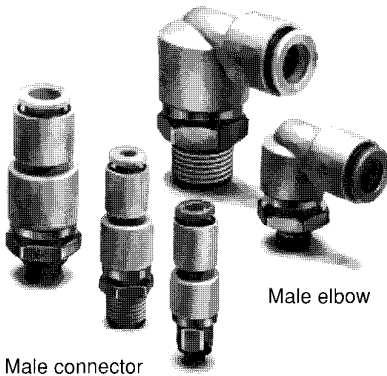


Rotary One-touch Fittings

Series **KS/KX**

(Standard) (High-Speed Type)



Male connector

Male elbow

Low-torque rotation type
Rotary one-touch fittings

Applicable to use for oscillating
and rotating sections in robots.

Brass parts are all electroless
nickel plating.

Thread sealant is standard

Applicable Tube

Note1) Tube material		Nylon, Soft nylon, Polyurethane
Tube O.D.	Metric size (Series KS/Series KX)	φ4, φ6, φ8, φ10, φ12
	Inch size (Series KS)	φ5/32", φ1/4", φ5/16", φ3/8"

Note1) Be careful about the max. operating pressure for Soft nylon and Polyurethane.

Specifications

Fluid	Air
Max. operating pressure	1.0MPa (10.2kgf/cm ²)
Operating vacuum pressure	-100KPa (10 Torr~)
Proof pressure	3.0MPa (30.6kgf/cm ²)
Ambient and fluid temperature	0~60°C
Thread	JISB0203, JISB0205

Rotating Torque/Permissible Number of Rotations

Applicable tube O.D. Note1)		φ4, φ5/32"	φ6, φ1/4"	φ8, φ5/16"	φ10, φ3/8"	φ12
Note2) Rotating torque	N·m (kgf·cm)	0.006 (0.06)	0.012 (0.12)	0.014 (0.14)	0.020 (0.20)	0.022 (0.22)
	Permissible number of rotations	500	500	400	300	250
Permissible number of rotations	rpm	Series KS	Series KX	Series KS	Series KX	Series KS
		1500	1200	1200	1000	1000

Note1) Inch size is available only for Series KS.

Note2) Value under pressure 0.5MPa (5.1kgf/cm²)

Principal Element Materials

Principal element	Series KS	Series KX
Body	PBT	
Stud, Holder, Guide	C3604BD (With electroless nickel plating)	
Chuck, Retainer	SUS304	
Collet, Release bushing, Retaining ring	Polyacetal	
O ring, Packing	NBR	
Rotary seal	NBR	FPM
Slide bearing	Oil-containing polyacetal	-
Scraper	-	NBR
Ball bearing	Bearing steel	SUS440C
Gasket	SUS304·NBR	

Construction

Slide bearing

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

Rotary seal

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

Holder

Standard electroless nickel plating allows copper-free applications.

Ball bearing

A ball bearing ensures low-torque rotation.

Stud

Threads are coated with a teflon based sealant for quick assembly.

Series KS
(Standard)

Cassette

The half union type is equipped with a "tube rotation prevention mechanism."

Series KS Metric size — Blue

Series KX Inch size — Red

Series KX Metric size — White

Series KX (High-speed type)

Scraper

Prevents chips from intruding into bearing parts.

Rotary seal





X ring shape minimizes friction while providing an excellent seal. Rotary seal is made of fire and shock proof fluorine rubber. Proves against high friction heat by high-speed rotating and long life time.

Ball bearing

A ball bearing ensures low torque rotation. SUS440C improves corrosion resistance.

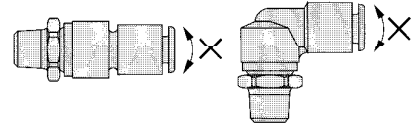
※ Other parts' specifications are same as those of Series KS.

Metric Size (Series KS / Series KX)

Type	Connection thread	Applicable tube O.D. (mm)					
		φ4	φ6	φ8	φ10	φ12	
Male connector KSH KXH 	M5×0.8	●	●				P.3
	M6×1.0	●	●				
	R(PT)1/8	●	●	●			
	R(PT)1/4		●	●	●		
	R(PT)3/8			●	●	●	
Uni-KSH Uni-KXH 	Uni1/8	●	●	●			P.6
Uni1/4		●	●	●			
Uni3/8			●	●	●		
Male elbow KSL KXL 	M5×0.8	●	●				P.4
	M6×1.0	●	●				
	R(PT)1/8	●	●	●			
	R(PT)1/4		●	●	●		
	R(PT)3/8			●	●	●	
Uni-KSL Uni-KXL 	Uni1/8	●	●	●			P.6
	Uni1/4		●	●	●		
	Uni3/8			●	●	●	
	Uni1/2				●	●	

Precautions

Minimize the load shown below to protect the ball bearing. A flexible polyurethane tube is recommended.



Precautions for Uni-Rotary One-touch Fittings

❶ After tightening the threaded section by hand, correctly apply a spanner to the hexagonal body using the appropriate tightening torque listed below.

Connection female thread: Rc(PT),NPT,NPTF

Nominal size of Uni thread	Appropriate tightening torque N·m (kgf·cm)	Tightening angle after manual tightening deg
1/8	5~7 {50~70}	30~60
1/4	11~13 {110~130}	30~60
3/8	14~16 {140~160}	15~45
1/2	20~22 {200~220}	15~30

Female connection of thread: G(PF)

Nominal size of Uni thread	Appropriate tightening torque N·m (kgf·cm)	Tightening angle after manual tightening deg
1/8	3~4 {30~40}	30~45
1/4	4~5 {40~50}	15~30
3/8	8~9 {80~90}	15~30
1/2	14~15 {140~150}	15~30

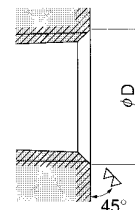
❷ The gasket can be used 6 to 10 times repeatedly. A broken gasket can be replaced easily. Hold the broken gasket and turn it counterclockwise to remove it. When it is difficult to remove, cut it with nippers. Do not damage the 45° gasket seat which is a sealing surface.

❸ Please contact us for the use of fluid other than air.

❹ Other precautions conform to those for one-touch fittings and speed controller with one-touch fittings.




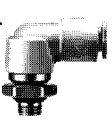
Recommended chamfering size

Chamfering should be based on the following table. The values in the table are effective in cutting threads and preventing burrs.



Female thread size	Recommended chamfering size	
	Rc(PT),G(PF)	NPT,NPTF
1/8	10.2~11.8	10.5~11.8
1/4	13.6~15.8	14.1~15.8
3/8	17.1~19.4	17.4~19.4
1/2	21.4~25.1	21.7~25.1

Inch Size (Series KS)

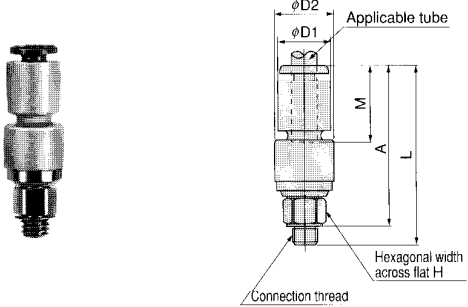
Type	Connection thread	Applicable tube O.D. (inch)				
		φ5/32"	φ1/4"	φ5/16"	φ3/8"	
Male connector KSH 	10-32UNF	●				P.5
	NPT1/8	●	●	●		
	NPT1/4		●	●	●	
	NPT3/8			●	●	
Uni-KSH 	Uni1/8	●	●	●		Back cover
	Uni1/4		●	●	●	
	Uni3/8			●	●	
Male elbow KSL 	10-32UNF	●				P.5
	NPT1/8	●	●	●		
	NPT1/4		●	●	●	
	NPT3/8			●	●	
Uni-KSL 	Uni1/8	●	●	●		Back cover
	Uni1/4		●	●	●	
	Uni3/8			●	●	

Series KS/KX

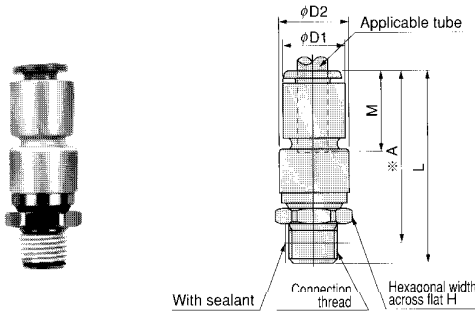
Metric Size

Male connector KSH (Standard)

<M5,M6>

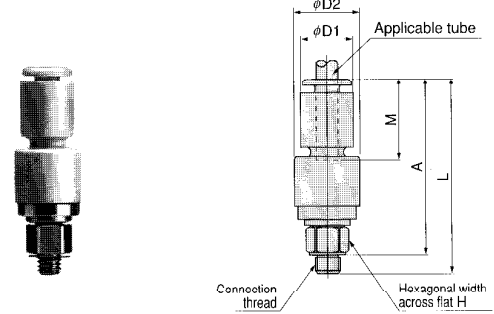


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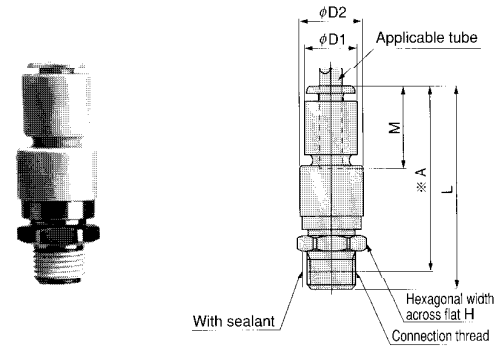


Male connector KXH (High-speed type)

<M5,M6>



<R(PT)>



※ Reference dimensions after thread installation

Applicable tube O.D.(mm)	Connection thread R(PT)	Model	H (Hex.)	D1	D2	Effective area mm ²		Weight g				
						Nylon	Urethane					
4	M5x0.8	KSH04-M5	8	10.4	12	36.5	33	9				
	M6x1.0	KSH04-M6	8			37	34					
	1/8	KSH04-01S	12			38	34					
6	M5x0.8	KSH06-M5	8	12.8	14	37.5	33.5	12				
	M6x1.0	KSH06-M6	8			38	34					
	1/8	KSH06-01S	14			39.5	35.5	17	17			
	1/4	KSH06-02S	14			42.5	36.5					
8	1/8	KSH08-01S	8	15.2	17	44	40	23				
	1/4	KSH08-02S	17			47	41		18.5	6	26.1	18.0
	3/8	KSH08-03S	17			48	41.5					
10	1/4	KSH10-02S	14	18.5	22	54	48	55				
	3/8	KSH10-03S	22			55	48.5		21	7	36.3	29.5
	1/2	KSH10-04S	22			57.5	49.5					
12	3/8	KSH12-03S	24	20.9	24	57	50.5	75				
	1/2	KSH12-04S	24			60	52		22	8	46.1	46.1

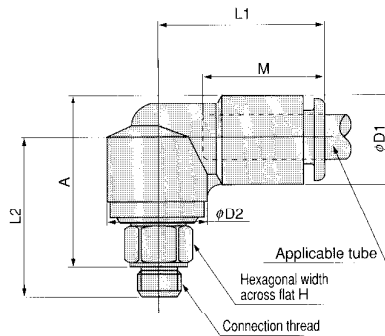
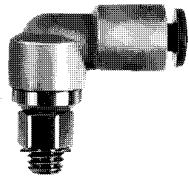
※ Reference dimensions after thread installation

Applicable tube O.D.(mm)	Connection thread R(PT)	Model	H (Hex.)	D1	D2	Effective area mm ²		Weight g				
						Nylon	Urethane					
4	M5x0.8	KXH04-M5	8	10.4	13	38.5	35	11				
	M6x1.0	KXH04-M6	8			39	36					
	1/8	KXH04-01S	12			40	36					
6	M5x0.8	KXH06-M5	8	12.8	15	39.5	36	15				
	M6x1.0	KXH06-M6	8			40	36					
	1/8	KXH06-01S	14			42	38	17	20			
	1/4	KXH06-02S	14			45	39					
8	1/8	KXH08-01S	8	15.2	18	46	42	28				
	1/4	KXH08-02S	17			49	43		18.5	6	26.1	18.0
	3/8	KXH08-03S	17			50	44					
10	1/4	KXH10-02S	14	18.5	23.5	58	52	68				
	3/8	KXH10-03S	22			59	52		21	7	36.3	29.5
	1/2	KXH10-04S	22			62	53					
12	3/8	KXH12-03S	24	20.9	26	60	54	88				
	1/2	KXH12-04S	24			63	55		22	8	46.1	46.1

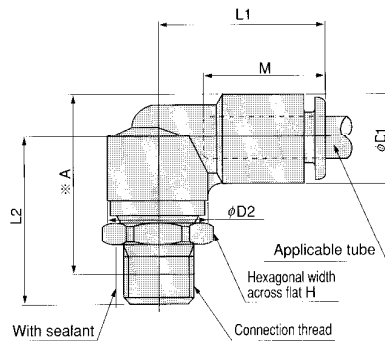
Metric Size

**Male elbow
KSL (Standard)**

<M5,M6>

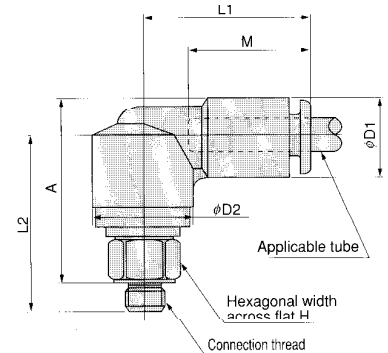
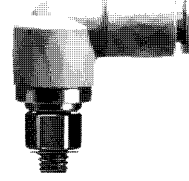


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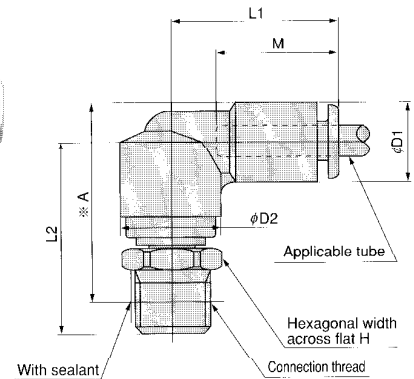
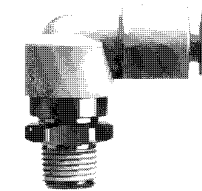


**Male elbow
KXL (High-speed type)**

<M5,M6>



<R(PT)>



※ Referonoo dimonione after thread installation

Applicable tube O.D.(mm)	Connection thread R(PT)	Model	H (Hex.)	D1	D2	L1	L2	A	M	Min. hole dia.	Effective area mm ²		Weight g
											Nylon	Urethane	
4	M5×0.8	KSL04-M5	8	10.4	12	21	20.5	22	16	2.5	3.5	3.5	9
	M6×1.0	KSL04-M6					21						
	1/8	KSL04-01S	12	22	23.5	14							
6	M5×0.8	KSL06-M5	8	12.8	14	23	21	23.5	17	2.5	3.5	3.5	12
	M6×1.0	KSL06-M6					21.5	24					
	1/8	KSL06-01S	14	23	25.5	17	4	0.0	0.0	17			
	1/4	KSL06-02S	14	26	26.5	17	4	0.0	0.0	23			
8	1/8	KSL08-01S	17	15.2	17	26	26.5	30	18.5	6	21.6	14.9	23
	1/4	KSL08-02S					29.5	31					
	3/8	KSL08-03S					31	32					
10	1/4	KSL10-02S	22	18.5	22	31.5	34	37.5	21	7	30.5	25.0	56
	3/8	KSL10-03S					35	38					
12	1/2	KSL10-04S	24	20.9	24	34	38	39.5	22	8	35.1	35.1	82
	3/8	KSL12-03S					36.5	40.5					
	1/2	KSL12-04S					39.5	42					

※ Reference dimensions after thread installation

Applicable tube O.D.(mm)	Connection thread R(PT)	Model	H (Hex.)	D1	D2	L1	L2	A	M	Min. hole dia.	Effective area mm ²		Weight g
											Nylon	Urethane	
4	M5×0.8	KXL04-M5	8	10.4	13	22	22.5	24	16	2.5	3.5	3.5	11
	M6×1.0	KXL04-M6					23	25					
	1/8	KXL04-01S	12	24	25	16							
6	M5×0.8	KXL06-M5	8	12.8	15	24	23.5	26	17	2.5	3.5	3.5	15
	M6×1.0	KXL06-M6					24	26					
	1/8	KXL06-01S	14	25	28	17	4	0.0	0.0	20			
	1/4	KXL06-02S	14	28	29	17	4	0.0	0.0	26			
8	1/8	KXL08-01S	17	15.2	18	27	29	32	18.5	6	21.6	14.9	28
	1/4	KXL08-02S					32	33					
	3/8	KXL08-03S					33	34					
10	1/4	KXL10-02S	22	18.5	23.5	32	38	42	21	7	30.5	25.0	69
	3/8	KXL10-03S					39	43					
	1/2	KXL10-04S					42	43					
12	3/8	KXL12-03S	24	20.9	26	35	40	44	22	8	35.1	35.1	89
	1/2	KXL12-04S					43	45					