

# For Gases and Liquids

# SP Cupla

For medium pressure general applications

Working pressure



1.5~7.5MPa  
(15~76kgf/cm<sup>2</sup>)

Valve structure

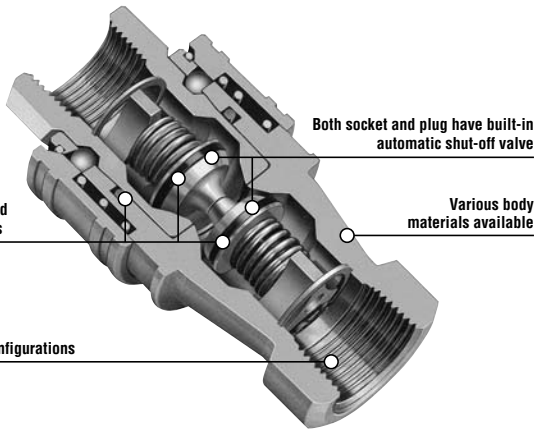


Two-way shut-off

Applicable fluids



Water Hydraulic oil Steam chemicals Air gas



Both socket and plug have built-in automatic shut-off valve

Wide range of seal materials for diversified applications with fluids

Various body materials available

Wide variety of end configurations

## Socket and plug both have automatic shut-off valve for medium pressure applications! Available with various body and seal materials, or sizes.

- Both socket and plug have automatic shut-off valve inside so that the fluid in the line will not flow out on disconnection.
- Various semi-standard seal materials are available to suit a variety of fluids.
- Various semi-standard body materials and sizes are available to suit a wide range of medium pressure applications.

Note: see the pages of Seal Material Selection Table at the end of this catalog for the suitability of seal materials to fluids.

### Specifications

Body material	Brass				Stainless steel•Steel (Nickel-plated)			
Size	1/8" • 1/4" / 3/8"	1/2" • 3/4" / 1"	1 1/4" / 1 1/2"	2"	1/8" • 1/4" / 3/8"	1/2" • 3/4" / 1"	1 1/4" / 1 1/2"	2"
Working pressure MPa (kgf/cm <sup>2</sup> )	5.0 (51)	3.0 (31)	2.0 (20)	1.5 (15)	7.5 (76)	4.5 (46)	3.0 (31)	2.0 (20)
Pressure resistance MPa (kgf/cm <sup>2</sup> )	7.5 (76)	4.5 (46)	3.0 (31)	2.3 (24)	10.0 (102)	6.5 (66)	4.5 (46)	3.0 (31)
Seal material Working temperature range	Seal material	Mark		Working temperature range	Remarks			
	Nitrile rubber	NBR (SG)		-20°C~+80°C	Standard material Available on request			
	Fluoro rubber	FKM (X-100)		-20°C~+180°C				
	Perfluoroelastomer	P		0°C~+50°C				
Ethylene-propylene rubber	EPDM (EPT)		-40°C~+150°C					

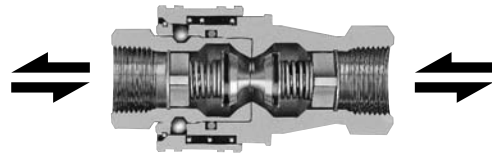
• Standard stainless steel SUS304 and SUS316 are available as semi-standard body materials.

### Max. Tightening Torque

		N•m (kgf•cm)								
Size		1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Torque	Steel	9 (92)	14 (143)	22 (224)	60 (612)	90 (918)	120 (1224)	260 (2652)	280 (2856)	500 (5100)
	Brass	5 (51)	9 (92)	12 (122)	30 (306)	50 (510)	65 (663)	150 (1530)	150 (1530)	260 (2652)
	Stainless steel	9 (92)	14 (143)	22 (224)	60 (612)	90 (918)	120 (1224)	260 (2652)	280 (2856)	500 (5100)

### Flow Direction

Fluid may flow in either direction from plug or from socket side when coupled.



### Interchangeability

Different sizes are not interchangeable.

\* Interchangeable with SP-V Cuplas but take heed of flow rates.

### Min. Cross-Sectional Area

Model	1SP	2SP	3SP	4SP	6SP	8SP	10SP	12SP	16SP
Min. Cross-Sectional Area	13	17	48	73	94	212	395	553	803

### Suitability for Vacuum

1.3 x 10<sup>-1</sup>Pa {1 x 10<sup>-3</sup>mmHg}

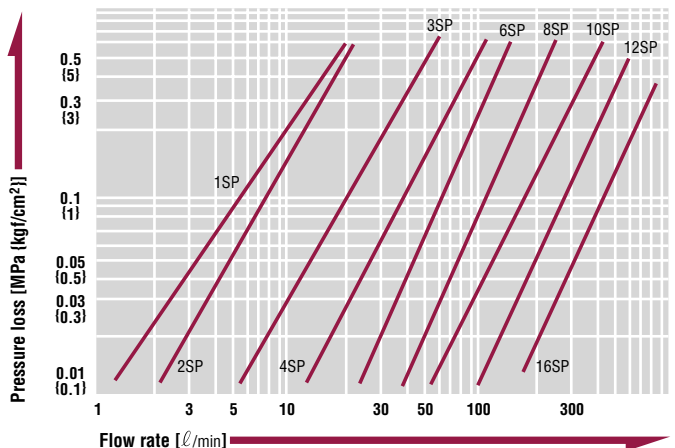
Socket only	Plug only	When connected
—	—	Operational

### Admixture of air on connection

Model	1SP	2SP	3SP	4SP	6SP	8SP	10SP	12SP	16SP
Volume of spillage	0.52	1.02	2.4	3.2	10.5	17	29	45	84

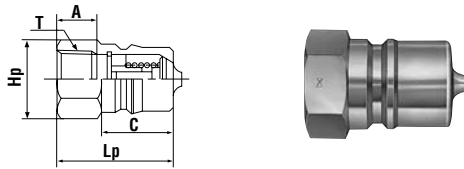
### Flow Rate – Pressure Loss Characteristics

[Test conditions] • Fluid : Hydraulic oil • Temperature : 30°C ± 5°C  
• Fluid viscosity : 32 x 10<sup>-6</sup>m<sup>2</sup>/s • Density : 0.87 x 10<sup>3</sup>kg/m<sup>3</sup>



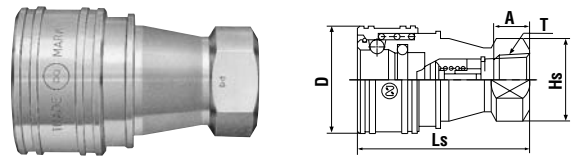
Models and Dimensions

**Plug Female thread**



Model	Application	Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	Lp	C	A	Hp(waf)	T
1P	R 1/8	19 *1	21	19	29	19	11	Hex.14	Rc 1/8
2P	R 1/4	35	38	35	36	22	13	Hex.17	Rc 1/4
3P	R 3/8	60	65	60	40	25	13	Hex.21	Rc 3/8
4P	R 1/2	123	134	124	44	28	15	Hex.29	Rc 1/2
6P	R 3/4	212	231	213	52	36	17	Hex.35	Rc 3/4
8P	R 1	350	381	332	62	40	20	Hex.41	Rc 1
10P	R1 1/4	590	610	590	70	45	24	Hex.54 *3	Rc1 1/4
12P	R1 1/2	820	880	840	75	49	24	Hex.63 *2	Rc1 1/2
16P	R 2	1430	1530	1450	80	52	27	Two flats 77x ø84	Rc 2

**Socket Female thread**



Model	Application	Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	Ls	øD	A	Hs(waf)	T
1S	R 1/8	85 *1	93	86	48	24	11	Two flats 14 x ø18	Rc 1/8
2S	R 1/4	133	145	134	58	28	13	Two flats 19 x ø22	Rc 1/4
3S	R 3/8	208	227	209	65	35	13	Two flats 21 x ø25	Rc 3/8
4S	R 1/2	428	466	431	72	45	15	Two flats 29 x ø35	Rc 1/2
6S	R 3/4	710	773	714	88	55	17	Two flats 35 x ø41	Rc 3/4
8S	R 1	1000	1089	980	102	65	20	Two flats 41 x ø48	Rc 1
10S	R1 1/4	1570	1680	1580	115	77	24	Two flats 54 x ø55	Rc1 1/4
12S	R1 1/2	2320	2490	2350	124	88	24	Two flats 63 x ø69	Rc1 1/2
16S	R 2	3590	3860	3620	132	108	27	Two flats 77 x ø86	Rc 2

\*1 : 1-S and 1-P steel are made-to-order items. \*2 : Stainless steel: Hex.63 x 67mm dia. \*3 : Stainless steel: Hex.54 x 59mm dia.  
 • Semi-standard stainless steels (SUS304, 316) have different appearances from the above drawings.

**Application example**

