

For Low Pressure

HI CUPLA

Universal purpose couplings for air lines

Working pressure

1.5

1.5 MPa
(15 kgf/cm²)

1.0

1.0 MPa
(10 kgf/cm²)

Valve structure

One-way shut-off

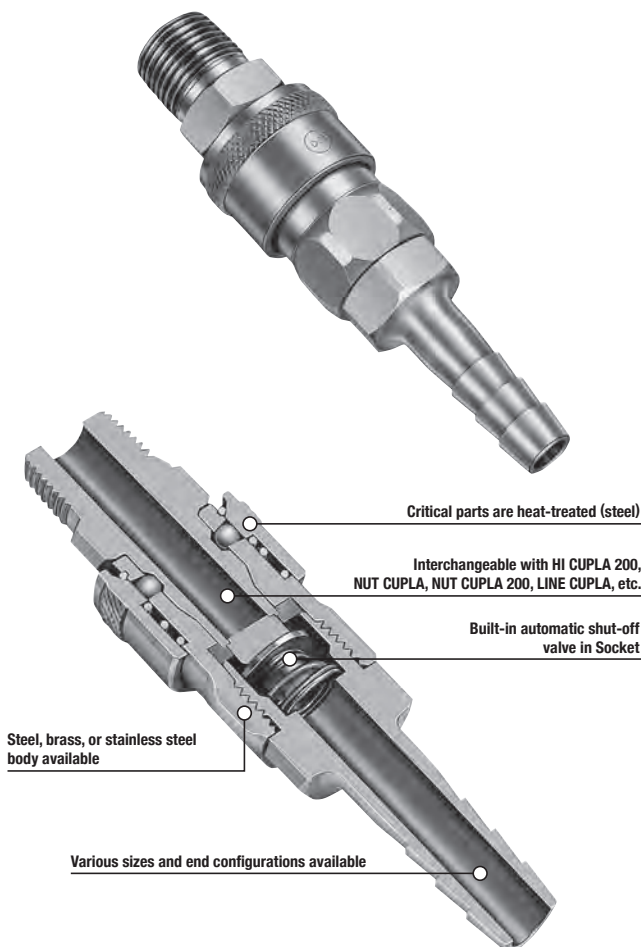
Applicable fluids (Steel applies to air only)

Air

Water

From factory air lines to pneumatic tool connections, available in various body materials, sizes, and end configurations. Excellent durability.

- An excellent general-purpose coupling for connecting factory air supplies to pneumatic tools.
- Steel couplings are suitable for air, while brass or stainless steel is suitable for water. Note that fluid will flow out from the plug when disconnected.
- Critical structural parts of steel models are heat-treated for increased strength giving greater durability and resistance to wear.
- Available in various body materials, sizes, and end configurations, making it applicable to a wide range of applications.



Suitability for Vacuum

Not suitable for vacuum application in either connected or disconnected condition.

Specifications

Body material		Steel (Chrome plated)	Brass	Stainless steel (SUS304)	
Size	Thread and hose barb	Thread and hose barb 1/8" to 1", 1/4" to 1" hose			
	Tube barb (Tube fitter) *1	Polyurethane tube: Outer dia. $\phi 6 \pm 0.1$, $\phi 8 \pm 0.15$, $\phi 10 \pm 0.15$ Polyamide tube: Outer dia. $\phi 6^{+0.05}_{-0.08}$, $\phi 8^{+0.05}_{-0.1}$, $\phi 10^{+0.05}_{-0.1}$ Fluorine contained resin tube: Outer dia. $\phi 6 \pm 0.07$, $\phi 8 \pm 0.07$, $\phi 10 \pm 0.07$			
Working pressure		MPa	1.5	1.0	1.5
		kgf/cm²	15	10	15
		bar	15	10	15
		PSI	218	145	218
Seal material	Working temperature range *2	Seal material	Mark	Working temperature range	Remarks
Nitrile rubber		NBR	-20°C to +80°C	Standard material	
Fluoro rubber		FKM	-20°C to +180°C		

- Above specifications apply only to CUPLA. Maximum working pressure and working temperature range may vary depending on the tube materials used with and the working temperature.

*1: When connecting an extremely soft tube such as soft polyurethane or soft nylon, attach the insert ring specified by the tube manufacturer to the inner diameter of the tube to be connected.

*2: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque

Size (Thread)		1/8"	1/4"	3/8"	1/2"	3/4"	1"
Torque	Steel	7 {71}	14 {143}	22 {224}	60 {612}	100 {1020}	120 {1224}
	Brass	5 {51}	9 {92}	11 {112}	30 {306}	50 {510}	65 {663}
	Stainless steel	—	14 {143}	22 {224}	60 {612}	100 {1020}	120 {1224}

Flow Direction

Fluid must run from socket to plug.



Interchangeability

- ① Sockets and plugs of models 10, 17, 20, 30, 40, and 60 can be connected with each other regardless of end configurations.
- ② Sockets and plugs of models 400, 600, and 800 can be connected with each other regardless of end configurations. ① and ② can not be connected across each group.
- ③ Interchangeable with each models of NUT CUPLA series and HI CUPLA series.
Please see [page 19](#) for "HI CUPLA Series Interchangeability".

Minimum Cross-Sectional Area

(mm²)

10, 17, 20, 30, 40, 60 type

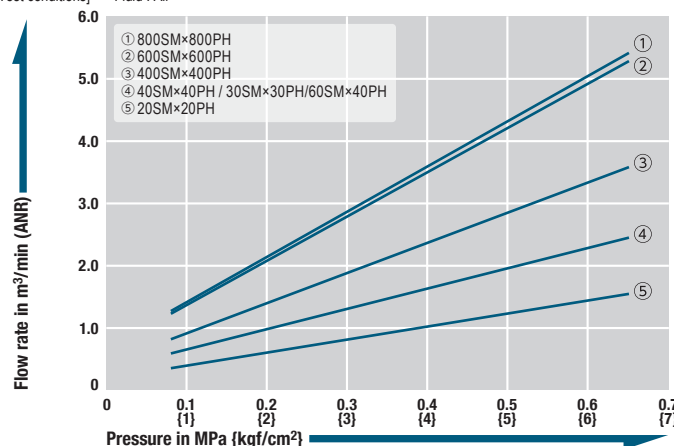
Socket \ Plug	17PH	20PH	30PH	40PH	10PM	20PM	30PM	40PM	20PF	30PF	40PF
10SM	16	20	20	20	13	20	20	20	20	20	20
17SH	16	16	16	16	13	16	16	16	16	16	16
20SH	16	20	20	20	13	20	20	20	20	20	20
20SM, SF	16	20	33	33	13	33	33	33	33	33	33
30SH	16	20	33	33	13	33	33	33	33	33	33
30SM, SF	16	20	33	33	13	33	33	33	33	33	33
40SH	16	20	33	33	13	33	33	33	33	33	33
40SM, SF	16	20	33	33	13	33	33	33	33	33	33
60SM	16	20	33	33	13	33	33	33	33	33	33

400, 600, 800 type

Socket \ Plug	400PH	600PH	800PH	400PM	600PM	800PM	400PF	600PF	800PF
400SH	64	64	64	64	64	64	64	64	64
400SM, SF	64	94	94	94	94	94	94	94	94
600SH	64	94	94	94	94	94	94	94	94
600SM, SF	64	94	94	94	94	94	94	94	94
800SH	64	94	94	94	94	94	94	94	94
800SM, SF	64	94	94	94	94	94	94	94	94

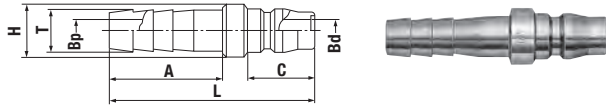
Pressure - Flow Characteristics

[Test conditions] - Fluid : Air



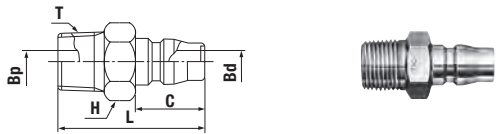
Models and Dimensions

Plug PH type (Hose barb)



Model	Application (Hose)	Body material • Mass (g)			Dimensions (mm)						
		Steel	Brass	Stainless steel	L	øH	A	C	øT	øBp	øBd
17PH	1/4"	24	—	—	54	16	27	20	7.2	4.5	7.5
20PH	1/4"	28	31	27	57	16	30	20	9	5	7.5
30PH	3/8"	32	34	33	61	16	34	20	11.3	7.5	7.5
40PH	1/2"	59	64	60	63	20	36	20	15	9	7.5
400PH	1/2"	65	71	66	66	22	36	23	15	9	13
600PH	3/4"	123	130	124	77	30	45	23	21	13	13
800PH	1"	151	161	151	85	34	54	23	27	20	13

Plug PM type (Male thread)



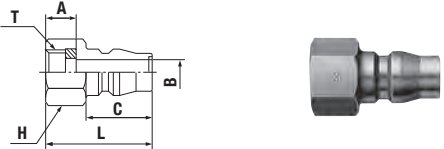
Model	Application (Thread)	Body material • Mass (g)			Dimensions (mm)						
		Steel	Brass	Stainless steel	L	H(WAF)	C	T	øBp	øBd	
10PM	Rc 1/8	22	24	—	37	Hex. 14	20	R 1/8	4	7.5	
20PM	Rc 1/4	25	27	26	41	Hex. 14	20	R 1/4	7.5	7.5	
30PM	Rc 3/8	40	43	41	42	Hex. 19 ^{*3}	20	R 3/8	7.5	7.5	
40PM	Rc 1/2	60	65	60	46	Hex. 22	20	R 1/2	12	7.5	
400PM	Rc 1/2	70	73	69	50	Hex. 22	23	R 1/2	13	13	
600PM	Rc 3/4	113	121	114	55	Hex. 32	23	R 3/4	19	13	
800PM	Rc 1	182	196	183	63	Hex. 35	23	R 1	22	13	

Plug PF type (Female thread)



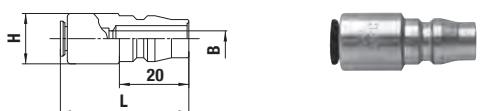
Model	Application (Thread)	Body material • Mass (g)			Dimensions (mm)						
		Steel	Brass	Stainless steel	L	H(WAF)	C	T	øB		
20PF	R 1/4	28	31	29	36	Hex. 17	20	Rc 1/4	7.5		
30PF	R 3/8	35	41	38	37	Hex. 21	20	Rc 3/8	7.5		
40PF	R 1/2	69	76	70	38	Hex. 29	20	Rc 1/2	7.5		
400PF	R 1/2	82	86	81	41	Hex. 29	23	Rc 1/2	13		
600PF	R 3/4	115	124	115	45	Hex. 35	23	Rc 3/4	13		
800PF	R 1	189	207	190	54	Hex. 41	23	Rc 1	13		

Plug PFF type (Parallel female thread)



Model	Application (Thread)	Body material • Mass (g)			Dimensions (mm)						
		Steel	Brass	Stainless steel	L	H(WAF)	A	C	T	øB	
20PFF	G 1/4	23	—	—	32	Hex. 17	9	20	G 1/4	7.5	

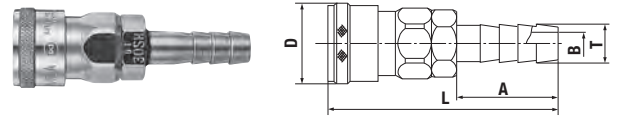
Plug PC type (Tube Fitter)



Model	Application (Tube)	Mass (g)	Dimensions (mm)		
			L	øH	øB
60PC	For 6 mm OD tube	25	(37)	14.5	4.5
80PC	For 8 mm OD tube	30	(41)	16.5	6.5
100PC	For 10 mm OD tube	43	(45)	19.5	7.5

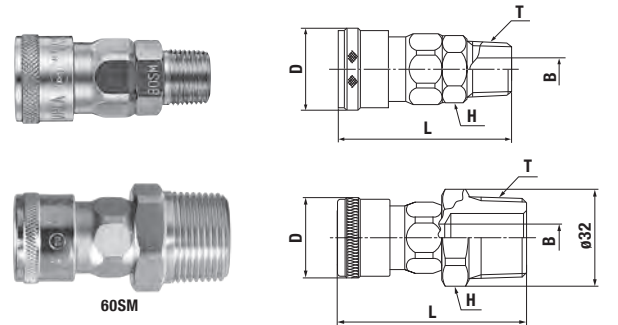
*The body material for PC type (Tube Fitter) is steel only.

Socket SH type (Hose barb)



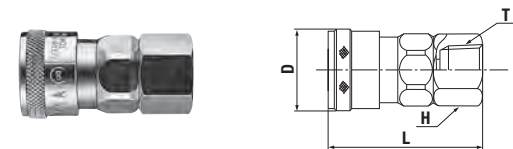
Model	Application (Hose)	Body material • Mass (g)			Dimensions (mm)						
		Steel	Brass	Stainless steel	L	øD	A	øT	øB		
17SH	1/4"	99	—	—	(69.5)	(26.5)	27	7.2	4.5		
20SH	1/4"	99	105	97	(72.5)	(26.5) ^{*1}	30	9	5		
30SH	3/8"	102	107	100	(76.5)	(26.5) ^{*1}	34	11.3	7.5		
40SH	1/2"	115	122	113	(78.5)	(26.5) ^{*1}	36	15	9		
400SH	1/2"	220	235	230	(83)	35	36	15	9		
600SH	3/4"	243	262	242	(92)	35	45	21	14		
800SH	1"	327	350	325	(102)	35	55	27	16		

Socket SM type (Male thread)



Model	Application (Thread)	Body material • Mass (g)			Dimensions (mm)						
		Steel	Brass	Stainless steel	L	øD	H(WAF)	T	øB		
10SM	Rc 1/8	97	—	—	(52.5)	(26.5)	Hex. 19	R 1/8	5		
20SM	Rc 1/4	97	103	96	(55.5)	(26.5) ^{*1}	Hex. 19	R 1/4	7		
30SM	Rc 3/8	104	108	100	(56.5)	(26.5) ^{*1}	Hex. 19	R 3/8	8 ^{*4}		
40SM	Rc 1/2	127	135	126	(59.5)	(26.5) ^{*1}	Hex. 23 ^{*2}	R 1/2	9		
60SM	Rc 3/4	158	—	—	(62.5)	(26.5)	Hex. 29	R 3/4	9		
400SM	Rc 1/2	210	224	212	(63)	35	Hex. 29	R 1/2	13		
600SM	Rc 3/4	242	259	243	(67)	35	Hex. 32	R 3/4	16		
800SM	Rc 1	329	353	328	(72)	35	Hex. 36	R 1	16		

Socket SF type (Female thread)



Model	Application (Thread)	Body material • Mass (g)			Dimensions (mm)						
		Steel	Brass	Stainless steel	L	øD	H(WAF)	T			
20SF	R 1/4	97	101	94	(49.5)	(26.5) ^{*1}	Hex. 19	Rc 1/4			
30SF	R 3/8	98	103	95	(50.5)	(26.5) ^{*1}	Hex. 21	Rc 3/8			
40SF	R 1/2	136	146	138	(52.5)	(26.5) ^{*1}	Hex. 29	Rc 1/2			
400SF	R 1/2	216	233	215	(57)	35	Hex. 29	Rc 1/2			
600SF	R 3/4	259	277	257	(61)	35	Hex. 35	Rc 3/4			
800SF	R 1	327	361	327	(68)	35	Hex. 41	Rc 1			

* Above pictures are plugs and sockets of steel 20, 30 and 40 models.

*1 : D = 25.4 for brass and stainless steel models.

*2 : H = Hex. 22 for brass and stainless steel models.

*3 : H = Hex. 17 for brass and stainless steel models.

*4 : B = 9 for brass and stainless steel models.

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*Plug and tube can be connected
in one push-to-connect operation.*

Just push the tube into CUPLA and then it is locked.

Polyurethane, Polyamide and Fluorine contained resin tubes.

PC type
(Tube Fitter)