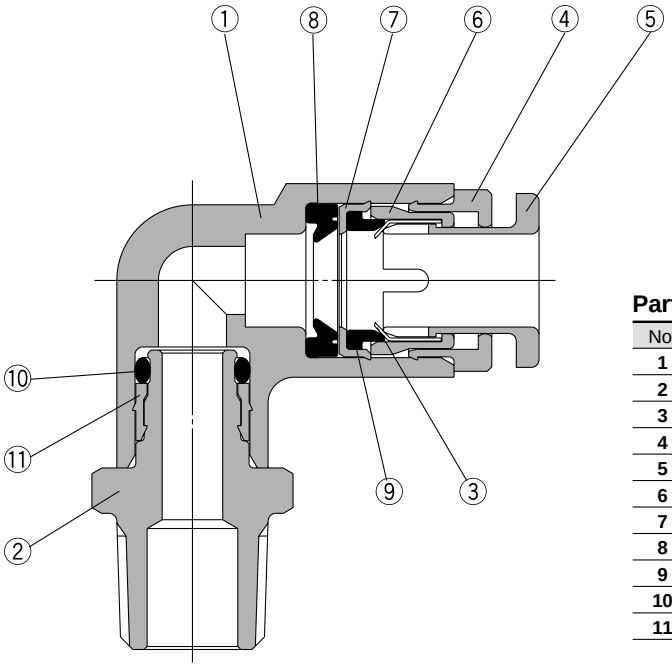
Clean One-touch fitting

Plug

Applicable fitting size

04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

Construction



Parts list

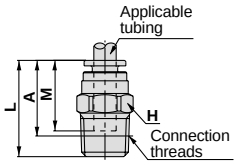
No.	Description	Material
1	**Body**	Polypropylene resin
2	**Stud**	Polypropylene resin
3	**Chuck**	SUS304 stainless steel
4	**Guide**	SUS304 stainless steel
5	**Release button**	Polypropylene resin (color: light green)
6	**Collet**	Polypropylene resin
7	**Stopper**	SUS304 stainless steel
8	**Seal**	EPDM
9	**Bumper**	EPDM
10	**O-ring**	EPDM
11	**Drive bushing**	SUS304 stainless steel

Dimensions

Male Connector: KPH

Applicable tubing O.D. mm	Connection threads R	Model	H (width across flats)	L	A*	M	Effective area mm² TPH	Effective area mm² TPS	Weight g
4	1/8	KPH04-01	12	24.4	20.5	17	4	4	3
	1/4	KPH04-02	14	24.4	18.5				4
6	1/8	KPH06-01		24.9	21	18.5	10	10	4
	1/4	KPH06-02		25.4	19.5				5
8	1/8	KPH08-01	17	31.3	27.5	20.5	26	18	6
	1/4	KPH08-02		29.3	23.5				7
10	1/4	KPH10-02	19	36.5	31	23	41	29	10
	3/8	KPH10-03		32	26				11
12	3/8	KPH12-03	22	33	27	24	58	46	12
	1/2	KPH12-04		33.5	26				13

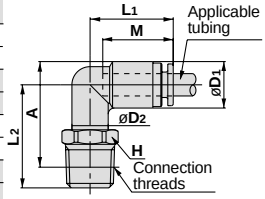
* Reference dimension for R threads after installation



Male Elbow: KPL

Applicable tubing O.D. mm	Connection threads R	Model	H (width across flats)	Note 1) øD1	øD2	L1	L2	A*	M	Effective area mm² TPH	Effective area mm² TPS	Weight g
4	1/8	KPL04-01	12	10.4	10	20.7	23.2	24.5	18	3.5	3.5	4
	1/4	KPL04-02	14				27.2	26.5				5
6	1/8	KPL06-01	12	12.8		22.8	24.4	27	19.5	9	9	5
	1/4	KPL06-02	14				28.4	29				6
8	1/8	KPL08-01		15.2	12	26.3	26.6	30	21.5	22	15	8
	1/4	KPL08-02					29.4	31.5				9
10	1/4	KPL10-02	17	18.5	17	29.4	32.1	35.5	24	35	25	13
	3/8	KPL10-03					33.1	36.5				14
12	3/8	KPL12-03		20.9	22	31.4	34.3	38.5	25	50	40	15
	1/2	KPL12-04					38.3	41.5				18

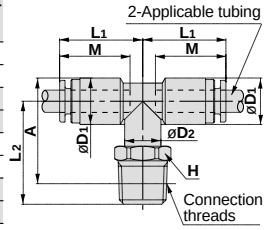
* Reference dimension for R threads after installation Note 1) **øD1** indicates the maximum diameter.



Male Branch Tee: KPT

Applicable tubing O.D. mm	Connection threads R	Model	H (width across flats)	Note 1) øD1	øD2	L1	L2	A*	M	Effective area mm² TPH	Effective area mm² TPS	Weight g
4	1/8	KPT04-01	12	10.4	10	20.7	23.2	24.5	18	4.1	4.1	6
	1/4	KPT04-02	14				27.2	26.5				7
6	1/8	KPT06-01	12	12.8		22.8	24.4	27	19.5	11	11	8
	1/4	KPT06-02	14				28.4	29				9
8	1/8	KPT08-01		15.2	12	26.3	26.6	30	21.5	26.3	18.2	12
	1/4	KPT08-02					29.4	31.5				13
10	1/4	KPT10-02	17	18.5	17	29.4	32.1	35.5	24	40.8	29	20
	3/8	KPT10-03					33.1	36.5				21
12	3/8	KPT12-03		20.9	22	31.4	34.3	38.5	25	57.2	45.2	24
	1/2	KPT12-04					38.3	41.5				27

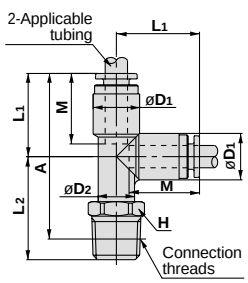
* Reference dimension for R threads after installation Note 1) **øD1** indicates the maximum diameter.



Male Run Tee: KPY

Applicable tubing O.D. mm	Connection threads R	Model	H (width across flats)	Note 1) øD1	øD2	L1	L2	A*	M	Effective area mm² TPH	Effective area mm² TPS	Weight g
4	1/8	KPY04-01	12	10.4	10	20.7	23.2	40	18	7.5	7.5	6
	1/4	KPY04-02	14				27.2	42				7
6	1/8	KPY06-01	12	12.8		22.8	24.4	43	19.5	11	11	8
	1/4	KPY06-02	14				28.4	45.5				9
8	1/8	KPY08-01		15.2	12	26.3	26.6	49	21.5	21	21	12
	1/4	KPY08-02					29.4	50				13
10	1/4	KPY10-02	17	18.5	17	29.4	32.1	56	24	45	45	19
	3/8	KPY10-03					33.1	56.5		57	52	20
12	3/8	KPY12-03		20.9	22	31.4	34.3	59.5	25	57	57	21
	1/2	KPY12-04					38.3	62.5				24

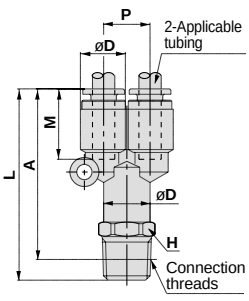
*Reference dimension for R threads after installation Note 1) **øD1** indicates the maximum diameter.



Male Branch "Y": KPU

Applicable tubing O.D. mm	Connection threads R	Model	H (width across flats)	Note 1) øD	L	P	A*	M	Effective area mm² TPH	Effective area mm² TPS	Weight g
4	1/8	KPU04-01	12	10.4	45.4	10.4	41.5	18	7.5	7.5	7
	1/4	KPU04-02	14		49.4		43.5				8
6	1/8	KPU06-01		12.8	49.6	12.8	45.5	19.5	18	18	9
	1/4	KPU06-02			52.4		46.5				10
8	1/8	KPU08-01	17	15.2	56.7	15.2	52.5	21.5	26	26	15
	1/4	KPU08-02	19		61.3		55.5		45	35	17
10	1/4	KPU10-02		18.5	64.5	18.5	59	24	45	45	23
	3/8	KPU10-03	22		67.5		61.5		70	55	25
12	3/8	KPU12-03		20.9	69.7	20.9	63.5	25	70	70	29
	1/2	KPU12-04			72.7		65.5		100	90	30

* Reference dimension for R threads after installation Note 1) **øD** indicates the maximum diameter.

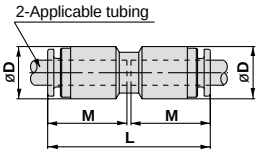


Dimensions

Straight Union: KPH

Applicable tubing O.D. mm	Model	Note 1) øD	L	M	Effective area mm²		Weight g
					TPH	TPS	
4	KPH04-00	10.4	37.4	18	4	4	4
6	KPH06-00	12.8	39.6	19.5	10	10	6
8	KPH08-00	15.2	44.4	21.5	26	18	10
10	KPH10-00	18.5	48.6	24	41	29	15
12	KPH12-00	20.9	50.6	25	58	46	18

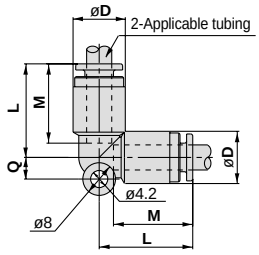
Note 1) **øD** indicates the maximum diameter.



Union Elbow: KPL

Applicable tubing O.D. mm	Model	Note 1) øD	L	Q	M	Effective area mm²		Weight g
						TPH	TPS	
4	KPL04-00	10.4	20.7	4.5	18	3.5	3.5	3
6	KPL06-00	12.8	22.8	5.3	19.5	9	9	7
8	KPL08-00	15.2	26.3	6	21.5	22	15	11
10	KPL10-00	18.5	29.4	6.8	24	35	25	16
12	KPL12-00	20.9	31.4	7.5	25	50	40	20

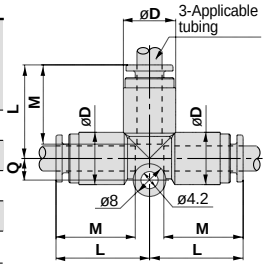
Note 1) **øD** indicates the maximum diameter.



Union Tee: KPT

Applicable tubing O.D. mm	Model	Note 1) øD	L	Q	M	Effective area mm²		Weight g
						TPH	TPS	
4	KPT04-00	10.4	20.7	4.5	18	4	4	7
6	KPT06-00	12.8	22.8	5.3	19.5	10	10	9
8	KPT08-00	15.2	26.3	6	21.5	26	18	16
10	KPT10-00	18.5	29.4	6.8	24	41	29	25
12	KPT12-00	20.9	31.4	7.5	25	58	46	29

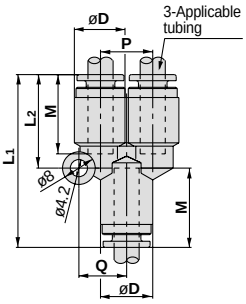
Note 1) **øD** indicates the maximum diameter.



Union "Y": KPU

Applicable tubing O.D. mm	Model	Note 1) øD	L1	L2	P	Q	M	Effective area mm²		Weight g
								TPH	TPS	
4	KPU04-00	10.4	36.8	19.6	10.4	9.7	17	4	4	7
6	KPU06-00	12.8	40.1	21.8	12.8	11.7	18.5	10	10	10
8	KPU08-00	15.2	46.7	26.5	15.2	13.7	20.5	26	18	17
10	KPU10-00	18.5	52	29.7	18.5	16.1	23	41	29	26
12	KPU12-00	20.9	55.2	31.9	20.9	18.1	24	58	46	32

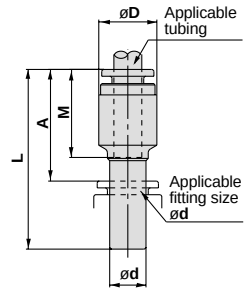
Note 1) **øD** indicates the maximum diameter.



Plug-in Reducer: KPR

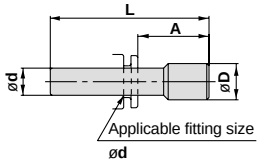
Applicable tubing O.D. mm	Applicable fitting size ød	Model	Note 1) øD	L	A	M	Effective area mm²		Weight g
							TPH	TPS	
4	6	KPR04-06	10.4	39.4	20.1	18	4	4	3
	8	KPR04-08		41.9	20.2				4
6		KPR06-08	12.8	42.5	20.8	19.5	10	10	4
	10	KPR06-10		45	21.2				5
8		KPR08-10	15.2	47	23.2	21.5	26	18	5
	12	KPR08-12		48	23.2				6
10		KPR10-12	18.5	50.5	25.7	24	41	29	9

Note 1) **øD** indicates the maximum diameter.



Plug: KPP

Applicable fitting size ød	Model	øD	L	A	Weight g
4	KPP-04	6	32	13.8	0.4
6	KPP-06	8	35	15.7	0.7
8	KPP-08	10	39	17.3	1.1
10	KPP-10	12	43	19.2	1.7
12	KPP-12	14	45.5	20.7	2.5



Clean Blowing System Related Equipment

Air Operated Valve *Series LV*

Low particulate generating valve with excellent corrosion resistance

Series LVA

Series LVC

Threaded type/Series LVA (basic type)

Note 1) PFA body not available for LVA10

Series	Orifice size (mm)	Body material	Port size Rc				
			1/8	1/4	3/8	1/2	3/4
LVA10	ø2	Note 1) PFA PPS SUS316	●	●			
LVA20	ø4		○	●			
LVA30	ø8			○	●		
LVA40	ø12				○	●	
LVA50	ø20					○	●

○: Body material SUS316 only

Integral fitting type/Series LVC (basic type)

Series	Orifice size (mm)	Body material	Tubing size										
			Metric sizes						Inch sizes					
			4	6	8	10	12	19	1/8	3/16	1/4	3/8	1/2	3/4
LVC20	ø4	PFA	●	●					●	●	●			
LVC30	ø8			●	●	●					●	●		
LVC40	ø10					●	●					●	●	
LVC50	ø16						●	●					●	●

Clean Regulator *Series SR*

Contamination controlled stainless steel regulator

Series SRH

Series SR

Series SRH

Series	Port size Rc						Liquid-contact part materials	
	1/8	1/4	3/8	1/2	9/16-18UNF	7/8-14UNF	Body	Diaphragm
SRH3000	●	●			●		SUS316L (fluid-contact parts SUS316)	Liquid-contact surfaces PTFE + Fluoro rubber (grade A) Fluoro rubber (grade B)
SRH4000		●	●	●		●		

Series SR

Series	Port size Rc					Liquid-contact part materials	
	M5	1/8	1/4	3/8	1/2	Body	Diaphragm
SR1000	●					SUS316	Fluoro rubber Fluoro rubber host with PTFE on liquid-contact surfaces
SR3000		●	●				
SR4000			●	●	●		

Clean Gas Filter *Series SF*

0.01mm particles 100% eliminated

Series SFA

Series SFB

Series SFC

Cartridge type

Series	Type	Principal materials			Thread type	Port size	
		Element	Housing	Seal		M5	1/4
SFA100 SFA200 SFA300	Disk	PTFE + Polyethylene	SUS316 (electropolished)	Fluoro rubber (FPM)	Rc NPT TSJ UOJ	●	●
SFB100	Straight	PTFE membrane				●	●

Disposable type

Series	Type	Principal materials			Thread type	Port size	
		Element	Housing	Seal		1/4	3/8
SFB300	Straight	PTFE membrane	SUS316 (electropolished)	–	Rc TSJ URJ	●	
SFC100	Multistage Disk	PTFE membrane PVDF holder		O-ring PTFE		●	●