


**For Multi-Port Connection (Automatic)**

# MULTI CUPLA

## MALC-01 Type for Low Pressure Use


**One-way shut-off type for Low pressure use**

Working pressure




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

Valve structure



One-way shut-off

Applicable fluids



Air Water

**Solo use of socket is possible.**  
**Suitable for operation of ejector pins to open / close valve gates in molding.**

- Solo use of socket is possible.
- As in the case of MULTI CUPLA MALC-SP type and MALC-HSP type, the distance between the socket plate and the plug plate is designed to be 30 mm when connected. This means the MULTI CUPLA MALC-01 type can also be installed mixed with any size of MALC-SP type and MALC-HSP type on the same plate.
- An axial eccentricity allowance of 2 mm eliminates precise centering at installation.
- Compact size with " thread screw mount " and "with flange" types available.



Specifications				
Body material	Socket: Brass (Nickel plated) Plug: Brass (Nickel plated)			
Pressure unit	MPa	kgf/cm <sup>2</sup>	bar	PSI
Working pressure	1.0	10	10	145
Seal material	Nitrile rubber		Mark	Working temperature range
Working temperature range			NBR (SG)	-20°C to +80°C

Maximum Tightening Torque		Nm {kgf·cm}
Thread screw mount	15 {153}	
Flange	1.5 {15}	

**Interchangeability**

- Sockets and plugs can be connected regardless of end configurations.
- Not interchangeable with MALC-SP Type (for medium pressure use) MALC-1SP or MALC-HSP Type (for high pressure use) MALC-1HSP.

Minimum Cross-Sectional Area		(mm <sup>2</sup> )
Minimum cross-sectional area	28	

**Suitability for Vacuum**  
 Not suitable for vacuum application in either connected or disconnected condition.

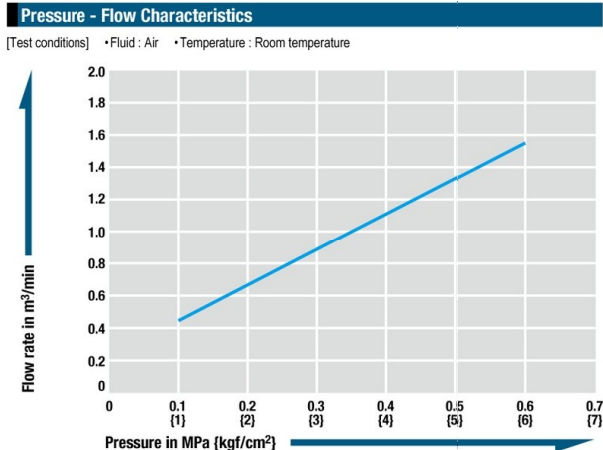
**Load Required to Maintain Connection When Line Is Pressurized**

$$F = (P \times 160) + 50 \{ f = p \times 1.6 + 5 \}$$

Minimum load required to maintain connection F [N] {f [kgf]}

Actual value of pressure P [MPa] {p [kgf/cm<sup>2</sup>]}

Assign the actual value of pressure [P (MPa), p (kgf /cm<sup>2</sup>)] to the above formula. Maintain the connection with this load [F (N), f (kgf)] or more. However, the maximum acceptable load is 500 N [51 kgf].



**Acceptable distance between plates**

Socket and plug or plate must be used in contact with each other. Maximum 0.5 mm distance between socket and plug or plate is acceptable.

**MULTI CUPLA MALC-01 Type for Low Pressure Use**

**Models and Dimensions**

WAF : WAF stands for width across flats.

**Plug MALC-01TP type (Thread screw mount)**

Model	Application	Mass (g)	Dimensions (mm)						
			L1	L2	L3	øD	øB	H(WAF)	T
MALC-01TP	See drawings below.	40	28	(14)	14	18.5	6	Hex.17	M14 x 1

**Socket MALC-01S type (Thread screw mount)**

Model	Application	Mass (g)	Dimensions (mm)						
			L1	L2	L3	øD	H(WAF)	T	
MALC-01S	See drawings below.	39	(41)	(20.5)	16	18.5	Hex.17	M14 x 1	

**Plug MALC-01TP-FL type (With flange)**

Model	Application	Mass (g)	Dimensions (mm)							
			L1	L2	L3	L4	øD	A	øB	H
MALC-01TP-FL	See drawings below.	52	28	(14)	14	3.2	(22)	120°	6	36

**Socket MALC-01S-FL type (With flange)**

Model	Application	Mass (g)	Dimensions (mm)						
			L1	L2	L3	L4	øD	A	H
MALC-01S-FL	See drawings below.	51	(41)	(20.5)	16	3.2	(22)	120°	36

**Dimensions of End Configurations**

**MALC-01TP / 01S type (Thread screw mount)**

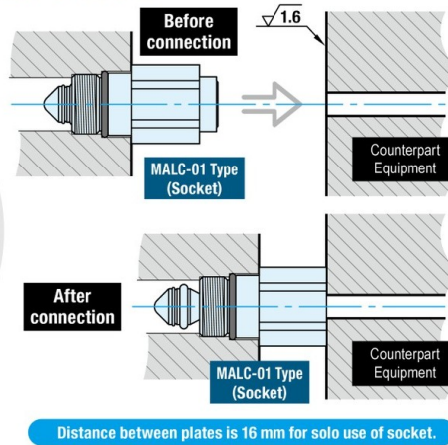
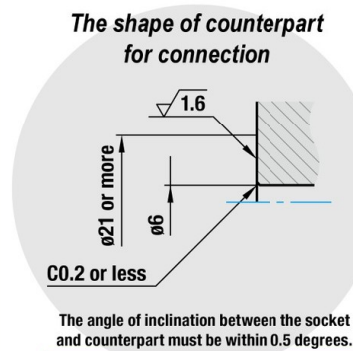
Model	Dimensions (mm)						
	øD1	øD2	L1	L2	L3	L4	T
MALC-01S	15.8 <sup>+0.05</sup> <sub>0</sub>	14.8 <sup>+0.05</sup> <sub>0</sub>	3	7.5 <sup>+0.2</sup> <sub>0</sub>	16	25	M14 x 1
MALC-01TP						18	

**MALC-01TP-FL / 01S-FL type (With flange)**

Model	Dimensions (mm)						
	D1	øD2	øD3	øD4	L1	L2	T
MALC-01S-FL	PCD28	20	16	14.8 <sup>+0.05</sup> <sub>0</sub>	2.5 <sup>+0.1</sup> <sub>0</sub>	25	2 x M4 x 0.7 Thread depth 10 mm or more
MALC-01TP-FL						16	

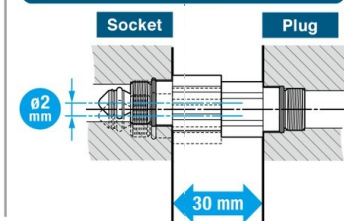
**Solo use of socket is possible**

**The shape of counterpart for solo use of socket**



As in the case of MULTI CUPLA MALC-SP type and MALC-HSP type, the distance between the socket plate and the plug plate is designed to be 30 mm when connected. This means the MULTI CUPLA MALC-01 type can also be installed mixed with any size of MALC-SP type and MALC-HSP type on the same plate.

**A 2 mm axial eccentricity allowance.**



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 Multi-Port Connection (Automatic)**

# MULTI CUPLA

## MALC-SP Type for Medium Pressure Use

**Low spill type for medium pressure use**

Working pressure

**1.5 to 7.0**  
1.5 to 7.0 MPa  
(15 to 71 kgf/cm<sup>2</sup>)

Valve structure

Two-way shut-off  
(Non-Spill)

Applicable fluids

Water Hydraulic oil Air

**A single operation enables simultaneous connections of multiple lines. A special design for medium pressure use minimizes air admixture in fluid lines upon connection.**

- Compared with conventional MULTI CUPLA, approximately double flow rates are realized. This could reduce the size of required plates. (Rate of flow increase depends on CUPLA sizes.)
- The MALC type realizes a 2 mm axial eccentricity allowance, while the conventional MULTI CUPLA is only 0.6 mm.
- Special valve design enables connection of socket and plug under pressure of up to 2 MPa. (up to 1.5 MPa for MALC-12SP.)
- When connected, the distance between the socket plate and the plug plate is designed to be 30 mm for all sizes. This means that any size of CUPLA can be mounted and used on the same plate.
- Low spill valves minimize outflow of fluid and admixture of air into the fluid line.



Specifications				
Body material		Stainless steel (Socket body: Nickel plated)		
Model	Thread screw mount	MALC-1SP	MALC-2 to 8SP	MALC-12SP
	Flange	-	MALC-2 to 8SP-FL	-
	Snap ring	-	MALC-8SP-10F	MALC-12SP(-F/-16F)
Working pressure *	MPa	7.0 (2.0)	5.0 (2.0)	1.5 (1.5)
	kgf/cm <sup>2</sup>	71 (20)	51 (20)	15 (15)
	bar	70 (20)	50 (20)	15 (15)
	PSI	1020 (290)	725 (290)	218 (218)
Seal material	Fluoro rubber		Mark	Working temperature range
Working temperature range			FKM (X-100)	-20°C to +180°C

\* The value in brackets is Maximum working pressure of individual plug or socket.

Model	Maximum Tightening Torque							Nm (kgf·cm)	
	1SP	2SP	3SP	4SP	6SP	8SP	12SP	12SP-16F	
Thread screw mount	20 {204}	30 {306}	35 {357}	45 {460}	60 {612}	75 {765}	80 {816}	-	
Flange	-	7 {71.5}	7 {71.5}	7 {71.5}	7 {71.5}	23 {235}	-	-	
Snap ring	-	-	-	-	-	260 {2652}	280 {2856}	350 {3570}	

**Interchangeability**  
Socket and plug in the same size can be connected regardless of their end configurations.

Model	Minimum Cross-Sectional Area							(mm <sup>2</sup> )	
	1SP	2SP(-FL)	3SP(-FL)	4SP(-FL)	6SP(-FL)	8SP(-FL/-10F)	12SP(-F/-16F)		
Min. cross-sectional area	26	49.5	87	153	227	347	795		

**Suitability for Vacuum**  
Not suitable for vacuum application in either connected or disconnected condition.

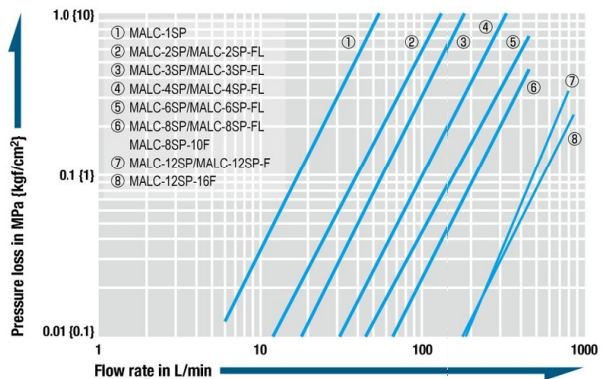
Model	Admixture of Air on Connection							(mL)	
	1SP	2SP(-FL)	3SP(-FL)	4SP(-FL)	6SP(-FL)	8SP(-FL/-10F)	12SP(-F/-16F)		
Volume of air	0.08	0.14	0.26	0.55	0.95	0.85	1.46		

Model	Volume of Spillage per Disconnection							(mL)	
	1SP	2SP(-FL)	3SP(-FL)	4SP(-FL)	6SP(-FL)	8SP(-FL/-10F)	12SP(-F/-16F)		
Volume of spillage	0.08	0.14	0.26	0.55	0.95	0.85	1.46		

Model	Load Required to Maintain Connection When Line Is Pressurized						
	1SP	2SP(-FL)	3SP(-FL)	4SP(-FL)	6SP(-FL)	8SP(-FL/-10F)	12SP(-F/-16F)
Maximum acceptable load N (kgf)	2800 {286}	4500 {459}	5600 {571}	10000 {1019}	14000 {1427}	15600 {1591}	8200 {837}
Minimum load required to maintain connection N (kgf) *	P x 170+85 {p x 1.7+8.5}	P x 345+180 {p x 3.45+18}	P x 460+190 {p x 4.6+19}	P x 855+260 {p x 8.55+26}	P x 1160+260 {p x 11.6+26}	P x 1360+310 {p x 13.6+31}	P x 2260+400 {p x 22.6+40}

\* Assign the actual value of pressure [P (MPa), p (kgf/cm<sup>2</sup>)] to the above formula to calculate the load. Maintain the connection with the minimum load or more, but not more than the maximum acceptable load.

**Flow Rate - Pressure Loss Characteristics**  
[Test conditions] • Fluid : Water • Temperature : 19°C to 25°C

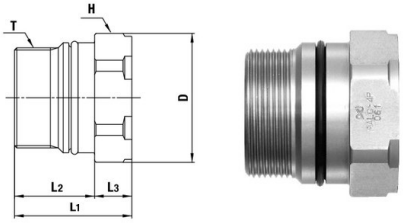


MULTI CUPLA MALC-SP Type for Medium Pressure Use

WAF : WAF stands for width across flats.

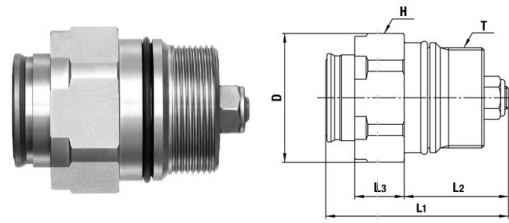
Models and Dimensions

**Plug MALC-1 to 12P type (Thread screw mount)**



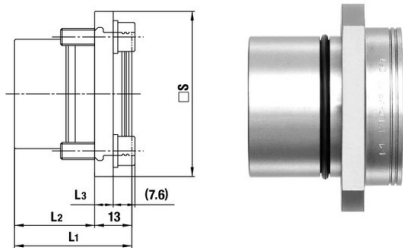
Model	Application	Mass (g)	Dimensions (mm)					
			L1	L2	L3	øD	H(WAF)	T
MALC-1P	See P123	40	32	(18)	14	21	Hex.19	M16 x 1
MALC-2P		75	33	(20)	13	28	Hex.26	M20 x 1.5
MALC-3P		95	33	(20)	13	32	Hex.29	M24 x 1.5
MALC-4P		248	41	(28)	13	45	Hex.41	M35 x 1.5
MALC-6P		369	50.5	(37.5)	13	50	Hex.46	M40 x 2
MALC-8P		399	53	(41)	12	54	Hex.50	M45 x 2
MALC-10P		724	57	(45)	12	74	Hex.67	M62 x 2
MALC-12P								

**Socket MALC-1 to 12S type (Thread screw mount)**



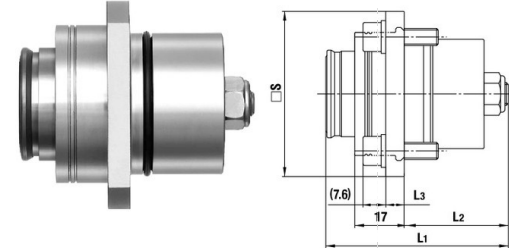
Model	Application	Mass (g)	Dimensions (mm)					
			L1	L2	L3	øD	H(WAF)	T
MALC-1S	See P123	53	(45)	(23)	16	21	Hex.19	M16 x 1
MALC-2S		95	(49)	(26)	17	28	Hex.26	M20 x 1.5
MALC-3S		120	(51)	(26)	17	32	Hex.29	M24 x 1.5
MALC-4S		306	(64)	(36.5)	17	45	Hex.41	M35 x 1.5
MALC-6S		471	(78.5)	(47.5)	17	50	Hex.46	M40 x 2
MALC-8S		590	(86)	(53)	18	54	Hex.50	M45 x 2
MALC-10S		1176	(98)	(60)	18	74	Hex.67	M62 x 2
MALC-12S								

**Plug MALC-2 to 6P-FL type (With flange)**



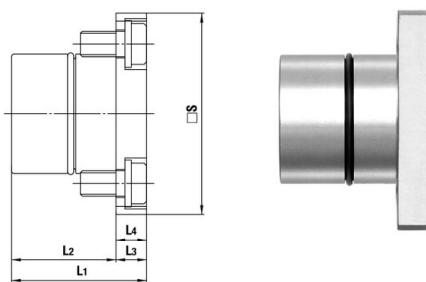
Model	Application	Mass (g)	Dimensions (mm)				
			L1	L2	L3	□ S	
MALC-2P-FL	See P123	146	30	(17)	6	40	
MALC-3P-FL		180	33	(20)	6	45	
MALC-4P-FL		390	41	(28)	6.5	58	
MALC-6P-FL		553	50.5	(37.5)	6.5	64	

**Socket MALC-2 to 6S-FL type (With flange)**



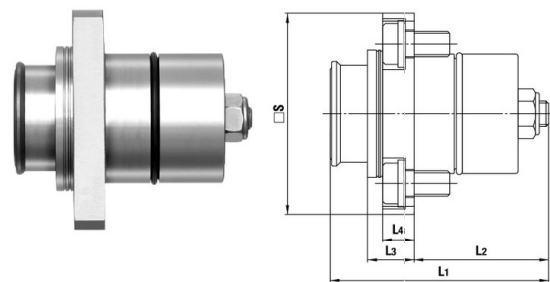
Model	Application	Mass (g)	Dimensions (mm)				
			L1	L2	L3	□ S	
MALC-2S-FL	See P123	173	(49)	(26)	6	40	
MALC-3S-FL		208	(51)	(26)	6	45	
MALC-4S-FL		449	(64)	(36.5)	6.5	58	
MALC-6S-FL		663	(78.5)	(47.5)	6.5	64	

**Plug MALC-8P-FL type (With flange)**



Model	Application	Mass (g)	Dimensions (mm)				
			L1	L2	L3	L4	□ S
MALC-8P-FL	See P123	796	53	(41)	12	12	79

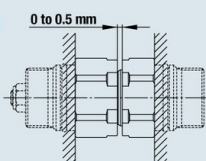
**Socket MALC-8S-FL type (With flange)**



Model	Application	Mass (g)	Dimensions (mm)				
			L1	L2	L3	L4	□ S
MALC-8S-FL	See P123	978	(86)	(53)	18	12	79

Acceptable distance between socket and plug

Plug and socket must be used in contact with each other.  
Maximum 0.5 mm distance between socket and plug is acceptable.



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

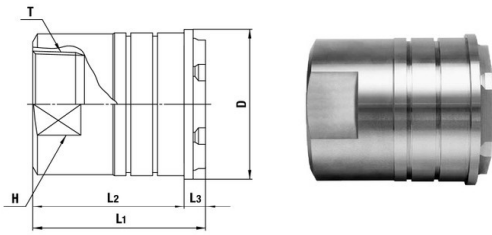


**MULTI CUPLA MALC-SP Type for Medium Pressure Use**

WAF : WAF stands for width across flats

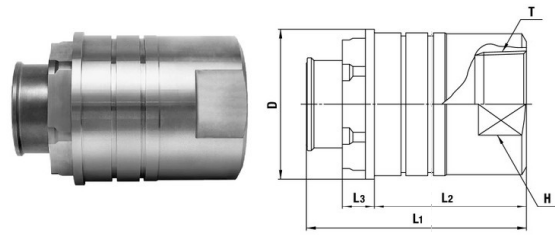
**Models and Dimensions**

**Plug MALC-8 / 12P type (With snap ring)**



Model	Application	Mass (g)	Dimensions (mm)					
			L1	L2	L3	øD	H(WAF)	T
MALC-8P-10F	See drawings below.	1182	(87)	75	(12)	64	54	Rc 1 1/4
MALC-12P-F		2054	(97)	85	(12)	84	58	Rc 1 1/2
MALC-12P-16F		2128	(97)	85	(12)	84	71	Rc 2

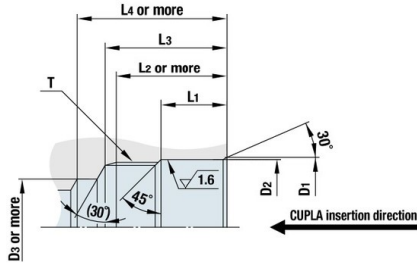
**Socket MALC-8 / 12S type (With snap ring)**



Model	Application	Mass (g)	Dimensions (mm)					
			L1	L2	L3	øD	H(WAF)	T
MALC-8S-10F	See drawings below.	1373	(108)	75	(18)	64	54	Rc 1 1/4
MALC-12S-F		2505	(123)	85	(18)	84	58	Rc 1 1/2
MALC-12S-16F		2579	(123)	85	(18)	84	71	Rc 2

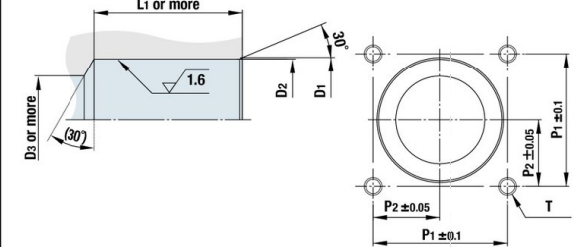
**Dimensions of End Configurations**

**MALC-1 to 12SP type (Thread screw mount)**



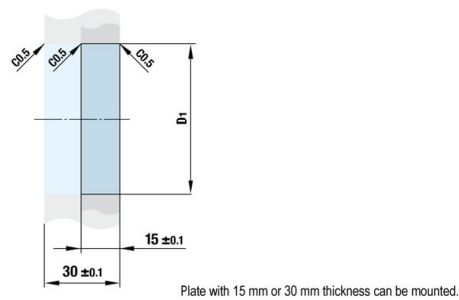
Model	Dimensions (mm)							
	øD1	øD2	øD3	L1	L2	L3	L4	T
MALC-1S	18.3 <sup>+0.1</sup> <sub>0</sub>	17.3 <sup>+0.06</sup> <sub>0</sub>	13	11	20	22	25	M16 x 1
MALC-1P								
MALC-2S	24 <sup>+0.1</sup> <sub>0</sub>	23 <sup>+0.06</sup> <sub>0</sub>	16	11.5	22	25	28	M20 x 1.5
MALC-2P								
MALC-3S	27.6 <sup>+0.1</sup> <sub>0</sub>	26.6 <sup>+0.08</sup> <sub>0</sub>	18	11	22	25	29	M24 x 1.5
MALC-3P								
MALC-4S	39.5 <sup>+0.1</sup> <sub>0</sub>	38.5 <sup>+0.08</sup> <sub>0</sub>	26	15.5	30	33	40.5	M35 x 1.5
MALC-4P								
MALC-6S	45 <sup>+0.1</sup> <sub>0</sub>	44 <sup>+0.08</sup> <sub>0</sub>	30	20	40	44	51.5	M40 x 2
MALC-6P								
MALC-8S	48 <sup>+0.3</sup> <sub>0</sub>	47 <sup>+0.08</sup> <sub>0</sub>	35	27	43	47	55	M45 x 2
MALC-8P								
MALC-12S	66 <sup>+0.3</sup> <sub>0</sub>	64 <sup>+0.1</sup> <sub>0</sub>	45	30	50	54	65	M62 x 2
MALC-12P								

**MALC-2 to 8SP-FL type (With flange)**



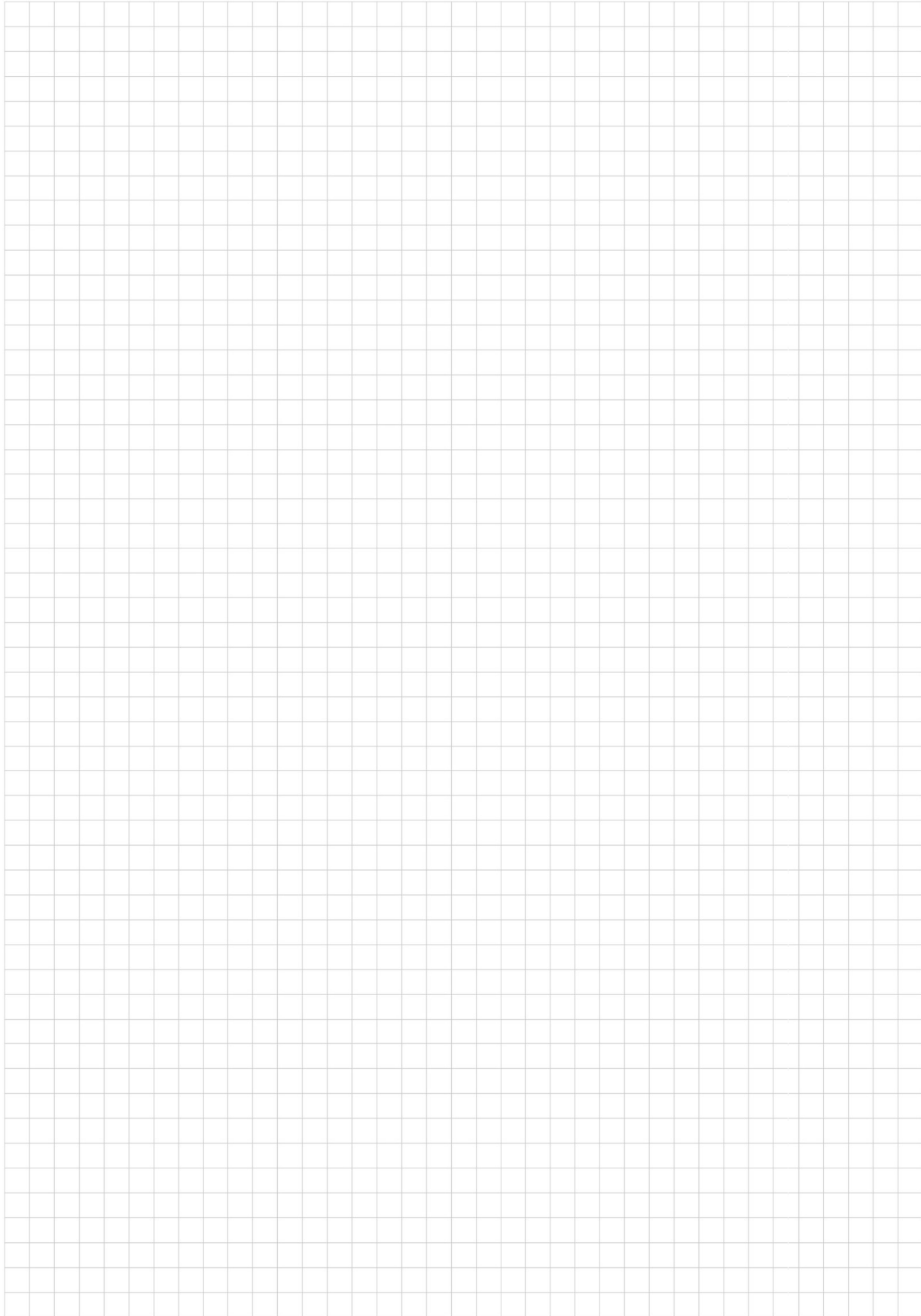
Model	Dimensions (mm)						
	øD1	øD2	øD3	L1	P1	P2	T
MALC-2S-FL	24 <sup>+0.1</sup> <sub>0</sub>	23 <sup>+0.06</sup> <sub>0</sub>	16	28	28	14	4 x M6 Thread depth 17 mm or more
MALC-2P-FL				19			
MALC-3S-FL	27.6 <sup>+0.1</sup> <sub>0</sub>	26.6 <sup>+0.08</sup> <sub>0</sub>	18	28	31	15.5	
MALC-3P-FL				22			
MALC-4S-FL	39.5 <sup>+0.1</sup> <sub>0</sub>	38.5 <sup>+0.08</sup> <sub>0</sub>	26	39	40	20	4 x M10 Thread depth 15 mm or more
MALC-4P-FL				30.5			
MALC-6S-FL	45 <sup>+0.1</sup> <sub>0</sub>	44 <sup>+0.08</sup> <sub>0</sub>	30	50	45	22.5	
MALC-6P-FL				40			
MALC-8S-FL	48 <sup>+0.3</sup> <sub>0</sub>	47 <sup>+0.08</sup> <sub>0</sub>	35	53	55	27.5	
MALC-8P-FL				43			

**MALC-8 / 12P type (With snap ring)**



Model	Dimensions (mm)	
	øD1	
MALC-8S-10F	60.1 <sup>+0.1</sup> <sub>0</sub>	
MALC-8P-10F		
MALC-12S-F	80.1 <sup>+0.1</sup> <sub>0</sub>	
MALC-12P-F		
MALC-12S-16F	80.1 <sup>+0.1</sup> <sub>0</sub>	
MALC-12P-16F		

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 Multi-Port Connection (Automatic)**

# MULTI CUPLA

## MALC-HSP Type for High Pressure Use


Low spill type for high pressure use

Working pressure




21.0 to 25.0 MPa  
(214 to 253 kgf/cm²)

Valve structure



Two-way shut-off

Applicable fluids



Hydraulic oil

**A single operation enables simultaneous connections of multiple lines. A special design minimizes air admixture in fluid lines upon connection. Suitable for high pressure hydraulic circuits.**

- Compared with conventional MULTI CUPLA, approximately double flow rates are realized. This could reduce the size of required plates. (Rate of flow increase depends on CUPLA sizes.)
- The MALC type realizes a 2 mm axial eccentricity allowance, while the conventional MULTI CUPLA is only 0.6 mm.
- Special valve design enables connection of socket and plug under dynamic pressure of up to 8 MPa.
- When connected, the distance between the socket plate and plug plate is designed to be 30 mm for all sizes. This means any size of CUPLA can be mounted and used on the same plate.
- Low spill valves minimize outflow of fluid and admixture of air into the fluid line.



Specifications			
Body material		Special steel (Nickel plated)	
Model	Thread screw mount	MALC-1HSP	MALC-2 to 8HSP
	Flange	-	MALC-2 to 8HSP-FL
Working pressure *	MPa	25.0 (8.0)	21.0 (8.0)
	kgf/cm <sup>2</sup>	255 (81)	214 (81)
	bar	250 (80)	210 (80)
	PSI	3630 (1160)	3050 (1160)
Seal material		Sealing material	Mark
Working temperature range		Fluoro rubber	FKM (X-100)
		Working temperature range	
		-20°C to +180°C	

\* The value in brackets is Maximum working pressure of individual plug or socket.

Maximum Tightening Torque						Nm (kgf·cm)
Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Thread screw mount	30 {306}	50 {510}	53 {540}	65 {663}	80 {816}	95 {969}
Flange	-	9 {91}				30 {306}

**Interchangeability**  
Socket and plug in the same size can be connected regardless of their end configurations.

Minimum Cross-Sectional Area (mm <sup>2</sup> )						
Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Min. cross-sectional area	26	49.5	87	153	227	347

**Suitability for Vacuum**  
Not suitable for vacuum application in either connected or disconnected condition.

Admixture of Air on Connection (mL)						
Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Volume of air	0.08	0.14	0.26	0.55	0.95	0.85

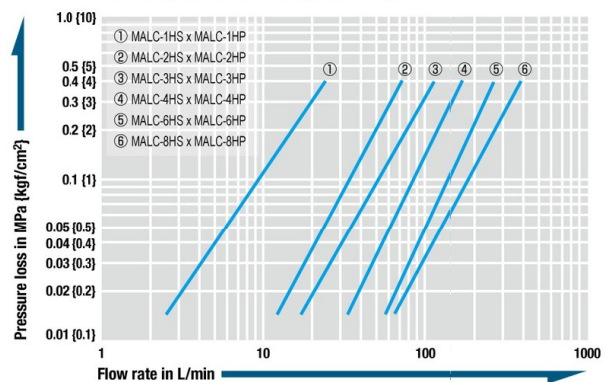
Volume of Spillage per Disconnection (mL)						
Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Volume of spillage	0.08	0.14	0.26	0.55	0.95	0.85

Load Required to Maintain Connection When Line Is Pressurized						
Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Maximum acceptable load N (kgf)	9300 {948}	16500 {1683}	22000 {2244}	40500 {4130}	55000 {5609}	64500 {6577}
Minimum load required to maintain connection N (kgf) *	$P \times 170 + 85$ { $p \times 1.7 + 8.5$ }	$P \times 345 + 180$ { $p \times 3.45 + 18$ }	$P \times 460 + 190$ { $p \times 4.6 + 19$ }	$P \times 855 + 260$ { $p \times 8.55 + 26$ }	$P \times 1160 + 260$ { $p \times 11.6 + 26$ }	$P \times 1360 + 310$ { $p \times 13.6 + 31$ }

\* Assign the actual value of pressure P (MPa), p (kgf/cm<sup>2</sup>) to the above formula to calculate the load. Maintain the connection with the minimum load or more, but not more than the maximum acceptable load.

**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>



**MULTI CUPLA MALC-HSP Type for High Pressure Use**

**Models and Dimensions**

WAF : WAF stands for width across flats.

**Plug MALC-1 to 8HP type (Thread screw mount)**

Model	Application	Mass (g)	Dimensions (mm)					
			L1	L2	L3	øD	H(WAF)	T
MALC-1HP	See P127	39	32	(18)	14	21	Hex.19	M16 x 1
MALC-2HP		73	33	(20)	13	28	Hex.26	M20 x 1.5
MALC-3HP		96	33	(20)	13	32	Hex.29	M24 x 1.5
MALC-4HP		250	41	(28)	13	45	Hex.41	M35 x 1.5
MALC-6HP		357	50.5	(37.5)	13	50	Hex.46	M40 x 2
MALC-8HP		391	53	(41)	12	54	Hex.50	M45 x 2

**Socket MALC-1 to 8HS type (Thread screw mount)**

Model	Application	Mass (g)	Dimensions (mm)					
			L1	L2	L3	øD	H(WAF)	T
MALC-1HS	See P127	51	(45)	(23)	16	21	Hex.19	M16 x 1
MALC-2HS		89	(49)	(26)	17	28	Hex.26	M20 x 1.5
MALC-3HS		117	(51)	(26)	17	32	Hex.29	M24 x 1.5
MALC-4HS		290	(64)	(36.5)	17	45	Hex.41	M35 x 1.5
MALC-6HS		447	(78.5)	(47.5)	17	50	Hex.46	M40 x 2
MALC-8HS		579	(86)	(53)	18	54	Hex.50	M45 x 2

**Plug MALC-2 to 6HP-FL type (With flange)**

Model	Application	Mass (g)	Dimensions (mm)			
			L1	L2	L3	□ S
MALC-2HP-FL	See P127	142	30	(17)	6	40
MALC-3HP-FL		179	33	(20)	6	45
MALC-4HP-FL		367	41	(28)	6.5	58
MALC-6HP-FL		514	50.5	(37.5)	6.5	64

**Socket MALC-2 to 6HS-FL type (With flange)**

Model	Application	Mass (g)	Dimensions (mm)			
			L1	L2	L3	□ S
MALC-2HS-FL	See P127	163	(49)	(26)	6	40
MALC-3HS-FL		200	(51)	(26)	6	45
MALC-4HS-FL		418	(64)	(36.5)	6.5	58
MALC-6HS-FL		611	(78.5)	(47.5)	6.5	64

**Plug MALC-8HP-FL type (With flange)**

Model	Application	Mass (g)	Dimensions (mm)				
			L1	L2	L3	L4	□ S
MALC-8HP-FL	See P127	786	53	(41)	12	12	79

**Socket MALC-8HS-FL type (With flange)**

Model	Application	Mass (g)	Dimensions (mm)				
			L1	L2	L3	L4	□ S
MALC-8HS-FL	See P127	964	(86)	(53)	18	12	79

**Acceptable distance between Socket and Plug**

Plug and socket must be used in contact with each other.  
Maximum 0.5 mm distance between socket and plug is acceptable.

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



**MULTI CUPLA MALC-HSP Type for High Pressure Use**

**Dimensions of End Configurations**

**MALC-1 to 8HSP type (Thread screw mount)**

Model	Dimensions (mm)									
	$\phi D_1$	$\phi D_2$	$\phi D_3$	L1	L2	L3	L4	L5	T	A
MALC-1HS	17.8 <sup>+0.1</sup> <sub>0</sub>	16.8 <sup>+0.06</sup> <sub>0</sub>	13	3.5 <sup>+0.2</sup> <sub>0</sub>	11	20	22	25	M16 x 1	C0.2
MALC-1HP										
MALC-2HS	23 <sup>+0.1</sup> <sub>0</sub>	22 <sup>+0.06</sup> <sub>0</sub>	16	2.8 <sup>+0.2</sup> <sub>0</sub>	11	22	25	28	M20 x 1.5	R0.5
MALC-2HP										
MALC-3HS	27.1 <sup>+0.1</sup> <sub>0</sub>	26 <sup>+0.08</sup> <sub>0</sub>	18	2.8 <sup>+0.2</sup> <sub>0</sub>	11	22	25	29	M24 x 1.5	R0.5
MALC-3HP										
MALC-4HS	37.7 <sup>+0.3</sup> <sub>0</sub>	36.5 <sup>+0.08</sup> <sub>0</sub>	26	6 <sup>±0.2</sup>	18	30	33	40.5	M35 x 1.5	R0.5
MALC-4HP										
MALC-6HS	42.5 <sup>+0.3</sup> <sub>0</sub>	41.5 <sup>+0.08</sup> <sub>0</sub>	30	6 <sup>±0.2</sup>	23	40	44	51.5	M40 x 2	R0.5
MALC-6HP										
MALC-8HS	47.5 <sup>+0.3</sup> <sub>0</sub>	46.5 <sup>+0.08</sup> <sub>0</sub>	35	10.5 <sup>±0.2</sup>	27	43	47	55	M45 x 2	R0.5
MALC-8HP										

**MALC-2 to 8HSP-FL type (With flange)**

Model	Dimensions (mm)							
	$\phi D_1$	$\phi D_2$	$\phi D_3$	L1	L2	P1	P2	T
MALC-2HS-FL	23 <sup>+0.1</sup> <sub>0</sub>	22 <sup>+0.06</sup> <sub>0</sub>	16	2.8 <sup>+0.2</sup> <sub>0</sub>	28	28	14	4 x M6 Thread depth 17 mm or more
MALC-2HP-FL					19			
MALC-3HS-FL	27.1 <sup>+0.1</sup> <sub>0</sub>	26 <sup>+0.08</sup> <sub>0</sub>	18	2.8 <sup>+0.2</sup> <sub>0</sub>	28	31	15.5	
MALC-3HP-FL					22			
MALC-4HS-FL	37.7 <sup>+0.3</sup> <sub>0</sub>	36.5 <sup>+0.08</sup> <sub>0</sub>	26	6 <sup>±0.2</sup>	39	40	20	4 x M10 Thread depth 15 mm or more
MALC-4HP-FL					30.5			
MALC-6HS-FL	42.5 <sup>+0.3</sup> <sub>0</sub>	41.5 <sup>+0.08</sup> <sub>0</sub>	30	6 <sup>±0.2</sup>	50	45	22.5	
MALC-6HP-FL					40			
MALC-8HS-FL	47.5 <sup>+0.3</sup> <sub>0</sub>	46.5 <sup>+0.08</sup> <sub>0</sub>	35	10.5 <sup>±0.2</sup>	53	55	27.5	
MALC-8HP-FL					43			

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 Purity Chemicals**

# SEMICON CUPLA

## SP Type


**For semiconductor manufacturing production installation**

Working pressure




0.2 MPa  
(2 kgf/cm<sup>2</sup>)

Valve structure



Two-way shut-off

Applicable fluids



High purity chemicals  
Water  
Gas  
Air

**General purpose type with stainless steel body and rubber seal. Electro-polished body for enhanced corrosion resistance.**

- Body and valve springs are stainless steel (SUS304). Body is electro-polished for enhanced corrosion resistance.
- Seal materials can be selected to suit your fluid and application, to flexibly comply with your semiconductor production process requirements.
- All components are cleaned, assembled, inspected, and then packed in a clean room.
- Grease free. No grease is applied to the seal material.
- Each plug comes with a dust cap.
- Stainless steel SUS316 body and valve springs are available as made-to-order products.



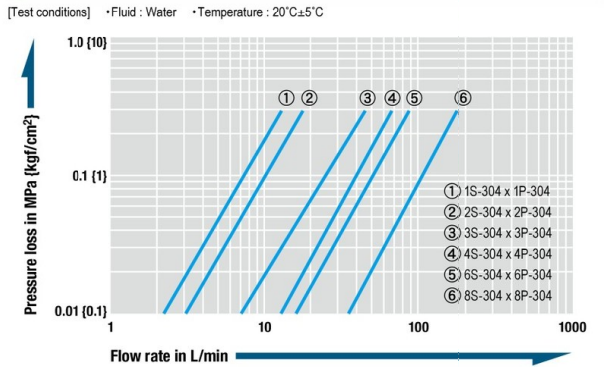
Specifications				
Body material	Electropolished stainless steel (SUS304)			
Size (Thread)	1/8", 1/4", 3/8", 1/2", 3/4", 1" 1/8-27NPT, 1/4-18NPT, 19/32-18UNS			
Pressure unit	MPa	kgf/cm <sup>2</sup>	bar	PSI
Working pressure	0.2	2	2	29
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Fluoro rubber	FKM (X-100)	0°C to +50°C	Standard material
	Ethylene-propylene rubber	EPDM (EPTS)	0°C to +50°C	Standard material
	Perfluoroelastomer	P	0°C to +50°C	Standard material
	Kalrez	KL	0°C to +50°C	Standard material

Maximum Tightening Torque							Nm (kgf·cm)
Size	1/8-27NPT Rc 1/8	1/4-18NPT Rc 1/4	19/32-18UNS	Rc 3/8	Rc 1/2	Rc 3/4	Rc 1
Torque	9 {92}	14 {143}	20 {204}	22 {224}	60 {612}	90 {918}	120 {1224}

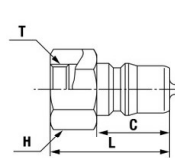

**Interchangeability**  
Sockets and plugs can be connected regardless of end configurations if the first number in the model name is the same.

Minimum Cross-Sectional Area							(mm <sup>2</sup> )
Model	1SP	2SP	3SP	4SP	6SP	8SP	
Min. cross-sectional area	13	17	48	64	83	192	


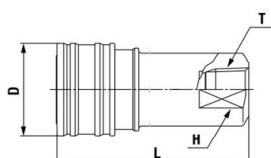
**Flow Rate – Pressure Loss Characteristics**



**Models and Dimensions** WAF : WAF stands for width across flats.

Plug		Female thread				
						
Model	Container capacity	Mass (g)	Dimensions (mm)			
			L	C	H(WAF)	T
1P-304	For 10L to 20L	19	29	19	Hex.14	Rc 1/8
1P-304-NPT	For 10L to 20L					1/8-27NPT
1P-304-UNS	For 10L to 20L	34	33	19	Hex.21	19/32-18UNS
2P-304	For 10L to 20L	35	36	22	Hex.17	Rc 1/4
2P-304-NPT	For 10L to 20L					1/4-18NPT
2P-304-UNS	For 10L to 20L	41	36	22	Hex.21	19/32-18UNS
3P-304	For 100L to 200L	60	40	25	Hex.21	Rc 3/8
4P-304	For 100L to 200L	115	44	28	Hex.29	Rc 1/2
6P-304	For 100L to 200L	216	52	36	Hex.35	Rc 3/4
8P-304	For 100L to 200L	352	62	40	Hex.41	Rc 1

\* Above are the dimensions of SUS304.  
\* The appearance of SUS304 and 316 bodies is different.

Socket		Female thread				
						
Model	Container capacity	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
1S-304	For 10L to 20L	82	48	24	14	Rc 1/8
1S-304-NPT	For 10L to 20L	84				1/8-27NPT
2S-304	For 10L to 20L	138	58	28	19	Rc 1/4
2S-304-NPT	For 10L to 20L					1/4-18NPT
3S-304	For 100L to 200L	204	65	35	21	Rc 3/8
4S-304	For 100L to 200L	424	72	45	29	Rc 1/2
6S-304	For 100L to 200L	708	88	55	35	Rc 3/4
8S-304	For 100L to 200L	1081	102	65	41	Rc 1

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 Purity Chemicals**

# SEMICON CUPLA

## SCS Type


**For semiconductor manufacturing equipment**

Working pressure




0.2 MPa  
(2 kgf/cm<sup>2</sup>)

Valve structure



Two-way shut-off

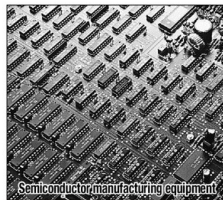
Applicable fluids



High purity chemicals  
Water  
Gas  
Air

## Adopted stainless steel body and fluorine contained resin valves.

- The body and spring material of stainless steel (SUS304), and valve of fluorine contained resin ensure excellent performance with various chemicals.
- Body (SUS304) is electropolished for enhanced corrosion resistance.
- All components are cleaned, assembled, inspected, and then packed in a clean room.
- Grease free. Grease is not applied to the seal material.
- Plug comes with a dust cap.



Specifications				
Body material	Electropolished stainless steel (SUS304)			
Size (Thread)	1/8", 1/4", 3/8", 1/2", 3/4", 1" 1/8-27NPT, 1/4-18NPT, 19/32-18UNS			
Pressure unit	MPa	kgf/cm <sup>2</sup>	bar	PSI
Working pressure	0.2	2	2	29
Seal material	Socket	Seal material	Mark	Working temperature range
	O-ring	Perfluoroelastomer	P	0°C to +50°C
Working temperature range	Valve	Fluoropolymer resin (Socket: PFA, Plug: PTFE except 1P and 2P of PFA)		

\*If you need a seal material other than perfluoroelastomer, please consult with us.

Size	Maximum Tightening Torque						
	1/8-27NPT Rc 1/8	1/4-18NPT Rc 1/4	19/32-18UNS	Rc 3/8	Rc 1/2	Rc 3/4	Rc 1
Torque	9 {92}	14 {143}	20 {204}	22 {224}	60 {612}	90 {918}	120 {1224}

### Interchangeability

Sockets and plugs can be connected regardless of end configurations if the number □ in the model name (SCS-□S (P)) is the same.  
The plugs can be connected with sockets of SCY Type of the same size.  
See below chart for details.

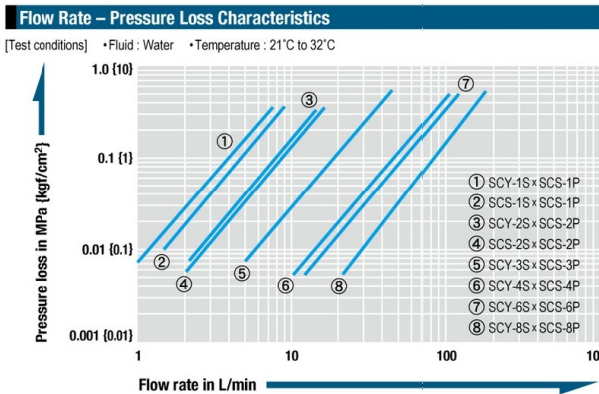
### Interchangeability Check List (SCS Type, SCY Type)

● indicates connection capability except for made-to-order products.

Plug	Model	Socket									
		SCS Type				SCY Type					
		-1S	-2S	-3S	-4S	-1S	-2S	-3S	-4S		
SCS Type	-1P	●									
	-2P		●								
	-3P			●							
	-4P				●						
	-6P					●					
	-8P						●				
								●			
									●		

### Minimum Cross-Sectional Area (mm<sup>2</sup>)

Model	SCS-1SP	SCS-2SP	SCS-3P	SCS-4P	SCS-6P	SCS-8P
Min. cross-sectional area	15	23	28	71	110	162



### Models and Dimensions

Model	Container capacity	Mass (g)	Dimensions (mm)				T
			L	C	H(WAF)	T	
SCS-1P	For 10L to 20L	17	29	19	Hex.14	Rc 1/8	
SCS-1P-NPT	For 10L to 20L					1/8-27NPT	
SCS-1P-UNS	For 10L to 20L	34	33	19	Hex.21	19/32-18UNS	
SCS-2P	For 10L to 20L	32	34	22	Hex.17	Rc 1/4	
SCS-2P-NPT	For 10L to 20L	29				1/4-18NPT	
SCS-2P-UNS	For 10L to 20L	41	36	22	Hex.21	19/32-18UNS	
SCS-3P	For 100L to 200L	61	40	25	Hex.21	Rc 3/8	
SCS-4P	For 100L to 200L	114	44	28	Hex.29	Rc 1/2	
SCS-6P	For 100L to 200L	198	52	36	Hex.35	Rc 3/4	
SCS-8P	For 100L to 200L	338	62	40	Hex.41	Rc 1	

WAF : WAF stands for width across flats.

Model	Container capacity	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
SCS-1S-NPT	For 10L to 20L	84	48	24	14	1/8-27NPT
SCS-2S-NPT	For 10L to 20L	138	58	28	19	1/4-18NPT

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 Purity Chemicals**

# SEMICON CUPLA

## SCY Type


**For semiconductor manufacturing equipment**

Working pressure




0.2 MPa  
(2 kgf/cm<sup>2</sup>)

Valve structure



Two-way shut-off

Applicable fluids



High purity chemicals  
Water  
Gas  
Air

## Fluorine contained resin packing seal and perfluoroelastomer packing seal are used to reduce required connection load and to achieve tight sealing.

- The material of body and spring are of stainless steel (SUS304), while that of valve is of fluorine contained resin. The combination shows excellent performance with various types of chemicals.
- Body (SUS304) is electropolished for enhanced corrosion resistance.
- All components are cleaned, assembled, inspected, and then packed in a clean room.
- Grease free. Grease is not applied to the seal materials.
- Flanged body makes it easy to operate even with gloves.



Specifications				
Body material	Electropolished stainless steel (SUS304)			
Size (Thread)	1/8", 1/4", 3/8", 1/2", 3/4", 1" 1/8-27NPT, 1/4-18NPT			
Pressure unit	MPa	kgf/cm <sup>2</sup>	bar	PSI
Working pressure	0.2	2	2	29
Seal material Working temperature range	Socket packing seal	Seal material	Mark	Working temperature range
		Perfluoroelastomer Fluoropolymer resin	P PTFE (TF)	0°C to +50°C
Valve		Fluoropolymer resin (PTFE except 1P and 2P of PFA)		
Remarks: Standard material				

\*If you need a seal material other than perfluoroelastomer, please consult with us.

Maximum Tightening Torque	Nm (kgf·cm)
See page 130 of SEMICON CUPLA SCS Type.	

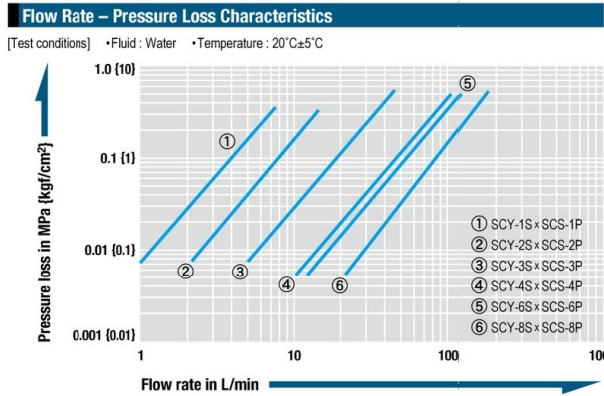
**Interchangeability**  
Can be connected with plugs of SCS Type of the same size. See below chart for details.

**Interchangeability Check List (SCS Type, SCY Type)**

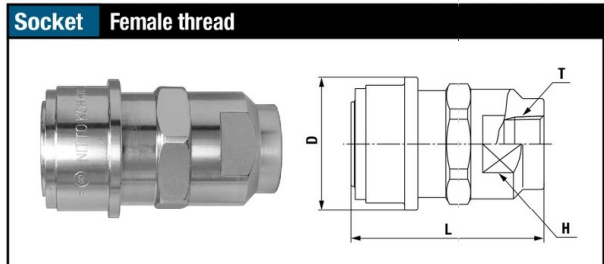
● indicates connection capability except for made-to-order products.

Plug	SCS Type	Socket							
		SCS Type		SCY Type					
		-1S	-2S	-1S	-2S	-3S	-4S	-6S	-8S
-1P	●		●						
-2P		●			●				
-3P						●			
-4P							●		
-6P								●	
-8P									●

Minimum Cross-Sectional Area (mm <sup>2</sup> )						
Model	SCY-1S	SCY-2S	SCY-3S	SCY-4S	SCY-6S	SCY-8S
Min. cross-sectional area	15	23	28	71	110	162



**Models and Dimensions** WAF : WAF stands for width across flats.



Model	Container capacity	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
SCY-1S	For 10L to 20L	116	(48)	29	18	Rc 1/8
SCY-1S-NPT	For 10L to 20L					1/8-27NPT
SCY-2S	For 10L to 20L	180	(58)	33	22	Rc 1/4
SCY-2S-NPT	For 10L to 20L					1/4-18NPT
SCY-3S	For 100L to 200L	292	(65)	39	27	Rc 3/8
SCY-4S	For 100L to 200L	519	(72)	50	35	Rc 1/2
SCY-6S	For 100L to 200L	862	(88)	59	41	Rc 3/4
SCY-8S	For 100L to 200L	1360	(102)	68	50	Rc 1

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 Purity Chemicals**

# SEMICON CUPLA

## SCT Type

**For semiconductor manufacturing equipment**

Working pressure

0.2 MPa  
(2 kgf/cm<sup>2</sup>)

Valve structure

Two-way shut-off

Applicable fluids

High purity chemicals  
Water  
Gas  
Air

## Polytetrafluoroethylene (PTFE) is utilised for the body.

- Polytetrafluoroethylene (PTFE) body gives excellent resistance to chemicals.
- Both socket and plug have built-in automatic shut-off valves that prevent fluid from outflowing when disconnected.
- No dissolution of metal ions from part in contact with liquid ensures excellent reliability.
- All components are cleaned, assembled, inspected and then packed in a clean room.
- Appropriate model can be selected from a wide variety of sizes to suit your application / fluid.
- Optional keyway lock to prevent incorrect connection. 10 keyway patterns are available.



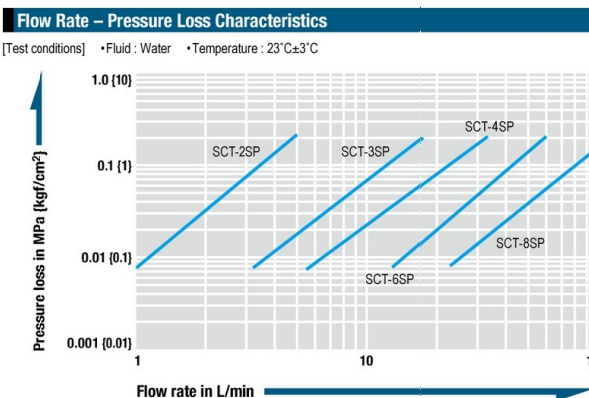
Specifications				
Body material	Polytetrafluoroethylene (PTFE)			
Size (Thread)	1/4", 3/8", 1/2", 3/4", 1" 1/4-18NPT, 3/8-18NPT, 1/2-14NPT, 3/4-14NPT, 1-11.5NPT			
Pressure unit	MPa	kgf/cm <sup>2</sup>	bar	PSI
Working pressure	0.2	2	2	29
Seal material	Socket	Seal material	Mark	Working temperature range
	O-ring	FEP-covered fluoro rubber	—	+5°C to +50°C
Working temperature range	Valve	Fluoropolymer resin (PFA)		

Maximum Tightening amount (approximate)	
1 <sup>3</sup> / <sub>4</sub> to 2 turns	1/4" · 3/8" · 1/2" · 3/4" · 1" Size

Whichever method, overtightening may damage the thread and cause leakage, so take extra care.

**Interchangeability**  
Sockets and plugs can be connected regardless of end configurations if the number □ in the model name {SCT-□S (P)} is the same.

Minimum Cross-Sectional Area (mm <sup>2</sup> )					
Model	SCT-2SP	SCT-3SP	SCT-4SP	SCT-6SP	SCT-8SP
Minimum cross-sectional area	12	34	54	103	225



**Models and Dimensions** WAF : WAF stands for width across flats.

Plug		Female thread				
Model	Mass (g)	Dimensions (mm)				
		L	A	øC	H(WAF)	T
SCT-2P	43	59	30.5	27.5	24	Rc 1/4
SCT-2P-NPT						1/4-18NPT
SCT-3P	77	68.5	33.5	34.5	30	Rc 3/8
SCT-3P-NPT						3/8-18NPT
SCT-4P	91	69.5	37.5	39.5	36	Rc 1/2
SCT-4P-NPT						1/2-14NPT
SCT-6P	160	78.5	45	48	41	Rc 3/4
SCT-6P-NPT						3/4-14NPT
SCT-8P	300	112	60.5	59	50	Rc 1
SCT-8P-NPT						1-11.5NPT

Socket		Female thread				
Model	Mass (g)	Dimensions (mm)				
		L	øD	H(WAF)	T	
SCT-2S	101	89.5	41	19	Rc 1/4	
SCT-2S-NPT					1/4-18NPT	
SCT-3S	156	102	49.5	24	Rc 3/8	
SCT-3S-NPT					3/8-18NPT	
SCT-4S	192	107	54.5	30	Rc 1/2	
SCT-4S-NPT					1/2-14NPT	
SCT-6S	340	123	68	36	Rc 3/4	
SCT-6S-NPT					3/4-14NPT	
SCT-8S	770	172.5	82	46	Rc 1	
SCT-8S-NPT					1-11.5NPT	

\* Available end configurations are female ISO Rc thread and female NPT thread.  
 \* Plug or socket with female ISO Rc end configuration has V-groove on the body as identification. (In case of female NPT thread, no V-groove on either plug or socket body).  
 \* Please inquire for other end configurations other than female thread (e.g. flanged or male thread).

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 Purity Chemicals**

# SEMICON CUPLA

## SCAL Type

**For semiconductor manufacturing equipment**

Working pressure

**0.2**  
0.2 MPa  
(2 kgf/cm<sup>2</sup>)

Valve structure

Two-way shut-off  
(Non-Spill)

Applicable fluids

High purity chemicals  
Water  
Gas  
Air

## Body is polytetrafluoroethylene (PTFE).

- Polytetrafluoroethylene (PTFE) body gives excellent resistance to chemicals.
- Unique seal design ensures minimal liquid spill.
- Both socket and plug have built-in automatic shut-off valves that prevent fluid from outflowing when disconnected.
- No dissolution of metal ions from part in contact with liquid ensures excellent reliability.
- Push-to-connect design.
- Flanged socket body makes it easy to push down sleeve even when wearing gloves.
- All components are cleaned, assembled, inspected and then packed in a clean room.
- Concaved surface of the plug end prevents liquid loss and protects the plug seal surface from damage if dropped or hit.
- To prevent incorrect connection, a keyed type sleeve is available on a made-to-order basis.
- Ten key angle positions are available. The appearance of the keyed type body slightly differs from that of the standard type.



Specifications				
Body material	Polytetrafluoroethylene (PTFE)			
Size (Thread)	1/4", 3/8", 1/2", 3/4", 1" 1/4-18NPT, 3/8-18NPT, 1/2-14NPT, 3/4-14NPT, 1-11.5NPT			
Pressure unit	MPa	kgf/cm <sup>2</sup>	bar	PSI
Working pressure	0.2	2	2	29
Seal material	Socket	Seal material	Mark	Working temperature range
	O-ring	Perfluoroelastomer	P	+5°C to +50°C
Working temperature range	Valve	Fluoropolymer resin (PFA)		
Remarks: Standard material				

Maximum Tightening amount (approximate)	
1 3/4 to 2 turns	1/4" - 3/8" - 1/2" - 3/4" - 1" Size

With seal tape wrapped on the male thread, screw it firmly by hand, and then add more tightening with a wrench as shown below.

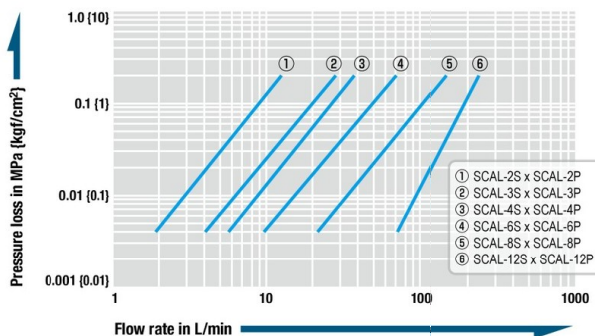
Whichever method, overtightening may damage the thread and cause leakage, so take extra care.

**Interchangeability**  
Sockets and plugs can be connected regardless of end configurations if the number □ in the model name {SCAL-□S (P)} is the same.

Minimum Cross-Sectional Area (mm <sup>2</sup> )						
Model (SCAL-□)	2S (-NPT) X 2P (-NPT)	3S (-NPT) X 3P (-NPT)	4S (-NPT) X 4P (-NPT)	6S (-NPT) X 6P (-NPT)	8S (-NPT) X 8P (-NPT)	12S (-NPT/FL-P) X 12P (-NPT/FL-P)
Min. Cross-Sectional Area	24	41	59	108	234	611

Volume of Spillage per Disconnection (mL)						
Model (SCAL-□)	2S (-NPT) X 2P (-NPT)	3S (-NPT) X 3P (-NPT)	4S (-NPT) X 4P (-NPT)	6S (-NPT) X 6P (-NPT)	8S (-NPT) X 8P (-NPT)	12S (-NPT/FL-P) X 12P (-NPT/FL-P)
Volume of spillage	0.07	0.09	0.13	0.20	0.59	1.26

**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	Mass (g)	Dimensions (mm)			
		L	øD	H(WAF)	T
SCAL-2P	37	50	27.5	24	Rc 1/4
SCAL-2P-NPT					1/4-18NPT
SCAL-3P	73	63	34.5	30	Rc 3/8
SCAL-3P-NPT					3/8-18NPT
SCAL-4P	107	72	39.5	36	Rc 1/2
SCAL-4P-NPT					1/2-14NPT
SCAL-6P	153	77	48	41	Rc 3/4
SCAL-6P-NPT					3/4-14NPT
SCAL-8P	348	109	59	50	Rc 1
SCAL-8P-NPT					1-11.5NPT
*SCAL-12P-NPT	740	126	80	75	1 1/2-11.5NPT

Socket		Female thread			
Model	Mass (g)	Dimensions (mm)			
		L	øD	H(WAF)	T
SCAL-2S	97	(60.5)	40.5	27	Rc 1/4
SCAL-2S-NPT					1/4-18NPT
SCAL-3S	135	(69.5)	47	32	Rc 3/8
SCAL-3S-NPT					3/8-18NPT
SCAL-4S	177	(76)	52	36	Rc 1/2
SCAL-4S-NPT					1/2-14NPT
SCAL-6S	339	(90)	65	46	Rc 3/4
SCAL-6S-NPT					3/4-14NPT
SCAL-8S	656	(109)	80	60	Rc 1
SCAL-8S-NPT					1-11.5NPT
*SCAL-12S-NPT	1580	(144.5)	108	80	1 1/2-11.5NPT

\*Made-to-order item

• Plug comes with a cap made of high density polyethylene (HDPE). • Outer appearance of NPT thread type differs slightly from that of the above.

• Please contact us about end configurations other than female thread such as flange and male thread. • Excessive tightening will damage the threaded part and result in leakage.

• Note: A very small amount of gas can permeate polytetrafluoroethylene (PTFE) bellows in the socket.

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 Purity Chemicals**

# SEMICON CUPLA

## SCF Type


**For semiconductor manufacturing equipment**

Working pressure




0.2 MPa  
(2 kgf/cm<sup>2</sup>)

Valve structure



Two-way shut-off

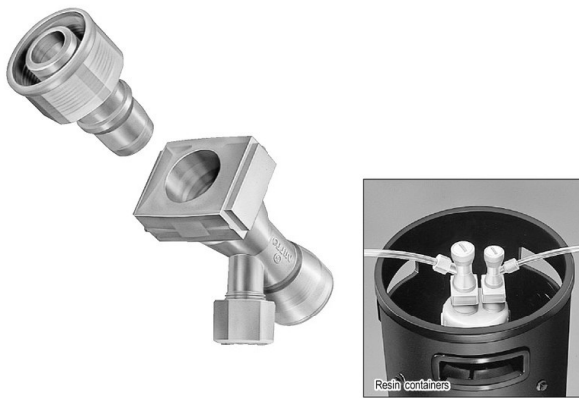
Applicable fluids



High purity chemicals  
Water  
Gas  
Air

## All plastic model. Fluoropolymer resin (PFA) body.

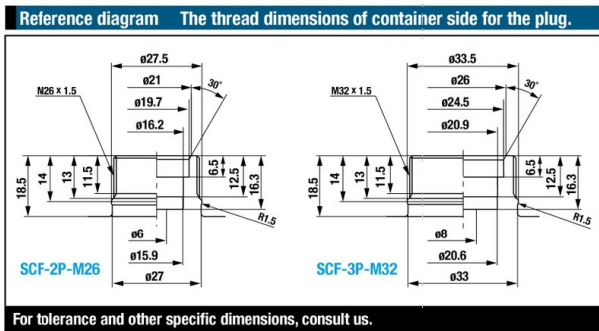
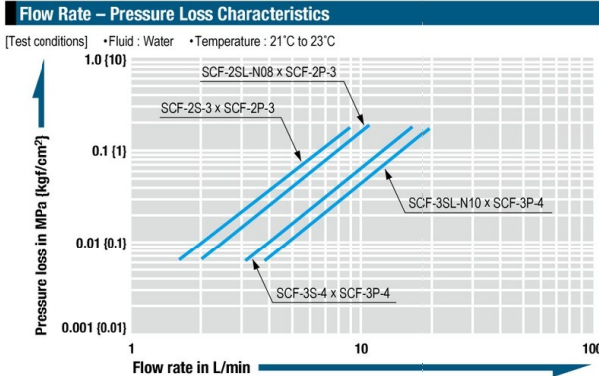
- All parts made of fluoropolymer resin. O-rings in particular are FEP-covered fluororubber with excellent chemical resistance and no rubber elution.
- To connect with a plug, just push the socket on to it. Disconnection is done in simple and one-handed button operation.
- Unique "double lock mechanism" prevents accidental disconnection of socket and plug.
- Branched tube port improves operability and reduces required piping space.
- Plugs come with a dust cap.
- All components are cleaned, assembled, inspected, and then packed in a clean room.



Specifications				
Body material	Fluoropolymer resin (PFA)			
Size	Thread	3/8", 1/2" / M26, M32		
	Tube barb	ø6 mm x ø8 mm, ø8 mm x ø10 mm		
Pressure unit	MPa	kgf/cm <sup>2</sup>	bar	PSI
Working pressure	0.2	2	2	29
Seal material	Socket O-ring	Seal material	Mark	Working temperature range
	Valve	FEP-covered fluoro rubber	-	+5°C to +50°C
Working temperature range	Standard material			
Fluoropolymer resin (PFA)				

**Interchangeability**  
Sockets and plugs can be connected regardless of end configurations if the number □ in the model name (SCF-□S (P)) is the same.

Minimum Cross-Sectional Area (mm <sup>2</sup> )		
Model	SCF-2SP	SCF-3SP
Minimum cross-sectional ar	23.8	44.2



**Models and Dimensions** WAF : WAF stands for width across flats.

**Plug Female thread**

Model	Container capacity	Mass (g)	Dimensions (mm)		
			L	D(WAF)	C
SCF-2P-M26	For 10L to 20L	33	(53.7)	Hex.30 x ø32.5	(31.2)
SCF-3P-M32	For 10L to 20L	50	(57.7)	Hex.36 x ø39	(35.2)

**Socket For tube connection**

Model	Container capacity	Mass (g)	Dimensions (mm)			Applicable tube
			L	D	E	
SCF-2SL-N08	For 10L to 20L	76	77	34	(45)	ø6 x ø8
SCF-3SL-N10	For 10L to 20L	116	85	39	(51)	ø8 x ø10

**Plug Straight type (Female thread)**

Model	Mass (g)	Dimensions (mm)						
		L	C	øD	H(WAF)	A(WAF)	øB	
SCF-2P-3	53	(67.2)	(31.2)	32.5	Hex.30	24	27	Rc 3/8
SCF-3P-4	79	(71.2)	(35.2)	39	Hex.36	30	33	Rc 1/2

**Socket Straight type (Female thread)**

Model	Mass (g)	Dimensions (mm)				
		L	øA	H(WAF)	D	E
SCF-2S-3	83	(92)	27	24	33	(45)
SCF-3S-4	124	(102.5)	33	30	39	(51)

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 Inert Gas and Vacuum

# SP-V CUPLA

For vacuum

Working pressure

3.0 to 7.5 MPa  
(31 to 76 kgf/cm<sup>2</sup>)

Valve structure

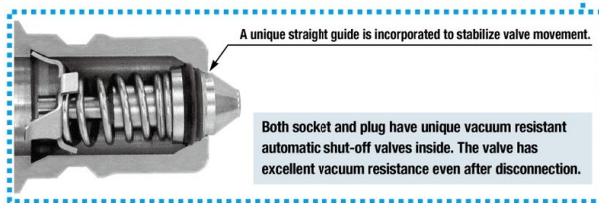
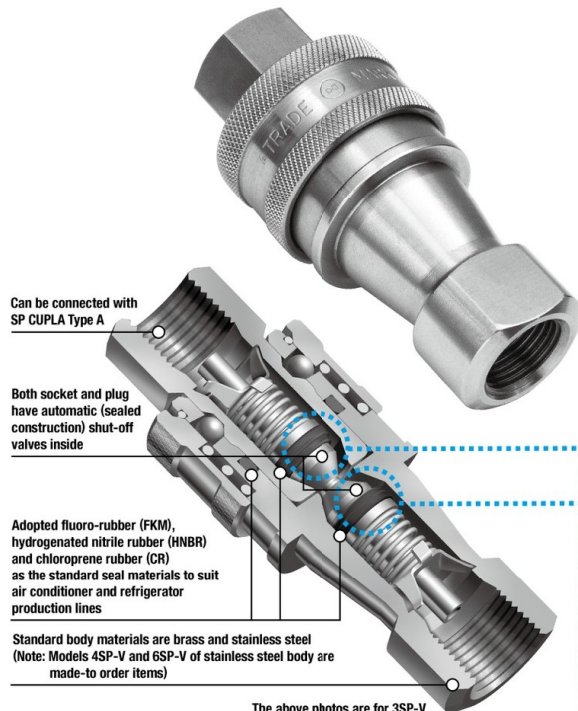
Two-way shut-off

Applicable fluids

Inert gas, Vacuum  
Gas Air Water

**Automatic shut-off valves in both socket and plug for vacuum applications. Each can withstand a vacuum of as high as  $1.3 \times 10^{-1}$  Pa even when disconnected.**

- Uses automatic shut-off valves with ultra-tight sealed construction in both socket and plug. Ideal for vacuum applications.
- Having automatic shut-off valves in both socket and plug facilitates easy fluid handling. Suitable for a wide range of vacuum applications as high as  $1.3 \times 10^{-1}$  Pa {  $1 \times 10^{-3}$  mmHg } even when disconnected.
- Three types of seal material are available to suit any of the diversified production lines for air conditioners, refrigerators or similar.
- Can be connected with SP CUPLA Type A.



Specifications					
Body material		Brass (Standard material)	Stainless steel (Standard material)	Stainless steel (Made-to-order item)	
Size (Thread)		1/4", 3/8"	1/2", 3/4"	1/4", 3/8" 1/2", 3/4"	
Working pressure	MPa	5.0	3.0	7.5 4.5	
	kgf/cm <sup>2</sup>	51	31	76 46	
	bar	50	30	75 45	
	PSI	725	435	1090 653	
Seal material	Seal material	Chloroprene rubber	CR (C308)	-20°C to +80°C	Standard material
	Seal material	Fluoro rubber	FKM (X-100)	-20°C to +180°C	Standard material
	Seal material	Hydrogenated nitrile rubber	HNBR (H708)	-20°C to +120°C	Standard material
Working temperature range	Mark				Remarks

\* No grease is applied to the O-ring of the socket for HNBR seal material products when shipping. Be sure to apply refrigerating machine oil before use.

Maximum Tightening Torque				Nm (kgf·cm)	
Size (Thread)		1/4"	3/8"	1/2"	3/4"
Torque	Brass	9 {92}	12 {122}	30 {306}	50 {510}
	Stainless steel	14 {143}	22 {224}	60 {612}	90 {918}

### Flow Direction

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

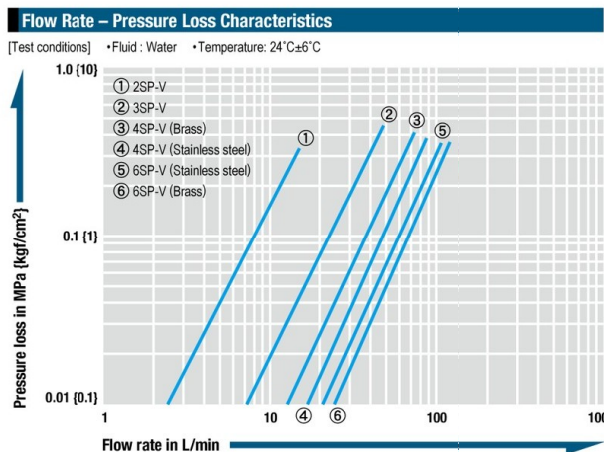
### Interchangeability

Socket and plug of different sizes cannot be connected. Interchangeable with SP CUPLA Type A but take heed of flow rate change.

Minimum Cross-Sectional Area (mm <sup>2</sup> )				
Model	2SP-V	3SP-V	4SP-V	6SP-V
Minimum cross-sectional area	18	38	71	110

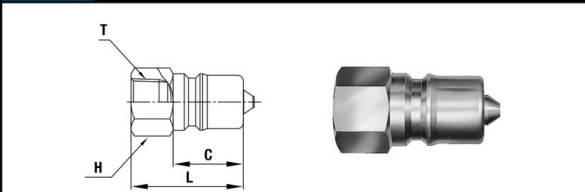
Suitability for Vacuum			$1.3 \times 10^{-1}$ Pa { $1 \times 10^{-3}$ mmHg }
Socket only	Plug only	When connected	
Operational	Operational	Operational	

Admixture of Air on Connection <small>May vary depending upon the usage conditions.</small>				(mL)
Model	2SP-V	3SP-V	4SP-V	6SP-V
Volume of air	1.0	2.4	3.2	10.5



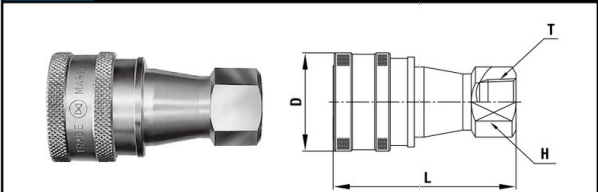
Models and Dimensions

Plug Female thread



Model	Application (Thread)	Mass (g)		Dimensions (mm)			
		Brass	Stainless steel	L	H(WAF)	C	T
2P-V	R 1/4	39	34	36	Hex.17	22	Rc 1/4
3P-V	R 3/8	67	59	40	Hex.21	25	Rc 3/8
4P-V	R 1/2	123	118	44	Hex.29	28	Rc 1/2
6P-V	R 3/4	211	202	52	Hex.35	36	Rc 3/4

Socket Female thread



Model	Application (Thread)	Mass (g)		Dimensions (mm)			
		Brass	Stainless steel	L	øD	H(WAF)	T
2S-V	R 1/4	136	127	58	(28)	19	Rc 1/4
3S-V	R 3/8	217	197	65	(35)	21	Rc 3/8
4S-V	R 1/2	421	393	72	45	29	Rc 1/2
6S-V	R 3/4	709	658	88	55	35	Rc 3/4

\* The sleeve shape of 4S-V and 6S-V differs from that of the above photo.

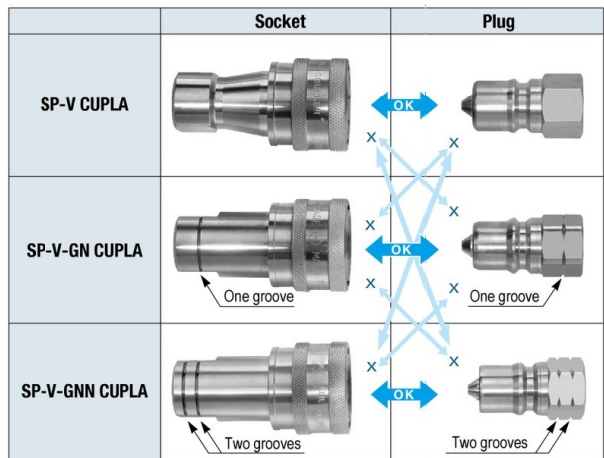
Seal Materials for Refrigerants

Various eco-friendly refrigerants for air conditioner and refrigerator have been developed. Nitto Kohki, having invested years in the research and development of excellent seal materials to withstand refrigerants and refrigerant oils, has made early attempts to develop and manufacture the seal materials for these eco-friendly refrigerants.

	Seal material	
	Hydrogenated nitrile rubber	Chloroprene rubber
Mark	HNBR (H708)	CR (C308)
Features	Resistant to hydrofluorocarbons (HFC-134a, HFC-407C, HFC-410A, HFC-404A), and PAG type and ester type oils. Also resistant to heat up to 120°C	Excellent resistance to hydrofluorocarbons (HCFC-22 and HFC-134a)
Application	Refrigerator production lines Air conditioner production lines	Air conditioner production lines

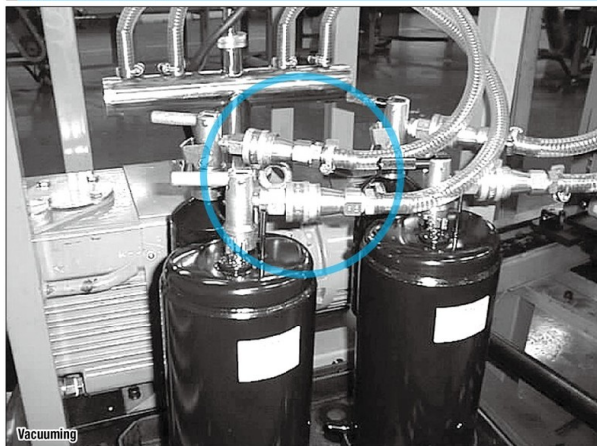
Comparison of External Appearance

When two different gases are used simultaneously in the production lines, SP-V-GN type and SP-V-GNN type (non-interchangeable with standard SP-V and each others) may be required in order to prevent connections to improper lines by mistakes. They are made-to-order items. For details please contact Nitto Kohki direct or its distributor in your country.

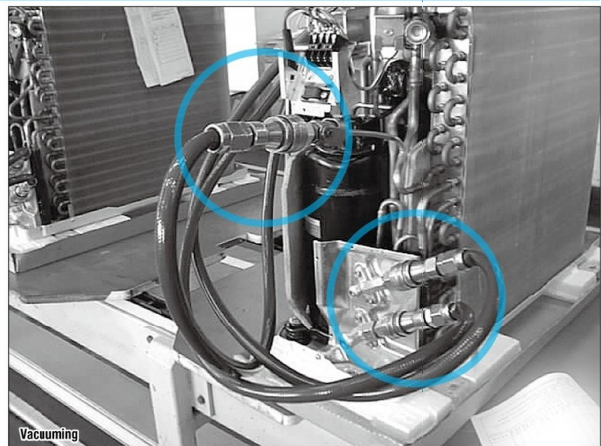


X indicates incompatibility.

Application Example



Vacuuuming



Vacuuuming

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 Inert Gas and Vacuum**

# PCV PIPE CUPLA


**For connection to copper pipes**

Working pressure




4.5 MPa  
(46 kgf/cm<sup>2</sup>)

Valveless



Applicable fluids

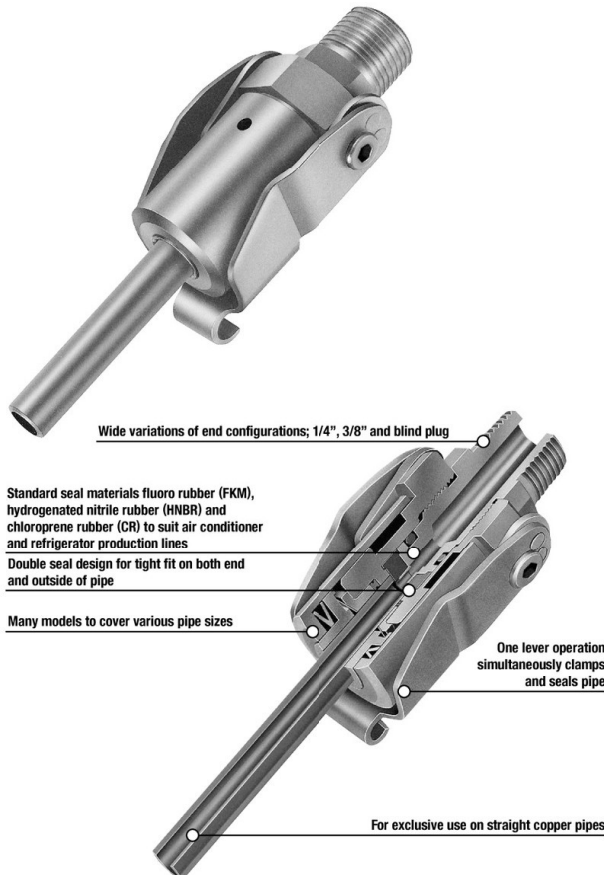


Inert gas,  
Vacuum  
Air  
Gas

## Clamps directly on straight copper pipes !

### Double seal construction withstands a vacuum of up to $1.3 \times 10^{-1}$ Pa.

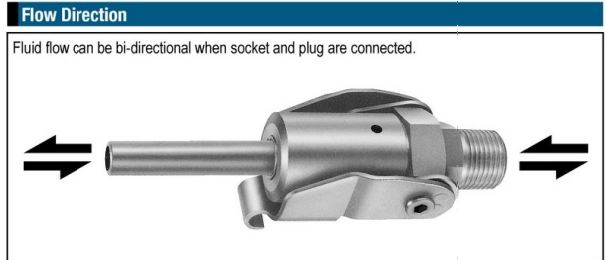
- Clamps directly on to straight copper pipes eliminating unnecessary welding or flaring.
- Withstands a vacuum of up to  $1.3 \times 10^{-1}$  Pa (when connected) making it possible to be used in leak testing, vacuum suction and refrigerant charge.
- Select from three standard types of seal materials to be used with fluids for air conditioner and refrigerator production lines. Many models to suit various pipe sizes.
- One lever operation simultaneously clamps and seals pipe. Double seal construction for tight fit on end and outside surface of pipe ensures excellent sealing and vacuum resistance.



Specifications										
Model	PCV400	PCV470	PCV500	PCV600	PCV630	PCV800	PCV950	PCV1000	PCV1270	PCV1590
Copper pipe OD mm	ø4.0	ø4.76 (3/16")	ø5.0	ø6.0	ø6.35 (1/4")	ø8.0 (5/16")	ø9.52 (3/8")	ø10.0	ø12.7 (1/2")	ø15.88 (5/8")
Body material	Brass									
Pressure unit	MPa		kgf/cm <sup>2</sup>		bar		PSI			
Working pressure	4.5		46		45		653			
Seal material	Seal material		Mark		Working temperature range		Remarks			
	Chloroprene rubber		CR (C308)		-20°C to +80°C		Standard material			
	Fluoro rubber		FKM (X-100)		-20°C to +180°C		Standard material			
Working temperature range	Hydrogenated nitrile rubber		HNBR (H708)		-20°C to +120°C		Standard material			

\* Hydrogenated nitrile rubber (HNBR) is colored in blue for easy recognition.

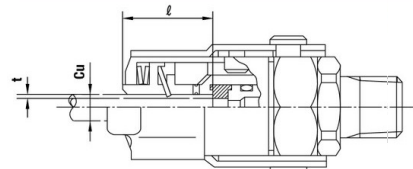
Maximum Tightening Torque		Nm {kgf·cm}	
Size (Thread)	1/4"	3/8"	
Torque	9 {92}	12 {122}	



Minimum Cross-Sectional Area (mm <sup>2</sup> )						
Model	PCV400	PCV470	PCV500	PCV600	PCV630	PCV800
Min. cross-sectional area	3.8	3.8	3.8	9.1	9.1	16.6
Model	PCV950	PCV1000	PCV1270-2	PCV1270-3	PCV1590-2	PCV1590-3
Min. cross-sectional area	16.6	16.6	50.3	73.9	50.3	78.5

Suitability for Vacuum		1.3 x 10 <sup>-1</sup> Pa {1 x 10 <sup>-3</sup> mmHg}	
CUPLA only	When connected to a pipe		
—	Operational		

**Pipe Outside Diameter, Insert Length of Pipe into CUPLA, and Minimum Thickness of Pipe Wall (mm)**



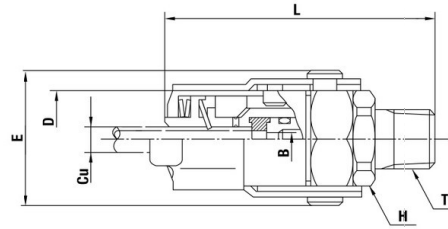
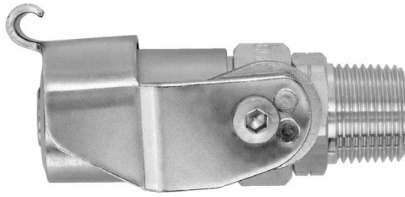
Items with asterisk (\*) are made-to-order products.

Product Group	Pipe OD (Cu)	Insert Length of Pipe into CUPLA (l)	Minimum Thickness of Pipe Wall (t)
PCV400*	ø4.0	19	0.8 or more
PCV470	ø4.76 (3/16")		
PCV500*	ø5.0		
PCV600	ø6.0		
PCV630	ø6.35 (1/4")		
PCV800	ø8.0 (5/16")	20.5	0.8 or more
PCV950	ø9.52 (3/8")		
PCV1000*	ø10.0		
PCV1270	ø12.7 (1/2")	30	1.0 or more
PCV1590	ø15.88 (5/8")		



Models and Dimensions

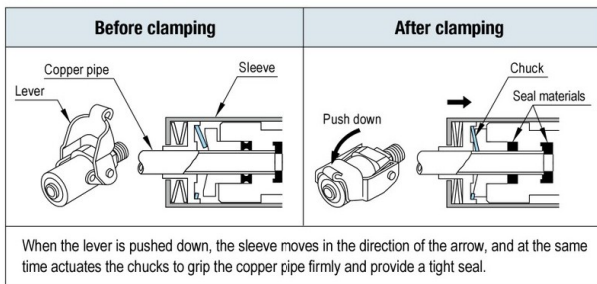
WAF : WAF stands for width across flats.



Product Group	Copper pipe OD mm	Model	Application (Thread)	Mass (g)	Dimensions (mm)						
					L	øD	H(WAF)	øB	E	T	
PCV400 *	ø4.0	PCV400-2	Rc 1/4	155	(59)	22.2	Hex.17	2.2	(32.5)	R 1/4	
		PCV400-3	Rc 3/8	155	(60)		Hex.19			R 3/8	
PCV470	ø4.76 (3/16)	PCV470-2	Rc 1/4	155	(60)	22.2	Hex.17	2.2	(32.5)	R 1/4	
		PCV470-3	Rc 3/8	160	(61)		Hex.19			R 3/8	
		PCV470-0	Blind plug	160	(47)		-			-	
PCV500 *	ø5.0	PCV500-2	Rc 1/4	155	(59)	22.2	Hex.17	2.2	(32.5)	R 1/4	
		PCV500-3	Rc 3/8	155	(60)		Hex.19			R 3/8	
PCV600	ø6.0	PCV600-2	Rc 1/4	150	(60)	22.2	Hex.17	3.4	(32.5)	R 1/4	
		PCV600-3	Rc 3/8	155	(61)		Hex.19			R 3/8	
		PCV600-0	Blind plug	155	(47)		-			-	
PCV630	ø6.35 (1/4)	PCV630-2	Rc 1/4	145	(60)	22.2	Hex.17	3.4	(32.5)	R 1/4	
		PCV630-3	Rc 3/8	150	(61)		Hex.19			R 3/8	
		PCV630-0	Blind plug	150	(47)		-			-	
PCV800	ø8.0 (5/16)	PCV800-2	Rc 1/4	175	(62)	24.8	Hex.17	4.6	(35.5)	R 1/4	
		PCV800-3	Rc 3/8	180	(63)		Hex.19			R 3/8	
		PCV800-0	Blind plug	185	(50)		-			-	
PCV950	ø9.52 (3/8)	PCV950-2	Rc 1/4	175	(62)	24.8	Hex.17	4.6	(35.5)	R 1/4	
		PCV950-3	Rc 3/8	180	(63)		Hex.19			R 3/8	
		PCV950-0	Blind plug	180	(50)		-			-	
PCV1000 *	ø10.0	PCV1000-2	Rc 1/4	155	(62)	24.8	Hex.17	4.6	(35.5)	R 1/4	
		PCV1000-3	Rc 3/8	155	(63)		Hex.19			R 3/8	
PCV1270	ø12.7 (1/2)	PCV1270-2	Rc 1/4	470	(80)	34.8	Hex.24	8.0	(45.0)	R 1/4	
		PCV1270-3	Rc 3/8	465	(81)		Hex.24			9.7	R 3/8
		PCV1270-0	Blind plug	475	(68)		-			-	
PCV1590	ø15.88 (5/8)	PCV1590-2	Rc 1/4	424	(80)	34.8	Hex.24	8.0	(45.0)	R 1/4	
		PCV1590-3	Rc 3/8	435	(81)		Hex.24			10.0	R 3/8
		PCV1590-0	Blind plug	445	(68)		-			-	

\* For mass with a plug, add (brass body) 2P-V : 39 g, 3P-V : 67 g, (stainless steel body) 2P-V : 34 g, or 3P-V : 59 g  
 \* Available on request

Clamping Mechanism



Application Example



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 Paint

# PAINT CUPLA

Piping for painting equipment

Working pressure



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

Valve structure



One-way shut-off

Applicable fluid



Solvent based paint

## Quick connection and disconnection of paint spray gun and paint fluid line is realized.

- Unique swing connection system enables easy connection and disconnection of paint spray gun and paint hose even by gloved hands.
- Full-open gate valve mechanism prevents paint precipitate buildup.
- Adoption of special resin seal that has resistance against solvents made it possible to feature superior durability, long stable capability, and easy cleaning of paint spray gun after the job.
- Connection and disconnection can be made even if paint sticks to the socket sleeve.
- Small and lightweight design (80 g per set) reduces the weight to be held by hand of operators.
- Built-in sleeve lock mechanism prevents accidental disconnection of CUPLA, ensuring safe operation.
- Wide variety of end configurations (standard thread: G 3/8) are available in response to various paint spray guns.



**Flow Direction**

Fluid must run from socket to plug.

**Models and Dimensions**

**Plug PE-3P type (Female thread)**

NPS end configuration has an identification groove on the CUPLA.

Model	Application (Thread)	Mass (g)	Dimensions (mm)				
			L	øD	øB	H(WAF)	T
PE-3P-G	G 3/8	31	(58)	24	4.5	19	G 3/8
PE-3P-NPS	3/8 NPS	31	(58)	24	4.5	19	3/8 NPS

**Specifications**

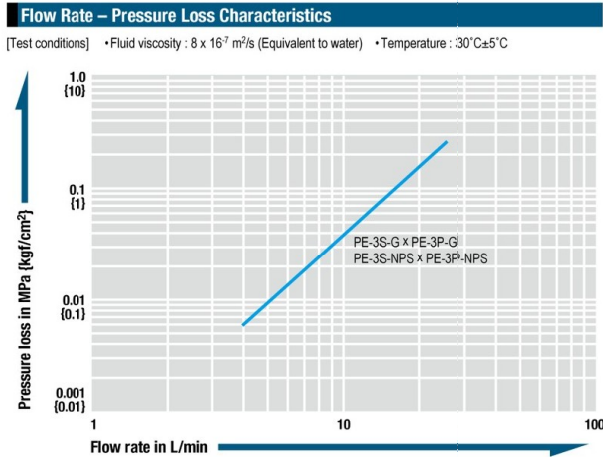
Body material	Socket : Aluminum alloy		Plug : Stainless steel	
Size (Thread)	3/8", 3/8NPS			
Pressure unit	MPa	kgf/cm <sup>2</sup>	bar	PSI
Working pressure	1.0	10	10	145
Seal material	Fluoro-resin	PFA	Working temperature range	0°C to +50°C
Working temperature range	Standard material			

**Tightening Torque Range** **Nm {kgf·cm}**

Torque	15 {153}
--------	----------

**Interchangeability**  
Sockets and plugs can be connected regardless of end configurations.

**Suitability for Vacuum**  
Not suitable for vacuum application in either connected or disconnected condition.



**Connection and Disconnection**

**Connection**  
Align the key on plug cover to the slot on sleeve, then while pulling the socket sleeve insert the plug to the hit.

While keeping the plug inserted into the socket, tilt the plug so as to align the plug with the socket. Lock can be made by turning the sleeve.

The sleeve of the plug shoots back and fully slides over the narrow part of the socket body.

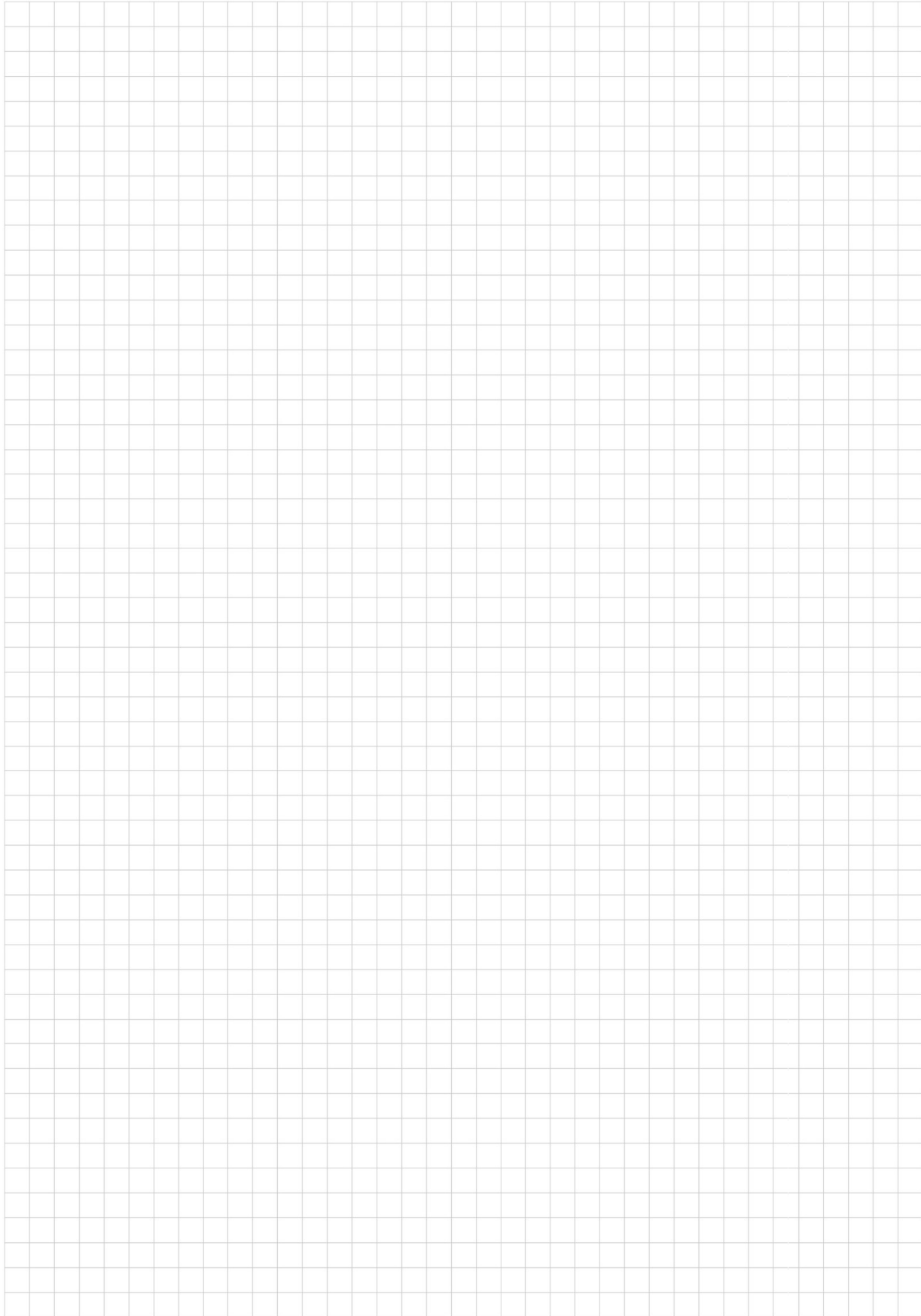
**Disconnection**  
Disconnect in the reverse order of connection.

**Socket PE-3S type (Male thread)**

NPS end configuration has an identification groove on the CUPLA.

Model	Application (Thread)	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
PE-3S-G	G 3/8	48	(47)	27	23	G 3/8
PE-3S-NPS	3/8 NPS	48	(47)	27	23	3/8 NPS

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 Food

# HYGIENIC CUPLA

## Easy Wash Type

Disassemble and wash type / For food manufacturing piping

Working pressure



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

Valve structure



Straight through

Applicable fluids



Food, Drinking water  
Water  
Powder  
Air

**Solves the troubles of ferrule joints by the effortless operation unique to CUPLA. Easy disassembly and cleanability help in hygienic management of HACCP.**

- It can be connected by just inserting the plug to the socket and twisting the "Safety lock".
- The "Safety lock" feature ensures that there can be no unintentional disconnection of the coupling.
- O-rings that conforms to the Food sanitation Act of Japan is adopted.
- An operator friendly design. Seal parts will not drop off during connection like conventional fittings.
- Stainless steel (JIS SUS316L equivalent) for the liquid contact parts, and finished with buffing (#400).

**Smart Connect and Disconnect**



Specifications				
Body material	Stainless steel [ SCS16 (JIS SUS316L equivalent) ] *1			
Surface finish of the liquid-contact part	Buff finish #400			
Size of end configurations	Welding type *2		Ferrule type *3	
	1.5 S / 2.0 S			
Pressure unit	MPa	kgf/cm <sup>2</sup>	bar	PSI
Working pressure	1.0	10	10	145
Seal material *4 Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Silicone rubber	SI	0°C to +110°C	Standard material
	Fluoro rubber	FKM (X-100)	0°C to +180°C	Available on request
	Ethylene-propylene rubber	EPDM (EPT)	0°C to +150°C	Available on request
O-ring size	1.5 S: P38, 2.0 S: P50 (Dimensions, tolerance: refer to JIS B 2401, Hardness: A70±5)			

\*1: All metal parts are equivalent to SUS304 except those exposed to liquid contact.  
 \*2: The dimensions of the weld zone conform to JIS G 3447 stainless steel sanitary pipe.  
 \*3: Please use ferrule couplings conforming to IDF / ISO 2852.  
 \*4: The seal material conforms to article No.3-D-3-(1) Rubber utensils (except nursing utensils) or Containers / Packages. It has passed both material and elution tests specified in the Food sanitation Act and the standards for Food and Food additives (Notice No.370 of 1959 issued by the Ministry of Health and Welfare of Japan). Conforms to standard No.21CFR 177.2600 of the US Food and Drug Administration (FDA).

**Flow Direction**

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

**Interchangeability**  
Sockets and plugs can be connected regardless of end configurations if the size is same.

Suitability for Vacuum		Vacuum pressure: 53 kPa A
Socket only	Plug only	When connected
-	-	Operational

Vacuum performance may vary depending upon working environment and usage conditions.

**Seal part (cross section)**

Because of the structure of this product, dead space is generated when using.

Enlarged view of seal part

**When installing the CUPLA on the pipe**

Connection and disconnection of socket and plug is enabled by sliding either the socket or plug to the central axis of pipe. When connecting the CUPLA to the pipe, ensure that there is at least minimum moving distance (L) in the axial direction.

Amount of sliding (L)  
More than 40 mm

**HACCP: Hazard Analysis and Critical Control Point**  
 HACCP is the management system in which food safety is addressed to the process from production, procurement and handling of raw materials to distribution and consumption of finished products through the analysis and control of biological, chemical and physical hazards.

**Models and Dimensions**

**Plug Welding type**

Model	Mass (g)	Dimensions (mm)	
		L	øB
SEW-1.5P-BW *	179	52	35.7
SEW-2.0P-BW *	231	52	47.8

**Socket Welding type**

Model	Mass (g)	Dimensions (mm)		
		L	H	øB
SEW-1.5S-BW	364	58	(84)	35.7
SEW-2.0S-BW	455	58	(94)	47.8

**Plug Ferrule type**

Model	Mass (g)	Dimensions (mm)		
		L	øD	øB
SEW-1.5P-FR *	224	(73.5)	50.5	35.7
SEW-2.0P-FR *	301	(73.5)	64	47.8

**Socket Ferrule type**

Model	Mass (g)	Dimensions (mm)			
		L	øD	H	øB
SEW-1.5S-FR	407	(79.5)	50.5	(84)	35.7
SEW-2.0S-FR	455	(79.5)	64	(94)	47.8

\* A type without seal material is also available. In such case, the model name ends with "-NP". (ex: SEW-2.0P-BW **-NP**)

**Applications**



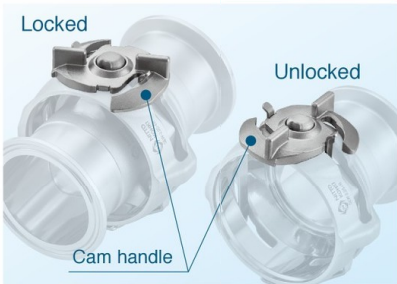
**Easy assembly and disassembly**

No tools are required to disassemble / assemble HYGIENIC CUPLA. Small number of parts that are easy to handle, aiding efficient maintenance.



**Easy washing of the whole unit**

After disassembly, small number of components requires minimum effort when cleaning. No small parts to lose.



**Safety Lock function**

As a safety measure, the "Safety lock" feature ensures that there can be no unintentional disconnection of the CUPLA. By turning the cam handle, you can maintain the connected state of the socket and plug.



**Construction and Safety standards**

Since the O-Ring is attached beforehand, it will not drop off during connection like conventional fittings. And the seal material conforms to article No. 3-D-3-(1) Rubber utensils (except nursing utensils) or Containers / Packages. It has passed both material and elution tests specified in the Food sanitation Act and the standards for Food and Food additives (Notice No.370 of 1959 issued by the Ministry of Health and Welfare of Japan). Also conforms to standard No. 21 CFR 177.2600 of the US Food and Drug Administration (FDA).

**Accessory**

**DUST CAP** Dust cap for both plug and socket (made of polyethylene).

Prevents contamination of foreign matter into piping during separation.

The Dust Cap conforms to No. 3-D-2-(1) and 3-D-2-(2)-4 Apparatus and Containers / Packages. It has passed both material and elution tests specified in the standards for Food and Food additives. (Notice No.201 of revised March 31, 2006 by the Ministry of Health and Welfare of Japan)



See page 150 for the details.

**Consumables**

The O-ring and Lock plate ASSY are consumable items. See the following list as a replacement guide for the Lock plate ASSY.

**Replacement guide**

Replacement parts	Connection and disconnection times
Lock plate ASSY	1000 times

**Lock plate ASSY**



- When the Lock plate ASSY is deformed, replace it with a new one regardless of connection / disconnection times.
- The durability of the O-ring differs depending on the operating environment and conditions (pressure and temperature etc.).

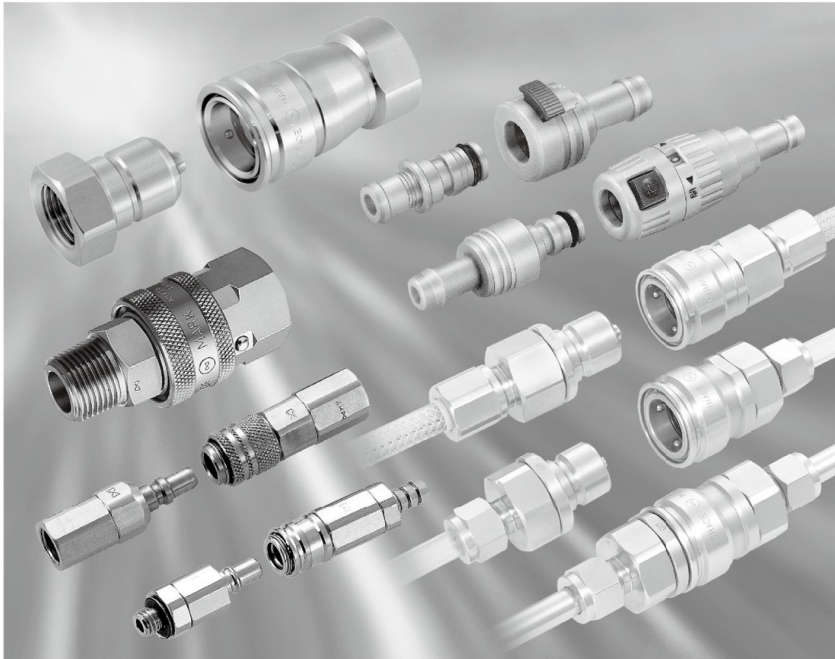
Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.



# Semi-Standard CUPLA Series

Quick Connect Couplings **CUPLA**

## Index



Product Name	Page
<b>C</b> CUPLA with Safety Lock	143
CUPLA with Single Lock	143
<b>H</b> HIGH FLOW CUPLA	145
HIGH FLOW CUPLA BI	146
<b>P</b> PLASTIC CUPLA BC Type	148
PLASTIC CUPLA BCC Type	148
<b>S</b> SP CUPLA Type APV Type <b>NEW</b>	147
<b>T</b> TSP-HP CUPLA for High Pressure	144
Two-way Shut-off Type Small Size CUPLA	144

## CUPLA with Single Lock CUPLA with Safety Lock

Accidental disconnection prevention mechanism

The standard CUPLA series listed on the lower right can have an additional single lock or a safety lock mechanism to prevent accidental disconnection.

- CUPLA with Single Lock**  
 The sleeve is provided with a cutout and the body of the socket has a projecting lock pin or ball. After connecting the CUPLA, simply turn the sleeve to lock the back and forth movement of the sleeve.
- CUPLA with Safety Lock**  
 A sleeve stopper Lock Ring is provided behind the sleeve. After connecting the CUPLA, simply turning the Lock Ring to disable the back and forth movement of the sleeve (see diagram sketch on the right top).



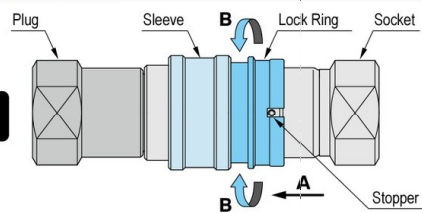
CUPLA with Single Lock

CUPLA with Safety Lock

### How to operate the Safety Lock

#### How to lock

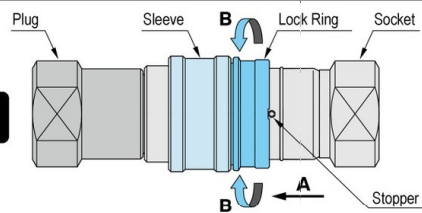
Connected state (before lock)



Slide the Lock Ring in the direction of the arrow A and rotate it in either direction simultaneously. When the Stopper is aligned with the shallow cutout on the Lock Ring, the CUPLA will be locked.

#### How to unlock

Connected state (locked)



Slide the Lock Ring in the direction of the arrow A and rotate it in either direction simultaneously. When the Stopper is aligned with the deeper cutout on the Lock Ring, the CUPLA will be unlocked.

#### CUPLA with Single Lock

HI CUPLA (Brass) / MOLD CUPLA / SP CUPLA Type A / TSP CUPLA / HSP CUPLA / 210 CUPLA  
 \*The above all with single lock are made-to-order.

The following CUPLA come with single lock as standard feature.

HI CUPLA BL / LOCK CUPLA 200 / HSU CUPLA / 350 CUPLA / FLAT FACE CUPLA F35 / FLAT FACE CUPLA FF / 450B CUPLA

#### CUPLA with Safety Lock

SP CUPLA Type A / TSP CUPLA / HSP CUPLA / 210 CUPLA / 350 CUPLA  
 \*The above all with safety lock are made-to-order.

The following CUPLA come with safety lock as standard feature. HOT WATER CUPLA / S210 CUPLA



## Two-way Shut-off Type Small Size CUPLA

For temperature controllers

Working pressure

1.0 MPa  
(10 kgf/cm<sup>2</sup>)    1.5 MPa  
(15 kgf/cm<sup>2</sup>)

Valve structure

Two-way shut-off

Applicable fluids

Water    Gas    Air

- Push-to-connect operation.
- Both socket and plug have built-in automatic shut-off valves to prevent fluid spill out when disconnected.
- Easy connection even in a restricted area.
- Lightweight feature will allow you easy design of multiple piping.



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

Specifications				
Body material	MYU CUPLA		Little CUPLA	
	Stainless steel, Brass (Nickel plated)		Stainless steel	
Size (Thread)	Please check with us.			
Working pressure	MPa	1.0	1.5	
	kgf/cm <sup>2</sup>	10	15	
	bar	10	15	
	PSI	145	218	
Seal material	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-20°C to +80°C	
	Ethylene-propylene rubber	EPDM (EPT)	-40°C to +150°C	
Working temperature range	Fluoro rubber	FKM (X-100)	-20°C to +180°C	Available on request

**Two-way Shut-off Type Small Size CUPLA Series** Please check with us about the end configurations and sizes.

### MYU CUPLA / MYU type

OD 10 mm

Min. Cross-Sectional Area: 4.9 mm<sup>2</sup> (ø2.5)

### LITTLE CUPLA / MSV type

OD 14 mm

Min. Cross-Sectional Area: 6.1 mm<sup>2</sup> (ø2.8)

## TSP-HP CUPLA for High Pressure

For high pressure and general purposes

Working pressure

9.0 MPa  
(92 kgf/cm<sup>2</sup>)

Valve structure

Straight through

Applicable fluids

Water    Hydraulic oil

- Good for high pressure water piping such as in high pressure washers, or car washers.
- Valveless type ensures high flow rate.



Specifications				
Body material	Stainless steel			
Size (Thread)	1/4", 3/8", 1/2"			
Pressure unit	MPa	kgf/cm <sup>2</sup>	bar	PSI
Working pressure	9.0	92	90	1310
Seal material	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-20°C to +80°C	
	Ethylene-propylene rubber	EPDM (EPT)	-40°C to +150°C	
Working temperature range				Available on request

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

**Models and Dimensions** WAF: WAF stands for width across flats.

Plug TPF type (Female thread)						Socket TSF type (Female thread)						
Model	Application (Thread)	Dimensions (mm)				Model	Application (Thread)	Dimensions (mm)				
		L	H(WAF)	C	T			øD	H(WAF)	T		
2TPF-HP	R 1/4	34	Hex.17	18	Rc 1/4	6.5	2TSF-HP	R 1/4	32	24	Hex.19	Rc 1/4
3TPF-HP	R 3/8	38	Hex.21	21	Rc 3/8	10	3TSF-HP	R 3/8	35	28	Hex.23	Rc 3/8
4TPF-HP	R 1/2	47.5	Hex.29	26.5	Rc 1/2	13	4TSF-HP	R 1/2	44.5	35	Hex.29	Rc 1/2

Plug TPM type (Male thread)					
Model	Application (Thread)	Dimensions (mm)			
		L	H(WAF)	C	øB
2TPM-HP	Rc 1/4	38	Hex.17	18	R 1/4 6.5
3TPM-HP	Rc 3/8	43	Hex.19	21	R 3/8 10

**Precautions for use**


**Warning**

Do not connect with standard TSP CUPLA (Page 77 to 80).

# HIGH FLOW CUPLA


**For Medium Pressure**

Working pressure




1.0 MPa  
{10 kgf/cm<sup>2</sup>}

Valve structure



Two-way shut-off

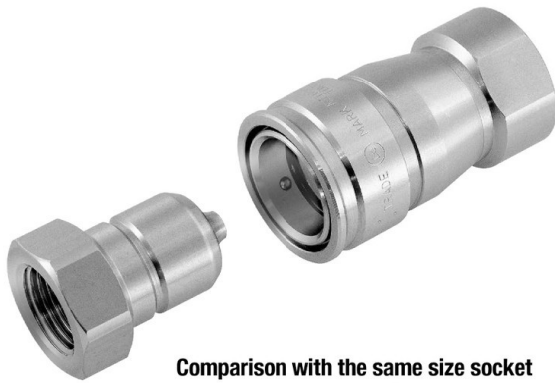
Applicable fluids



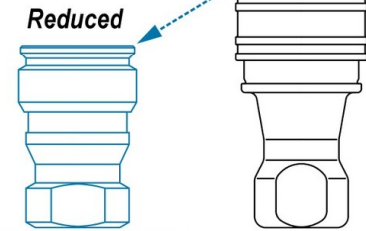
Water  
Temperature control refrigerant

## Drastically increases flow volume while minimizing 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



**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	Seal material	Mark		Working temperature range
	Ethylene-propylene rubber	EPDM		-40°C to +150°C
Working temperature range	Fluoro rubber	FKM		-20°C to +180°C

\* Standard seal material is fluoro rubber for brass body.

Maximum 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

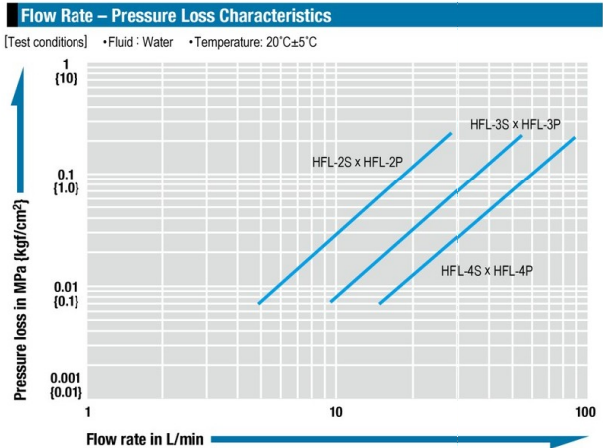
Fluid flow can be bi-directional when socket and plug are connected.

### Interchangeability

Socket and plug of different sizes cannot be connected.

Minimum Cross-Sectional Area (mm <sup>2</sup> )			
Model	HFL-2P / HFL-2S	HFL-3P / HFL-3S	HFL-4P / HFL-4S
Minimum Cross-Sectional Area	32	53	91

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



### Models and Dimensions

WAF : WAF stands for width across flats.

#### Plug Female thread

Model	Application (Thread)	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 (Thread)	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  
Temperature control refrigerant

## 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

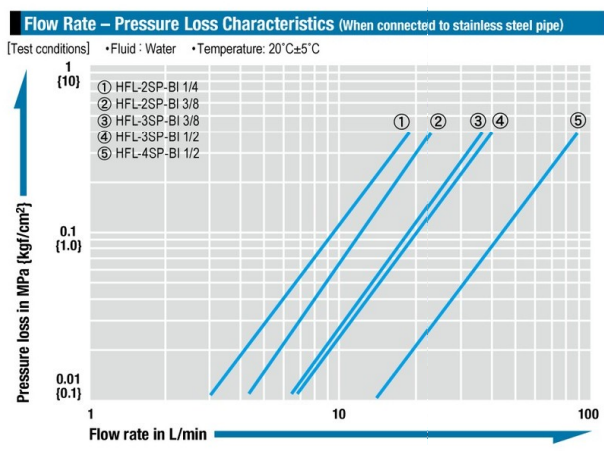
Fluid flow can be bi-directional when socket and plug are connected.



### Interchangeability

Socket and plug of different sizes cannot be connected.

Suitability for Vacuum		
Socket only	Plug only	When connected
-	-	Operational



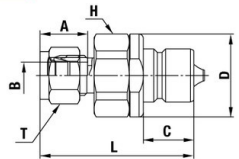
### Stainless steel pipe, hose, and tube size

Model	Stainless steel pipe		Hose connection nut (Optional)		Tube connection insert (Optional)				
	Pipe dia. Inch (mm)	Model	Hose size (ID x OD) mm	Type of insert	Tube dimensions (ID x OD) mm	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
HFL-2SP-BI 3/8	3/8 (ø9.53)	-	-	DTI 4-3	ø4.76 x ø9.53	3.5	11.9	6.35	4.76
		-	-	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
		-	-	DTI 8-4	ø6.35 x ø12.7	4.8	19.1	12.7	6.35
HFL-3SP-BI 1/2	1/2 (ø12.7)	E1-8 x 11	ø6 x ø11	DTI 8-6	ø9.53 x ø12.7	7.9	19.1	12.7	9.53
		E1-8 x 13.5	ø8 x ø13.5	DTI 8-6	ø9.53 x ø12.7	7.9	19.1	12.7	9.53
		E1-8 x 11	ø6 x ø11	DTI 8-6	ø6.35 x ø12.7	4.8	19.1	12.7	6.35
HFL-4SP-BI 1/2	1/2 (ø12.7)	E1-8 x 13.5	ø8 x ø13.5	DTI 8-6	ø9.53 x ø12.7	7.9	19.1	12.7	9.53
		E1-8 x 11	ø6 x ø11	DTI 8-6	ø6.35 x ø12.7	4.8	19.1	12.7	6.35

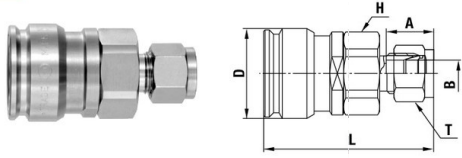
Note: The material of tube to be applied must be any of nylon, polyester, polypropylene, or Teflon. The nut for stainless steel pipe comes with standard HIGH FLOW CUPLA. When a hose or tube is connected to the CUPLA, an optional hose connection nut or tube connection insert is required.

### Models and Dimensions

#### Plug For pipe connection



#### Socket For pipe connection

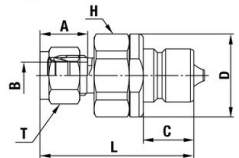


Model	Application (Pipe size) (mm)	Mass (g)	Dimensions (mm)						
			L	C	A	øD	øB	H(WAF)	T(WAF)
HFL-2P-BI 1/4	6.35 (1/4")	66	(51.9)	16.5	(15.4)	23	(6.35)	Hex.20.64 (13/16")	Hex.14.29 (9/16")
HFL-2P-BI 3/8	9.53 (3/8")	74	(53.4)	16.5	(17)	23	(9.53)	Hex.20.64 (13/16")	Hex.17.46 (11/16")
HFL-3P-BI 3/8	9.53 (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")

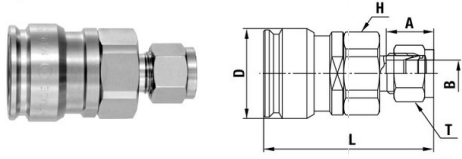
Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.

### Models and Dimensions

#### Plug For pipe connection



#### 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")	



# SP CUPLA Type A PV Type

For Medium Pressure / Connectable with residual pressure With Purge Valve

**Working pressure**  
2.0 to 4.5 MPa  
(20 to 46 kgf/cm<sup>2</sup>)

**Valve structure**  
Two-way shut-off

**Applicable fluids**  
Water Hydraulic oil

## Equipped with residual pressure eliminating valve (up to 1 MPa).

- Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection.
- Smooth connection even when there is residual pressure when connecting.
- No residual pressure eliminating operation required on your piping. Just connect to purge the remaining pressure.



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									
May vary depending upon the usage conditions.									
Model	6S-A-PV x 6P-A	6P-A-PV x 6S-A	8S-A-PV x 8P-A	8P-A-PV x 8S-A	10S-A-PV x 10P-A	10P-A-PV x 10S-A	12S-A-PV x 12P-A	12P-A-PV x 12S-A	
Volume of air	11		17		29		45		

Volume of Spillage per Disconnection									
May vary depending upon the usage conditions.									
Model	6S-A-PV x 6P-A	6P-A-PV x 6S-A	8S-A-PV x 8P-A	8P-A-PV x 8S-A	10S-A-PV x 10P-A	10P-A-PV x 10S-A	12S-A-PV x 12P-A	12P-A-PV x 12S-A	
Volume of spillage	8.4		12		26		36		

### Models and Dimensions

Plug		Female thread						
Model	Application (Thread)	Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	L	C	H (WAF)	T	
6P-A-PV	R 3/4	204	189	52	36	Hex.35	Rc 3/4	
8P-A-PV	R 1	330	307	62	40	Hex.41	Rc 1	
10P-A-PV	R 1 1/4	627	617	70	45	Hex.54 (*)	Rc 1 1/4	
12P-A-PV	R 1 1/2	917	877	75	49	Hex.63 (**)	Rc 1 1/2	

(\*) Stainless steel: WAF 54 x ø59 (\*\*) Stainless steel: WAF 63 x ø68

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

### Specifications

Body material		Brass, Stainless steel (SUS304)								
Model		6S-A-PV	6P-A-PV	8S-A-PV	8P-A-PV	10S-A-PV	10P-A-PV	12S-A-PV	12P-A-PV	
		Socket	Plug	Socket	Plug	Socket	Plug	Socket	Plug	
Size (Thread)		Rc 3/4		Rc 1		Rc 1 1/4		Rc 1 1/2		
Working pressure	Brass	MPa	3.0				2.0			
		kgf/cm <sup>2</sup>	31				20			
		bar	30				20			
	Stainless steel	MPa	4.5				3.0			
		kgf/cm <sup>2</sup>	46				31			
		bar	45				30			
PSI	653				435					
Connectable residual pressure*		1.0 MPa, 10 kgf/cm <sup>2</sup> , 10 bar, 145 PSI								
Seal material		Nitrile rubber		NBR (SG)		Working temperature range		Remarks		
Working temperature range		-20°C to +80°C Standard material								

\* The allowable residual pressure that can be connected when the fluid is limited to liquid.

Maximum Tightening Torque				Nm (kgf·cm)
Size (Thread)	Brass	Stainless steel		
Rc 3/4	50 {510}	90 {918}	65 {663}	150 {1530}
Rc 1	120 {1224}	260 {2652}	180 {1836}	280 {2856}

### Flow Direction

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



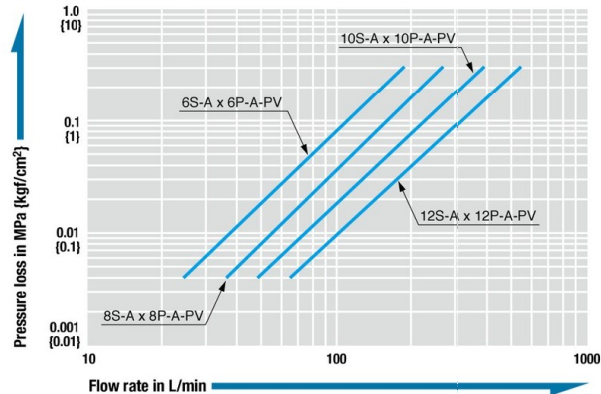
### Interchangeability

Socket and plug of different sizes cannot be connected. Can be connected with SP CUPLA Type A AND SP-V CUPLA of the same size. Refrain from connecting SP CUPLA Type A PV together, since the residual pressure will not release.

Minimum Cross-Sectional Area								
Model	6S-A-PV x 6P-A	6P-A-PV x 6S-A	8S-A-PV x 8P-A	8P-A-PV x 8S-A	10S-A-PV x 10P-A	10P-A-PV x 10S-A	12S-A-PV x 12P-A	12P-A-PV x 12S-A
Min. Cross-Sectional Area	178		229		395		553	

### Flow Rate - Pressure Loss Characteristics

[Test conditions] • Fluid : Water • Temperature: 25°C±5°C



WAF : WAF stands for width across flats.


Socket		Female thread						
Model	Application (Thread)	Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	L	øD	H (WAF)	T	
6S-A-PV	R 3/4	685	644	88	55	WAF 35	Rc 3/4	
8S-A-PV	R 1	1021	959	102	65	WAF 41	Rc 1	
10S-A-PV	R 1 1/4	1517	1437	115	77	WAF 54	Rc 1 1/4	
12S-A-PV	R 1 1/2	2267	2147	124	88	WAF 63	Rc 1 1/2	

**Safety Guide:** This product can be connected under residual pressure, but do not connect under dynamic pressure applied. It may lead to incomplete connection, deteriorated durability or possible valve fly out. Read without fail and observe the "Instruction sheet" that comes with the product and the following pages in the general Quick Connect Coupling Catalog: "Precautions Relating to the Use of All CUPLA" and "CUPLA for Low Pressure (Water, Liquid) and for Medium Pressure" in the [Safety Guide] page.

## PLASTIC CUPLA BC Type Valveless


For low pressure air piping

Working pressure




0.07 MPa  
(0.7 kgf/cm<sup>2</sup>)

Valve structure



Straight through

Applicable fluid



Air

- To connect, just push the plug into the socket.
- Plastic makes this ideal for use in environment prone to rusting.
- Compact and light weight for easy handling.
- Valveless construction gives more stable flow.




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

## PLASTIC CUPLA BCC Type with Flow Controller


For low pressure air piping

Working pressure




0.07 MPa  
(0.7 kgf/cm<sup>2</sup>)

Valve structure



One-way shut-off

Applicable fluid



Air

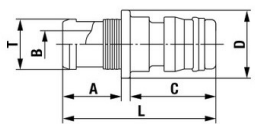

- To connect, just push the plug into the socket.
- Plug with built-in automatic shut-off valve.
- Socket with handy flow controller.
- Plastic makes this ideal for use in environments prone to rusting.
- Compact and light weight for excellent handling.

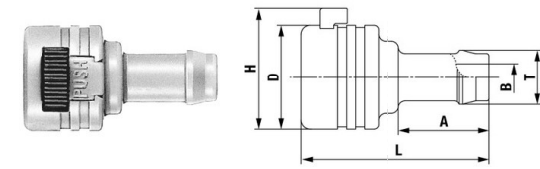


Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.

Specifications				
Body material	Plastic			
Size	1/4", 3/8" hose			
Pressure unit	MPa	kgf/cm <sup>2</sup>	bar	PSI
Working pressure	0.07	0.7	0.7	10.2
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C to +50°C	Standard material

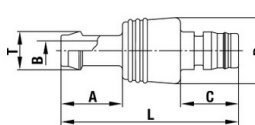

**Models and Dimensions** WAF : WAF stands for width across flats.

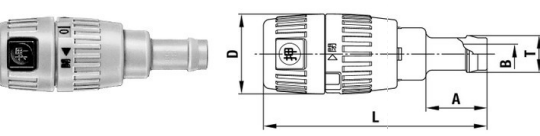
Plug		PH type (Hose barb)								
 		Dimensions (mm)								
		L	C	A	øB	øT	øD			
Model	Application (Hose)	Mass (g)								
BC-2PH	1/4"	1.8	41	19	17	4	8.5	14		
BC-3PH	3/8"	2	34	19	13	6	10.9	15		

Socket		SH type (Hose barb)								
		Dimensions (mm)								
		L	A	øB	øT	øD	H			
Model	Application (Hose)	Mass (g)								
BC-2SH	1/4"	5.6	38	17	4	8.5	23	(26.5)		
BC-3SH	3/8"	6	41	20	6	12	23	(26.5)		

Specifications				
Body material	Plastic			
Size	3/8" hose			
Pressure unit	MPa	kgf/cm <sup>2</sup>	bar	PSI
Working pressure	0.07	0.7	0.7	10.2
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C to +50°C	Standard material

**Models and Dimensions** WAF : WAF stands for width across flats.

Plug		PH type (Hose barb)								
 		Dimensions (mm)								
		L	C	A	øD	øT	øB			
Model	Application (Hose)	Mass (g)								
BCV-3PH	3/8"	10	(58)	19	20	21	12	6		

Socket		SH type (Hose barb)								
		Dimensions (mm)								
		L	øD	A	øT	øB				
Model	Application (Hose)	Mass (g)								
BCC-3SH	3/8"	25	(73)	20	12	6				



