

# High Flow Cupla

For Medium Pressure

Working pressure



1.0 MPa  
(10 kgf/cm<sup>2</sup>)

Valve structure



Two-way shut-off

Applicable fluids

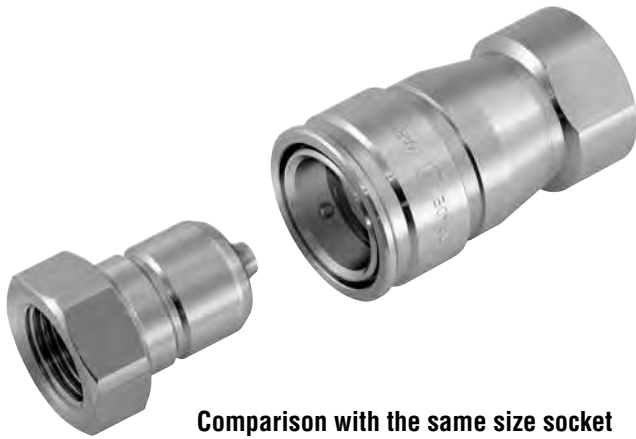


Water

Cooling water

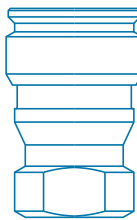
## Drastically increases flow volume while minimising pressure drop.

- 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.

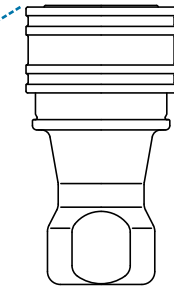


Comparison with the same size socket

**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 <sup>2</sup>	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

(mm<sup>2</sup>)

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

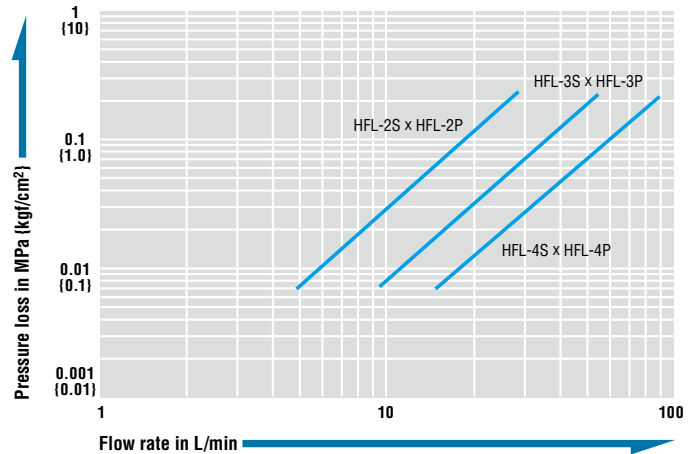
### Suitability for Vacuum

$1.3 \times 10^{-1}$  Pa {  $1 \times 10^{-3}$  mmHg }

Socket only	Plug only	When connected
—	—	Operational

### Flow Rate – Pressure Loss Characteristics

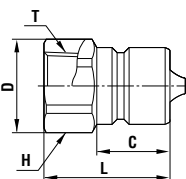
[Test conditions] • Fluid : Water • Temperature: 20°C ± 5°C



### Models and Dimensions

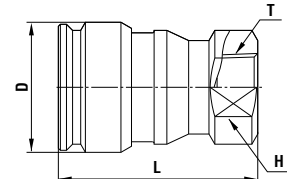
WAF : WAF stands for width across flats.

#### 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/cm<sup>2</sup>)

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.



### 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 <sup>2</sup>	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.

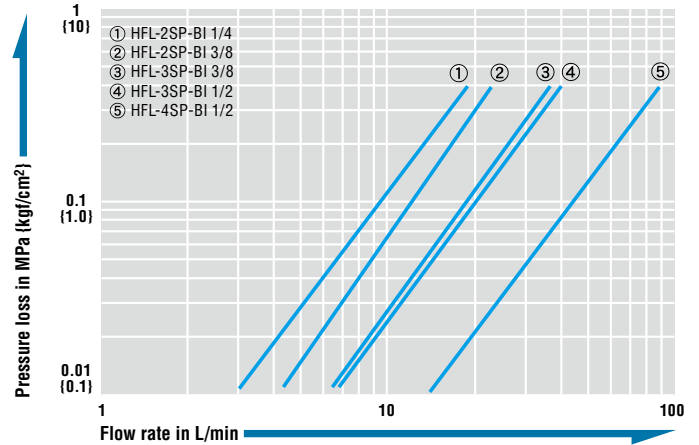
### Suitability for Vacuum

1.3 x 10<sup>-1</sup> Pa (1 x 10<sup>-3</sup> 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



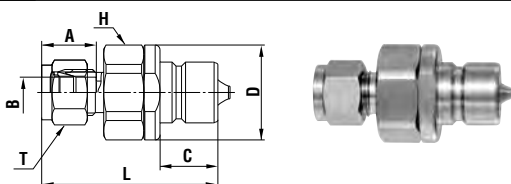
### Stainless steel pipe, hose, and tube size

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

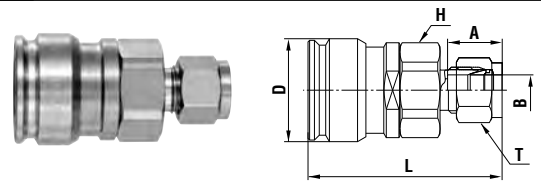
#### Plug For pipe connection



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")	

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