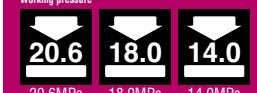
For High Pressure

HSP Cupla

For hydraulic pressure from 14.0 to 20.6MPa {142~210kgf/cm²}

Working pressure



20.6MPa {210kgf/cm²} 18.0MPa {183kgf/cm²} 14.0MPa {142kgf/cm²}

Valve structure

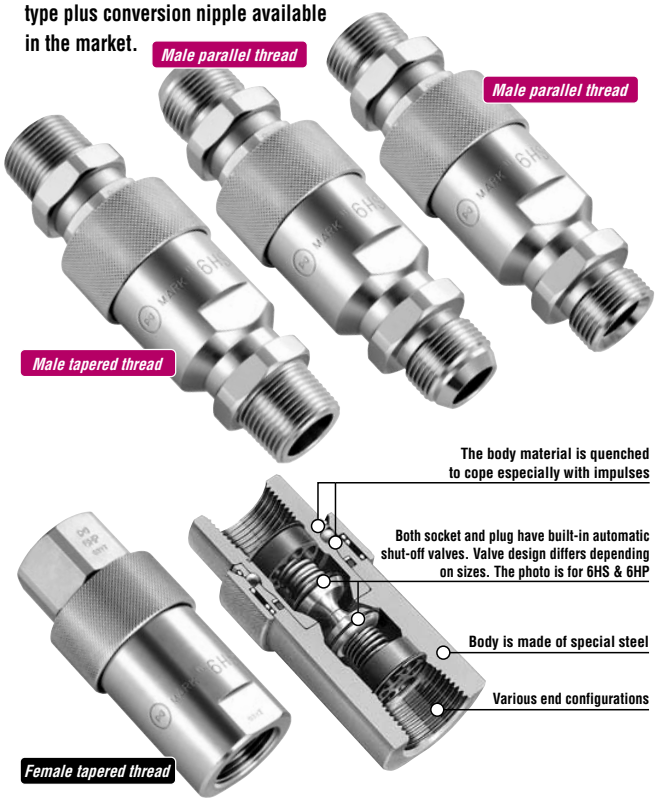
Two-way shut-off

Applicable fluids

Hydraulic oil

Special steel body is tough against vibration and impact! Male and female thread end configurations are available. Low pressure loss characteristic suits hydraulic equipment applications.

- Quenched special steel body!
  Powerful impact resistance, especially against impulses.
- Valve is designed to suppress pressure loss, particularly suitable for hydraulic applications which need big fluid flow rates.
- Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection. Easy to handle.
- In addition to conventional female thread type, male thread types (male tapered thread, male parallel thread with 30˚ flare, and male parallel thread with 30˚ cone-seat) are newly added. Male thread types are designed especially for direct connection to hydraulic power units effectively.
- Male parallel thread type complies with both metal seal and O-ring seal. (In case of O-ring seal, O-rings available in the market can be used.)
- Optional HSP-DC Cuplas are available for die-casting machine applications with severe pressure variation.
- The overall length of male thread type is shorter than that of female thread type plus conversion nipple available in the market.



Specifications

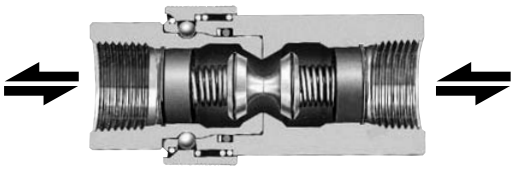
Body material	Special steel (Nickel-plated)			
Size	1/4" • 3/8" • 1/2" • 3/4" • 1"		1 1/4" • 1 1/2"	2"
Working pressure MPa {kgf/cm²}	20.6 {210}		18.0 {183}	14.0 {142}
Pressure resistance MPa {kgf/cm²}	31.0 {316}		26.5 {270}	20.6 {210}
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-20˚C~+80˚C	Standard material
	Fluoro rubber	FKM (X-100)	-20˚C~+180˚C	Available on request

Max. Tightening Torque N•m {kgf•cm}

Size		1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Torque	Female thread	28 {286}	45 {459}	90 {918}	100 {1020}	180 {1836}	290 {2958}	350 {3570}	500 {5100}
	Male taper thread	28 {286}	45 {459}	90 {918}	100 {1020}	—	—	—	—
	Parallel male thread	25 {255}	35 {357}	60 {612}	120 {1224}	—	—	—	—

Flow Direction

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



Interchangeability

4HSP with 6HSP or 10HSP with 12HSP can be connected each other.
Other combinations of different sizes are not connectable.

Min. Cross-Sectional Area (mm²)

Model	2HSP	3HSP	4HSP	6HSP	66HSP	8HSP	10HSP	12HSP	16HSP
Min. cross-sectional area	21	37	77	77	145	203	595	595	1084

Suitability for Vacuum 1.3×10^{-1}Pa {1×10^{-3}mmHg}

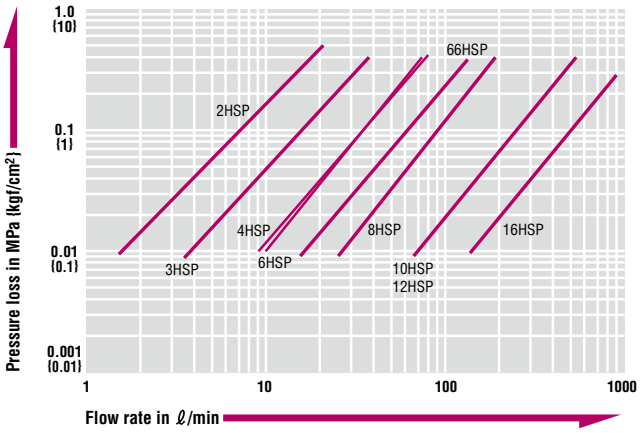
Socket only	Plug only	When connected
—	—	Operational

Admixture of Air on Connection (mℓ)

Model	2HSP	3HSP	4HSP	6HSP	66HSP	8HSP	10HSP	12HSP	16HSP
Volume of air	0.7	1.9	3.5	3.5	8.2	12.4	44	44	156

Flow Rate – Pressure Loss Characteristics

[Test conditions] •Fluid : Hydraulic oil •Temperature : 30˚C ± 5˚C
•Fluid viscosity : 32×10^{-6}m²/s •Density : 0.87×10^{3}kg/m³

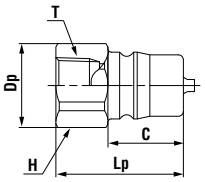


The flow volume of male thread type is increased by 5~10% compared with that of female thread type with conversion nipple.

Models and Dimensions

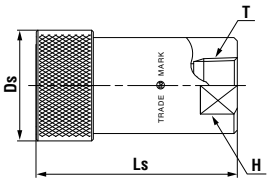
WAF : WAF stands for width across flat.

Plug HP type (Female tapered thread)



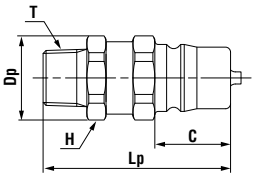
Model	Application	Mass (g)	Dimensions (mm)				
			Lp	øDp	C	H(WAF)	T
2HP	R 1/4	40	32	20.5	17.5	Hex.19	Rc 1/4
3HP	R 3/8	68	38	25	22.5	Hex.23	Rc 3/8
4HP	R 1/2	124	44	32	27.5	Hex.29	Rc 1/2
6HP	R 3/4	148	50	35	27.5	Hex.32	Rc 3/4
66HP	R 3/4	232	51	40	28	35	Rc 3/4
8HP	R 1	361	61	47	36	41	Rc 1
10HP	R1 1/4	886	80	64	58	58	Rc1 1/4
12HP	R1 1/2	810	80	64	58	58	Rc1 1/2
16HP	R 2	1513	115	100	83	90	Rc 2

Socket HS type (Female tapered thread)



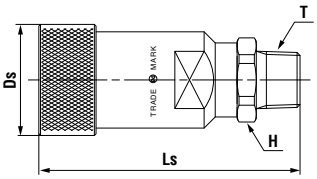
Model	Application	Mass (g)	Dimensions (mm)			
			Ls	øDs	H(WAF)	T
2HS	R 1/4	134	49	27.5	19	Rc 1/4
3HS	R 3/8	226	60	33	23	Rc 3/8
4HS	R 1/2	485	72	43	35	Rc 1/2
6HS	R 3/4	460	72	43	35	Rc 3/4
66HS	R 3/4	569	78.5	47	35	Rc 3/4
8HS	R 1	1042	93	58	46	Rc 1
10HS	R1 1/4	2586	138	87	58	Rc1 1/4
12HS	R1 1/2	2510	138	87	58	Rc1 1/2
16HS	R 2	3699	198	123	80	Rc 2

Plug HP-R type (Male tapered thread)



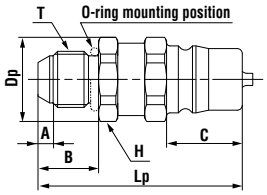
Model	Application	Mass (g)	Dimensions (mm)				
			Lp	øDp	C	H(WAF)	T
2HP-R	Rc 1/4	60	(49)	21	17.5	Hex.19	R 1/4
3HP-R	Rc 3/8	102	(55.5)	25	22.5	Hex.23	R 3/8
4HP-R	Rc 1/2	171	(63)	31	27.5	Hex.29	R 1/2
6HP-R	Rc 3/4	197	(66)	35	27.5	Hex.32	R 3/4

Socket HS-R type (Male tapered thread)



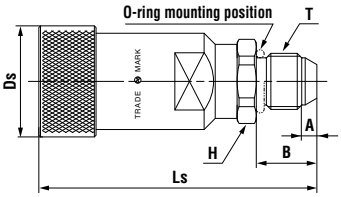
Model	Application	Mass (g)	Dimensions (mm)			
			Ls	øDs	H(WAF)	T
2HS-R	Rc 1/4	148	(66)	27.5	Hex.19	R 1/4
3HS-R	Rc 3/8	245	(77.5)	33	Hex.23	R 3/8
4HS-R	Rc 1/2	466	(90)	43	Hex.29	R 1/2
6HS-R	Rc 3/4	493	(93)	43	Hex.32	R 3/4

Plug HP-GP type (Male parallel thread with 30˚ flare)



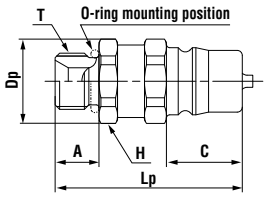
Model	Application*	Mass (g)	O-ring size	Dimensions (mm)						
				Lp	øDp	A	B	C	H(WAF)	T
2HP-GP	G 1/4	62	P-11	(52.5)	21	4.5	16	17.5	Hex.19	G 1/4B
3HP-GP	G 3/8	103	P-14	(60.5)	25	4.5	18	22.5	Hex.23	G 3/8B
4HP-GP	G 1/2	173	P-18	(66)	31	5.5	20	27.5	Hex.29	G 1/2B
6HP-GP	G 3/4	203	P-24	(69)	35	5.5	22	27.5	Hex.32	G 3/4B

Socket HS-GP type (Male parallel thread with 30˚ flare)



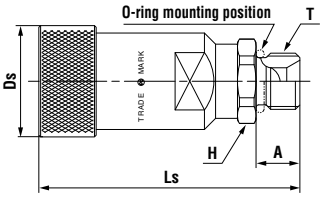
Model	Application*	Mass (g)	O-ring size	Dimensions (mm)					
				Ls	øDs	A	B	H(WAF)	T
2HS-GP	G 1/4	149	P-11	(69.5)	27.5	4.5	16	Hex.19	G 1/4B
3HS-GP	G 3/8	246	P-14	(82.5)	33	4.5	18	Hex.23	G 3/8B
4HS-GP	G 1/2	476	P-18	(93)	43	5.5	20	Hex.29	G 1/2B
6HS-GP	G 3/4	498	P-24	(96)	43	5.5	22	Hex.32	G 3/4B

Plug HP-GS type (Male parallel thread with 30˚ cone-seat)



Model	Application*	Mass (g)	O-ring size	Dimensions (mm)					
				Lp	øDp	A	C	H(WAF)	T
2HP-GS	G 1/4	59	P-11	(48)	21	11.5	17.5	Hex.19	G 1/4B
3HP-GS	G 3/8	99	P-14	(55.5)	25	13	22.5	Hex.23	G 3/8B
4HP-GS	G 1/2	167	P-18	(60.5)	31	14.5	27.5	Hex.29	G 1/2B
6HP-GS	G 3/4	191	P-24	(63.5)	35	16.5	27.5	Hex.32	G 3/4B

Socket HS-GS type (Male parallel thread with 30˚ cone-seat)



Model	Application*	Mass (g)	O-ring size	Dimensions (mm)				
				Ls	øDs	A	H(WAF)	T
2HS-GS	G 1/4	146	P-11	(65)	27.5	11.5	Hex.19	G 1/4B
3HS-GS	G 3/8	242	P-14	(77.5)	33	13	Hex.23	G 3/8B
4HS-GS	G 1/2	469	P-18	(87.5)	43	14.5	Hex.29	G 1/2B
6HS-GS	G 3/4	485	P-24	(90.5)	43	16.5	Hex.32	G 3/4B

*The counterpart of GP type must be the female parallel thread specified in JIS B 8363 with 30˚ cone-seat or the coupling with O-ring seal.
The counterpart of GS type must be the female parallel thread JIS B 8363 with 30˚ flare or the coupling with O-ring seal.