For High Pressure

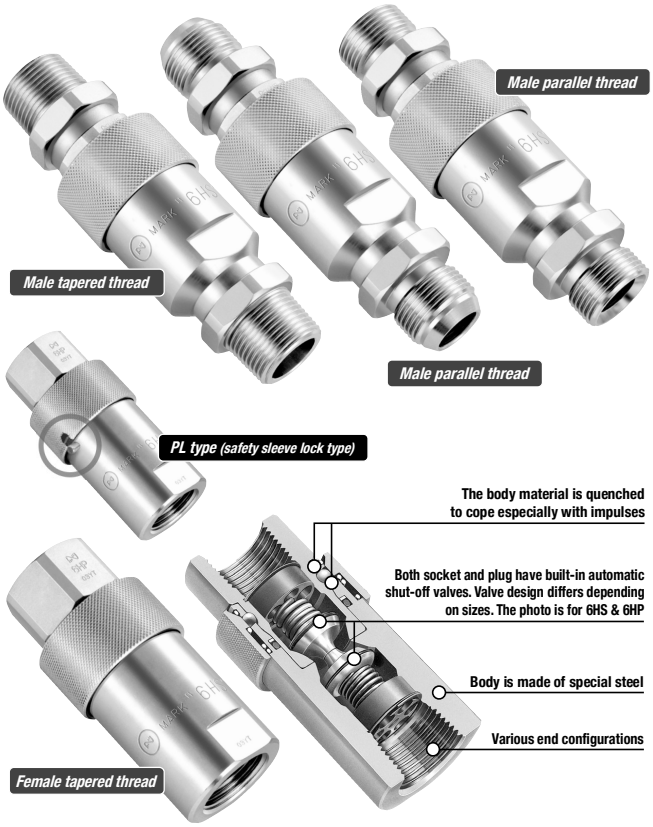
HSP CUPLA

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

Working pressure: 14.0 to 20.6 MPa {14.0 to 210 kgf/cm²}
Valve structure: Two-way shut-off
Applicable fluid: 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.**
- **Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection.**
- **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 available. 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 CUPLA series 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.**
- **PL type (Safety sleeve lock type) for 2HS to 8HS (except 66HS) with female thread is also available as standard.**



Specifications

Body material		Special steel (Nickel plated)		
Size (Thread)		1/4", 3/8", 1/2", 3/4", 1"	1 1/4", 1 1/2"	2"
Working pressure	MPa	20.6	18.0	14.0
	kgf/cm²	210	183	142
	bar	206	180	140
	PSI	2990	2610	2030

Seal material Working temperature range	**Seal material**	**Mark**	**Working temperature range**	**Remarks**
	Nitrile rubber	NBR (SG)	-20˚C to +80˚C	Standard material
	Fluoro rubber	FKM (X-100)	-20˚C to +180˚C	Available on request

Maximum Tightening Torque — Nm {kgf·cm}

Size (Thread)		**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 flow can be bi-directional when socket and plug are connected.

Interchangeability

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

Minimum Cross-Sectional Area — (mm²)

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

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

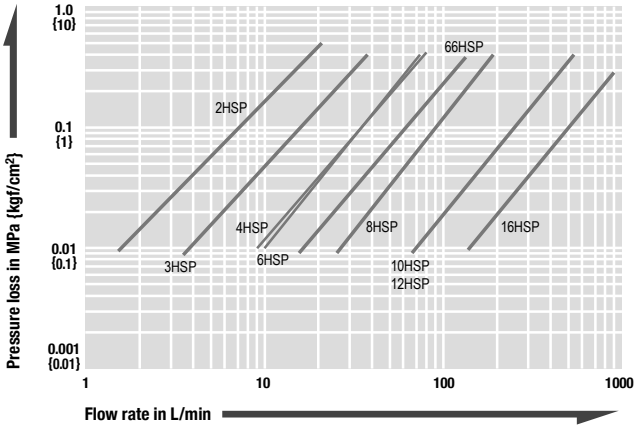
Socket only	**Plug only**	**When connected**
–	–	Operational

Admixture of Air on Connection — May vary depending upon the usage conditions. (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 x 10^{-6} m^2/s •Density : 0.87 x 10^3 kg/m^3



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

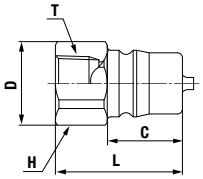
⚠ Precautions for use

There is no interchangeability between HSP CUPLA and 210 CUPLA or 280 CUPLA. Do not connect to each other even if sizes are similar.

Models and Dimensions

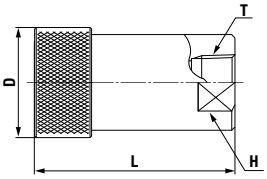
Product appearance may vary by size. / **WAF** : WAF stands for width across flats.

Plug HP type (Female tapered thread)



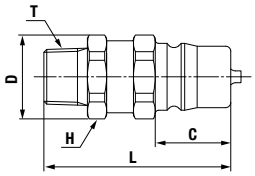
Model	Application (Thread)	Mass (g)	Dimensions (mm)				
			L	øD	C	H(WAF)	T
2HP	R 1/4	40	32	20.5	17.5	Hex.19	Rc 1/4
3HP	R 3/8	68	38	25	22.5	Hex.23	Rc 3/8
4HP	R 1/2	124	44	32	27.5	Hex.29	Rc 1/2
6HP	R 3/4	148	50	35	27.5	Hex.32	Rc 3/4
66HP	R 3/4	232	51	40	28	35	Rc 3/4
8HP	R 1	361	61	47	36	41	Rc 1
10HP	R 1 1/4	886	80	64	58	58	Rc 1 1/4
12HP	R 1 1/2	810	80	64	58	58	Rc 1 1/2
16HP	R 2	3,307	115	100	83	90	Rc 2

Socket HS type (Female tapered thread)



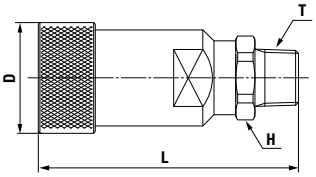
Model	Application (Thread)	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
2HS	R 1/4	134	49	(27.5)	19	Rc 1/4
3HS	R 3/8	226	60	(33)	23	Rc 3/8
4HS	R 1/2	485	(72)	(43)	35	Rc 1/2
6HS	R 3/4	460	(72)	(43)	35	Rc 3/4
66HS	R 3/4	569	78.5	(47)	35	Rc 3/4
8HS	R 1	1,042	93	(58)	46	Rc 1
10HS	R 1 1/4	2,586	138	87	58	Rc 1 1/4
12HS	R 1 1/2	2,510	138	87	58	Rc 1 1/2
16HS	R 2	7,286	198	123	80	Rc 2

Plug HP-R type (Male tapered thread)



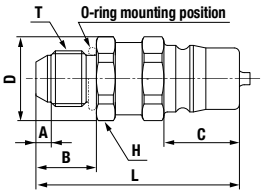
Model	Application (Thread)	Mass (g)	Dimensions (mm)				
			L	øD	C	H(WAF)	T
2HP-R	Rc 1/4	60	(49)	21	17.5	Hex.19	R 1/4
3HP-R	Rc 3/8	102	(55.5)	25	22.5	Hex.23	R 3/8
4HP-R	Rc 1/2	171	(63)	31	27.5	Hex.29	R 1/2
6HP-R	Rc 3/4	197	(66)	35	27.5	Hex.32	R 3/4

Socket HS-R type (Male tapered thread)



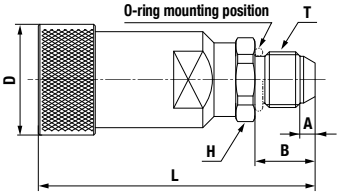
Model	Application (Thread)	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
2HS-R	Rc 1/4	148	(66)	(27.5)	Hex.19	R 1/4
3HS-R	Rc 3/8	245	(77.5)	(33)	Hex.23	R 3/8
4HS-R	Rc 1/2	466	(90)	(43)	Hex.29	R 1/2
6HS-R	Rc 3/4	493	(93)	(43)	Hex.32	R 3/4

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



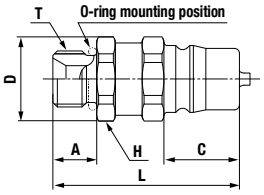
Model	Application* (Thread)	Mass (g)	O-ring size	Dimensions (mm)						
				L	øD	A	B	C	H(WAF)	T
2HP-GP	G 1/4	62	P-11	(52.5)	21	(4.5)	16	17.5	Hex.19	G 1/4B
3HP-GP	G 3/8	103	P-14	(60.5)	25	(4.5)	18	22.5	Hex.23	G 3/8B
4HP-GP	G 1/2	173	P-18	(66)	31	(5.5)	20	27.5	Hex.29	G 1/2B
6HP-GP	G 3/4	203	P-24	(69)	35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

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



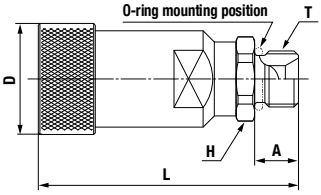
Model	Application* (Thread)	Mass (g)	O-ring size	Dimensions (mm)					
				L	øD	A	B	H(WAF)	T
2HS-GP	G 1/4	149	P-11	(69.5)	(27.5)	(4.5)	16	Hex.19	G 1/4B
3HS-GP	G 3/8	246	P-14	(82.5)	(33)	(4.5)	18	Hex.23	G 3/8B
4HS-GP	G 1/2	476	P-18	(93)	(43)	(5.5)	20	Hex.29	G 1/2B
6HS-GP	G 3/4	498	P-24	(96)	(43)	(5.5)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

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



Model	Application* (Thread)	Mass (g)	O-ring size	Dimensions (mm)					
				L	øD	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* (Thread)	Mass (g)	O-ring size	Dimensions (mm)				
				L	øD	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)	(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.

• Sleeve stopper design is available for models 2HS to 8HS (except 66HS).

Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.

For High Pressure

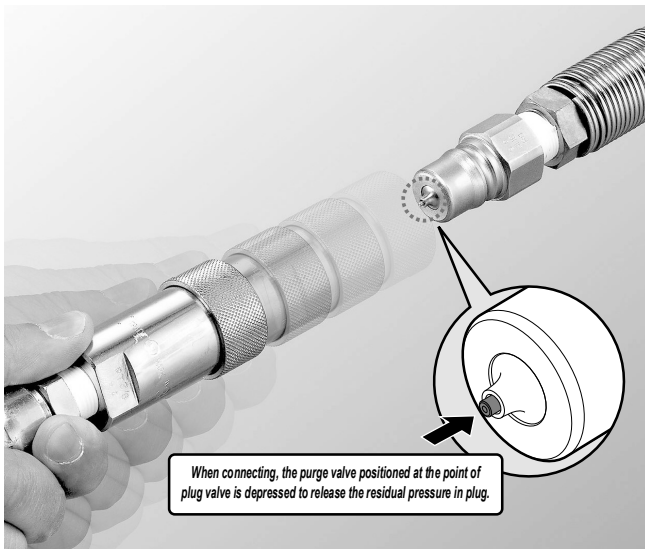
HYPER HSP CUPLA

Connects hydraulic piping even with residual pressure up to 20.6 MPa {210 kgf/cm²}

Working pressure	Valve structure	Applicable fluid
20.6 MPa {210 kgf/cm²}	Two-way shut-off	Hydraulic oil

Purge function will set you free from the troublesome residual pressure elimination before connection and let you achieve efficient and frequent hydraulic pipe line coupling.

- **Both socket and plug have built-in automatic shut-off valves to prevent fluid spill out when disconnected.**
- **Interchangeable with standard HSP CUPLA plug or socket in the same size.**



Specifications

Body material	Special steel (Nickel plated)			
Size (Thread)	1/4", 3/8", 1/2", 3/4", 1"			
Pressure unit	MPa	kgf/cm²	bar	PSI
Working pressure	20.6	210	206	2990
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-20˚C to +80˚C	Standard material

Maximum Tightening Torque — Nm {kgf•cm}

Size (Thread)	1/4"	3/8"	1/2"	3/4"	1"
Torque	28 {286}	45 {459}	90 {918}	100 {1020}	180 {1836}

Flow Direction

Fluid flow can be bi-directional when socket and plug are connected.

Interchangeability

Interchangeable with standard HSP CUPLA plug or socket in the same size.
Avoid connecting HYPER HSP CUPLA socket with HYPER HSP CUPLA plug.
The residual pressure will not release.

Minimum Cross-Sectional Area — (mm²)

Model	2HP-PV/2HS-PV	3HP-PV/3HS-PV	4HP-PV/4HS-PV	6HP-PV/6HS-PV	8HP-PV/8HS-PV
Minimum cross-sectional area	21	37	77	77	203

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

Socket only	Plug only	When connected
–	–	Operational

Admixture of Air on Connection — May vary depending upon the usage conditions. (mL)

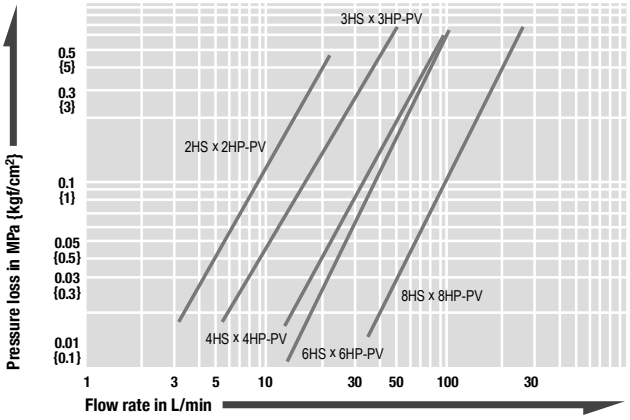
Model	2HP-PV/2HS-PV	3HP-PV/3HS-PV	4HP-PV/4HS-PV	6HP-PV/6HS-PV	8HP-PV/8HS-PV
Volume of air	0.7	1.9	3.5	3.5	12.4

Connection Load under Residual Pressure (For reference) — (N)

Residual pressure / Model	2HP-PV/2HS-PV	3HP-PV/3HS-PV	4HP-PV/4HS-PV	6HP-PV/6HS-PV	8HP-PV/8HS-PV
at 5.0 MPa	50	85	85	85	100
at 10.0 MPa	70	85	85	85	130
at 15.0 MPa	100	100	100	100	170

Flow Rate – Pressure Loss Characteristics

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

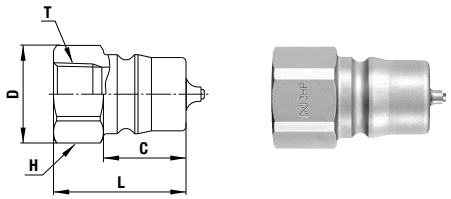


Note: Either socket or plug of HYPER HSP CUPLA must be used on the line where the residual pressure remains. The counterpart of HYPER HSP must be either plug or socket of standard HSP CUPLA.

Models and Dimensions

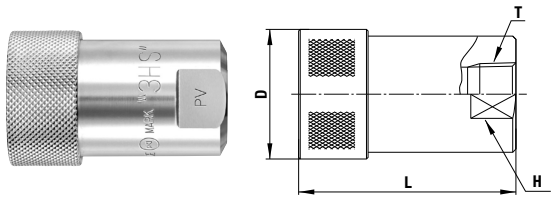
WAF : WAF stands for width across flats.

Plug HP type (Female thread)



Model	Application (Thread)	Mass (g)	Dimensions (mm)				
			L	øD	C	H(WAF)	T
2HP-PV	R 1/4	44	32	20.5	17.5	Hex.19	Rc 1/4
3HP-PV	R 3/8	72	38	25	22.5	Hex.23	Rc 3/8
4HP-PV	R 1/2	138	44	32	27.5	Hex.29	Rc 1/2
6HP-PV	R 3/4	147	50	35	27.5	Hex.32	Rc 3/4
8HP-PV	R 1	360	61	47	36	41	Rc 1

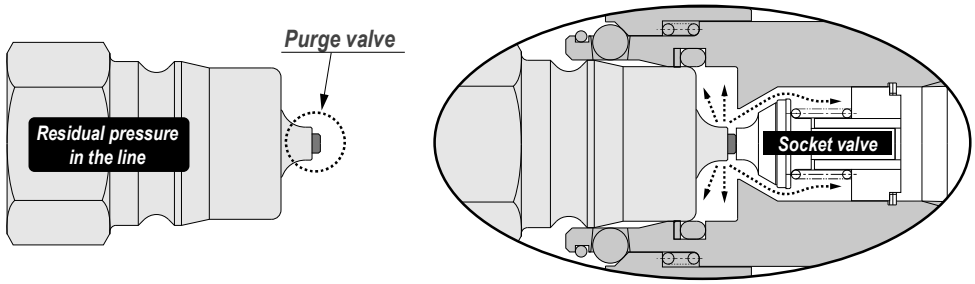
Socket HS type (Female thread)



Model	Application (Thread)	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
2HS-PV	R 1/4	136	49	(27.5)	19	Rc 1/4
3HS-PV	R 3/8	225	60	(33)	23	Rc 3/8
4HS-PV	R 1/2	485	(72)	(43)	35	Rc 1/2
6HS-PV	R 3/4	460	(72)	(43)	35	Rc 3/4
8HS-PV	R 1	1050	93	(58)	46	Rc 1

Residual Pressure Release (or purge) Mechanism

While connecting, the purge valve indicated with a circle is being pushed and releasing the residual pressure



Note: Either socket or plug of HYPER HSP CUPLA must be used on the line where the residual pressure remains. The counterpart of HYPER HSP must be either plug or socket of standard HSP CUPLA.
HYPER HSP CUPLA can be connected under the residual pressure in the line,but cannot during pressurizing. It may lead to incomplete connection, durability deterioration or possible valve fly out.