

High Flow Cupla

For Medium Pressure

Working pressure



1.0 MPa
(10 kgf/cm²)

Valve structure



Two-way shut-off

Applicable fluids

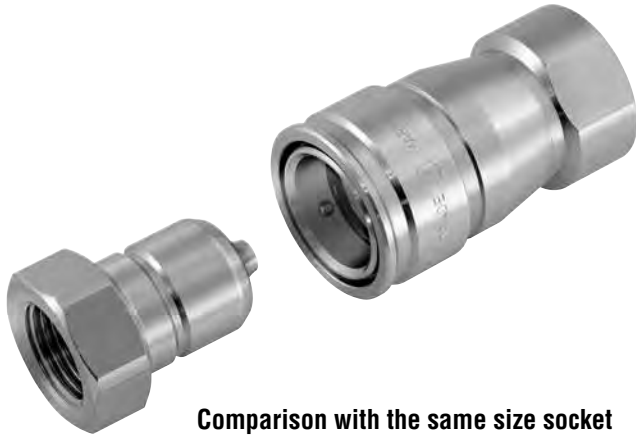


Water

Cooling water

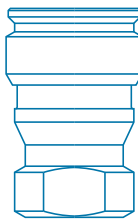
Drastically increases flow volume while minimising pressure drop.

- Both socket and plug have built-in automatic shut-off valves.
- High flow rate type to increase cooling effect.
- Quick connection and disconnection of cooling pipes.
- Compact and space-saving design. Compared with the coupled length of SP Cupla type A, that of High Flow Cupla is reduced by 22%.
- Installation and maintenance can be done within a short time.

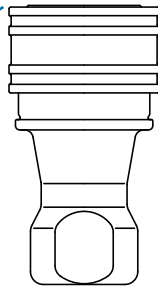


Comparison with the same size socket

Reduced



High Flow Cupla
HFL-4S



SP Cupla Type A
4S-A

Specifications

Body material	Stainless steel, Brass			
Size (Thread)	1/4", 3/8", 1/2"			
Pressure unit	MPa	kgf/cm ²	bar	PSI
Working pressure	1.0	10	10	145
Seal material Working temperature range	Seal material	Mark	Working temperature range	
	Ethylene-propylene rubber	EPDM	-40°C to +150°C	
	Fluoro rubber	FKM	-20°C to +180°C	

* Standard seal material is fluoro rubber for brass body.

Max. Tightening Torque

Nm (kgf·cm)

Model	HFL-2P / HFL-2S	HFL-3P / HFL-3S	HFL-4P / HFL-4S	
Torque	Stainless steel	14 (143)	22 (224)	60 (612)
	Brass	9 (92)	12 (122)	30 (306)

Flow Direction

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



Interchangeability

Different sized sockets and plugs cannot be connected to each other.

Min. Cross-Sectional Area

(mm²)

Model	HFL-2P / HFL-2S	HFL-3P / HFL-3S	HFL-4P / HFL-4S
Min. Cross-Sectional Area	32	53	91

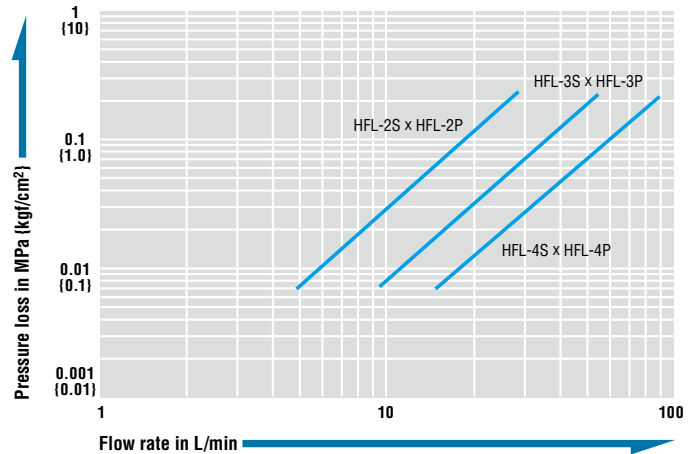
Suitability for Vacuum

1.3×10^{-1} Pa { 1×10^{-3} mmHg }

Socket only	Plug only	When connected
—	—	Operational

Flow Rate – Pressure Loss Characteristics

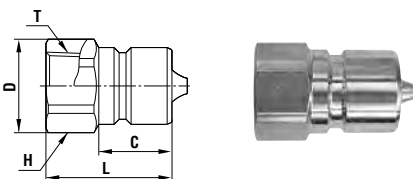
[Test conditions] • Fluid : Water • Temperature: 20°C ± 5°C



Models and Dimensions

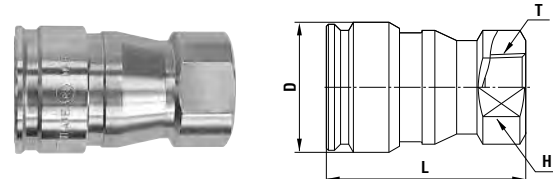
WAF : WAF stands for width across flats.

Plug Female thread



Model	Application	Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	L	C	øD	H(WAF)	T
HFL-2P	R 1/4	31	28	30	16.5	18.5	Hex.17	Rc 1/4
HFL-3P	R 3/8	47	43	31	18	23	Hex.21	Rc 3/8
HFL-4P	R 1/2	91	82	37.5	22.5	32	Hex.29	Rc 1/2

Socket Female thread



Model	Application	Mass (g)		Dimensions (mm)			
		Brass	Stainless steel	L	øD	H(WAF)	T
HFL-2S	R 1/4	110	99	(47)	26	19	Rc 1/4
HFL-3S	R 3/8	165	150	(49)	32	24	Rc 3/8
HFL-4S	R 1/2	231	211	60	35	29	Rc 1/2

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

High Flow Cupla BI Type

Cupla with ferrule flange for piping of water and fluids for temperature control

Working pressure



1.0 MPa
(10 kgf/cm²)

Valve structure



Two-way shut-off

Applicable fluids



Water

Cooling water

High flow Cupla and ferrule flange are combined to achieve efficient piping.

- Easy connection with stainless steel pipe.
- Connection to plastic hose is possible with optional hose connection kit.
- Connection to various tubes is also possible via the use of appropriate optional inserts.



Hose
Requires optional nut to mount

Tube
Requires optional insert to mount

Stainless steel pipe

Specifications

Body material	Stainless steel			
Applicable pipe size	1/4", 3/8", 1/2" (See the below list for hose and tube size.)			
Pressure unit	MPa	kgf/cm ²	bar	PSI
Working pressure	1.0	10	10	145
Seal material	Seal material	Mark	Working temperature range	Remarks
	Ethylene-propylene rubber	EPDM	-40°C to +150°C	Standard material
Working temperature range	Fluoro rubber	FKM	-20°C to +180°C	Made-to-order item

Flow Direction

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



Interchangeability

Different sizes are not connectable.

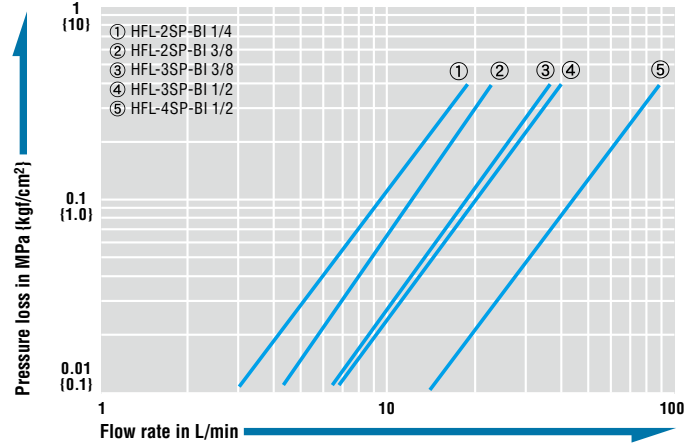
Suitability for Vacuum

1.3 x 10⁻¹ Pa (1 x 10⁻³ mmHg)

Socket only	Plug only	When connected
—	—	Operational

Flow Rate – Pressure Loss Characteristics (When connected to stainless steel pipe)

[Test conditions] • Fluid : Water • Temperature: 20°C ± 5°C



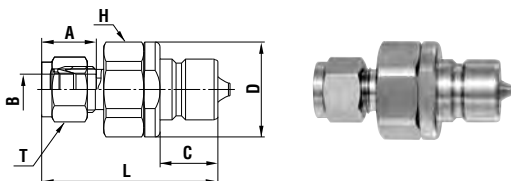
Stainless steel pipe, hose, and tube size

Model	Stainless steel pipe		Hose connection nut (Optional)		Tube connection insert (Optional)						
	Pipe dia. Inch (mm)	Model	Hose size (ID x OD)	Type of insert	Tube dimensions (ID x OD)	Insert dimensions					
						E (mm)	L (mm)	A (mm)	D (mm)		
HFL-2SP-BI 1/4	1/4 (ø6.35)	—	—	DTI 4-2	ø3.18 x ø6.35	2.3	11.9	6.35	3.18		
				DTI 4-2.5	ø3.97 x ø6.35	2.7	11.9	6.35	3.97		
				DTI 4-2.75	ø4.32 x ø6.35	2.7	11.9	6.35	4.32		
				DTI 4-3	ø4.76 x ø6.35	3.5	11.9	6.35	4.76		
HFL-2SP-BI 3/8	3/8 (ø9.53)	—	—	DTI 6-3	ø4.76 x ø9.53	3.0	14.3	9.53	4.76		
				DTI 6-4	ø6.35 x ø9.53	4.8	14.3	9.53	6.35		
HFL-3SP-BI 3/8	3/8 (ø9.53)	—	—	DTI 6-3	ø4.76 x ø9.53	3.0	14.3	9.53	4.76		
				DTI 6-4	ø6.35 x ø9.53	4.8	14.3	9.53	6.35		
HFL-3SP-BI 1/2	1/2 (ø12.7)	E1-6 x 11	ø6 x ø11	DTI 8-4	ø6.35 x ø12.7	4.8	19.1	12.7	6.35		
				DTI 8-6	ø9.53 x ø12.7	7.9	19.1	12.7	9.53		
HFL-4SP-BI 1/2	1/2 (ø12.7)	E1-6 x 11	ø6 x ø11	DTI 8-4	ø6.35 x ø12.7	4.8	19.1	12.7	6.35		
				DTI 8-6	ø9.53 x ø12.7	7.9	19.1	12.7	9.53		

Note: The material of tube to be applied must be any of nylon, polyester, polypropylene, or Teflon. The nut for stainless steel pipe comes with standard High Flow Cupla. When a hose or tube is connected to the Cupla, an optional hose connection nut or tube connection insert is required.

Models and Dimensions

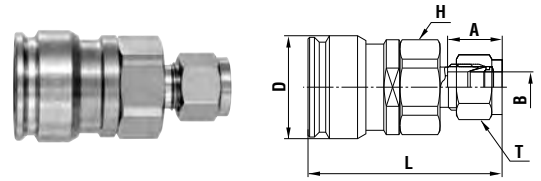
Plug For pipe connection



Model	Application (Pipe size) (mm)	Mass (g)	Dimensions (mm)						
			L	C	A	øD	øB	H(WAF)	T(WAF)
HFL-2P-BI 1/4	6.35 (1/4")	66	(51.9)	16.5	(15.4)	23	(6.35)	Hex.20.64 (13/16")	Hex.14.29 (9/16")
HFL-2P-BI 3/8	9.53 (3/8")	74	(53.4)	16.5	(17)	23	(9.53)	Hex.20.64 (13/16")	Hex.17.46 (11/16")
HFL-3P-BI 3/8	9.53 (3/8")	109	(54.8)	18	(17)	29.5	(9.53)	Hex.26.99 (1 1/16")	Hex.17.46 (11/16")
HFL-3P-BI 1/2	12.7 (1/2")	134	(59)	18	(23)	29.5	(12.7)	Hex.26.99 (1 1/16")	Hex.22.23 (7/8")
HFL-4P-BI 1/2	12.7 (1/2")	160	(68.7)	22.5	(23)	32	(12.7)	Hex.28.58 (1 1/8")	Hex.22.23 (7/8")

WAF : WAF stands for width across flats.

Socket For pipe connection



Model	Application (Pipe size) (mm)	Mass (g)	Dimensions (mm)						
			L	A	øD	øB	H(WAF)	T(WAF)	
HFL-2S-BI 1/4	6.35 (1/4")	97	(54.9)	(15.4)	26	(6.35)	Hex.20.64 (13/16")	Hex.14.29 (9/16")	
HFL-2S-BI 3/8	9.53 (3/8")	105	(56.5)	(17)	26	(9.53)	Hex.20.64 (13/16")	Hex.17.46 (11/16")	
HFL-3S-BI 3/8	9.53 (3/8")	165	(60.3)	(17)	32	(9.53)	Hex.26.99 (1 1/16")	Hex.17.46 (11/16")	
HFL-3S-BI 1/2	12.7 (1/2")	189	(64.6)	(23)	32	(12.7)	Hex.26.99 (1 1/16")	Hex.22.23 (7/8")	
HFL-4S-BI 1/2	12.7 (1/2")	233	(73.2)	(23)	35	(12.7)	Hex.28.58 (1 1/8")	Hex.22.23 (7/8")	

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