



ISO 14001  
JQA-EM4057  
NITTO KOHKI CO., LTD.  
Headquarters  
Research Center



ISO 9001  
JQA-2025  
NITTO KOHKI CO., LTD.  
Couplings Division

Cat.No. **Ck040**

# Nitto Kohki's **CUPLA**

**Quick Connect Couplings**



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## Quick Connect Couplings

# CUPLA



# “CUPLA” Quick Connect Couplings

Nitto Kohki’s unique technologies and dedicated research have been proven by numerous patents, which led to the development of 25,000 different Cupla variations.

- Applications diversify from general household to high-tech industries such as in oceanic and space development.
- Diameters range from a tiny 1mm to a huge 540mm.
- Wide varieties of body materials such as steel, brass, plastic, aluminum or stainless steel are available.

For easy replacements:

*Replacements of pneumatic / hydraulic tools, pneumatic / hydraulic cylinders, mold attachments, etc.*

For temporary installation in test line:

*Vacuum tests, pressure durability tests, leakage tests, running tests, etc.*

For filling:

*For filling up various industrial gases, including inert gases, nitrogen, LPG, carbon dioxide, oxygen, fuel gas, etc.*

For maintenance services:

*For computer cooling system, hydraulic cylinders in die-casting machines.*

For transfer:

*For transfer of solid items through pipes such as screws and nuts as well as for electric power cable lines.*

As joints:

*Applications other than fluid transfer covering connections for holding works while anchored or carried around.*

*A profusion of patented technology crystallized in global users recognition of high quality and high performance.*

## ISO 9001 and 14001 Certification Award

“Cuplas” quick connect couplings are produced as the crystallization of high-grade know-how nurtured in the fields of fluid engineering and materials engineering, and top level precision machining technology. Having assessed Nitto Kohki consistent quality assurance and control system ranging from design and development through procurement of material, manufacture, assembly, and shipping, the Japan Quality Assurance Foundation, authority for inspection and registration, awarded us “ISO 9001”, international standard for quality management systems, and “ISO 14001”, international standard for environment management systems intended to perform global environment preservation and pollution control. High reliability built on unparalleled “high quality” and accumulated history of “productivity” for stable supply. Cupla is receiving overwhelming support from many users spread all over the world as the top brand for fluid energy transmission and control.



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# CUPLA






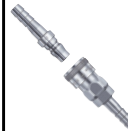

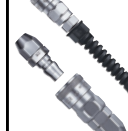
## Beware of imitations

Recently on the market, there have appeared similar products that invite misidentification or confusion with Nitto Kohki Cuplas, or such products that claim to have compatible mating parts. Nitto Kohki cannot accept responsibility for any accident that may result by mixed use with a coupling of another brand that seems connectable to a Nitto Kohki Cupla. Nitto Kohki Cuplas are produced with their own unique tolerances and precision under strict quality control, and are not interchangeable with other couplings that are not under such tolerances. Therefore, connection to other brand of coupling may end up with abrupt breakdown or personal injury. Please be sure to check for our marks below, which are always inscribed on Nitto Kohki Cupla products, when you order and purchase.



# Guide for Selecting "NITTO" Standard Cuplas

This chart will let you quickly select an appropriate Cupla for your application. For technical data, please refer to the detailed information pages of each Cupla, Seal Material Selection Table and Body Material Selection Table at the end of this catalog.

Applicable fluid		For Low Pressure (Air)							
Name		Micro Cupla	Small Cupla	Compact Cupla	Cube Cupla	Super Cupla	Hi Cupla	Hi Cupla 200	Nut Cupla Rotary Nut Cupla
Photo									
Body material • Working pressure (MPa)	Brass	1.0	0.7	1.0			1.0		
	Stainless steel	1.0		1.0			1.5		
	Steel					1.0	1.5	1.5	1.5
	Plastic				1.0				
	Others	1.0	0.7			1.0			
Body surface treatment		Chrome-plated (Brass only)	Chrome-plated Nickel-plated (With Tube Fitter only)	—	—	Chrome-plated (Steel only) Nickel-plated (With Tube Fitter only)	Chrome-plated (Steel only)	Chrome-plated	Chrome-plated
Size	1/8"		○	○	○	○	○		
	1/4"		○			○	○	○	
	5/16"								
	3/8"						○	○	
	1/2"						○	○	
	3/4"						○		
	1"						○		
	1 1/4"								
	1 1/2"								
	2"								
	2 1/2"								
	3"								
	4"								
Others	○	○	○	○	○	○	○	○	
Working temperature range		-20°C~+80°C (NBR)	-20°C~+80°C (NBR)	-20°C~+180°C (FKM)	-20°C~+60°C (NBR)	-20°C~+80°C (NBR)	-20°C~+80°C (NBR)	-20°C~+60°C (NBR)	-20°C~+60°C (NBR)
Seal material		NBR, FKM	NBR	FKM, EPDM	NBR	NBR, FKM	NBR, FKM	NBR	NBR
Connection method	Manual			○			○		○
	Push-to-connect	○	○		○	○	○	○	
Valve structure	Two-way shut-off			○	○				
	Two-way shut-off (Non-Spill)								
	One-way shut-off	○	○		○	○	○	○	○
	Straight through				○				
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## Guide for Selecting "NITTO" Standard Cuplas

This chart will let you quickly select an appropriate Cupla for your application. For technical data, please refer to the detailed information pages of each Cupla, Seal Material Selection Table and Body Material Selection Table at the end of this catalog.

For Low Pressure (Air)									
Nut Cupla 200	Lock Cupla 200	Hi Cupla Two Way Type	Full-Blow Cupla	Purge Hi Cupla PVR	Purge Hi Cupla	Purge Line Cupla	Rotary Line Cupla	Line Cupla 200T/L/S	Rotary Full-Blow Line Cupla
									
					1.0	1.0			
1.5	1.5	1.5							
			1.5	1.5			1.5	1.5	1.5
Chrome-plated	Chrome-plated	Chrome-plated	—	—	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	—
	○	○	○		○				
	○	○	○		○				
	○	○	○	○	○	○	○		○
				○	○				
				○					
○	○		○				○	○	○
-20°C~+60°C (NBR)	-20°C~+60°C (NBR)	-20°C~+80°C (NBR)	-20°C~+60°C (NBR)	-20°C~+60°C (NBR)	-20°C~+60°C (NBR)	-20°C~+60°C (NBR)	-20°C~+60°C (NBR)	-20°C~+60°C (NBR)	-20°C~+60°C (NBR)
NBR	NBR	NBR, FKM	NBR	NBR	NBR	NBR	NBR	NBR	NBR
		○					○		
○	○		○	○	○	○		○	○
○	○	○	○	○	○	○	○	○	○
33	35	36	37	39	41	42	43	45	47











## Guide for Selecting "NITTO" Standard Cuplas

This chart will let you quickly select an appropriate Cupla for your application. For technical data, please refer to the detailed information pages of each Cupla, Seal Material Selection Table and Body Material Selection Table at the end of this catalog.

Applicable fluid		For Low Pressure (Air)							
Name		Hi Cupla Ace	Rotary Plug	Twist Plug	Purge Plug	Anti-Vibration Plug Hose	Anti-Vibration Plug VA Type	Duster Cupla	Oil Cupla
Photo									
Body material • Working pressure (MPa)	Brass								
	Stainless steel								
	Steel		1.0, 1.5	1.0	1.0				
	Plastic	1.0, 1.5							
	Others					1.5	1.5	1.0	1.5
Body surface treatment		—	Nickel-plated	Nickel-plated	Chrome-plated	—	Chrome-plated	Chrome-plated	Chrome-plated
Size	1/8"			○					
	1/4"	○	○	○	○	○	○	○	
	5/16"								
	3/8"	○	○	○	○	○	○	○	
	1/2"				○			○	
	3/4"								
	1"								
	1 1/4"								
	1 1/2"								
	2"								
	2 1/2"								
	3"								
	4"								
Others	○			○			○	○	
Working temperature range		-20°C~+60°C (NBR)	-20°C~+80°C (NBR)	-20°C~+60°C (NBR)	-20°C~+60°C (NBR)	-5°C~+60°C	-5°C~+60°C	-20°C~+60°C (NBR)	-20°C~+60°C (NBR)
Seal material		NBR	NBR	NBR	NBR	—	—	NBR	NBR
Connection method	Manual							○	○
	Push-to-connect	○							
Valve structure	Two-way shut-off								
	Two-way shut-off (Non-Spill)								
	One-way shut-off	○						○	○
	Straight through								
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## Guide for Selecting “NITTO” Standard Cuplas

This chart will let you quickly select an appropriate Cupla for your application. For technical data, please refer to the detailed information pages of each Cupla, Seal Material Selection Table and Body Material Selection Table at the end of this catalog.

For Low Pressure (Air)		For Oxygen and Fuel Gas		For Low Pressure (Water)					
NK Cupla Hose	NK Cupla Coil Hose	Mini Cupla	Mini Cupla Super	Micro Cupla	Small Cupla	Compact Cupla	Cube Cupla	Hi Cupla	Hi Cupla Ace
									
		0.7	0.7	1.0	0.7	1.0		1.0	
				1.0		1.0		1.5	
			0.7						
							1.0		1.0, 1.5
1.0	0.7			1.0					
Chrome-plated (Plug only)	Chrome-plated (Plug only)	—	Chrome-plated	Chrome-plated (Brass only)	Chrome-plated	—	—	—	—
					○	○	○	○	
		○	○		○			○	○
		○	○					○	
		○	○					○	○
								○	
								○	
								○	
								○	
○	○	○	○	○		○	○		
-20°C~+60°C (NBR)	-20°C~+60°C (NBR)	-20°C~+80°C (NBR)	-20°C~+80°C (NBR)	-20°C~+80°C (NBR)	-20°C~+80°C (NBR)	-20°C~+180°C (FKM)	-20°C~+60°C (NBR)	-20°C~+80°C (NBR)	-20°C~+60°C (NBR)
NBR	NBR	NBR	NBR	NBR, FKM	NBR	FKM, EPDM	NBR	NBR, FKM	NBR
						○		○	
○	○	○	○	○	○		○		○
						○	○		
○	○	○	○	○	○		○	○	○
							○		
56	56	57	59	19	21	23	25	29	49

## Guide for Selecting “NITTO” Standard Cuplas

This chart will let you quickly select an appropriate Cupla for your application. For technical data, please refer to the detailed information pages of each Cupla, Seal Material Selection Table and Body Material Selection Table at the end of this catalog.

Applicable fluid		For Low Pressure (Water)				For Medium Pressure	For High Pressure		
Name		Mold Cupla	Mold Cupla High flow type	Flow Meter	Lever Lock Cupla	TSP Cupla	SP Cupla Type A	HSP Cupla	Hyper HSP Cupla
Photo									
Body material • Working pressure (MPa)	Brass	1.0	1.0			5.0,3.0,2.0,1.5	5.0,3.0,2.0,1.5		
	Stainless steel				1.8, 1.6, 1.1	7.5,4.5,3.0,2.0	7.5,4.5,3.0,2.0		
	Steel					7.5,4.5,3.0,2.0	7.5,4.5,3.0,2.0	20.6,18.0,14.0	20.6
	Plastic				0.5, 0.2				
	Others			0.5	1.8,1.1,0.9,0.7				
Body surface treatment		—	—	—	—	Nickel-plated (Steel only)	Nickel-plated (Steel only)	Nickel-plated	Nickel-plated
Size	1/8"	○				○	○		
	1/4"	○	○			○	○	○	○
	5/16"								
	3/8"	○	○	○		○	○	○	○
	1/2"		○			○	○	○	○
	3/4"				○	○	○	○	○
	1"				○	○	○	○	○
	1 1/4"				○	○	○	○	○
	1 1/2"				○	○	○	○	○
	2"				○	○	○	○	○
	2 1/2"				○				
	3"				○				
	4"				○				
Others						○			
Working temperature range		-20°C~+80°C (NBR)	-20°C~+80°C (NBR)	+10°C~+60°C (NBR)	-20°C~+80°C (NBR) +5°C~+50°C (PP body)	-20°C~+80°C (NBR)	-20°C~+80°C (NBR)	-20°C~+80°C (NBR)	-20°C~+80°C (NBR)
Seal material		NBR, FKM	NBR, FKM	NBR	NBR, FKM, SI, EPDM	NBR, FKM, EPDM	NBR, FKM, EPDM	NBR, FKM	NBR
Connection method	Manual				○	○	○	○	○
	Push-to-connect	○	○						
Valve structure	Two-way shut-off						○	○	○
	Two-way shut-off (Non-Spill)								
	One-way shut-off	○	○						
	Straight through	○	○		○	○			
Detailed information page		61	63	64	65	69	71	73	75









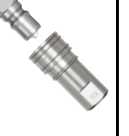
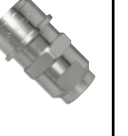
## Guide for Selecting “NITTO” Standard Cuplas

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For High Pressure									For Multi-Port Connection (Manual)
Super HSP Cupla	210 Cupla	S210 Cupla	280 Cupla	350 Cupla	Flat Face Cupla F35	Flat Face Cupla FF	450B Cupla	700R Cupla	Multi Cupla MAM Type
									
									0.7
20.6	20.6	20.6	31.5, 27.5	34.5	35	35	44.1	68.6	
Nickel-plated	Nickel-plated	—	Bright chromate conversion coating	Nickel-plated	Nickel-plated	Autocatalytic nickel-phosphorus coating	Nickel-plated	Nickel-plated	Chrome-plated
○	○	○	○	○					○
○	○	○	○	○	○	○	○	○	
○	○	○	○	○	○	○	○	○	
○	○	○	○	○	○	○			
○	○	○	○	○	○	○			
				○					
				○					
				○					
-20°C~+80°C (NBR)	-20°C~+80°C (NBR)	-20°C~+180°C (FKM)	-20°C~+80°C (NBR)	-20°C~+180°C (FKM)	-20°C~+180°C (FKM)	-20°C~+80°C (NBR)	-20°C~+80°C (NBR)	-20°C~+80°C (NBR)	-20°C~+60°C (NBR)
NBR	NBR, FKM	FKM, NBR	NBR	FKM, NBR	FKM, NBR	NBR	NBR, FKM	NBR, FKM	NBR
○	○	○	○	○	○	○	○	○	
○	○	○	○	○	○	○	○	○	○
77	79	81	83	85	87	89	91	92	93






## Guide for Selecting "NITTO" Standard Cuplas

This chart will let you quickly select an appropriate Cupla for your application. For technical data, please refer to the detailed information pages of each Cupla, Seal Material Selection Table and Body Material Selection Table at the end of this catalog.

Applicable fluid		For Multi-Port Connection (Manual)		For Multi-Port Connection (Automatic)			For High Purity Chemicals		
Name		Multi Cupla MAM-B Type	Multi Cupla MAM-A Type	Multi Cupla MAS/MAT	Multi Cupla MALC-SP	Multi Cupla MALC-HSP	Semicon Cupla SP Type	Semicon Cupla SCS Type	Semicon Cupla SCY Type
Photo									
Body material • Working pressure (MPa)	Brass	1.0	1.0						
	Stainless steel			7.0	5.0		0.2	0.2	0.2
	Steel					21.0			
	Plastic								
	Others								
Body surface treatment		Nickel-plated	Nickel-plated	Autocatalytic nickel-phosphorus coating	Autocatalytic nickel-phosphorus coating	Autocatalytic nickel-phosphorus coating	Electropolished	Electropolished	Electropolished
Size	1/8"	○					○	○	○
	1/4"	○	○	○	○	○	○	○	○
	5/16"								
	3/8"		○	○	○	○	○	○	○
	1/2"		○	○	○	○	○	○	○
	3/4"			○	○	○	○	○	○
	1"			○			○	○	○
	1 1/4"								
	1 1/2"								
	2"								
	2 1/2"								
	3"								
	4"								
Others									
Working temperature range		-20°C~+180°C (FKM)	-20°C~+180°C (FKM)	-20°C~+180°C (FKM)	-20°C~+180°C (FKM)	-20°C~+180°C (FKM)	0°C~+50°C (FKM)	0°C~+50°C (P)	0°C~+50°C (P)
Seal material		FKM	FKM	FKM	FKM	FKM	FKM, EPDM, P, KL	P, EPDM, FKM (O-ring for socket)	P (Packing seal for socket)
Connection method	Manual						○	○	○
	Push-to-connect								
Valve structure	Two-way shut-off	○	○	○			○	○	○
	Two-way shut-off (Non-Spill)				○	○			
	One-way shut-off								
	Straight through								
Detailed information page		95	99	103	105	107	109	110	111

## Guide for Selecting “NITTO” Standard Cuplas

This chart will let you quickly select an appropriate Cupla for your application. For technical data, please refer to the detailed information pages of each Cupla, Seal Material Selection Table and Body Material Selection Table at the end of this catalog.



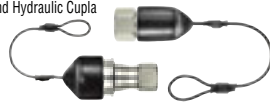

















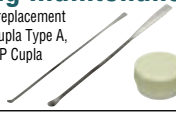


For High Purity Chemicals		For Paint	For Inert Gas and Vacuum		
Semicon Cupla SCT Type	Semicon Cupla SCF Type	Paint Cupla	SP-V Cupla	PCV Pipe Cupla	
					
			5.0, 3.0	4.5	
		1.0	7.5, 4.5		
0.2	0.2				
		1.0			
—	—	—	—	—	
○	○		○	○	
○	○	○	○	○	
○			○		
○			○		
○					
	○			○	
+5°C~+50°C (FKM)	+5°C~+50°C (FKM)	0°C~+50°C (PFA)	-20°C~+80°C (CR)	-20°C~+80°C (CR)	
FEP-coated FKM	FEP-coated FKM	PFA	CR, FKM, HNBR	CR, FKM, HNBR	
○	○	○	○	○	
○	○		○		
		○			
				○	
112	113	114	115	117	

# Semi-standard Cupla Series

“Semi-standard Cupla Series” are products with an already established record but are not standard stock items.

# Accessories

# Special Made-to-Order Cuplas

Cupla Safety Mechanism		For Water	Accessories	For Inert Gases
<b>Cupla with Single Lock</b> <sup>119</sup> Disconnection fail-safe mechanism 	<b>TSP-HP Cupla (for High Pressure)</b> <sup>121</sup> High pressure and general purpose type  Valve structure: Straight through Working pressure : 9.0MPa (91.8kgf/cm <sup>2</sup> ) Body material : Stainless steel Application : 1/4"~1/2" Seal material : NBR, etc.	<b>Dip Mold Cap</b> <sup>123</sup> Dust caps for Hi Cupla, SP Cupla Type A, TSP Cupla, and Hydraulic Cupla 	<b>Charge Cupla CS Type</b> For industrial gases Connectable to SP-V Cupla plugs  Valve structure: Two-way shut-off Working pressure : 3.0MPa (31kgf/cm <sup>2</sup> ) Body material : Stainless steel (some parts are made of aluminum and brass) Application : 1/4", 3/8" Seal material : CR, FKM	
<b>Cupla with Safety Lock</b> <sup>119</sup> Disconnection fail-safe mechanism 	<b>For Low Pressure (air)</b>		<b>Safety Cap</b> <sup>123</sup> Metal caps for Hi Cupla Series, SP Cupla Type A, TSP Cupla and Hydraulic Cupla •Semi-standard 	<b>Charge Cupla CNR Type</b> For industrial gases Connectable to SP-V Cupla plugs  Valve structure: Two-way shut-off Working pressure : 4.5MPa (46kgf/cm <sup>2</sup> ) Body material : Stainless steel (some parts are made of aluminum and brass) Application : 3/8", 1/2" Seal material : CR, HNBR
	<b>Plastic Cupla BC Type</b> <sup>122</sup> Valveless type for low pressure air piping  Valve structure: Straight through Working pressure : 0.07MPa (0.7kgf/cm <sup>2</sup> ) Body material : Plastic Application : 1/4", 3/8" Seal material : NBR	<b>Protection Cover</b> <sup>124</sup> Plastic Cover for Nut Cupla and Full-Blow Cupla Nut Type 	<b>Auto Cupla AC Type</b> For industrial gases Connectable to SP-V Cupla plugs  Valve structure: Two-way shut-off Working pressure : 3.0MPa (31kgf/cm <sup>2</sup> ) Body material : Stainless steel (some parts are made of aluminum and brass) Application : 1/4", 3/8" Seal material : CR, FKM, NBR	
<b>For Temperature Controllers</b>		<b>Plastic Cupla BCC Type</b> <sup>122</sup> Equipped with flow controller for low pressure air piping  Valve structure: One-way shut-off Working pressure : 0.07MPa (0.7kgf/cm <sup>2</sup> ) Body material : Plastic Application : 3/8" Seal material : NBR	<b>Dust Cap</b> <sup>124</sup> Plastic cap for Hi Cupla Series 	<b>Auto Cupla ACV Type</b> For industrial gases Connectable to SP-V Cupla plugs  Valve structure: Two-way shut-off Working pressure : 3.0MPa (31kgf/cm <sup>2</sup> ) Body material : Stainless steel (some parts are made of aluminum and brass) Application : 1/4", 3/8" Seal material : CR, FKM, NBR
<b>High Flow Cupla</b> <sup>120</sup> For piping to control temperatures Applicable fluid: Water, Heat transfer fluids  Valve structure: Two-way shut-off Working pressure : 1.0MPa (10kgf/cm <sup>2</sup> ) Body material : Stainless steel, brass Application : 1/4"~1/2" Seal material : EPDM, FKM	<b>High Flow Cupla BI Type</b> <sup>120</sup> High Flow Cupla with ferrule flange mount Applicable fluid: Water, Heat transfer fluids  Valve structure: Two-way shut-off Working pressure : 1.0MPa (10kgf/cm <sup>2</sup> ) Body material : Stainless steel Application : 1/8"~1/2" Seal material : EPDM, FKM	<b>Drain Cock / Pressure Gauge</b> <sup>124</sup> Accessories for Air Lines of Hi Cupla Series 	<b>Airless Cupla CNA Type</b> For industrial gases  Valve structure: Two-way shut-off Working pressure : 3.0MPa (31kgf/cm <sup>2</sup> ) Body material : Stainless steel Application : 3/8" Seal material : FKM, EPDM	
<b>MYU Cupla</b> <sup>121</sup> For small bore piping (max.10mm outer diameter) to control temperatures Applicable fluid : Water, gas, air  Valve structure: Two-way shut-off Working pressure : 1.0MPa (10kgf/cm <sup>2</sup> ) Body material : Stainless steel, brass (nickel-plated) Application : Please let us know the required sizes and end configurations. Seal material : NBR, EPDM, FKM	<b>Little Cupla</b> <sup>121</sup> For small bore piping (max.14mm outer diameter) to control temperatures Applicable fluid : Water, gas, air  Valve structure: Two-way shut-off Working pressure : 1.0MPa (10kgf/cm <sup>2</sup> ) Body material : Stainless steel, brass (chrome-plated) Application : Please let us know the required sizes and end configurations. Seal material : NBR, EPDM, FKM	<b>Sleeve Stopper</b> <sup>124</sup> Sleeve Stopper for SP Cupla Type A 		
		<b>Accessories for O-ring maintenance</b> <sup>125</sup> Jigs & grease for replacement of O-rings in SP Cupla Type A, TSP Cupla and HSP Cupla 		
		<b>Residual Pressure Release Jig</b> <sup>125</sup> Residual Pressure Release Jig for SP Cupla and Hydraulic Cuplas 		
		<b>Purge Adapter</b> <sup>125</sup> Metal Purge Adapter for Hydraulic lines •Semi-standard 		

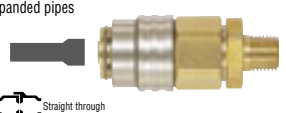
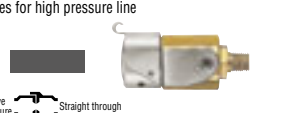


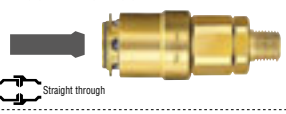
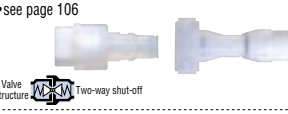

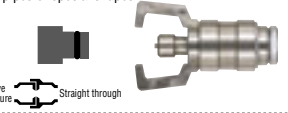
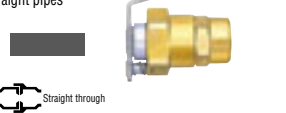





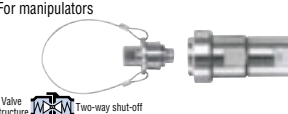


**When placing your order:**  
 Please select your appropriate combination from the column in each product page (on the right beside the product name) then decide the seal and body materials from the selection tables listed at the end of the catalog.



# Special Made-to-Order Cuplas

Nitto Kohki is developing Cuplas with various functions and specifications to suit respective user's applications. The Cuplas on this page are examples of such.

**When placing your order:**  
Please ask about the details, since the Cuplas in this group are special made-to-order items.

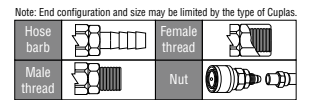
For Gases and Liquids (Pipe Cupla Series)		For Inert Gas and Vacuum	For High Purity Chemicals	Automatic Multi Cupla
<p><b>PCB Cupla</b> For expanded pipes</p>  <p>Valve structure: Straight through</p> <p>Working pressure: To be defined after consultation. Body material: Brass (some of the parts are of stainless steel) Pipe sizes: To be complied with your requirements. Seal material: CR, FKM, NBR</p>	<p><b>PCA Cupla</b> Pipes for high pressure line</p>  <p>Valve structure: Straight through</p> <p>Working pressure: To be defined after consultation. Body material: Brass (some of the parts are of stainless steel and steel) Pipe sizes: To be complied with your requirements. Seal material: CR, FKM, NBR</p>	<p><b>Semicon Cupla SML Type</b> For semiconductor manufacturing equipment</p>  <p>Valve structure: Two-way shut-off</p> <p>Working pressure: 0.2MPa (2kgf/cm<sup>2</sup>) Body material: Stainless steel Application: 1/8", 1/4" Seal material: FKM, EPDM, others</p>	<p><b>Multi Cupla AMCS-FA Type</b> Full automatic operation type</p>  <p>Valve structure: Two-way shut-off</p> <p>Working pressure: To be decided after consultation. Body material: To be decided after consultation. Application: To be decided after consultation. Seal material: To be decided after consultation.</p>	
<p><b>PCBW Cupla</b> For bulged pipes and spool pipes</p>  <p>Valve structure: Straight through</p> <p>Working pressure: To be defined after consultation. Body material: Brass (some of the parts are of stainless steel) Pipe sizes: To be complied with your requirements. Seal material: CR, FKM, NBR</p>	<p><b>PCIO Cupla</b> For pipes that have inner locking system</p>  <p>Valve structure: Straight through</p> <p>Working pressure: To be defined after consultation. Body material: Stainless steel (some of the parts are of brass) Pipe sizes: To be complied with your requirements. Seal material: CR, FKM, NBR</p>	<p><b>Semicon Cupla scf Straight Type</b> For semiconductor manufacturing equipment • see page 106</p>  <p>Valve structure: Two-way shut-off</p> <p>Working pressure: 0.2MPa (2kgf/cm<sup>2</sup>) Body material: Fluorine contained resin Application: 3/8", 1/2" Seal material: FEP-coated FKM, Fluoro-resin</p>	<p><b>Multi Cupla AMCS-SA Type</b> Semi-automatic type</p>  <p>Valve structure: Two-way shut-off</p> <p>Working pressure: To be decided after consultation. Body material: To be decided after consultation. Application: To be decided after consultation. Seal material: To be decided after consultation.</p>	
<p><b>PCP Cupla</b> For bulged pipes and spool pipes</p>  <p>Valve structure: Straight through</p> <p>Working pressure: To be defined after consultation. Body material: POM (polyacetal), some of the parts are of stainless steel Pipe sizes: To be complied with your requirements. Seal material: CR, FKM, NBR</p>	<p><b>PCD Cupla</b> For pipes of special shapes</p>  <p>Valve structure: Straight through</p> <p>Working pressure: To be defined after consultation. Body material: Stainless steel (some of the parts are of aluminum) Pipe sizes: To be complied with your requirements. Seal material: CR, FKM, NBR</p>	<p><b>For Water</b>                      <b>For Water Purifiers</b></p>		
<p><b>PCBL Cupla</b> For straight pipes</p>  <p>Valve structure: Straight through</p> <p>Working pressure: To be defined after consultation. Body material: Stainless steel (some of the parts are of brass) Pipe sizes: To be complied with your requirements. Seal material: CR, FKM, NBR</p>	<p><b>Auto Cupla</b> For copper pipes</p>  <p>Valve structure: Straight through</p> <p>Working pressure: To be defined after consultation. Body material: Stainless steel (some of the parts are of brass) Pipe sizes: To be complied with your requirements. Seal material: CR, FKM, NBR</p>	<p><b>Airless Cupla</b> For physical and chemical devices</p>  <p>Valve structure: Two-way shut-off</p> <p>Working pressure: 3.0MPa (31kgf/cm<sup>2</sup>) Body material: Stainless steel Application: 1/4"~1" Seal material: FKM, EPDM</p>	<p><b>Cupla for Water Cleaner</b> For water cleaner</p>  <p>Valve structure: One-way shut-off</p> <p>Working pressure: 0.5MPa (5kgf/cm<sup>2</sup>) Body material: Plastic Application: ø9 x ø15 Seal material: EPDM</p>	
<p><b>PCL Cupla</b> For straight pipes</p>  <p>Valve structure: Straight through</p> <p>Working pressure: To be defined after consultation. Body material: Brass (some of the parts are of steel) Pipe sizes: To be complied with your requirements. Seal material: CR, FKM, NBR</p>	<p><b>Screw Cupla PCS Type</b> For vacuum and pressure testing Please consult with us for larger sizes.</p>  <p>Straight through</p> <p>Working pressure: 3.0MPa (31kgf/cm<sup>2</sup>) Body material: steel (some parts are made of stainless steel) Application: 7/16"~7/8" Seal material: CR, NBR, FKM</p>	<p><b>For Manipulators</b>                      <b>Safety Equipment</b></p>		
<p><b>PCW Cupla</b> For expanded pipes</p>  <p>Valve structure: Straight through</p> <p>Working pressure: To be defined after consultation. Body material: Brass (some of the parts are of stainless steel and steel) Pipe sizes: To be complied with your requirements. Seal material: CR, FKM, NBR</p>	<p><b>For Pneumatics and Hydraulics</b></p>		<p><b>New Clear Cupla MP Type</b> For manipulators</p>  <p>Valve structure: Two-way shut-off</p> <p>Working pressure: 5.0MPa (51kgf/cm<sup>2</sup>) Body material: Stainless steel Application: 1/4"~1" Seal material: FKM</p>	<p><b>Automatic Disconnection Cupla</b> For fail safe system and automatic connection/disconnection applications</p>  <p>Valve structure: Two-way shut-off</p> <p>Working pressure: To be decided after consultation. Body material: To be decided after consultation. Application: To be decided after consultation. Seal material: To be decided after consultation.</p>
<p><b>Screw Cupla NCM Type</b> For connecting pneumatic/hydraulic lines</p>  <p>Valve structure: Straight through</p> <p>Working pressure: 14.0MPa (142kgf/cm<sup>2</sup>) Body material: Steel (chrome-plated) Application: 1/8"~1" Seal material: NBR</p>				

# Select an appropriate Cupla for the job

Nitto Kohki has the wide range of Cuplas covering almost every application and feature you need. In order to select an appropriate Cupla for your job, you need to realize the following specifications.

## Specifications to Be Checked When Selecting Cuplas

<b>Fluid and the temperature</b>	<b>Select a Cupla with body and seal materials that suit the fluid and its temperature.</b>	There are different body and seal materials to suit different fluids. For example, we recommend steel Hi Cuplas for air, and brass or stainless steel for water. Please refer to Body Material Selection Table and Seal Material Selection Table at the end of this catalog for details about the correspondence between fluids and materials.
<b>Fluid Pressure</b>	<b>Select a Cupla suitable for the actual max. fluid pressure.</b>	Fluid pressure is also a key to Cupla selection. Each series of hydraulic Cuplas have different structures to cope with each pressure resistance ranges between 5.0MPa (50 kgf/cm <sup>2</sup> ) and 68.6MPa (700kgf/cm <sup>2</sup> ).
<b>Automatic Shut-off Valve</b>	<b>Select a Cupla with a valve structure that suits the piping application.</b>	Valve combinations are two-way shut-off, one-way shut-off, or straight through types. Choose carefully. Unless it is a two-way shut-off type, the internal fluid will flow out from the Cupla without valve when it is disconnected.
<b>Operating Environment</b>	<b>Select a Cupla with design and materials that suit each operating environment.</b>	In choosing the type of Cupla, body material and seal material, consider the temperature range, possible dirt and dust, and/or corrosive atmosphere in the operating environment.
<b>Size and type of end configurations</b>	<b>Finally and critically specify the size and type of end configurations.</b>	Having checked the type and materials for the Cupla, now specify the size and type of end configurations to suit the type of piping. Choose carefully, as the size affects the fluid flow rate.



If you cannot find a suitable Cupla, please enter the above details in the "Cupla Inquiry Form" at the end of this catalog and send it to our distributor in your country or directly to Nitto Kohki by fax or post.

## Symbols

Quick reference symbols: 1) Type of valve structure, 2) Working pressure, 3) Applicable fluids, are given on each product page to help you to quickly select a suitable Cupla. Please use them as the guide to grasp each type selection.

### Valve structure

Plug Socket Valve

Two-way shut-off

Two-way shut-off (Non-Spill)

One-way shut-off

One-way shut-off

Straight through

### Working pressure

1.0

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

### Applicable fluids

Air

Water

Hydraulic oil

Steam

Oxygen,  
Fuel Gas

Cooling water

Gas

Inert gas,  
Vacuum, Helium

High purity  
chemicals

Dialysate

Heated oil

Solvent based  
paint

# Glossary

The following terms are used in detailed information pages of Cuplas. Refer to these terms when checking Cupla specifications.

## International System of Units (SI Units)

Every unit stated in this catalog is based on SI Units. The old units, which are Non-SI Units, are also written within parentheses side by side with SI Units for reference only.

## Glossary

### The Meaning of Each Letter in the Model Name

The model name of a Cupla indicates its size, whether plug or socket, and the end configuration. Rated pressure is also shown for some hydraulic Cuplas. Check the following tables to understand the model name implication before making your selection.

**Model name ( in case of Hi Cupla 200)**

**200 - 20 S H**

↓ Series name

↓ End configuration

Symbol	H	M	F
Meaning	Hose barb	Male thread	Female thread

↓ Plug or Socket

Symbol	P	S
Meaning	Plug	Socket

↓ Size

Symbol	1	2	3	4	6	8	10	12	16	20	24	32
Nominal diameter	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"

\*1: The digit numbers of models for some products differs from those of symbols. For example, in case of Hi Cupla 20SH, not "20" but only "2" of the "20" corresponds to "2" of the symbol and indicates the nominal diameter of 1/4".

\*2: For a product with only one type of end configuration, this symbol is omitted. For example, 210 Cuplas have only female threaded end so the model indicates only the size and plug or socket identification.

### Body Material

This indicates the material that is used for the plug body or socket body that form the flow path of fluid through the Cupla. Some products have internal components of a different material. Please check with us for details.

### Size

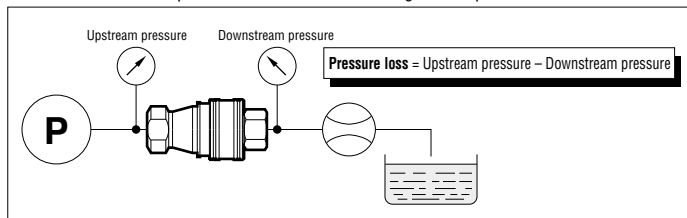
This indicates the nominal size of the pipe thread connection or of the hose to be used.

### Pressure

- Working pressure: This shows the normal allowable fluid pressure under continuous use.
- Pressure resistance: This shows the maximum pressure that will not affect the performance of the Cupla even if there is a temporary increase to reach the pressure.

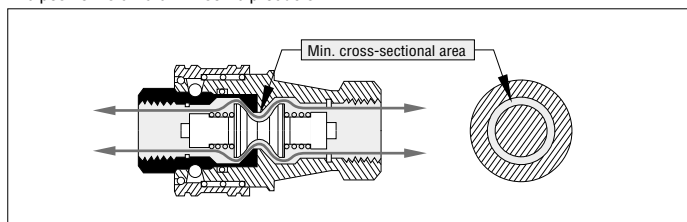
### Pressure Loss

This shows the loss of pressure when fluid runs through the Cupla set.



### Min. Cross-Sectional Area

This shows the minimum cross-sectional area of the fluid path when the Cupla is connected. The position is different in some products.



### Seal Material

This shows the material used to seal the Cupla, usually an O-ring. The standard material is nitrile butadiene rubber. For materials other than those shown below, please specify such as silicon (SI), butyl (IR), Kalrez (KL) or rubber for food, depending on your application.

#### • Properties of rubbers used for O-rings

Seal material	Working Temperature Range	Features
<b>Nitrile rubber</b>	-20°C ~ +80°C	Standard seal with excellent oil and wear resistance profile. High nitrile rubber is particularly oil resistant. Low nitrile one has excellent low temperature resistance but less oil resistance.
<b>Hydrogenated nitrile rubber</b>	-20°C ~ +120°C	For freezer oil resistant and hydrochlorofluorocarbon (HFC134a) resistant applications.
<b>Fluoro rubber</b>	-20°C ~ +180°C	Excellent heat resistance, as well as oil and chemical resistance is good for wide range of applications.
<b>Chloroprene rubber</b>	CR (X-306)	Excellent resistance to weather variations, also little affected by ultraviolet and/or ozone.
	CR (C308)	In addition to conventional durability features, suitable for hydrochlorofluorocarbon (HFC134a) resistant applications.
<b>Ethylene-propylene rubber</b>	EPDM (EPT)	Excellent resistance to steam and hot water, also excellent resistance to weather variations and ozone.
<b>Perfluoroelastomer</b>	P	Excellent resistance to chemical and solvents.

Note: Even among rubber materials of the same category, the working temperature range differs depending upon the design of the Cuplas. For details, see the specifications of each Cupla series. As for the Nitto symbol for rubber material, fluoro rubber is designated as "FKM" or "X-100" for example.

### Working Temperature Range

This shows the minimum and maximum temperature, in-between which the Cupla with the seal material can be used. However, it does not mean that they can be used continuously at the minimum or maximum working temperatures. Please check with us if you need Cuplas in such extreme applications.

### Valve Structure

<b>Two-way shut-off</b>		Automatic shut-off valves are mounted in both plug and socket. The valves prevent spill out of fluid from the lines on disconnection.	
<b>Two-way shut-off (Airless)</b>		"Two-way shut-off" with additional "Airless" design allows extremely little admixture of air on connection and prevents fluid spill out on disconnection.	
<b>One-way shut-off</b>		This design prevents fluid outflow only from the socket side on disconnection. Also available are plugs with an automatic shut-off valve.	
<b>Straight through</b>		Shut-off valve is equipped neither in plug nor in socket. Fluid flows out from either side on disconnection.	

### Suitability for Vacuum

Indicates if the Cupla has necessary performance required for vacuum applications. (Note that the required performance is different in connection and in disconnection.)

### Interchangeability

Indicates whether the plug or socket of different series, types or models can be connected with each other.

### Max. Tightening Torque, Tightening Torque Range

Considering the balance between possible leakage caused by loose fit and too much structural stress when a Cupla is mounted on a workpiece, the appropriate screw-in torque value or range is suggested by the maker.

### Flow Direction

The design of some Cuplas may restrict the fluid flow direction only to one way. Check the maker's suggested direction before mount.



# Cupla Quality Control

Cuplas are delivered to the user only after passing the most stringent quality control procedures, including careful selection of materials, unending pursuit of process accuracy and rigorous durability tests. Long years of devotion to thorough quality control are paying dividends in users' confidence today but still we persist in challenging even higher quality levels.

## Quality Control System That Earns the Constant Trust from Users



*Electron microscope*



*Inspection and measurement with various testing devices*



*Automatic Cupla product inspection system*



*Inspection in clean room*



*Durability test under diversified environments*



*Hydraulic impact tester*



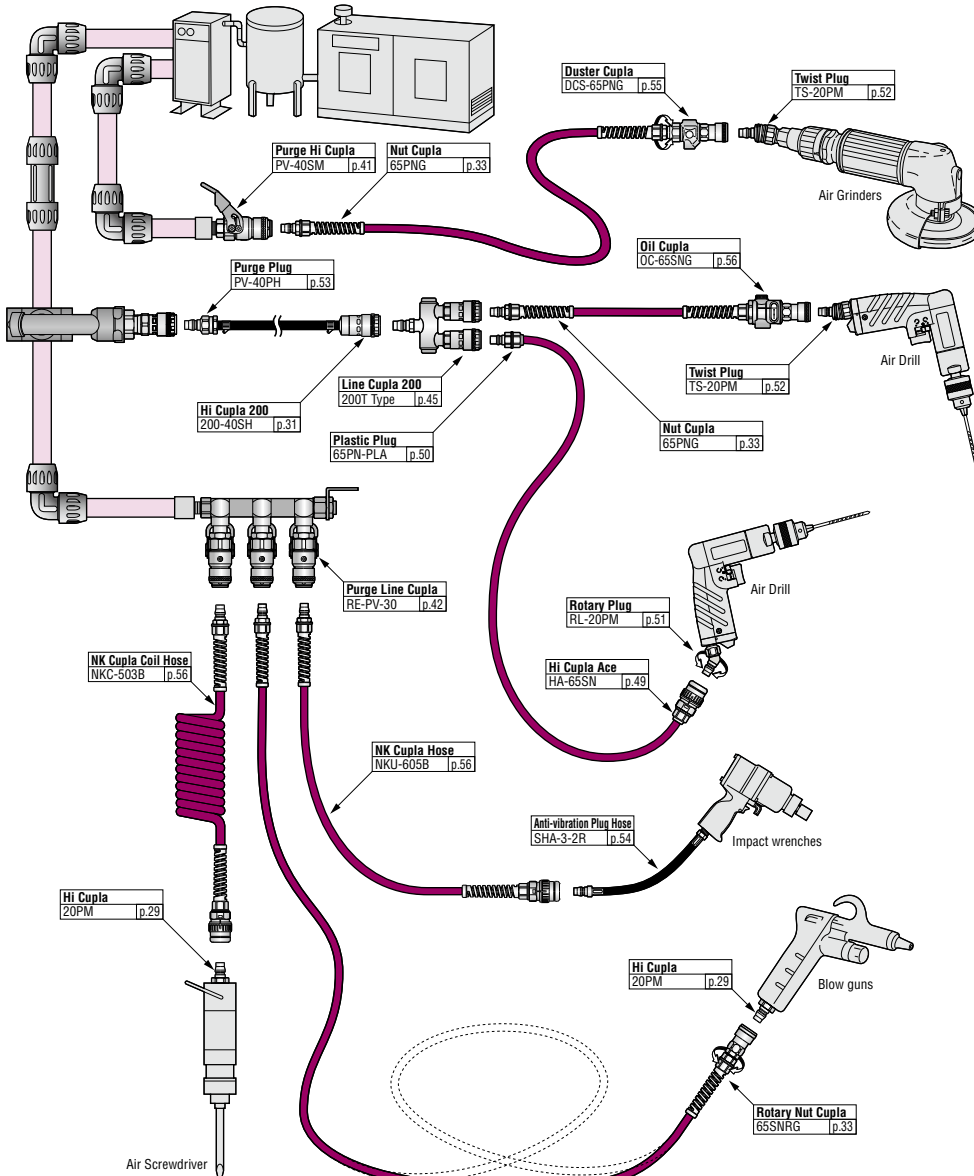
# Standard Cupla Series

## Index



### Examples of Air Line connections Using Hi Cuplas Group Models

Air distribution is one of the typical piping systems. Various Hi Cupla Series models meet all needs of air piping from main supply, relays in factories, pipe end connections to pneumatic tools, and those of air piping within equipment. The following sketch gives you some examples of air piping using Hi Cupla Series and may serve as a good reference in selecting appropriate Cuplas.



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For Low Pressure

# Micro Cupla

For piping in pneumatic control devices

Working pressure



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

Valve structure



One-way shut-off

Applicable fluids



Air

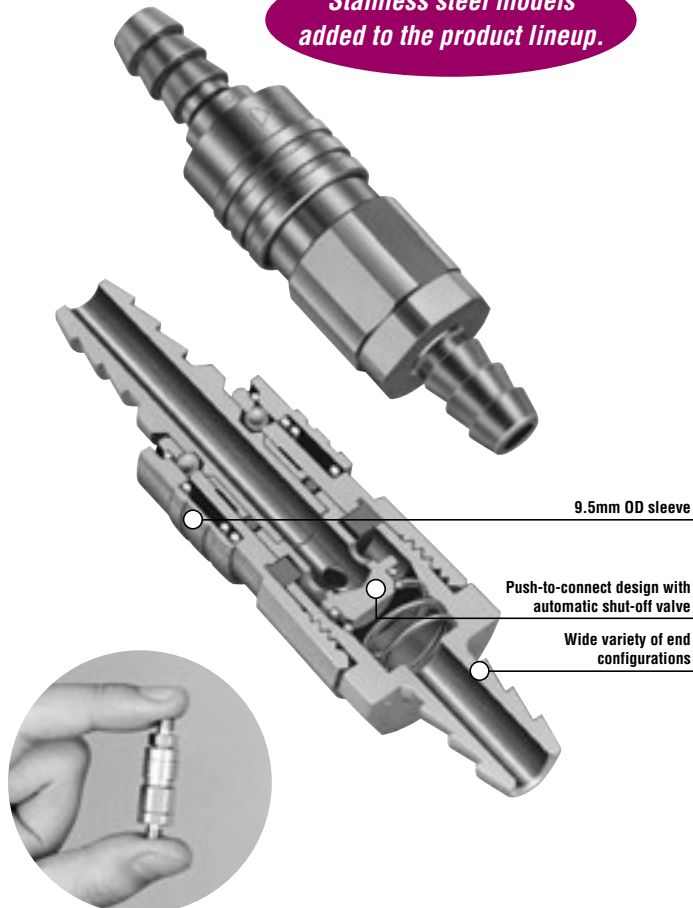
Water (Tube Fitter type is unsuitable for water.)

**Compact, lightweight Cuplas with only 9.5mm outer diameter. Push-to-connect operation. Tube Fitter type for even easier tube insertion.**

- Even though the valve is built in the socket, the sleeve outer diameter is confined to 9.5mm.
- Push-to-connect design.
- Just push in and the tube mount is completed.
- Compact design for piping in narrow spaces.
- Plated brass and stainless steel bodies are available for excellent corrosion resistance.
- Available in various end configurations to satisfy a wide range of pneumatic applications.

Note: Fluid will flow out from the plug when disconnected because of no valve inside the plug.  
If the fluid is water and you require a valve in the plug, ask for semi-standard Little Cupla or Compact Cupla series.

*Stainless steel models added to the product lineup.*



## Specifications

Body material	Cupla : Brass (Plated) • Stainless steel (SUS 304) Tube Fitter Type : Brass (Chrome-plated)			
Size	1/8" (Minimum internal diameter 2.5mm) *Minimum internal diameter of MC-03SP : 1.2mm			
Tube size (for Tube Fitter end configurations)	Polyurethane : $\phi 4 \pm 0.1$ • $\phi 6 \pm 0.1$ Nylon : $\phi 4^{+0.05}_{-0.08}$ • $\phi 6^{+0.05}_{-0.08}$ Teflon : $\phi 4 \pm 0.05$ • $\phi 6 \pm 0.07$			
Working pressure MPa (kgf/cm <sup>2</sup> )	1.0 (10)			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	1.5 (15)			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-20°C~+80°C	Standard material
	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Made-to-order item(s)

\* Above specifications apply only to Cuplas. Working pressure, pressure resistance and working temperature range may vary depending on tube materials you use with and temperature conditions you use under. Micro Cupla with Tube Fitter has NBR packing material only.

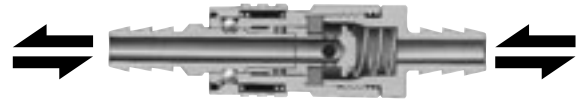
## Max. Tightening Torque

N·m {kgf·cm}

Size	M5 x 0.8	1/8"
Torque	1.3 (13)	7 (71)

## Flow Direction

Air flows in either direction from plug or socket side when coupled.



## Interchangeability

Sockets and plugs can be connected regardless of end configurations.

## Min. Cross-Sectional Area

(mm<sup>2</sup>)

Model	MC-03SP	MC-04SP	MC-05SP	MC-10SP	Tube Fitter Type for 4mm OD tube	Tube Fitter Type for 6mm OD tube
Min. cross-sectional area	1.1	4.9	4.9	4.9	4.9	4.9

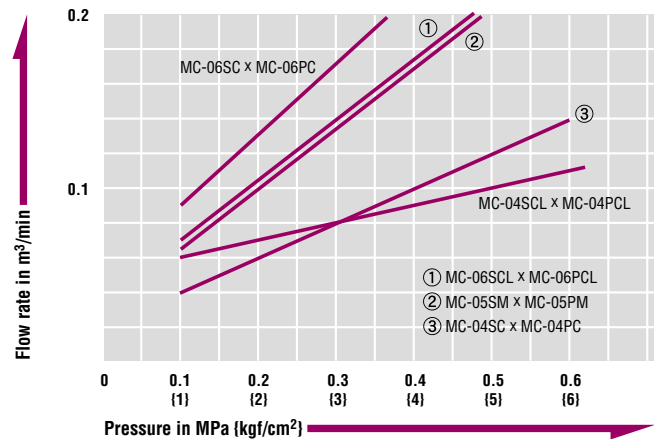
## Suitability for Vacuum

53.0kPa (400mmHg)

Socket only	Plug only	When connected
—	—	Operational

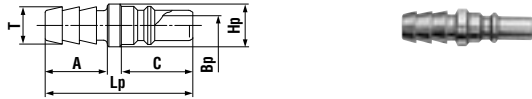
## Pressure - Flow Characteristics

[Test conditions] • Fluid : Air • Temperature : Room temperature  
• Tube size :  $\phi 4\text{mm} \times \phi 2\text{mm}$ ,  $\phi 6\text{mm} \times \phi 4\text{mm}$  (Micro Cupla with Tube Fitter)



Models and Dimensions

**Plug PH type (Hose barb)**



Model	Application (Tube)	Body material*Mass (g)		Dimensions (mm)					
		Brass		Lp	C	A	Hp	T	Bp
MC-03PH	3mm ID	1.2		19	9.2	8	5.5	3.5	1.2
MC-04PH	4mm ID	1.4		19	9.2	8	5.5	4.8	2.5

**Plug PM type (Male thread)**



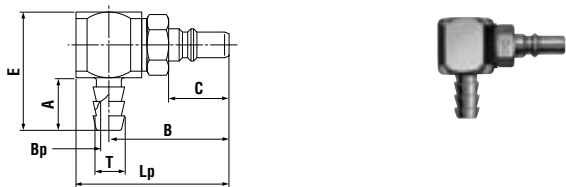
Model	Application	Body material*Mass (g)		Dimensions (mm)					
		Brass		Lp	C	A	Hp(WAF)	T	Bp
MC-05PM	M5 x 0.8	1.9		17	9.2	4.5	Hex.7	M5x0.8	2.5

**Plug PM type (Male thread)**



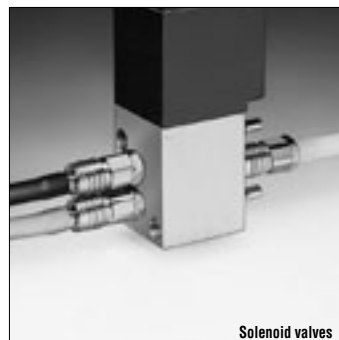
Model	Application	Body material*Mass (g)		Dimensions (mm)					
		Brass		Lp	C	Hp(WAF)	T	Bp	
MC-10PM	Rc1/8	9		26	9.2	Hex.11	R1/8	2.5	

**Plug PHL type (L-shaped hose barb)**

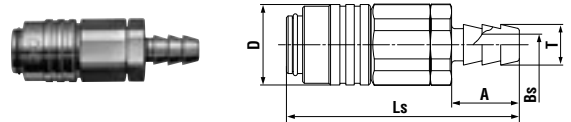


Model	Application (Tube)	Body material*Mass (g)		Dimensions (mm)						
		Brass		Lp	C	A	B	E	Bp	T
MC-04PHL	4mm ID	9.4		(23.3)	9.2	8	(18.3)	18	4.8	2.5

Application Example

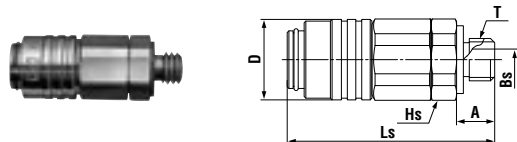


**Socket SH type (Hose barb)**



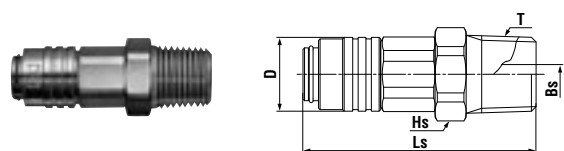
Model	Application (Tube)	Body material*Mass (g)		Dimensions (mm)				
		Brass		Ls	D	A	T	Bp
MC-03SH	3mm ID	7		(27.5)	9.5	8	3.5	1.2
MC-04SH	4mm ID	7.3		(27.5)	9.5	8	4.8	2.5

**Socket SM type (Male thread)**



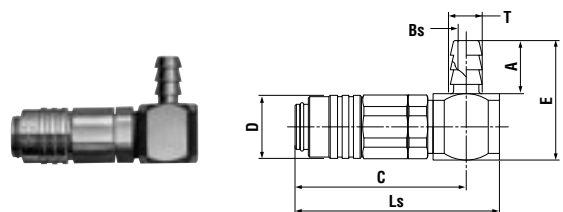
Model	Application	Body material*Mass (g)		Dimensions (mm)					
		Brass		Ls	D	A	T	Hs(WAF)	Bp
MC-05SM	M5 x 0.8	7.4		(24.5)	9.5	4.5	M5x0.8	Hex.9	2.5

**Socket SM type (Male thread)**



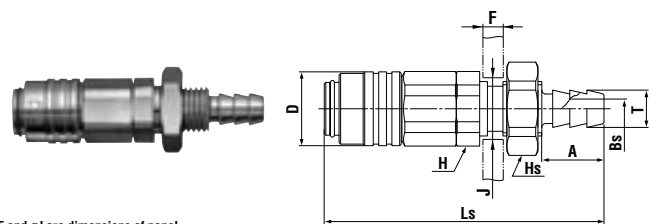
Model	Application	Body material*Mass (g)		Dimensions (mm)					
		Brass		Ls	D	T	Hs(WAF)	Bp	
MC-10SM	Rc1/8	13.1		(30)	9.5	R1/8	Hex.11	3	

**Socket SHL type (L-shaped hose barb)**



Model	Application (Tube)	Body material*Mass (g)		Dimensions (mm)						
		Brass		Ls	C	E	A	D	T	Bp
MC-04SHL	4mm ID	14.8		(30.8)	(25.8)	18	8	9.5	4.8	2.5

**Socket SHB type (For panel mounting)**



\* F and aJ are dimensions of panel.

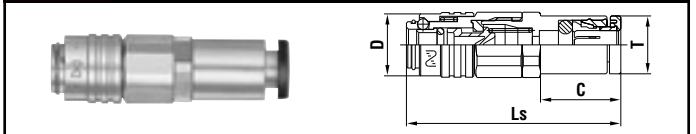
Model	Application (Tube)	Body material*Mass (g)		Dimensions (mm)								
		Brass		Ls	A	D	T	Bp	Hs(WAF)	aJ	H(WAF)	F
MC-04SHB	4mm ID	11.5		(36)	8	9.5	4.8	2.5	Hex.11	7.1 <sup>+0.3</sup>	Hex.9	1.2-3.5

**Plug PC type (With Tube Fitter)**



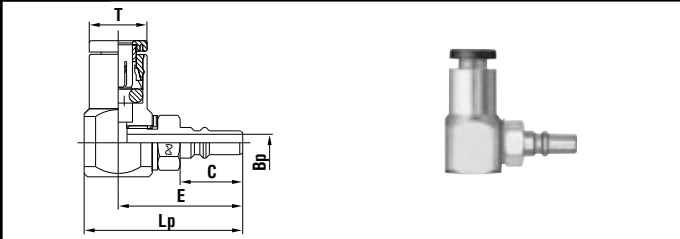
Model	Application (Tube)	Mass (g)	Dimensions (mm)			
			Lp	C	øT	øBp
MC-04PC	4mm OD	3	(21.7)	9.2	8	2.5
MC-06PC	6mm OD	5	(25)	9.2	9.8	2.5

**Socket SC type (With Tube Fitter)**



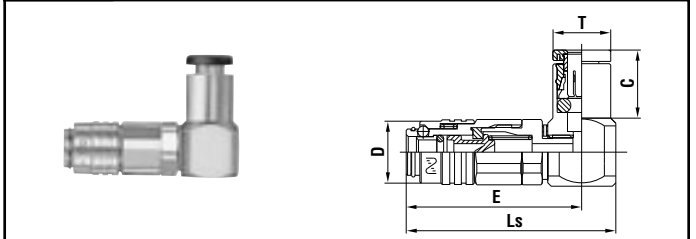
Model	Application (Tube)	Mass (g)	Dimensions (mm)			
			Ls	øD	C	øT
MC-04SC	4mm OD	9	(31.5)	9.5	(11.8)	8
MC-06SC	6mm OD	11.5	(33.5)	9.5	(12.5)	9.8

**Plug PCL type (With L-shaped Tube Fitter)**

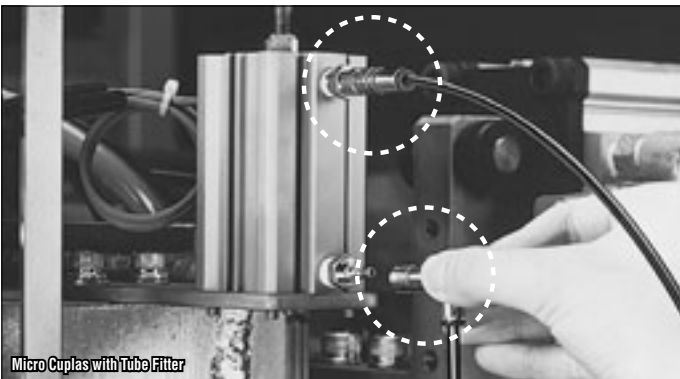


Model	Application (Tube)	Mass (g)	Dimensions (mm)				
			Lp	C	E	øT	øBp
MC-04PCL	4mm OD	10	(23.3)	9.2	(18.3)	8	2.5
MC-06PCL	6mm OD	13.5	(24.3)	9.2	(18.8)	9.8	2.5

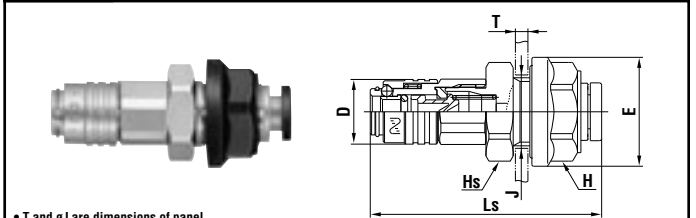
**Socket SCL type (With L-shaped Tube Fitter)**



Model	Application (Tube)	Mass (g)	Dimensions (mm)				
			Ls	E	øD	C	øT
MC-04SCL	4mm OD	16	(30.8)	(25.8)	9.5	(10)	8
MC-06SCL	6mm OD	19	(31.8)	(26.3)	9.5	(12.5)	9.8



**Socket SCB type (With Tube Fitter for panel mounting)**

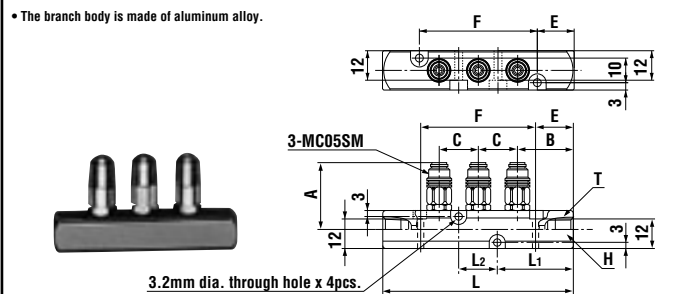


• T and øJ are dimensions of panel.

Model	Application (Tube)	Mass (g)	Dimensions (mm)						
			Ls	øD	øE	Hs(WAF)	H(WAF)	T	øJ
MC-04SCB	4mm OD	15	(34)	9.5	16	Hex.13	Hex.13	3.5 or less	10.5 <sup>+0.3</sup> <sub>0</sub>
MC-06SCB	6mm OD	18.5	(36)	9.5	18	Hex.15	Hex.15	3.5 or less	12.5 <sup>+0.3</sup> <sub>0</sub>

**Socket Micro Line Cupla with three branch ports**

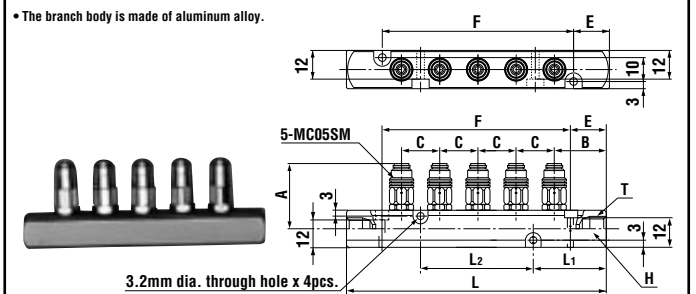
• The branch body is made of aluminum alloy.



Model	Application	Mass (g)	Dimensions (mm)									
			L	L1	L2	A	B	C	E	F	T	H(WAF)
MC-03	3 ports	65	78	31	16	(28.8)	23	16	15	48	2-Rc1/8	Box 16

**Socket Micro Line Cupla with 5 branch ports**

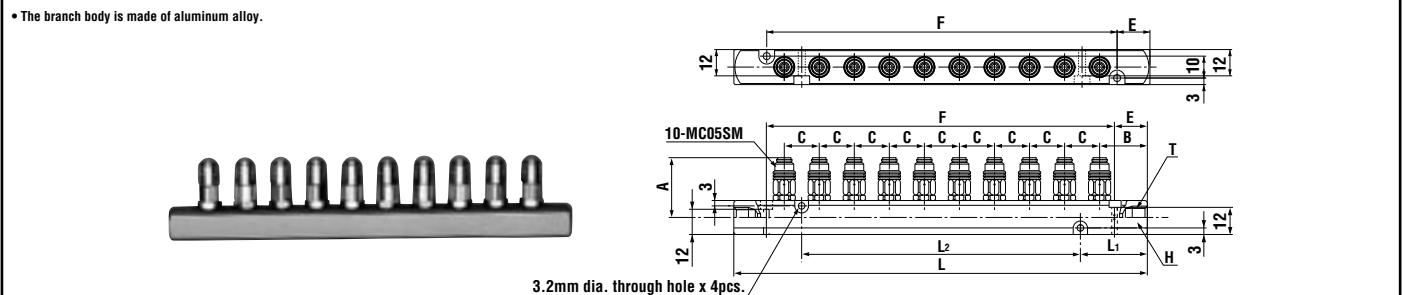
• The branch body is made of aluminum alloy.



Model	Application	Mass (g)	Dimensions (mm)									
			L	L1	L2	A	B	C	E	F	T	H(WAF)
MC-05	5 ports	101	110	31	48	(28.8)	23	16	15	80	2-Rc1/8	Box 16

**Socket Micro Line Cupla with 10 branch ports**

• The branch body is made of aluminum alloy.



Model	Application	Mass (g)	Dimensions (mm)									
			L	L1	L2	A	B	C	E	F	T	H(WAF)
MC-10	10 ports	187	190	31	128	(28.8)	23	16	15	160	2-Rc1/8	Box 16



# Micro Cupla

**NEW** Stainless steel models

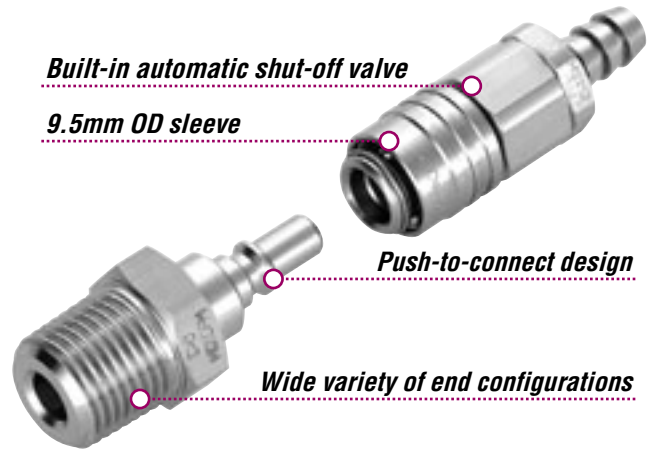
Highly corrosion-resistant stainless steel Micro Cupla

Built-in automatic shut-off valve

9.5mm OD sleeve

Push-to-connect design

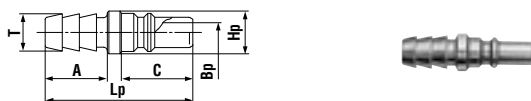
Wide variety of end configurations



**Models and Dimensions (Stainless Steel)**

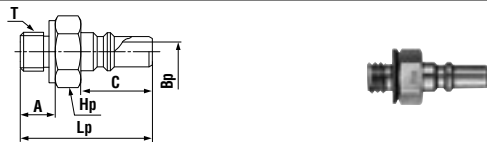
WAF : WAF stands for width across flat.

**Plug PH type (Hose barb)**



Model	Application (Tube)	Body material*Mass (g)	Dimensions (mm)					
		Stainless steel	Lp	C	A	øHp	øT	øBp
MC-04PH	4mm ID	1.3	19	9.2	8	5.5	4.8	2.5

**Plug PM type (Male thread)**



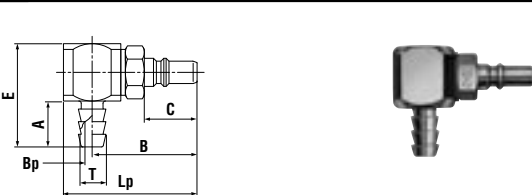
Model	Application	Body material*Mass (g)	Dimensions (mm)					
		Stainless steel	Lp	C	A	Hp(WAF)	T	øBp
MC-05PM	M5 x 0.8	2.2	17	9.2	4.5	Hex.8	M5x0.8	2.5

**Plug PM type (Male thread)**



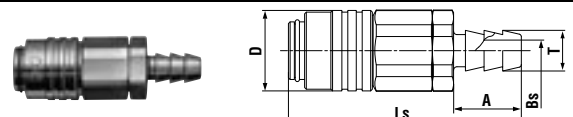
Model	Application	Body material*Mass (g)	Dimensions (mm)					
		Stainless steel	Lp	C	Hp(WAF)	T	øBp	
MC-10PM	Rc1/8	8.1	26	9.2	Hex.11	R1/8	2.5	

**Plug PHL type (L-shaped hose barb)**



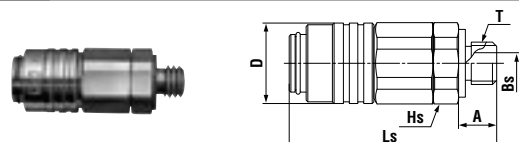
Model	Application (Tube)	Body material*Mass (g)	Dimensions (mm)						
		Stainless steel	Lp	C	A	B	E	øT	øBp
MC-04PHL	4mm ID	9	(23.3)	9.2	8	(18.3)	18	4.8	2.5

**Socket SH type (Hose barb)**



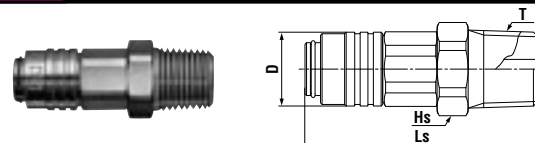
Model	Application (Tube)	Body material*Mass (g)	Dimensions (mm)				
		Stainless steel	Ls	øD	A	øT	øBs
MC-04SH	4mm ID	6.7	(27.5)	9.5	8	4.8	2.5

**Socket SM type (Male thread)**



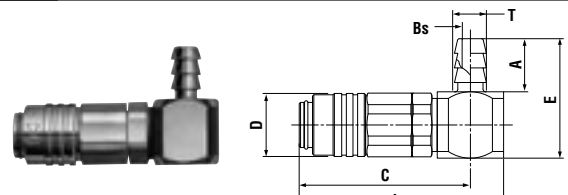
Model	Application	Body material*Mass (g)	Dimensions (mm)					
		Stainless steel	Ls	øD	A	T	Hs(WAF)	øBs
MC-05SM	M5 x 0.8	6.8	(24.5)	9.5	4.5	M5x0.8	Hex.9	2.5

**Socket SM type (Male thread)**



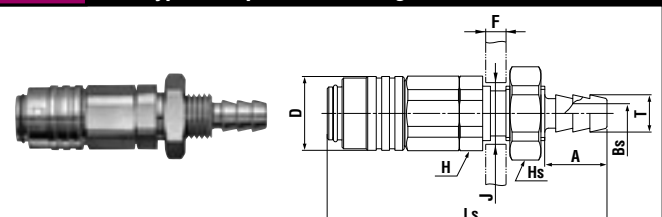
Model	Application	Body material*Mass (g)	Dimensions (mm)					
		Stainless steel	Ls	øD	T	Hs(WAF)	øBs	
MC-10SM	Rc1/8	12.1	(30)	9.5	R1/8	Hex.11	3	

**Socket SHL type (L-shaped hose barb)**



Model	Application (Tube)	Body material*Mass (g)	Dimensions (mm)						
		Stainless steel	Ls	C	E	A	øD	øT	øBs
MC-04SHL	4mm ID	13.6	(30.8)	(25.8)	18	8	9.5	4.8	2.5

**Socket SHB type (For panel mounting)**



\* F and øJ are dimensions of panel.





Model	Application (Tube)	Body material*Mass (g)	Dimensions (mm)									
		Stainless steel	Ls	A	øD	øT	øBs	Hs(WAF)	øJ	H(WAF)	F	
MC-04SHB	4mm ID	10.6	(36)	8	9.5	4.8	2.5	Hex.11	7.1 <sup>+0.3</sup> <sub>0</sub>	Hex.9	1.2-3.5	

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 Low Pressure

# Small Cupla

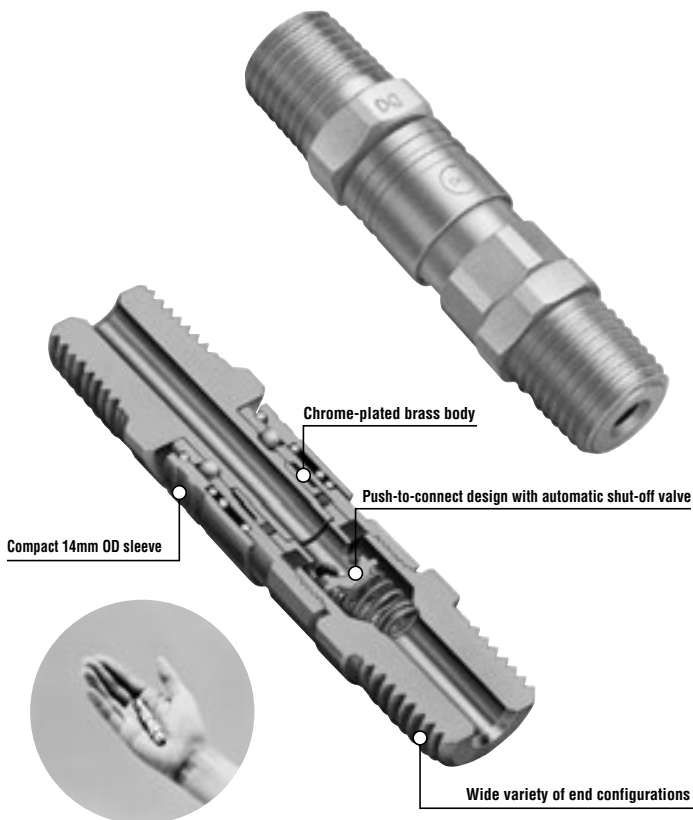
Lightweight and compact for use on air lines and scientific equipment

<b>Working pressure</b>	<b>Valve structure</b>	<b>Applicable fluids</b>	
 0.7 MPa (7 kgf/cm <sup>2</sup> )	 One-way shut-off	 Air	 Water (Tube Fitter type is unsuitable for water.)

**Lightweight and compact push-to-connect operation.**  
**Responding to requirements of modular combinations.**

- Compact socket with built-in valve and 14mm OD sleeve. Suits applications calling for compact and modular components.
- Just push in the plug to the socket for connection by easy one hand operation.
- Chrome-plated brass for corrosion resistance adopted for the body. Stable performance for long life.
- A wide line-up of end configurations (female and male threads, hose barbs, manifolds) enables suitability with a wide range of piping applications such as pneumatic, scientific and medical equipment.
- Also available with Tube Fitter quick connect/disconnect type.

Note: Fluid will flow out from the plug side when disconnected. Take necessary precaution if the fluid is water.



## Specifications

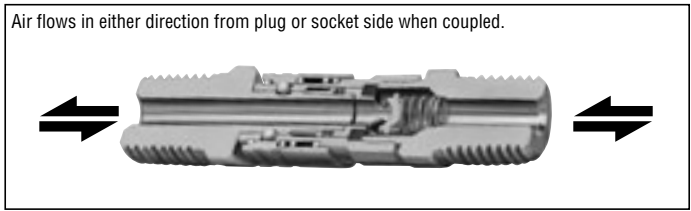
<b>Body material</b>	Cupla : Brass (Chrome-plated) Tube Fitter Type: Brass (Nickel-plated)			
<b>Size</b>	1/8" • 1/4"			
<b>Tube size (for Tube Fitter end configurations)</b>	Polyurethane : $\phi 6 \pm 0.1$ • $\phi 8 \pm 0.15$ Nylon : $\phi 6^{+0.05}_{-0.08}$ • $\phi 8^{+0.05}_{-0.1}$ Teflon : $\phi 6 \pm 0.07$ • $\phi 8 \pm 0.07$			
<b>Working pressure MPa (kgf/cm<sup>2</sup>)</b>	0.7 (7)			
<b>Pressure resistance MPa (kgf/cm<sup>2</sup>)</b>	1.1 (11)			
<b>Seal material</b>	<b>Seal material</b>	<b>Mark</b>	<b>Working temperature range</b>	<b>Remarks</b>
<b>Working temperature range</b>	Nitrile rubber	NBR (SG)	-20°C~+80°C	Standard material

• Above specifications apply only to Cuplas. Working pressure, pressure resistance and working temperature range may vary depending on tube materials you use with and temperature conditions you use under.

## Max. Tightening Torque

	N·m {kgf·cm}		
<b>Size</b>	<b>1/8"</b>	<b>1/4"</b>	<b>Nut type</b>
<b>Torque</b>	7 (71)	9 (92)	5 (51)

## Flow Direction



## Interchangeability

Sockets and plugs can be connected regardless of end configurations.

## Min. Cross-Sectional Area

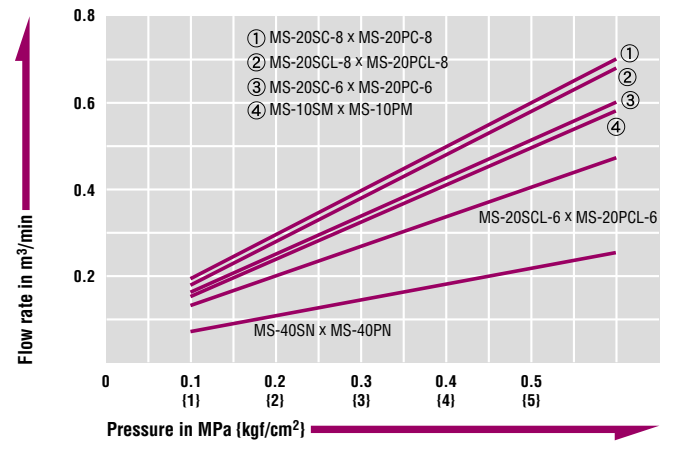
	(mm <sup>2</sup> )					
<b>Model</b>	<b>MS-10SM X MS-10PM</b>	<b>MS-20SM X MS-20PM</b>	<b>MS-40SN X MS-40PN</b>	<b>MS-45SN X MS-45PN</b>	<b>Tube Fitter Type for 6mm OD tube</b>	<b>Tube Fitter Type for 8mm OD tube</b>
<b>Min. cross-sectional area</b>	12.5	12.5	4.9	7	12.5	12.5

## Suitability for Vacuum

53.0kPa (400mmHg)		
<b>Socket only</b>	<b>Plug only</b>	<b>When connected</b>
—	—	Operational

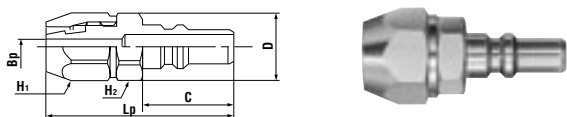
## Pressure - Flow Characteristics

[Test conditions] • Fluid : Air • Temperature : Room temperature  
 • Tube size :  $\phi 6\text{mm} \times \phi 4\text{mm}$ ,  $\phi 8\text{mm} \times \phi 6\text{mm}$  (Small Cupla with Tube Fitter)



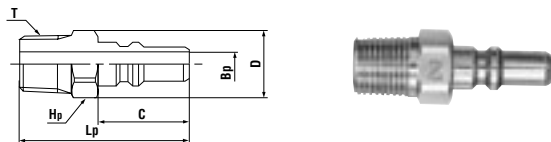
Models and Dimensions

**Plug PN type (For connection to Nylon or Polyurethane hose)**



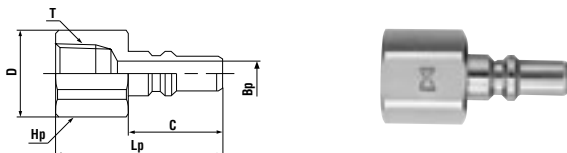
Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			Lp	C	øD	H1(WAF)	H2(WAF)	øBp
MS-40PN	ø4mm x ø6mm Nylon hose	10.5	31	15.2	11	Hex.10	Hex.10	2.5
MS-45PN	ø4.5mm x ø6mm Nylon hose ø4mm x ø6mm Polyurethane hose	11	31	15.2	11	Hex.10	Hex.10	3

**Plug PM type (Male thread)**



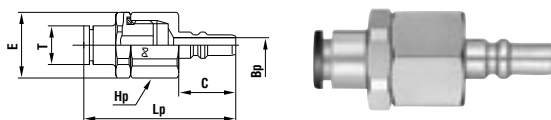
Model	Application	Mass (g)	Dimensions (mm)					
			Lp	øD	C	Hp(WAF)	T	øBp
MS-10PM	Rc 1/8	9	28.5	12	15.2	Hex.11	R 1/8	4
MS-20PM	Rc 1/4	19.5	32.5	15.2	15.2	Hex.14	R 1/4	4

**Plug PF type (Female thread)**



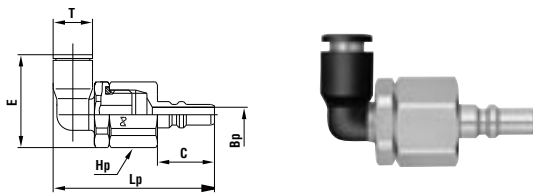
Model	Application	Mass (g)	Dimensions (mm)					
			Lp	øD	C	Hp(WAF)	T	øBp
MS-10PF	R 1/8	11	27	14	15.2	Hex.13	Rc 1/8	4

**Plug PC type (With Tube Fitter)**



Model	Application (Tube)	Mass (g)	Dimensions (mm)					
			Lp	C	øE	Hp(WAF)	øT	øBp
MS-20PC-6	6mm OD	26.5	(40.5)	15.2	17.5	Hex.16	10.3	4
MS-20PC-8	8mm OD	31	(47.2)	15.2	17.5	Hex.16	13.5	4

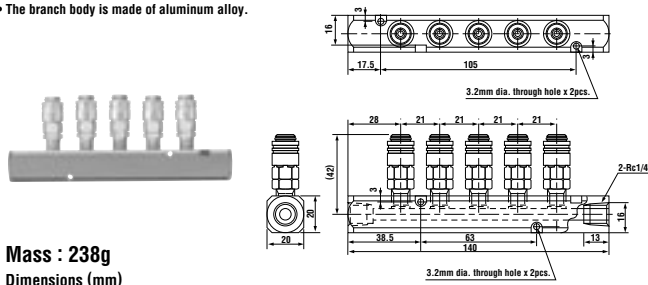
**Plug PCL type (With L-shaped Tube Fitter)**



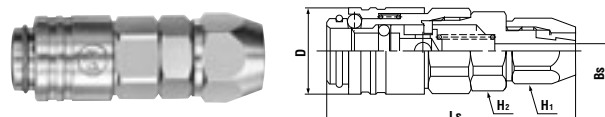
Model	Application (Tube)	Mass (g)	Dimensions (mm)					
			Lp	C	E	Hp(WAF)	øT	øBp
MS-20PCL-6	6mm OD	27.5	(43)	15.2	(24.8)	Hex.16	10.5	4
MS-20PCL-8	8mm OD	32	(46.3)	15.2	(31.8)	Hex.16	13.5	4

**Socket MS-5 type (Small Line Cupla with 5 branch ports)**

• The branch body is made of aluminum alloy.

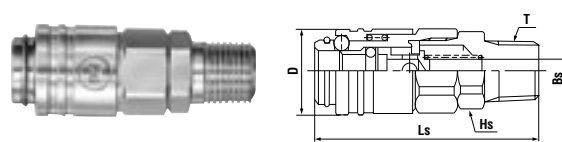


**Socket SN type (For connection to Nylon or Polyurethane hose)**



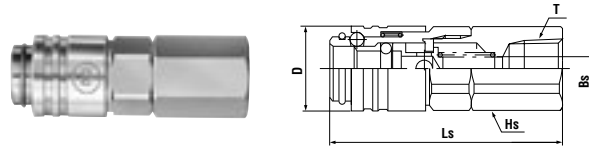
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			Ls	H1(WAF)	H2(WAF)	øD	øBs
MS-40SN	ø4mm x ø6mm Nylon hose	26.5	(40.8)	Hex.10	Hex.12	14	2.5
MS-45SN	ø4.5mm x ø6mm Nylon hose ø4mm x ø6mm Polyurethane hose	27.0	(40.8)	Hex.10	Hex.12	14	3

**Socket SM type (Male thread)**



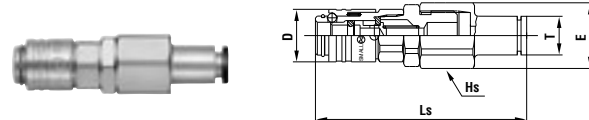
Model	Application	Mass (g)	Dimensions (mm)				
			Ls	Hs(WAF)	T	øD	øBs
MS-10SM	Rc 1/8	24	(36.8)	Hex.12	R 1/8	14	4
MS-20SM	Rc 1/4	34	(40.8)	Hex.14	R 1/4	14	4

**Socket SF type (Female thread)**



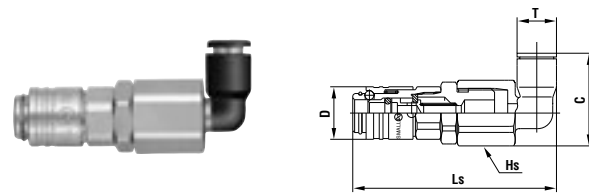
Model	Application	Mass (g)	Dimensions (mm)				
			Ls	Hs(WAF)	T	øD	øBs
MS-10SF	R 1/8	29.5	(38.8)	Hex.13	Rc 1/8	14	4

**Socket SC type (With Tube Fitter)**



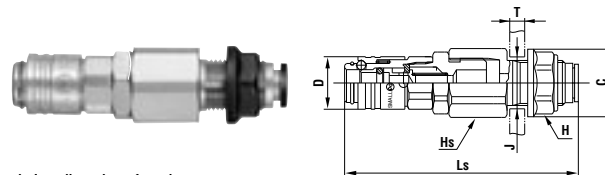
Model	Application (Tube)	Mass (g)	Dimensions (mm)				
			Ls	øD	øE	Hs(WAF)	øT
MS-20SC-6	6mm OD	46	(56.3)	14	17.5	Hex.16	10.3
MS-20SC-8	8mm OD	50.5	(60.8)	14	17.5	Hex.16	13.5

**Socket SCL type (With L-shaped Tube Fitter)**



Model	Application (Tube)	Mass (g)	Dimensions (mm)				
			Ls	øD	C	Hs(WAF)	øT
MS-20SCL-6	6mm OD	47.5	(55)	14	(24.7)	Hex.16	10.5
MS-20SCL-8	8mm OD	49.5	(58.5)	14	(31.4)	Hex.16	13.5

**Socket SCB type (With Tube Fitter for panel mounting)**



• T and øJ are dimensions of panel.

Model	Application (Tube)	Mass (g)	Dimensions (mm)						
			Ls	øD	øC	Hs(WAF)	H(WAF)	T	øJ
MS-20SCB-6	6mm OD	57.5	(62.3)	14	18	Hex.17	Hex.15	7 or less	12.5 <sup>+0.3</sup> <sub>0</sub>
MS-20SCB-8	8mm OD	58.5	(62.8)	14	21	Hex.17	Hex.18	8 or less	15.5 <sup>+0.3</sup> <sub>0</sub>

For Low Pressure

# Compact Cupla

Small multipurpose type for low pressure lines

Working pressure



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

Valve structure



Two-way shut-off

Applicable fluids



Air

Water

**Compact 17.5mm outer diameter, yet socket and plug have built-in automatic shut-off valves.**

- Both socket and plug have built-in automatic shut-off valves.
- Compact size with max. outer dia. 17.5mm.
- Compact yet operator friendly sleeve design.
- For small bore piping from temperature control piping to scientific equipment.
- Body materials in stainless steel or brass, excellent in corrosion resistance.
- Four types of end configuration enable suitability with a wide range of piping applications.

**NEW**



## Specifications

Body material	Brass, Stainless steel (SUS 304)			
Size	For 1/8", ø4mm x ø6mm, ø6mm x ø8mm tube			
Tube material	Polyamide, Polyolefin, Fluorine contained resin			
Working pressure	MPa (kgf/cm <sup>2</sup> )	1.0 (10)		
Pressure resistance	MPa (kgf/cm <sup>2</sup> )	1.5 (15)		
Seal material	Seal material	Mark	Working temperature range	Remarks
	Fluoro rubber	FKM	-20°C~+180°C	Standard material
Working temperature range	Ethylene-propylene rubber	EPDM	-40°C~+150°C	Available on request

Note: Working pressure and working temperature of nut type depend on the tube material and its dimensional tolerance.

## Max. Tightening Torque

N·m (kgf·cm)

Model	PM, PF, SM, SF	PN, SN
Torque	Brass	5 (51)
	Stainless steel	9 (92)

## Flow Direction

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



## Interchangeability

Socket and plug of Compact Cupla can be connected regardless of end configurations.

## Min. Cross-Sectional Area

(mm<sup>2</sup>)

Model	CO-1SM x CO-1PM	CO-1SF x CO-1PF	CO-40SN x CO-40PN	CO-60SN x CO-60PN
Min. cross-sectional area	8.8	8.8	4.9	8.8

## 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

(m<sup>3</sup>)

Volume of air admixture	0.34
-------------------------	------

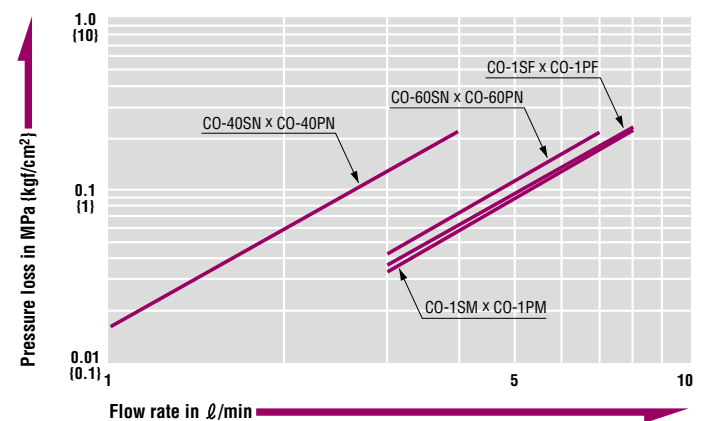
## Volume of Spillage per Disconnection

(m<sup>3</sup>)

Volume of spillage	0.23
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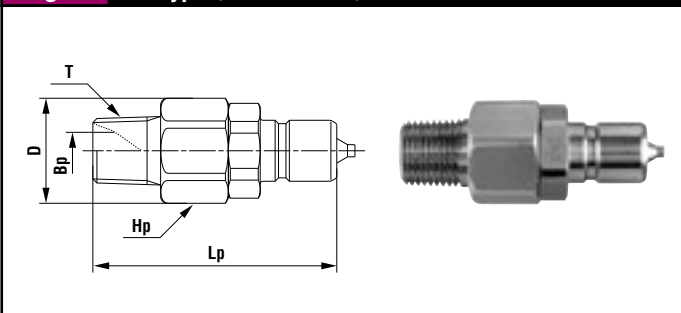
## Flow Rate – Pressure Loss Characteristics

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



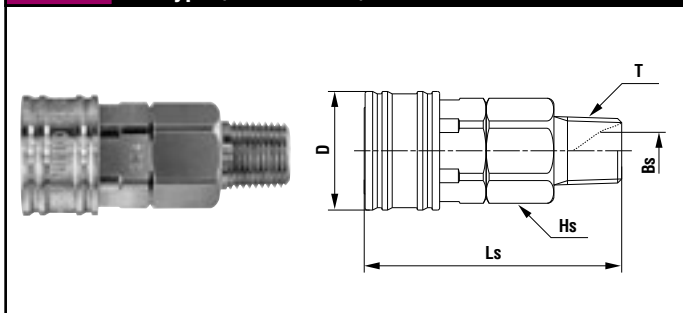
Models and Dimensions

**Plug PM type (Male thread)**



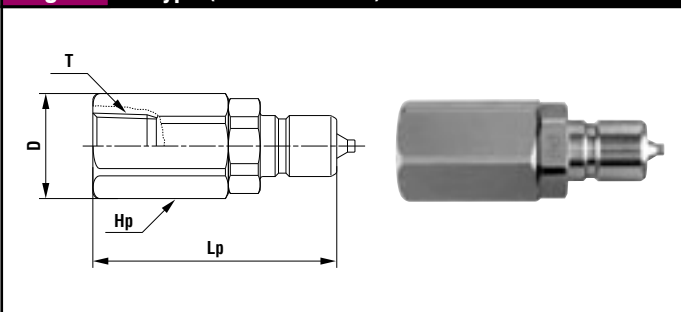
Model	Application	Body material, Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	Lp	øD	Hp (WAF)	T	øBp
CO-1PM	Rc 1/8	20	19	(36)	15.5	Hex.14	R 1/8	5.5

**Socket SM type (Male thread)**



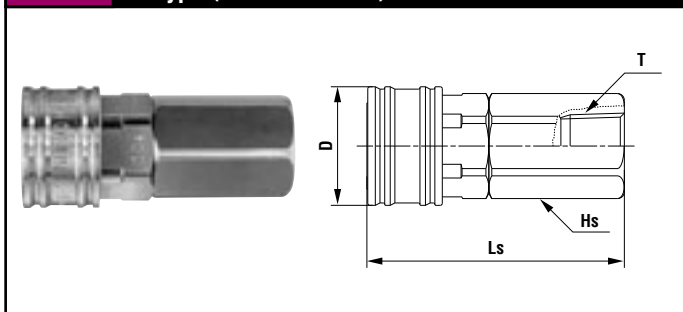
Model	Application	Body material, Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	Ls	øD	Hs (WAF)	T	øBs
CO-1SM	Rc 1/8	34	32	(38)	17.5	Hex.14	R 1/8	5.5

**Plug PF type (Female thread)**



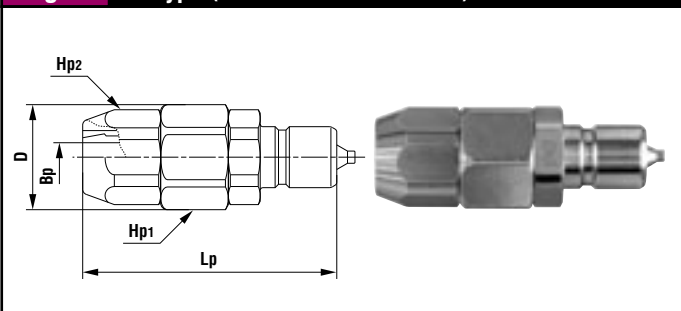
Model	Application	Body material, Mass (g)		Dimensions (mm)			
		Brass	Stainless steel	Lp	øD	Hp (WAF)	T
CO-1PF	R 1/8	25	23	(36)	15.5	Hex.14	Rc 1/8

**Socket SF type (Female thread)**



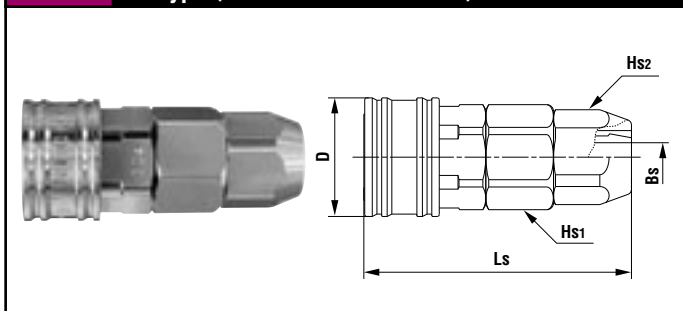
Model	Application	Body material, Mass (g)		Dimensions (mm)			
		Brass	Stainless steel	Ls	øD	Hs (WAF)	T
CO-1SF	R 1/8	39	36	(38)	17.5	Hex.14	Rc 1/8

**Plug PN type (For connection to tube)**



Model	Application (Tube)	Body material, Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	Lp	øD	Hp1 (WAF)	Hp2 (WAF)	øBp
CO-40PN	ø4 x ø6	23	22	(38.5)	15.5	Hex.14	Hex.10	2.5
CO-60PN	ø6 x ø8	25	24	(37.5)	15.5	Hex.14	Hex.13	4.2

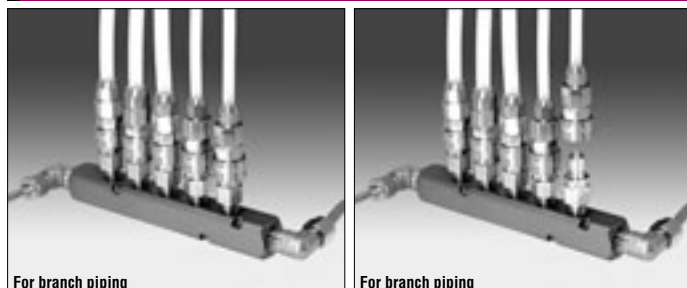
**Socket SN type (For connection to tube)**



Model	Application (Tube)	Body material, Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	Ls	øD	Hs1 (WAF)	Hs2 (WAF)	øBs
CO-40SN	ø4 x ø6	38	35	(40.5)	17.5	Hex.14	Hex.10	2.5
CO-60SN	ø6 x ø8	40	37	(39.5)	17.5	Hex.14	Hex.13	4.2

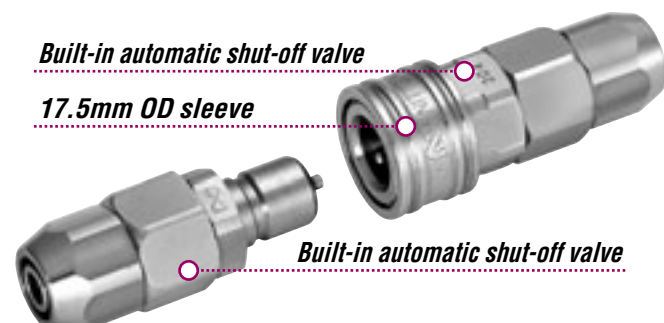
No difference in dimensions of brass and stainless steel Cupla  
Before use, please be sure to read "Instruction Sheet" that comes with the products.

Application Example



For branch piping

For branch piping



Built-in automatic shut-off valve

17.5mm OD sleeve

Built-in automatic shut-off valve



For Low Pressure

# Cube Cupla

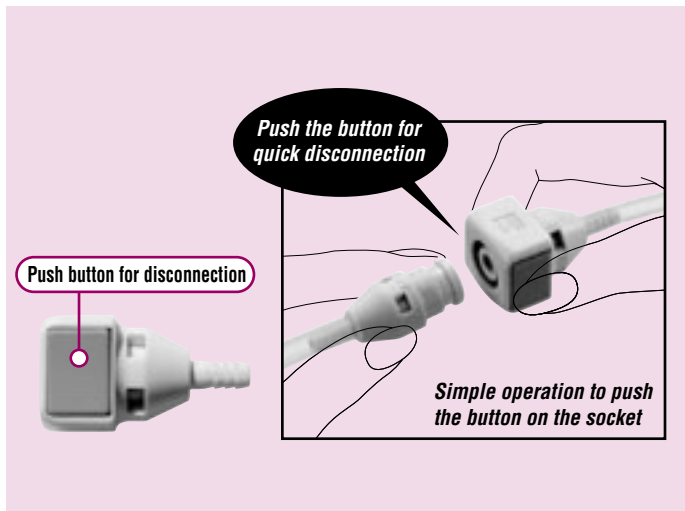
Small and lightweight coupling for air supply lines to medical and/or scientific equipment

<b>Working pressure</b> 1.0 1.0 MPa (10 kgf/cm <sup>2</sup> )	<b>Valve structure</b> Two-way shut-off One-way shut-off Straight through	<b>Applicable fluids</b> Air Water
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Both socket and plug have built-in valve types and valveless types. Simple one action for connection or disconnection. Lightweight plastic coupling.

- Compact design for space saving.
- Just push plug into socket for connection. Simply push the button on the socket for disconnection.
- Suitable for a wide range of applications from medical/scientific equipment to beverage machines or semiconductor manufacturing devices.

Note: When valveless type socket or plug is used, fluid will flow out of it when disconnected.



Specifications				
Body material	Polyacetal resin (POM)			
Size	4mm and 6mm ID tube, female thread Rc 1/8			
Working pressure MPa (kgf/cm <sup>2</sup> )	1.0 (10)			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	1.5 (15)			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+60°C	Standard material

Max. Tightening Torque		N·m (kgf·cm)
Size	1/8"	
Torque	1.3 (13)	

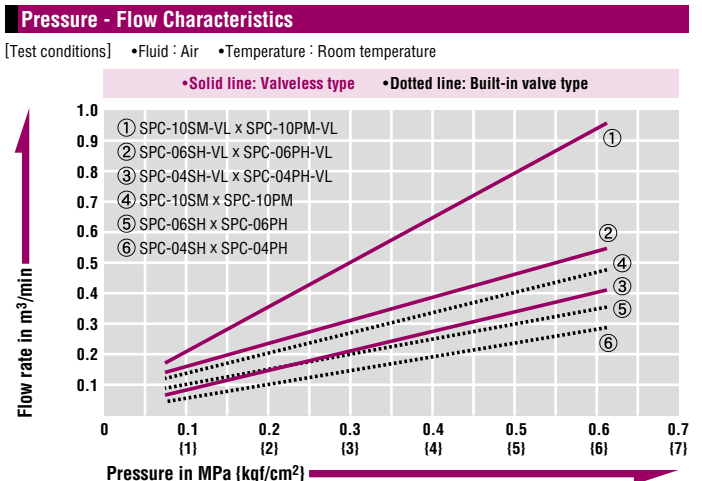
**Flow Direction**

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

**Interchangeability**  
Can be connected with plug and socket for Cube Cupla of the same type regardless of end configurations. However, built-in valve sockets cannot be connected with valveless plugs.

Min. Cross-Sectional Area (mm <sup>2</sup> )						
Model	04PH/04PHB	06PH/06PHB	10PM	04PH-VL/04PHB-VL	06PH-VL/06PHB-VL	10PM-VL
SPC-04SH	5	5	5	—	—	—
SPC-06SH	5	8.6	8.6	—	—	—
SPC-10SM	5	8.6	8.6	—	—	—
SPC-04SH-VL	5	5	5	5	5	5
SPC-06SH-VL	5	8.6	8.6	5	10.2	10.2
SPC-10SM-VL	5	8.6	8.6	5	10.2	16.6

Suitability for Vacuum			53.0kPa (400mmHg)
Socket only	Plug only	When connected	
—	—	Operational	

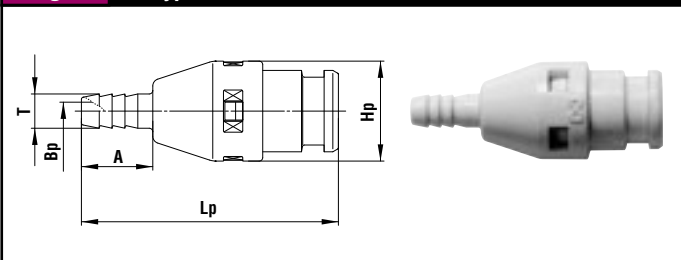


**Connection capability** Select the combination of models suitable to your applications

Connection capability		Plug	
		With	Without
Socket	Valve	With  Two-way shut-off	Without Not connectable
	Without	With  One-way shut-off	Without  Straight through

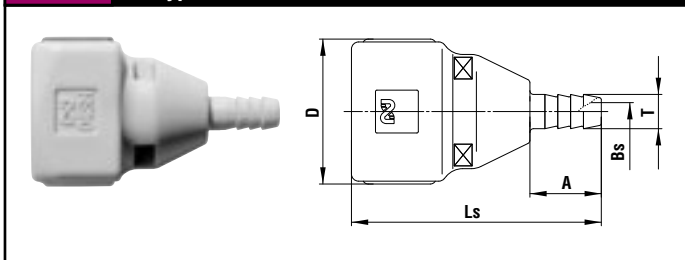
Models and Dimensions

**Plug PH type (Hose barb)**



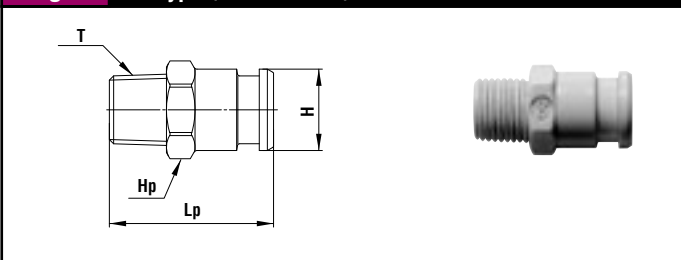
Model	Application (Tube)	Built-in valve	Mass (g)	Dimensions (mm)				
				Lp	A	øHp	øT	øBp
SPC-04PH	4mm ID	○	3.1	(36)	10	14	4.8	2.5
SPC-04PH-VL	4mm ID	—	2.6	(36)	10	14	4.8	2.5
SPC-06PH	6mm ID	○	3.4	(40)	15	14	7	3.6
SPC-06PH-VL	6mm ID	—	2.9	(40)	15	14	7	3.6

**Socket SH type (Hose barb)**



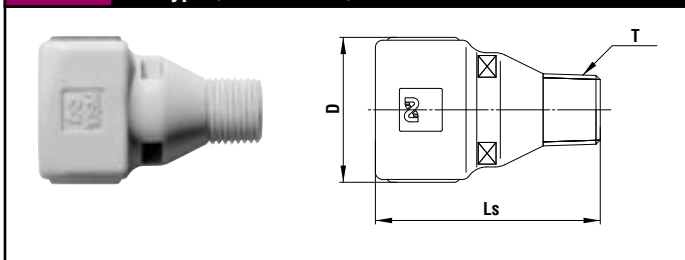
Model	Application (Tube)	Built-in valve	Mass (g)	Dimensions (mm)				
				Ls	A	D	øT	øBs
SPC-04SH	4mm ID	○	6.5	35	10	20.3	4.8	2.5
SPC-04SH-VL	4mm ID	—	6.1	35	10	20.3	4.8	2.5
SPC-06SH	6mm ID	○	7.0	40	15	20.3	7	3.6
SPC-06SH-VL	6mm ID	—	6.6	40	15	20.3	7	3.6

**Plug PM type (Male thread)**



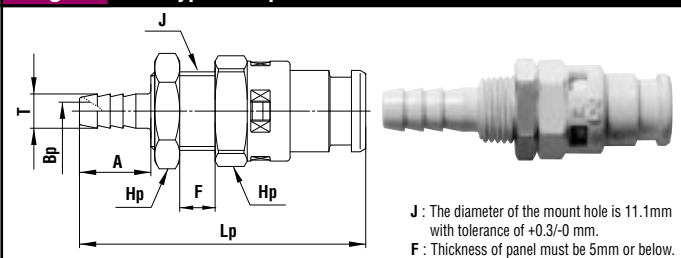
Model	Application	Built-in valve	Mass (g)	Dimensions (mm)			
				Lp	øH	Hp(wAF)	T
SPC-10PM	Rc 1/8	○	2.0	23	11.4	Hex.12	R 1/8
SPC-10PM-VL	Rc 1/8	—	1.5	23	11.4	Hex.12	R 1/8

**Socket SM type (Male thread)**



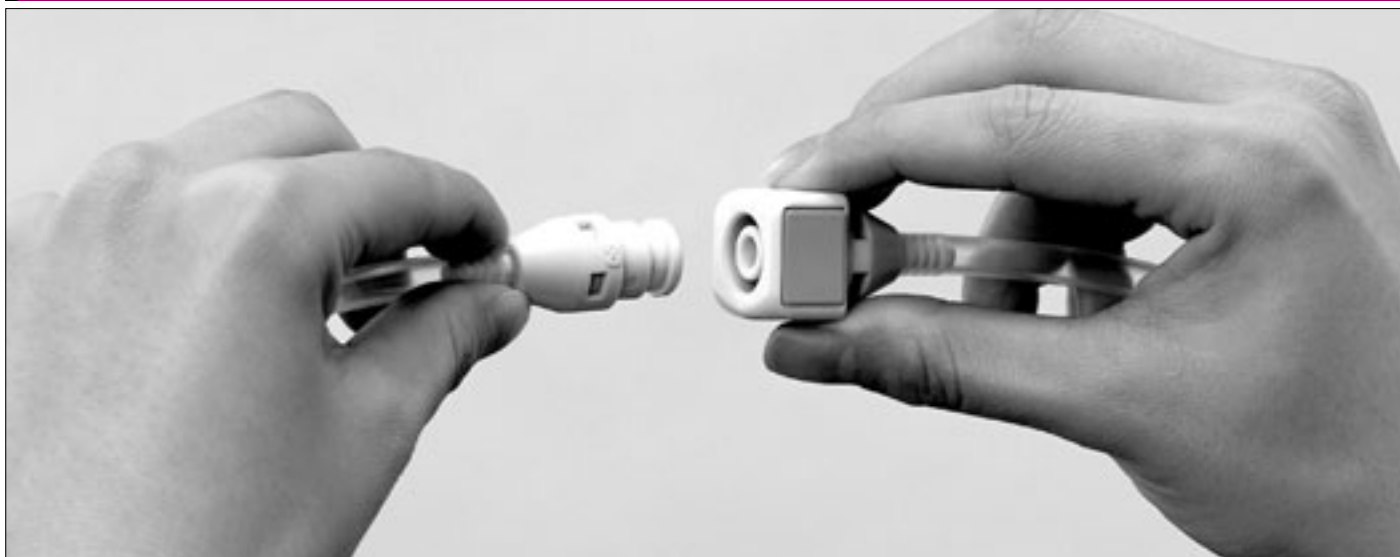
Model	Application	Built-in valve	Mass (g)	Dimensions (mm)		
				Ls	D	T
SPC-10SM	Rc 1/8	○	6.8	31.5	20.3	R 1/8
SPC-10SM-VL	Rc 1/8	—	6.4	31.5	20.3	R 1/8

**Plug PHB type (For panel mount)**



Model	Application	Built-in valve	Mass (g)	Dimensions (mm)				
				Lp	A	Hp(wAF)	øT	øBp
SPC-04PHB	4mm ID	○	5.9	(40)	10	Hex.14	4.8	2.5
SPC-04PHB-VL	4mm ID	—	5.4	(40)	10	Hex.14	4.8	2.5
SPC-06PHB	6mm ID	○	6.2	(45)	15	Hex.14	7	3.6
SPC-06PHB-VL	6mm ID	—	5.7	(45)	15	Hex.14	7	3.6

Application Example



For Low Pressure (Air)

# Super Cupla

Light, compact for air piping connections

Working pressure



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

Valve structure



One-way shut-off

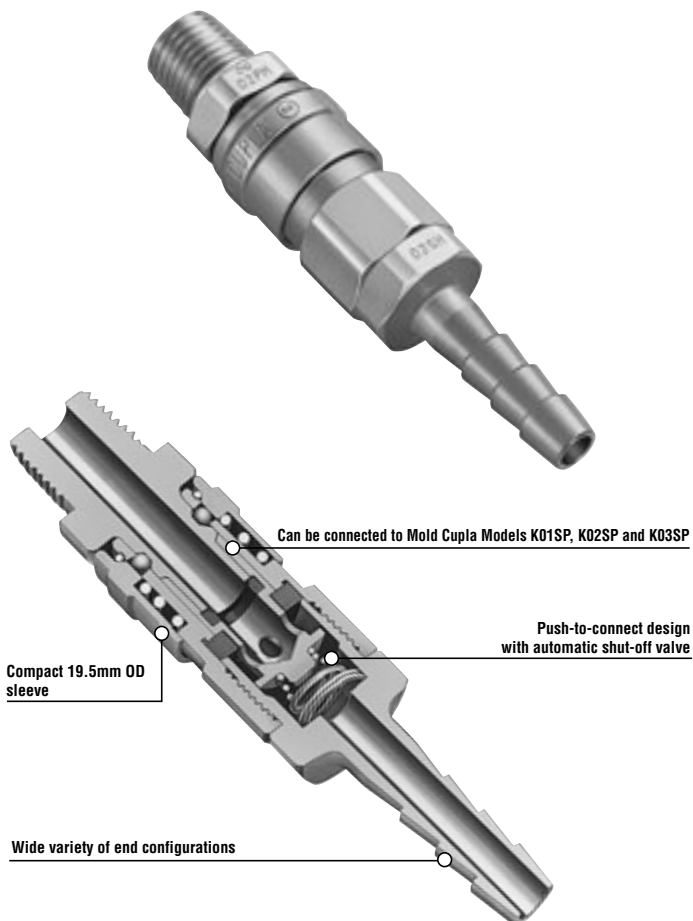
Applicable fluids



Air

## The lightweight design makes the Cupla best suited to power tools! Push-to-connect for easy operation.

- Lightweight design suits direct connection to power tools. Aluminum body is adopted for some models to reduce the weight.
- Just push the plug into socket for easy one hand connection.
- Available in various end configurations for a wide range of pneumatic applications.
- Model O2S20P can be connected with sockets for Hi Cupla Models 20, 30 and 40.
- Also available with quick connect / disconnect Tube Fitter type.



### Specifications

Body material	Cupla : Steel (Chrome-plated), Aluminum Tube Fitter Type: Brass (Nickel-plated)			
Size	1/8" • 1/4"			
Tube size (for Tube Fitter end configurations)	Polyurethane : $\phi 6 \pm 0.1$ • $\phi 8 \pm 0.15$ Nylon : $\phi 6 \pm 0.05$ • $\phi 8 \pm 0.05$ Teflon : $\phi 6 \pm 0.07$ • $\phi 8 \pm 0.07$			
Working pressure MPa (kgf/cm <sup>2</sup> )	1.0 {10}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	1.5 {15}			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-20°C~+80°C	Standard material
	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Made-to-order item

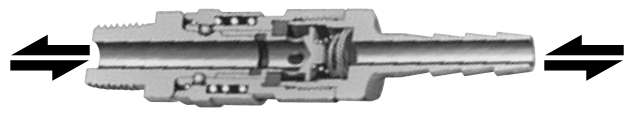
• Above specifications apply only to Cuplas. Working pressure, pressure resistance and working temperature range may vary depending on tube materials you use with and temperature conditions you use under. Micro Cupla with Tube Fitter has NBR packing material only.

### Max. Tightening Torque

	1/8"	1/4"
Size		
Torque	7 {71}	14 {143}

### Flow Direction

Air flows in either direction from plug or socket side when coupled.



### Interchangeability

Any socket and plug can be connected regardless of their sizes and end configurations.  
\*Can be connected with Mold Cuplas.  
\*When conversion socket+plug Model O2S20P is used, Super Cupla plugs can be connected with sockets for Hi Cupla Models 20, 30 and 40.

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

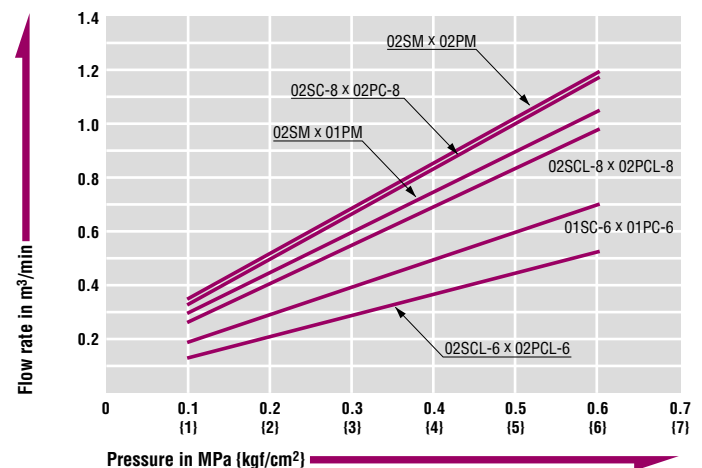
Model	O1SP	O2SP	Tube Fitter Type for 6mm OD tube	Tube Fitter Type for 8mm OD tube
Min. cross-sectional area	19	19	12.5	19

### Suitability for Vacuum

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

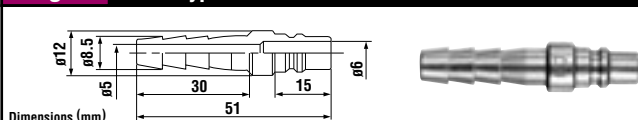
### Pressure - Flow Characteristics

[Test conditions] • Fluid : Air • Temperature : Room temperature  
• Tube size :  $\phi 6\text{mm} \times \phi 4\text{mm}$ ,  $\phi 8\text{mm} \times \phi 6\text{mm}$  (Super Cupla with Tube Fitter)



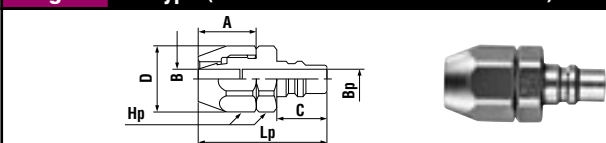
Models and Dimensions

**Plug** O2PH type (Hose barb)



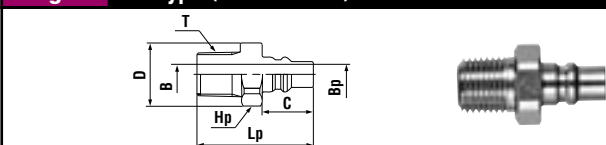
Model	Application (Hose)	Mass (g)
O2PH	1/4"	16

**Plug** PN type (For connection to urethane hose)



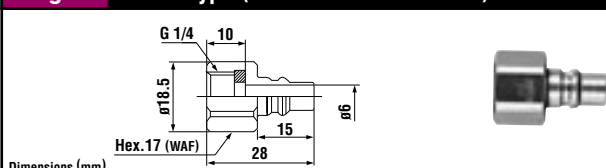
Model	Application (Hose)	Mass (g)	Dimensions (mm)						
			Lp	C	øD	A	Hp(WAF)	øBp	øB
O1PN	ø5mm x ø8mm	27.6	(38.5)	15	18.5	17	Hex.17	6	3.8
O2PN	ø6.5mm x ø10mm	27.6	(38.5)	15	18.5	17	Hex.17	6	5.3

**Plug** PM type (Male thread)



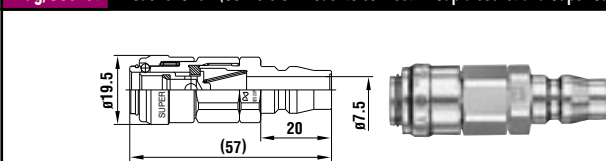
Model	Application	Mass (g)	Dimensions (mm)						
			Lp	C	øD	Hp(WAF)	T	øBp	øB
O1PM	Rc 1/8	12	31	15	-	Hex.12	R 1/8	6	5
O2PM	Rc 1/4	22.7	34	15	18.5	Hex.17	R 1/4	6	6

**Plug** O2PFF type (Parallel female thread)



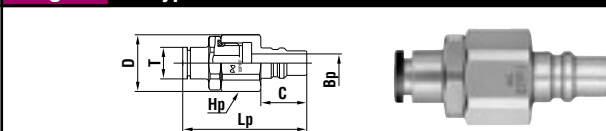
Model	Application	Mass (g)
O2PFF	G 1/4	17.7

**Plug/Socket** Model O2S20P (Conversion model to connect Hi Cupla socket and Super Cupla plug)



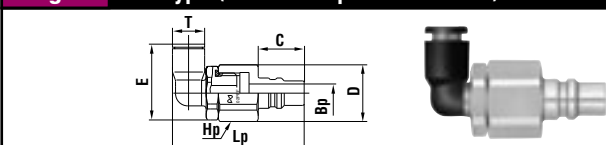
Model	Application	Mass (g)
O2S20P	Hi Cupla (Socket)	58

**Plug** PC type (With Tube Fitter)



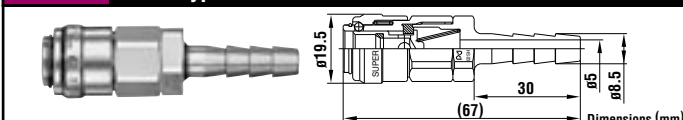
Model	Application (Tube)	Mass (g)	Dimensions (mm)						
			Lp	C	øD	E	Hp(WAF)	øT	øBp
O2PC-6	6mm OD	28.5	(40.5)	15	18.5	18.5	Hex.17	10.3	6
O2PC-8	8mm OD	33	(47.5)	15	18.5	18.5	Hex.17	13.5	6

**Plug** PCL type (With L-shaped Tube Fitter)



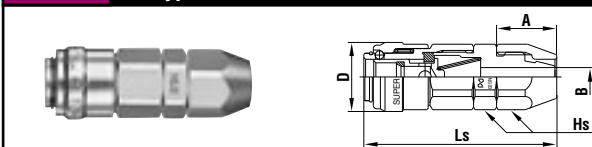
Model	Application (Tube)	Mass (g)	Dimensions (mm)						
			Lp	C	øD	E	Hp(WAF)	øT	øBp
O2PCL-6	6mm OD	29.5	(43)	15	18.5	(25.3)	Hex.17	10.5	6
O2PCL-8	8mm OD	34.5	(46.5)	15	18.5	(32.3)	Hex.17	13.5	6

**Socket** O2SH type (Hose barb)



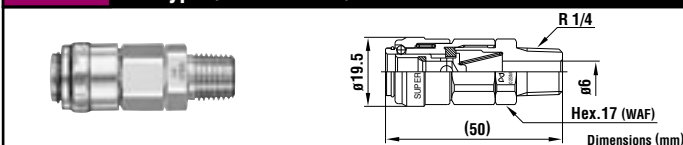
Model	Application (Hose)	Mass (g)
O2SH	1/4"	56

**Socket** SN type (For connection to urethane hose)



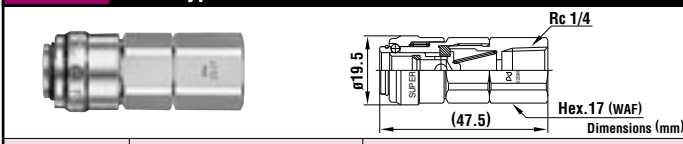
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			Ls	A	øD	Hs(WAF)	øB
O1SN	ø5mm x ø8mm	35	(54.5)	17	19.5	Hex.17	3.8
O2SN	ø6.5mm x ø10mm	35	(54.5)	17	19.5	Hex.17	5.3

**Socket** SM type (Male thread)



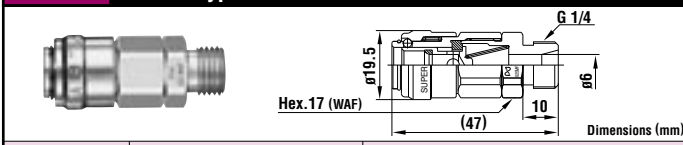
Model	Application	Mass (g)
O2SM	Rc 1/4	57

**Socket** O2SF type (Female thread)



Model	Application	Mass (g)
O2SF	R 1/4	26

**Socket** O2SMF type (Parallel female thread)



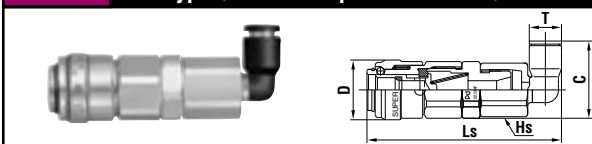
Model	Application	Mass (g)
O2SMF	G 1/4	27

**Socket** SC type (With Tube Fitter)



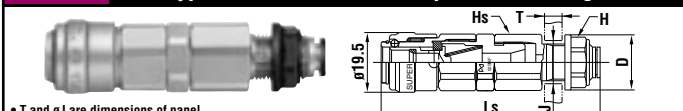
Model	Application (Tube)	Mass (g)	Dimensions (mm)		
			Ls	øD	øT
O2SC-6	6mm OD	46	(65.5)	19.5	10.5
O2SC-8	8mm OD	50.5	(70)	19.5	13.5

**Socket** SCL type (With L-shaped Tube Fitter)



Model	Application (Tube)	Mass (g)	Dimensions (mm)				
			Ls	øD	Hs(WAF)	C	øT
O2SCL-6	6mm OD	47.5	(63.5)	19.5	Hex.16	(25.7)	10.3
O2SCL-8	8mm OD	49.5	(67.7)	19.5	Hex.16	(32.8)	13.5

**Socket** SCB type (With Tube Fitter for panel mounting)



\* T and øJ are dimensions of panel.

Model	Application (Tube)	Mass (g)	Dimensions (mm)					
			Ls	øD	Hs(WAF)	H(WAF)	T	øJ
O2SCB-6	6mm OD	45.5	(71.5)	18	Hex.17	Hex.15	7 or less	12.5 <sup>+0.3</sup> <sub>0</sub>
O2SCB-8	8mm OD	46.5	(72)	21	Hex.17	Hex.18	8 or less	15.5 <sup>+0.3</sup> <sub>0</sub>

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 Low Pressure

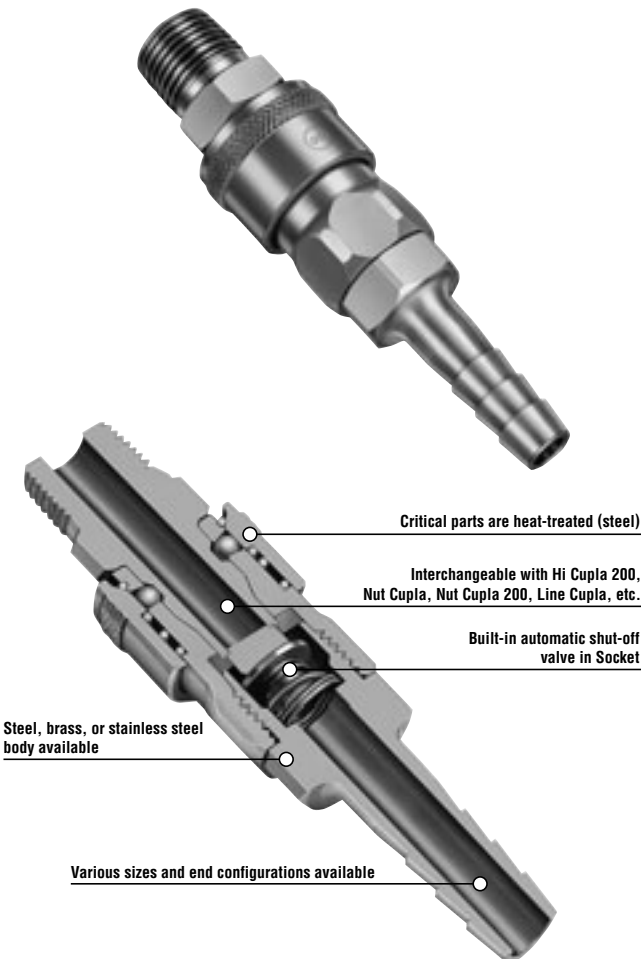
# Hi Cupla

Universal purpose couplings for air lines

Working pressure	Working pressure	Valve structure	Applicable fluids (Steel applies to air only)
1.5MPa (15kgf/cm <sup>2</sup> )	1.0MPa (10kgf/cm <sup>2</sup> )	One-way shut-off	Air Water

From factory air line to pneumatic tool connection, available in various body materials, sizes and end configurations. Excellent durability.

- An excellent general purpose coupling for connecting factory air supply to pneumatic tools.
- Steel coupling is suitable for air. Brass or stainless steel are suitable for water. Note that fluid will come out from the plug when disconnected.
- Critical structural parts of steel models are heat-treated for increased strength giving greater durability and resistance to wear.
- Available in various body materials, sizes and end configurations applicable to a wide range of applications.



Specifications			
Body material	Steel (Chrome-plated)	Brass	Stainless steel
Size	1/8" (10 type) • 1/4" (20 type) • 3/8" (30 type) 1/2" (40 type, 400 type) • 3/4" (600 type) • 1" (800 type)		
Working pressure MPa (kgf/cm <sup>2</sup> )	1.5 (15)	1.0 (10)	1.5 (15)
Pressure resistance MPa (kgf/cm <sup>2</sup> )	2.0 (20)	1.5 (15)	2.0 (20)
Seal material	Seal material	Mark	Working temperature range
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+80°C
	Fluoro rubber	FKM (X-100)	-20°C~+180°C
			Standard material

Max. Tightening Torque		N·m (kgf·cm)					
Size		1/8"	1/4"	3/8"	1/2"	3/4"	1"
Torque	Steel	7 (71)	14 (143)	22 (224)	60 (612)	100 (1020)	120 (1224)
	Brass	5 (51)	9 (92)	11 (112)	30 (306)	50 (510)	65 (663)
	Stainless steel	—	14 (143)	22 (224)	60 (612)	100 (1020)	120 (1224)

**Flow Direction**

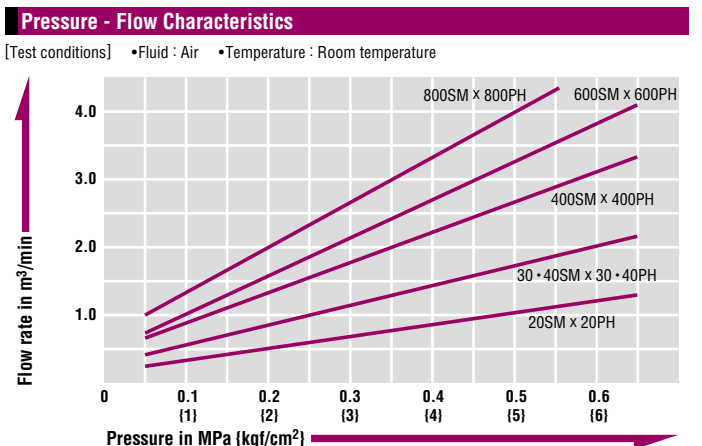
Fluid must run from socket to plug.

- Interchangeability**
- 1 Sockets and plugs for Models 10 (1/8"), 17 (1/4"), 20 (1/4"), 30 (3/8") and 40 (1/2") can be connected with each other.
  - 2 Sockets and plugs for Models 400 (1/2"), 600 (3/4") and 800 (1") can be connected with each other. 1 and 2 can not be connected across each group.
  - 3 Interchangeable with all other Hi Cupla Series products.  
Please see the page for "Hi Cupla series Interchangeability".

Min. Cross-Sectional Area		(mm <sup>2</sup> )							
10, 17, 20, 30, 40 type									
Socket	Plug	10PM	17PH	20PH	20PM-PF	30PH	30PM-PF	40PH	40PM-PF
10SM		13	13	13	13	13	13	13	13
17SH		13	16	16	16	16	16	16	16
20SH		13	16	20	20	20	20	20	20
20SM-SF		13	16	20	33	33	33	33	33
30SH		13	16	20	33	33	33	33	33
30SM-SF		13	16	20	33	33	33	33	33
40SH		13	16	20	33	33	33	33	33
40SM-SF		13	16	20	33	33	33	33	33

400, 600, 800 type		400PH	400PM-PF	600PH	600PM-PF	800PH	800PM-PF
Socket	Plug						
400SH		64	64	64	64	64	64
400SM-SF		64	94	94	94	94	94
600SH		64	94	94	94	94	94
600SM-SF		64	94	94	94	94	94
800SH		64	94	94	94	94	94
800SM-SF		64	94	94	94	94	94

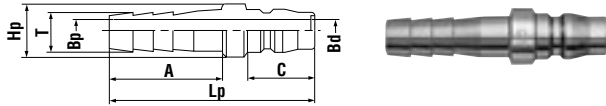
**Suitability for Vacuum**  
Not suitable for vacuum application in either connected or disconnected condition.





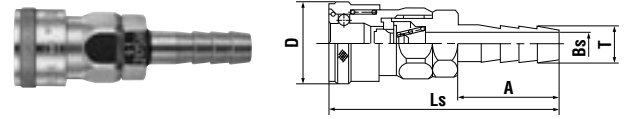
Models and Dimensions

**Plug PH type (Hose barb)**



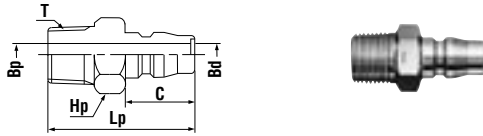
Model	Application (Hose)	Body material•Mass (g)			Dimensions (mm)						
		Steel	Brass	Stainless steel	Lp	øHp	A	C	øT	øBp	øBd
17PH	1/4"	24	-	-	54	16	27	20	7.2	4.5	7.5
20PH	1/4"	28	30	26	57	16	30	20	9	5	7.5
30PH	3/8"	31	34	27	61	16	34	20	11.3	7.5	7.5
40PH	1/2"	53	58	47	63	20	36	20	15	7.5	7.5
400PH	1/2"	66	72	67	66	22	36	23	15	9	13
600PH	3/4"	121	132	129	77	30	45	23	21	13	13
800PH	1"	152	167	150	85	34	54	23	27	20	13

**Socket SH type (Hose barb)**



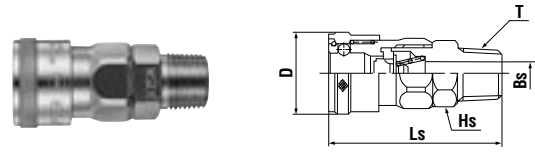
Model	Application (Hose)	Body material•Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	Ls	øD	A	T	øBs
17SH	1/4"	99	-	-	(69.5)	26.5	27	7.2	4.5
20SH	1/4"	103	107	100	(72.5)	26.5 <sup>+1</sup>	30	9	5
30SH	3/8"	106	111	101	(76.5)	26.5 <sup>+1</sup>	34	11.3	7.5
40SH	1/2"	118	124	118	(78.5)	26.5 <sup>+1</sup>	36	15	9
400SH	1/2"	220	240	218	(83)	35	36	15	9
600SH	3/4"	251	273	242	(92)	35	45	21	14
800SH	1"	273	299	272	(102)	35	55	27	16

**Plug PM type (Male thread)**



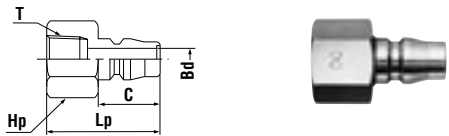
Model	Application	Body material•Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	Lp	Hp(WAF)	C	T	øBp	øBd
10PM	Rc 1/8	22	24	-	37	Hex.14	20	R 1/8	4	7.5
20PM	Rc 1/4	25	28	27	41	Hex.14	20	R 1/4	7.5	7.5
30PM	Rc 3/8	43	48	40	42	Hex.19 <sup>-3</sup>	20	R 3/8	7.5	7.5
40PM	Rc 1/2	59	66	62	46	Hex.22	20	R 1/2	12	7.5
400PM	Rc 1/2	69	77	70	50	Hex.22	23	R 1/2	13	13
600PM	Rc 3/4	116	126	115	55	Hex.32	23	R 3/4	19	13
800PM	Rc 1	180	196	180	63	Hex.35	23	R 1	22	13

**Socket SM type (Male thread)**



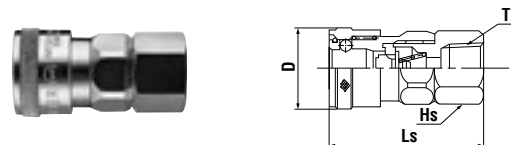
Model	Application	Body material•Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	Ls	øD	Hs(WAF)	T	øBs
10SM	Rc 1/8	98	-	-	(52.5)	26.5	Hex.19	R 1/8	5
20SM	Rc 1/4	101	104	96	(55.5)	26.5 <sup>+1</sup>	Hex.19	R 1/4	7
30SM	Rc 3/8	108	119	105	(56.5)	26.5 <sup>+1</sup>	Hex.19	R 3/8	8
40SM	Rc 1/2	131	136	120	(59.5)	26.5 <sup>+1</sup>	Hex.23 <sup>+2</sup>	R 1/2	9
400SM	Rc 1/2	213	232	207	(63)	35	Hex.29	R 1/2	13
600SM	Rc 3/4	260	283	241	(67)	35	Hex.32	R 3/4	16
800SM	Rc 1	288	317	303	(72)	35	Hex.36	R 1	16

**Plug PF type (Female thread)**



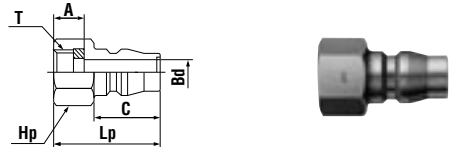
Model	Application	Body material•Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	Lp	Hp(WAF)	C	T	øBd
20PF	R 1/4	28	30	30	36	Hex.17	20	Rc 1/4	7.5
30PF	R 3/8	39	41	41	37	Hex.21	20	Rc 3/8	7.5
40PF	R 1/2	70	77	69	38	Hex.29	20	Rc 1/2	7.5
400PF	R 1/2	82	89	81	41	Hex.29	23	Rc 1/2	13
600PF	R 3/4	116	126	118	45	Hex.35	23	Rc 3/4	13
800PF	R 1	190	202	192	54	Hex.41	23	Rc 1	13

**Socket SF type (Female thread)**



Model	Application	Body material•Mass (g)			Dimensions (mm)			
		Steel	Brass	Stainless steel	Ls	øD	Hs(WAF)	T
20SF	R 1/4	95	103	98	(49.5)	26.5 <sup>+1</sup>	Hex.19	Rc 1/4
30SF	R 3/8	103	105	99	(50.5)	26.5 <sup>+1</sup>	Hex.21	Rc 3/8
40SF	R 1/2	139	149	138	(52.5)	26.5 <sup>+1</sup>	Hex.29	Rc 1/2
400SF	R 1/2	216	235	216	(57)	35	Hex.29	Rc 1/2
600SF	R 3/4	260	283	258	(61)	35	Hex.35	Rc 3/4
800SF	R 1	324	353	317	(68)	35	Hex.41	Rc 1

**Plug PFF type (Parallel female thread)**



Model	Application	Body material•Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	Lp	Hp(WAF)	A	C	T	øBd
20PFF	G 1/4	23	-	-	32	Hex.17	9	20	G 1/4	7.5

- Above pictures are plugs and sockets of steel 20, 30 and 40 models.
- \*1 : D = 25.4 for brass and stainless steel models.
- \*2 : Hs = Hex. 22 for brass and stainless steel models.
- \*3 : Hp = Hex. 17 for brass and stainless steel models.

Application Example



For Low Pressure (Air)

# Hi Cupla 200

Push-to-connect type for air lines

Working pressure



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

Valve structure



One-way shut-off

Applicable fluid



Air

**Simple and secure push-to-connect type! Big flow rate! End-face seal design. Gives excellent handling touch.**

- Just push the plug into the socket for simple and secure connection. This reduces connection time and improves efficiency.
- New valve design for low pressure loss to achieve flow rate increase (15% up over the conventional model).
- End-face seal is achieved when connected.
- Low connection resistance allows easier connection/disconnection.
- No seal damage caused by exhausted lubricant is observed and the handling is superior to external O-ring design.
- Available only with steel body. Not suitable for water or oil.
- Tube Fitter type is available for push-to-connect operation.



▼ With Tube Fitter

## Specifications

Body material	Steel (Chrome-plated)			
Size	1/4" (20 type) • 3/8" (30 type) • 1/2" (40 type)			
Tube size (for Tube Fitter end configurations)	Polyurethane : $\phi 6 \pm 0.1$ • $\phi 8 \pm 0.15$ • $\phi 10 \pm 0.15$ Nylon : $\phi 6^{+0.05}_{-0.08}$ • $\phi 8^{+0.05}_{-0.1}$ • $\phi 10^{+0.05}_{-0.1}$ Teflon : $\phi 6 \pm 0.07$ • $\phi 8 \pm 0.07$ • $\phi 10 \pm 0.07$			
Working pressure MPa (kgf/cm <sup>2</sup> )	1.5 {15}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	2.0 {20}			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+60°C	Standard material

• Above are specifications only for Cuplas. Working pressures, maximum pressures and working temperature ranges may vary depending on materials of the tube and temperature conditions in use.

## Max. Tightening Torque

N·m {kgf·cm}

Size	1/4"	3/8"	1/2"
Torque	14 {143}	22 {224}	60 {612}

## Flow Direction

Fluid must run from socket to plug.



## Interchangeability

Interchangeable with Hi Cupla Models 20, 30 and 40.  
Interchangeable with each corresponding Hi Cupla Series models.

## Min. Cross-Sectional Area

(mm<sup>2</sup>)

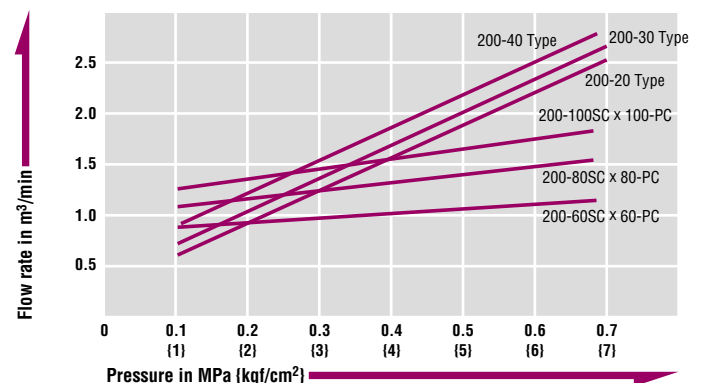
Socket	Plug	17PH	20PH	30PH	40PH	20PM	30PM	40PM	20PF	30PF	40PF
200-17SH		16	16	16	16	16	16	16	16	16	16
200-20SH		16	20	20	20	20	20	20	20	20	20
200-30SH		16	20	41	41	41	41	41	41	41	41
200-40SH		16	20	41	41	41	41	41	41	41	41
200-20SM		16	20	41	41	41	41	41	41	41	41
200-30SM		16	20	41	41	41	41	41	41	41	41
200-40SM		16	20	41	41	41	41	41	41	41	41
200-20SF		16	20	41	41	41	41	41	41	41	41
200-30SF		16	20	41	41	41	41	41	41	41	41
200-40SF		16	20	41	41	41	41	41	41	41	41

## Suitability for Vacuum

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

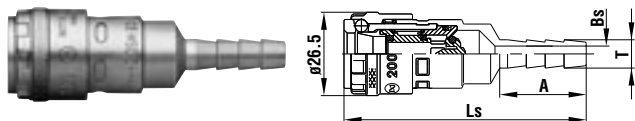
## Pressure - Flow Characteristics

[Test conditions] • Fluid : Air • Temperature : Room temperature



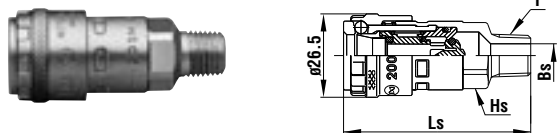
**Models and Dimensions** WAF : WAF stands for width across flat.

**Socket SH type (Hose barb)**



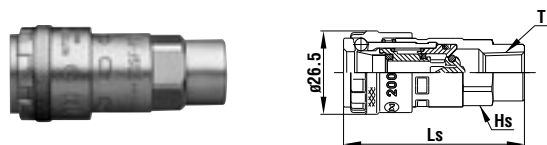
Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			Ls	A	øT	øBs
200-17SH	1/4"	86	(77)	27	7.2	4.5
200-20SH	1/4"	90	(77)	27.5	9	5
200-30SH	3/8"	92	(79)	32	11.3	7.5
200-40SH	1/2"	104	(79.5)	32	15	10

**Socket SM type (Male thread)**



Model	Application	Mass (g)	Dimensions (mm)			
			Ls	Hs(WAF)	T	øBs
200-20SM	Rc 1/4	89	(60)	Hex.19	R 1/4	7.5
200-30SM	Rc 3/8	91	(60.5)	Hex.19	R 3/8	10
200-40SM	Rc 1/2	102	(56)	Hex.24	R 1/2	13

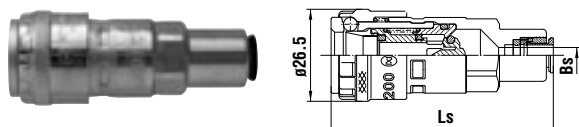
**Socket SF type (Female thread)**



Models	Application	Mass (g)	Dimensions (mm)		
			Ls	Hs(WAF)	T
200-20SF	R 1/4	94	(57.5)	Hex.19	Rc 1/4
200-30SF	R 3/8	103	(55.5)	Hex.22	Rc 3/8
200-40SF	R 1/2	138	(57.5)	Hex.29	Rc 1/2

**Models and Dimensions (With Tube Fitter)**

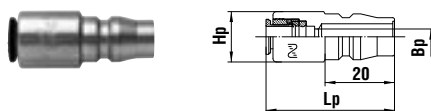
**Socket SC type (With Tube Fitter)**



Model	Application	Mass (g)	Dimensions (mm)	
			Ls	øBs
200-60SC	For 6mm OD tube	100	(64)	5
200-80SC	For 8mm OD tube	105	(67.5)	6.5
200-100SC	For 10mm OD tube	123	(70.5)	8.5

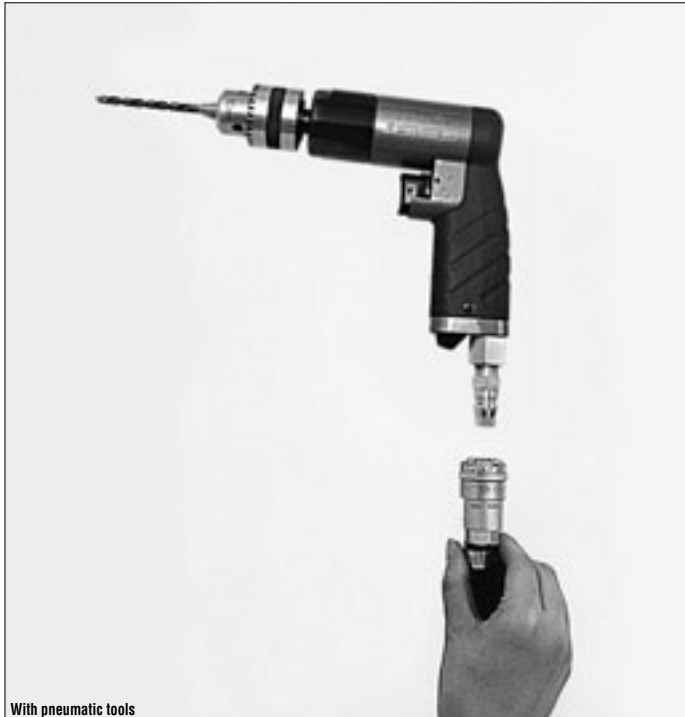
• The outer dimensions of Model 200-100SC are a little bit different from those of other models.

**Plug PC type (With Tube Fitter)**



Model	Application	Mass (g)	Dimensions (mm)		
			Lp	øHp	øBp
60PC	For 6mm OD tube	25	(37)	14.5	4.5
80PC	For 8mm OD tube	30	(41)	16.5	6.5
100PC	For 10mm OD tube	43	(45)	19.5	7.5

**Application example**



*All of socket, plug and tube can be connected in one push-to-connect operation.*

Socket

Plug

No need of pulling the sleeve before the connection. Just push-to-connect operation.

Just push the tube into Cupla and then it is locked.

Polyurethane, Nylon and Teflon tubes.

**Hi Cupla 200 and Tube Fitter are now integrated.**

Major applications: miniature pneumatic equipment, automatic control equipment, physicochemical equipment and medical devices.

**Just push in for quick connection.**

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 Low Pressure (Air)

# Nut Cupla Nut Cupla 200 Rotary Nut Cupla

For connection to urethane hose

Working pressure



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

Valve structure



One-way shut-off

Applicable fluid



Air

**No hose clamp required!**  
**Simple and secure connection to urethane hose.**  
**Fitted with hose guard nut to prevent possible kinking.**

- Nut types are available in Hi Cupla Series and Hi Cupla 200 Series. Hose guard nut type available to prevent hose kinking.
- To mount on hose, simply slide it over the nipple and tighten the nut.
- The design to tighten outside of hose reduces hose slip away or fluid leaks.
- Also available are Rotary Nut Cupla equipped with ball bearing swivel mechanism to prevent and relieve tension on operator's hands.

Nut Cupla

Nut Cupla 200

Nut Cupla 200 with hose guard nut



Rotary Nut Cupla

### Application example



Blow guns

### Specifications

Body material	Steel (Chrome-plated)						
Size	For ø5 mm x ø8 mm • ø8 mm x ø12 mm hose						
	For ø6 mm x ø9 mm • ø8.5 mm x ø12.5 mm hose						
	For ø6.5 mm x ø10 mm • ø11 mm x ø16 mm hose						
Working pressure MPa (kgf/cm <sup>2</sup> )	1.5 (15)						
Pressure resistance MPa (kgf/cm <sup>2</sup> )	2.0 (20)						
Seal material	Nitrile rubber	Mark	NBR (SG)	Working temperature range	-20°C~+60°C	Remarks	Standard material

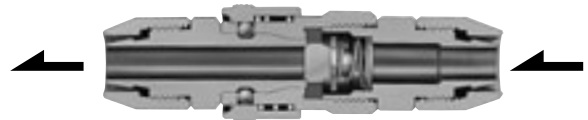
### Tightening Torque Range

N·m (kgf·cm)

Model	SN • PN • SNR Type	65SNG • PNG • SNRG Type	85SNG • PNG • SNRG Type
Torque	9~11 (92~112)	5~6 (51~61)	7~8 (71~82)

### Flow Direction

Fluid must run from socket to plug.



### Interchangeability

Interchangeable with Hi Cupla Models 20, 30 and 40.  
Interchangeable with each corresponding Hi Cupla Series models.

### Min. Cross-Sectional Area

(mm<sup>2</sup>)

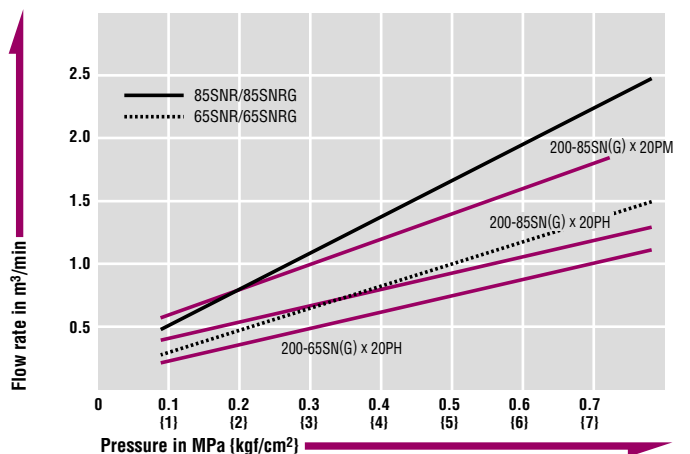
Socket \ Plug	20PH	30PH	40PH	20PM	30PM	40PM	20PF	30PF	40PF
200-50SN	16	16	16	16	16	16	16	16	16
200-60SN	20	22	22	22	22	22	22	22	22
200-65SN	20	22	22	22	22	22	22	22	22
200-80SN	20	41	41	41	41	41	41	41	41
200-85SN	20	40	41	41	41	41	41	41	41
200-110SN	20	40	41	41	41	41	41	41	41
200-50SNG	16	16	16	16	16	16	16	16	16
200-65SNG	20	22	22	22	22	22	22	22	22
200-85SNG	20	40	41	41	41	41	41	41	41

### Suitability for Vacuum

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

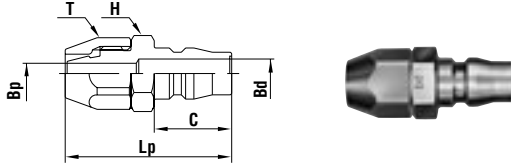
### Pressure - Flow Characteristics

[Test conditions] • Fluid : Air • Temperature : Room temperature



Models and Dimensions (Nut Cupla / Nut Cupla 200)

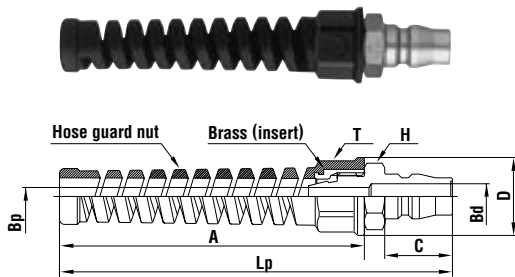
**Plug PN type (For urethane hose connection)**



(Old model)

Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			Lp	C	σBp	σBfd	H(WAF)	T(WAF)
50PN (10PAH)	ø5 mm x ø8 mm	30	43	20	4.5	7.5	Hex.17	Hex.17
60PN (20PAH)	ø6 mm x ø9 mm	40	43	20	5.3	7.5	Hex.17	Hex.17
65PN	ø6.5 mm x ø10 mm	42	43	20	5.3	7.5	Hex.17	Hex.17
80PN (30PAH)	ø8 mm x ø12 mm	50	45	20	7.5	7.5	Hex.19	Hex.19
85PN	ø8.5 mm x ø12.5 mm	52	45	20	7.5	7.5	Hex.19	Hex.19
110PN (40PAH)	ø11 mm x ø16 mm	75	52	20	7.5	7.5	Hex.23	Hex.24

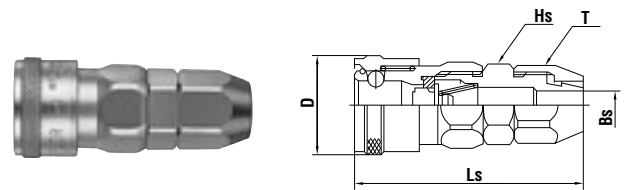
**Plug PNG type (For urethane hose with hose guard nut connection)**



Model	Application (Hose)	Mass (g)	Dimensions (mm)							
			Lp	C	A	σD	σBp	σBfd	H(WAF)	T(WAF)
50PNG*	ø5 mm x ø8 mm	41	(116)	20	90	23	4.5	7.5	Hex.17	Hex.19
65PNG	ø6.5 mm x ø10 mm	43	(116)	20	90	23	5.3	7.5	Hex.17	Hex.19
85PNG	ø8.5 mm x ø12.5 mm	55	(116)	20	90	26	7.5	7.5	Hex.19	Hex.22

\* Made-to-order item.

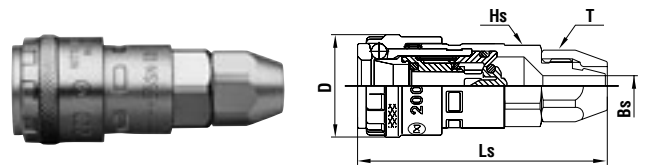
**Socket SN type (For urethane hose connection)**



(Old model)

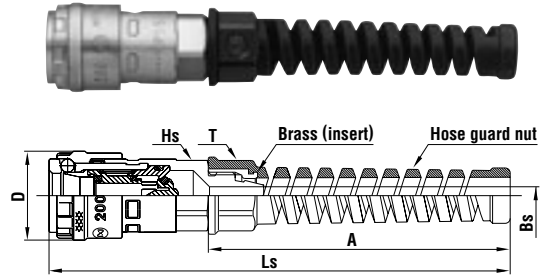
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			Ls	σD	σBs	Hs(WAF)	T(WAF)
50SN (10SAH)	ø5 mm x ø8 mm	117	(60)	26.5	4.5	Hex.19	Hex.17
60SN (20SAH)	ø6 mm x ø9 mm	115	(59.5)	26.5	5.3	Hex.19	Hex.17
65SN	ø6.5 mm x ø10 mm	115	(59.5)	26.5	5.3	Hex.19	Hex.17
80SN (30SAH)	ø8 mm x ø12 mm	120	(61.5)	26.5	7.5	Hex.19	Hex.19
85SN	ø8.5 mm x ø12.5 mm	120	(61.5)	26.5	7.5	Hex.19	Hex.19
110SN (40SAH)	ø11 mm x ø16 mm	153	(64.5)	26.5	10	Hex.23	Hex.24

**Socket SN type (For urethane hose connection)**



Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			Ls	σD	σBs	Hs(WAF)	T(WAF)
200-50SN	ø5 mm x ø8 mm	105	(64.5)	26.5	4.5	Hex.19	Hex.17
200-60SN	ø6 mm x ø9 mm	105	(64.5)	26.5	5.3	Hex.19	Hex.17
200-65SN	ø6.5 mm x ø10 mm	106	(64.5)	26.5	5.3	Hex.19	Hex.17
200-80SN	ø8 mm x ø12 mm	112	(66.5)	26.5	7.5	Hex.19	Hex.19
200-85SN	ø8.5 mm x ø12.5 mm	113	(66.5)	26.5	7.5	Hex.19	Hex.19
200-110SN	ø11 mm x ø16 mm	127	(62)	26.5	10	Hex.23	Hex.24

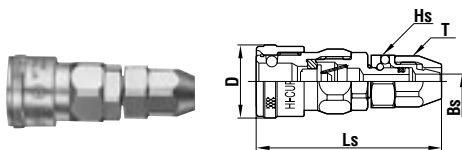
**Socket SNG type (For urethane hose with hose guard nut connection)**



Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			Ls	A	σD	σBs	Hs(WAF)	T(WAF)
200-50SNG*	ø5 mm x ø8 mm	105	(137.5)	90	26.5	4.5	Hex.19	Hex.19
200-65SNG	ø6.5 mm x ø10 mm	107	(137.5)	90	26.5	5.3	Hex.19	Hex.19
200-85SNG	ø8.5 mm x ø12.5 mm	116	(137.5)	90	26.5	7.5	Hex.19	Hex.22

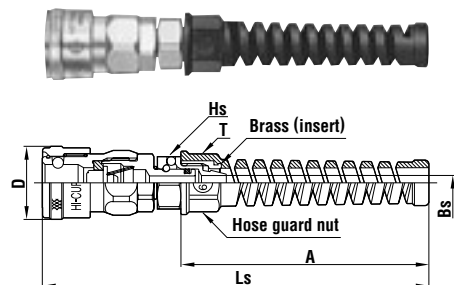
Models and Dimensions (Rotary Nut Cupla)

**Socket SNR type (With ball bearing swivel mechanism)**



Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			Ls	σD	σBs	Hs(WAF)	T(WAF)
65SNR	ø6.5 mm x ø10 mm	120	(67.3)	26.5	5.3	Hex.19	Hex.17
85SNR	ø8.5 mm x ø12.5 mm	136	(69.3)	26.5	7.5	Hex.21	Hex.19

**Socket SNRG type (With ball bearing swivel mechanism)**



Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			Ls	A	σD	σBs	Hs(WAF)	T(WAF)
65SNRG	ø6.5 mm x ø10 mm	121	(140.3)	90	26.5	5.3	Hex.19	Hex.19
85SNRG	ø8.5 mm x ø12.5 mm	139	(140.3)	90	26.5	7.5	Hex.21	Hex.22




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 Low Pressure (Air)

# Lock Cupla 200

Air line coupling with sleeve safety lock feature

<b>Working pressure</b>	<b>Valve structure</b>	<b>Applicable fluid</b>
 1.5 MPa (15 kgf/cm <sup>2</sup> )	 One-way shut-off	 Air

**Push-to-connect operation. Added easy lock design for safety!**



- Locking design prevents unexpected detachment after connection. Good for connections between hoses.
- Simple one push of plug and socket to each other for connection. Easy handling improves job efficiency.
- Ball bearing swivel mechanism prevents hose twists and relieves load on holding hands (SNRG type).
- To mount on hose, simply slide it over the nipple and tighten the nut (SNRG type).
- Hose guard nut to prevent hose from kinking as a standard feature (SNRG type).
- Low pressure loss valve design gives improved flow rate.

### Application Example

<b>Applicable fluid</b>	Application
Air	Pneumatic tools, Pneumatic devices, Various air piping

### Suitability for Vacuum

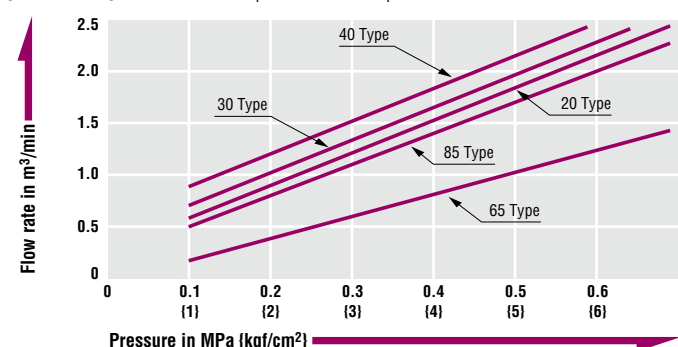
Not suitable for vacuum application in either connected or disconnected condition.

### Min. Cross-sectional Area (mm<sup>2</sup>)

Lock Cupla 200	Plug	Min. Cross-sectional Area (mm <sup>2</sup> )								
		20PH	30PH	40PH	20PM	30PM	40PM	20PF	30PF	40PF
L200-20SH	20	20	20	20	20	20	20	20	20	20
L200-30SH	20	41	41	41	41	41	41	41	41	41
L200-40SH	20	41	41	41	41	41	41	41	41	41
L200-20SM	20	41	41	41	41	41	41	41	41	41
L200-30SM	20	41	41	41	41	41	41	41	41	41
L200-40SM	20	41	41	41	41	41	41	41	41	41
L200-20SF	20	41	41	41	41	41	41	41	41	41
L200-30SF	20	41	41	41	41	41	41	41	41	41
L200-40SF	20	41	41	41	41	41	41	41	41	41
L200-65SNRG	20	20	20	20	20	20	20	20	20	20
L200-85SNRG	38	38	38	38	38	38	38	38	38	38

### Pressure - Flow Characteristics

[Test conditions] • Fluid : Air • Temperature : Room temperature



### Specifications

<b>Body material</b>	Steel (Chrome-plated)			
<b>Size</b>	1/4" (20 type) • 3/8" (30 type) • 1/2" (40 type) For ø6.5 mm x ø10mm • ø8.5mm x ø12.5mm polyurethane hose			
<b>Working pressure MPa (kgf/cm<sup>2</sup>)</b>	1.5 (15)			
<b>Pressure resistance MPa (kgf/cm<sup>2</sup>)</b>	2.0 (20)			
<b>Seal material</b>	<b>Seal material</b>	<b>Mark</b>	<b>Working temperature range</b>	<b>Remarks</b>
<b>Working temperature range</b>	Nitrile rubber	NBR (SG)	-20°C ~ +60°C	Standard material

### Max. Tightening Torque, Tightening Torque Range

N·m (kgf·cm)

Type of connection	Thread		Hose guard nut	
<b>Applicable size</b>	1/4"	3/8"	1/2"	ø6.5 mm x ø10mm ø8.5 mm x ø12.5mm
<b>Torque</b>	14 {143}	22 {224}	60 {612}	5~6 {51~61}    7~8 {71~82}

### Flow Direction

Fluid must run from socket to plug.



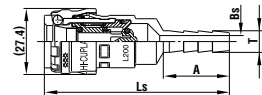
### Interchangeability

Can be connected with plugs for Hi Cupla Models 20, 30 and 40. Interchangeable with each corresponding Hi Cupla Series models.

### Models and Dimensions

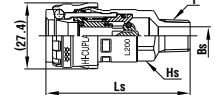
WAF : WAF stands for width across flat.

#### Socket SH type (Hose barb)



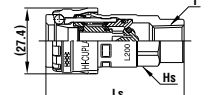
Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			Ls	A	øT	øBs
L200-20SH	1/4"	90	(77)	27.5	9	5
L200-30SH	3/8"	92	(79)	32	11.3	7.5
L200-40SH	1/2"	104	(79.5)	32	15	10

#### Socket SM type (Male thread)



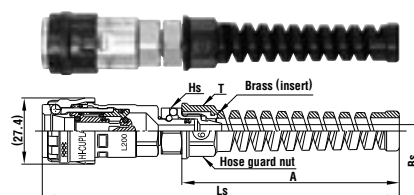
Model	Application	Mass (g)	Dimensions (mm)			
			Ls	Hs(WAF)	T	øBs
L200-20SM	Rc 1/4	89	(60)	Hex.19	R 1/4	7.5
L200-30SM	Rc 3/8	91	(60.5)	Hex.19	R 3/8	10
L200-40SM	Rc 1/2	102	(56)	Hex.24	R 1/2	13

#### Socket SF type (Female thread)



Model	Application	Mass (g)	Dimensions (mm)		
			Ls	Hs(WAF)	T
L200-20SF	R 1/4	94	(57.5)	Hex.19	Rc 1/4
L200-30SF	R 3/8	103	(55.5)	Hex.22	Rc 3/8
L200-40SF	R 1/2	138	(57.5)	Hex.29	Rc 1/2

#### Socket SNRG type (For hose with hose guard nut connection)



Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			Ls	A	Hs(WAF)	T(WAF)	øBs
L200-65SNRG	ø6.5 mm x ø10 mm	125	(147.8)	(90)	Hex.19	Hex.19	5.3
L200-85SNRG	ø8.5 mm x ø12.5 mm	132	(146.8)	(90)	Hex.21	Hex.22	7.5

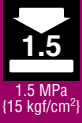
Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.

For Low Pressure (Air)

# Hi Cupla Two Way Type

For bidirectional compressed air flow

Working pressure



Valve structure



Applicable fluid



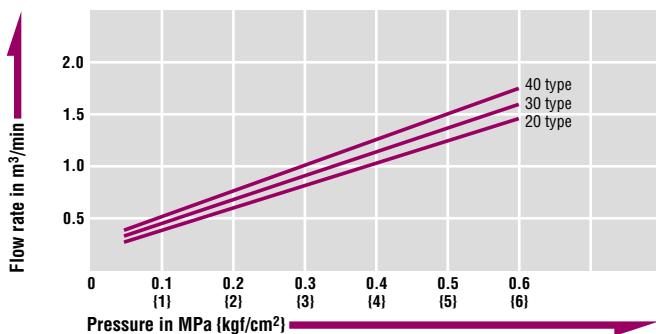
**Air flows in either direction from plug or from socket side when coupled. Ideal for connection of factory air supply lines to pneumatic devices.**

- Can be connected with plugs for Hi Cupla Models 20, 30 and 40 and allows fluid to flow from either plug or socket side when coupled.
- Wide range of connections such as from ports on air pipes in factory to individual pneumatic devices.
- Critical structural parts are heat-treated for increased strength giving greater durability and resistance to wear.
- Available in various sizes and end configurations to suit a wide range of applications.



## Pressure - Flow Characteristics

[Test conditions] • Fluid : Air • Temperature : Room temperature



## Specifications

Body material of brass or stainless steel is available as made-to-order item.

Body material	Steel (Chrome-plated)			
Size	1/4" (20 type) • 3/8" (30 type) • 1/2" (40 type)			
Working pressure MPa (kgf/cm²)	1.5 (15)			
Pressure resistance MPa (kgf/cm²)	2.0 (20)			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-20°C~+80°C	Standard material
	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Made-to-order item

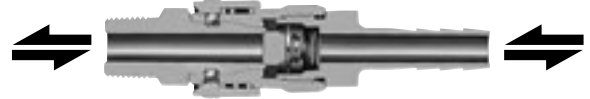
## Max. Tightening Torque

N·m (kgf·cm)

Size	1/4"	3/8"	1/2"
Torque	14 (143)	22 (224)	60 (612)

## Flow Direction

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



## Interchangeability

Can be connected with plugs for Hi Cupla Models 20, 30 and 40. Interchangeable with each corresponding Hi Cupla Series models.

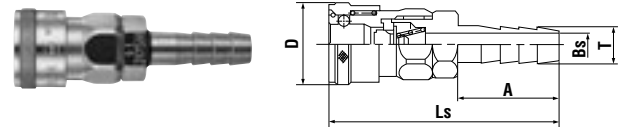
## Suitability for Vacuum

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

## Models and Dimensions

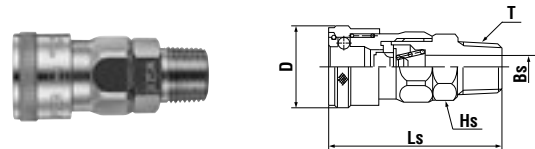
WAF : WAF stands for width across flat.

### Socket SH type (Hose barb)



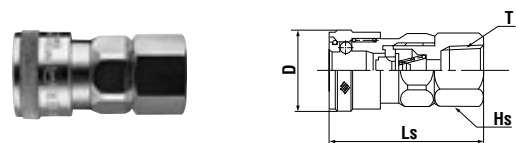
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			Ls	øD	A	øT	øBs
TW20SH	1/4"	98	(72.5)	26.5	30	9	5
TW30SH	3/8"	102	(76.5)	26.5	34	11.3	7.5
TW40SH	1/2"	117	(78.5)	26.5	36	15	9

### Socket SM type (Male thread)



Model	Application	Mass (g)	Dimensions (mm)				
			Ls	øD	Hs(WAF)	T	øBs
TW20SM	Rc 1/4	95	(55.5)	26.5	Hex.19	R 1/4	7
TW30SM	Rc 3/8	109	(56.5)	26.5	Hex.19	R 3/8	8
TW40SM	Rc 1/2	116	(59.5)	26.5	Hex.23	R 1/2	9

### Socket SF type (Female thread)






Model	Application	Mass (g)	Dimensions (mm)			
			Ls	øD	Hs(WAF)	T
TW20SF	R 1/4	95	(49.5)	26.5	Hex.19	Rc 1/4
TW30SF	R 3/8	96	(50.5)	26.5	Hex.21	Rc 3/8
TW40SF	R 1/2	137	(52.5)	26.5	Hex.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.

For Low Pressure (Air)

# Full-Blow Cupla

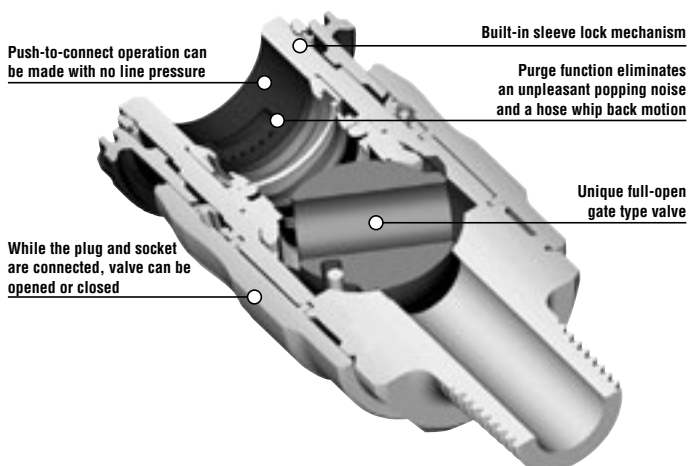
Air line coupling with low pressure loss and high flow rate

<p>Working pressure</p>  <p>1.5 MPa (15 kgf/cm<sup>2</sup>)</p>	<p>Valve structure</p>  <p>One-way shut-off</p>	<p>Applicable fluid</p>  <p>Air</p>
---	--	--

**Unique full-open gate type valve mechanism realizes low pressure loss and high flow rate, which reduces required source air volume.**

- The flow rate is increased by up to 40% more than that of conventional Cuplas.
- During connection and disconnection, the valve is closed, enabling connection/disconnection under zero line pressure.
- When the sleeve of socket is returned to its original position, the purge mechanism releases the residual air pressure in the plug, eliminating an unpleasant popping noise and a hose whip back motion on disconnection.
- Built-in sleeve lock mechanism prevents accidental disconnection of Cuplas, assuring safe operation.
- The valve can be opened and closed while the socket and plug is connected.
- The weight is reduced by 30 to 45% compared with that of conventional Cuplas.

Note: Direct mounting of Full-Blow Cupla to percussive and vibrating tools should be avoided.



Specifications				
Body material	Aluminum alloy			
Size	1/4" (20 type) • 3/8" (30 type) • 1/2" (40 type)			
	For ø6.5 mm x ø10 mm • ø8 mm x ø12 mm polyurethane hose For ø8.5 mm x ø12.5 mm • ø11 mm x ø16 mm polyurethane hose			
Working pressure MPa (kgf/cm <sup>2</sup> )	1.5 {15}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	2.0 {20}			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+60°C	Standard material

Max. Tightening Torque		N·m (kgf·cm)	
Size	1/4"	3/8"	1/2"
Torque	14 {143}	22 {224}	66 {612}

**Flow Direction**

Fluid must run from socket to plug.

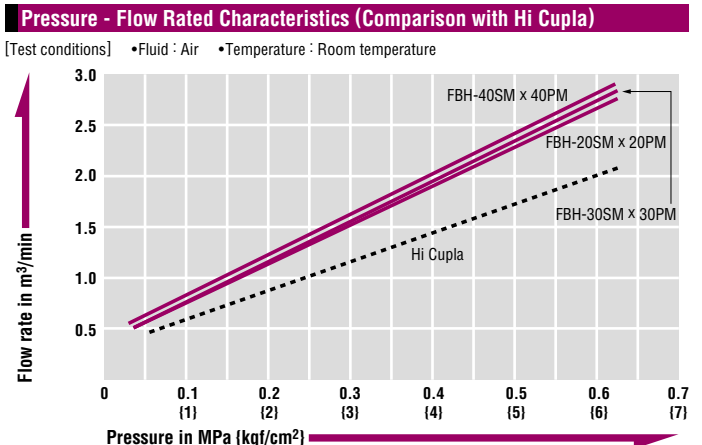
**Interchangeability**

Can be connected with plugs for Hi Cupla Models 20, 30 and 40. Interchangeable with each corresponding Hi Cupla Series models.

Min. Cross-Sectional Area							(mm <sup>2</sup> )
Model	17PH	20PH	20PM/PF	30PH	30PM/PF	40PH	40PM/PF
FBH-20SH	16	20	23.8	23.8	23.8	23.8	23.8
FBH-30SH	16	20	44.2	44.2	44.2	44.2	44.2
FBH-40SH	16	20	44.2	44.2	44.2	44.2	44.2
FBH-20SM	16	20	44.2	44.2	44.2	44.2	44.2
FBH-30SM	16	20	44.2	44.2	44.2	44.2	44.2
FBH-40SM	16	20	44.2	44.2	44.2	44.2	44.2
FBH-20SF	16	20	44.2	44.2	44.2	44.2	44.2
FBH-30SF	16	20	44.2	44.2	44.2	44.2	44.2
FBH-40SF	16	20	44.2	44.2	44.2	44.2	44.2
FBH-65SN	16	20	23.8	23.8	23.8	23.8	23.8
FBH-80SN	16	20	44.2	44.2	44.2	44.2	44.2
FBH-85SN	16	20	44.2	44.2	44.2	44.2	44.2
FBH-110SN	16	20	44.2	44.2	44.2	44.2	44.2

**Suitability for Vacuum**

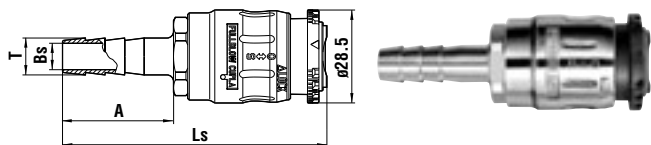
Not suitable for vacuum application in either connected or disconnected condition.



Models and Dimensions

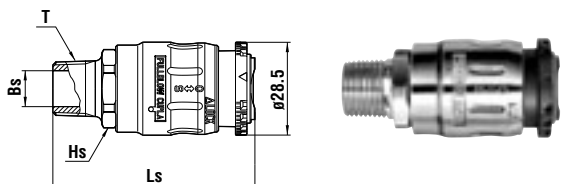
WAF : WAF stands for width across flat.

Socket SH type (Hose barb)



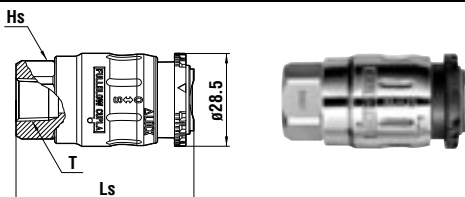
Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			Ls	A	øT	øBs
FBH-20SH	1/4"	70	(77)	30	9	5.5
FBH-30SH	3/8"	74	(81)	34	11.3	8
FBH-40SH	1/2"	85	(83)	36	15	10

Socket SM type (Male thread)



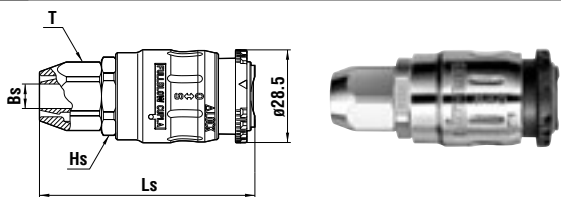
Model	Application	Mass (g)	Dimensions (mm)			
			Ls	Hs(WAF)	T	øBs
FBH-20SM	Rc 1/4	71	(62)	Hex.22	R 1/4	8
FBH-30SM	Rc 3/8	75	(62)	Hex.22	R 3/8	11
FBH-40SM	Rc 1/2	86	(66)	Hex.22	R 1/2	15

Socket SF type (Female thread)



Model	Application	Mass (g)	Dimensions (mm)		
			Ls	Hs(WAF)	T
FBH-20SF	R 1/4	77	(54.5)	Hex.22	Rc 1/4
FBH-30SF	R 3/8	69	(54.5)	Hex.22	Rc 3/8
FBH-40SF	R 1/2	90	(61)	Hex.26	Rc 1/2

Socket SN type (For urethane hose connection)

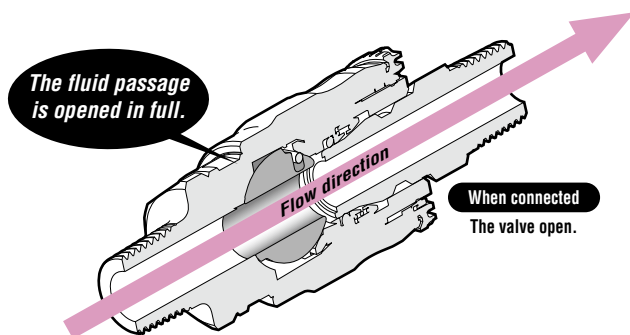
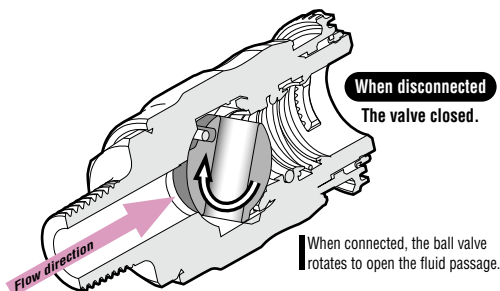


Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			Ls	Hs(WAF)	T(WAF)	øBs
FBH-65SN	ø6.5 mm x ø10 mm	64	(64)	Hex.22	Hex.17	5.5
FBH-80SN	ø8 mm x ø12 mm	67	(66)	Hex.22	Hex.19	7.5
FBH-85SN	ø8.5 mm x ø12.5 mm	68	(66)	Hex.22	Hex.19	7.5
FBH-110SN	ø11 mm x ø16 mm	86	(71)	Hex.26	Hex.24	10

Features of Full-Blow Cupla

Up to about 40% increase in flow rate.

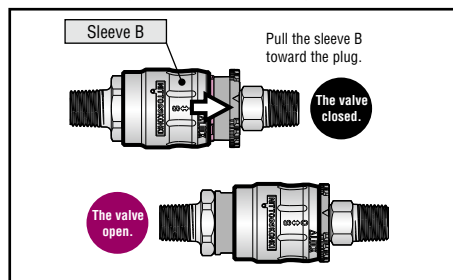
Pressure loss is reduced to the ultimate level. Up to about 40% increase in flow rate compared with conventional Cuplas.



How It Works

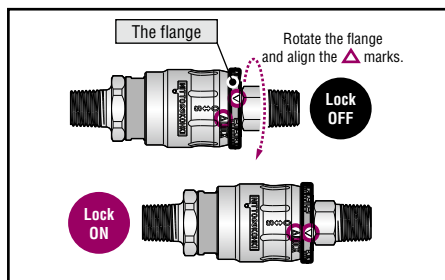
1. Open the valve

Only after connection with the plug, you can slide the socket sleeve B toward the plug in order to open the built-in valve. Full flow path is then obtained.



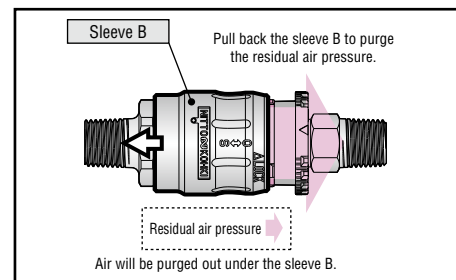
2. Lock the sleeve

Rotate the flange of the sleeve B. Without unlocking the plug you cannot disconnect.



3. Purge the residual air

To disconnect the plug, first turn the flange back to its original position for unlocking and then pull the sleeve B back to the original position. The built-in valve will be closed to purge the residual air pressure.






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 Low Pressure (Air)

# Purge Hi Cupla

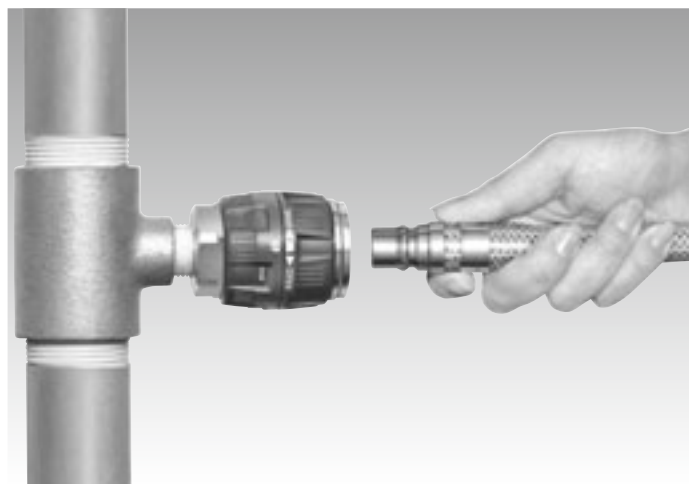
## PVR Type

Air line coupling with built-in residual air pressure release function

<p>Working pressure</p>  <p>1.5 MPa (15 kgf/cm<sup>2</sup>)</p>	<p>Valve structure</p>  <p>One-way shut-off</p>	<p>Applicable fluid</p>  <p>Air</p>
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Connection can be made smoothly regardless of the existing pressure inside the socket.

- Push-to-connect operation. Easy one-hand operation.
- The sleeve lock function prevents accidental disconnection.
- Upon completion of sleeve locking the valve will open to supply air.
- When the sleeve is turned back to its original position, the valve is closed and purges residual air pressure in the plug without an unpleasant popping noise and a hose whip back motion on disconnection.
- Even after connection, valve opening/closing control is possible.
- Flow rate increases by approximately 20% over that of Hi Cupla Model 400SM.
- Can be connected with plugs for Hi Cupla Models 400, 600 and 800.



Specifications				
Body material	Zinc Die Cast, brass, and others			
Size	1/2" (400 type) • 3/4" (600 type) • 1" (800 type)			
Working pressure MPa (kgf/cm <sup>2</sup> )	1.5 (15)			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	2.0 (20)			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber Hydrogenated nitrile rubber	NBR (SG)	-20°C~+60°C	Standard material

Max. Tightening Torque		N·m (kgf·cm)		
Size	1/2"	3/4"	1"	
Torque	30 (306)	50 (510)	65 (663)	

**Flow Direction**

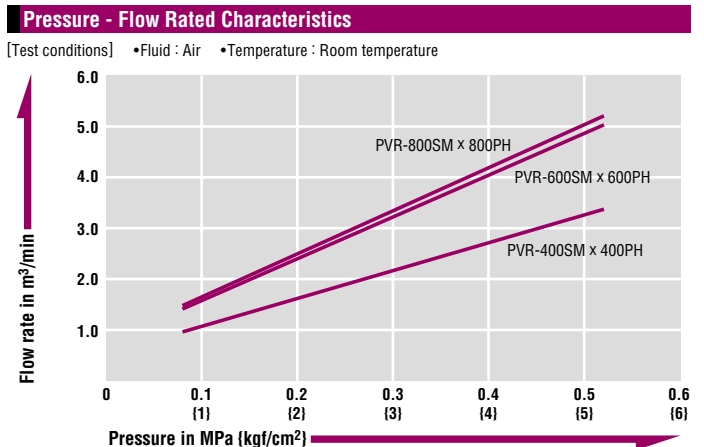
Fluid must run from socket to plug.



**Interchangeability**  
Can be connected with plugs for Hi Cupla Models 400, 600 and 800.

Model	Min. Cross-Sectional Area (mm <sup>2</sup> )					
	400PH	400PM/PF	600PH	600PM/PF	800PH	800PM/PF
PVR-400SH	64	71	71	71	71	71
PVR-400SM/SF	64	116	116	116	116	116
PVR-600SH	64	116	116	116	116	116
PVR-600SM/SF	64	116	116	116	116	116
PVR-800SH	64	116	116	116	116	116
PVR-800SM/SF	64	116	116	116	116	116

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

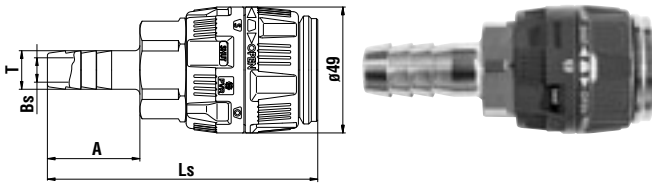




**Models and Dimensions**

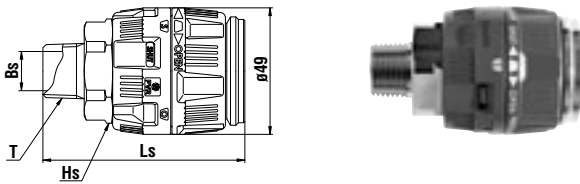
WAF : WAF stands for width across flat.

**Socket SH type (Hose barb)**



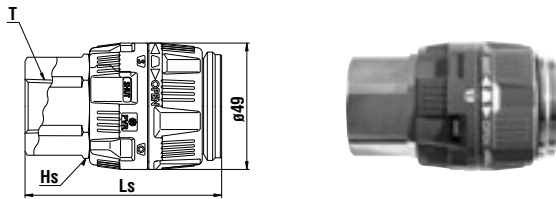
Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			Ls	A	∅T	∅Bs
PVR-400SH	1/2"	380	(105)	36	15	9.5
PVR-600SH	3/4"	361	(109)	45	21	14
PVR-800SH	1"	440	(118)	55	27	16

**Socket SM type (Male thread)**



Model	Application	Mass (g)	Dimensions (mm)			
			Ls	HS(WAF)	T	∅Bs
PVR-400SM	Rc 1/2	327	(78)	Hex.35	R 1/2	14
PVR-600SM	Rc 3/4	345	(82)	Hex.35	R 3/4	18
PVR-800SM	Rc 1	374	(84)	Hex.35	R 1	22

**Socket SF type (Female thread)**

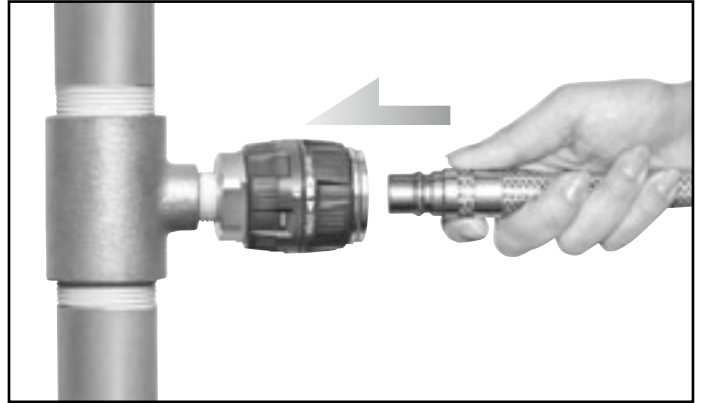


Model	Application	Mass (g)	Dimensions (mm)		
			Ls	HS(WAF)	T
PVR-400SF	R 1/2	394	(76)	Hex.35	Rc 1/2
PVR-600SF	R 3/4	370	(77)	Hex.35	Rc 3/4
PVR-800SF	R 1	440	(82)	Hex.41	Rc 1

**Function of Purge Hi Cupla PVR Type**

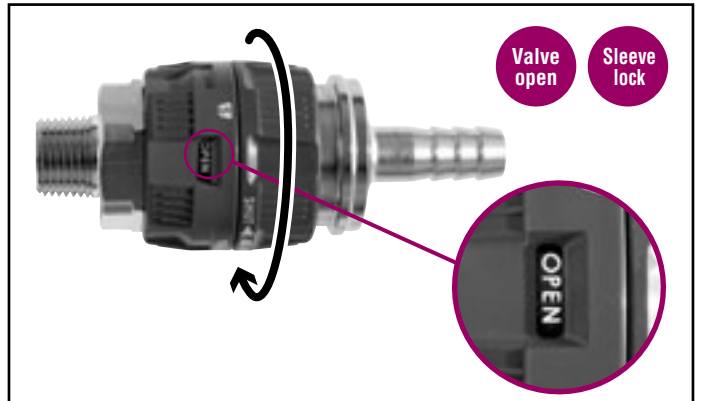
**1. Connection**

Valve opening/closing operation and plug connection to socket can be made independently. Push-to-connect operation is achieved regardless of existing pressure inside the pipe.



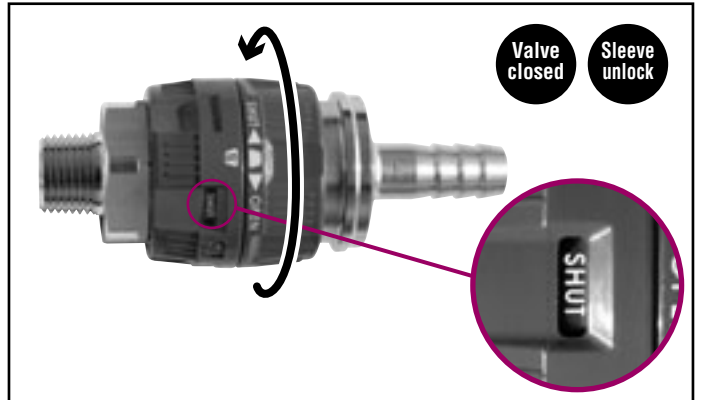
**2. Open the valve and lock the sleeve.**

Turning the operation ring will open the valve in the socket to supply air and lock the sleeve to prevent accidental disconnection.



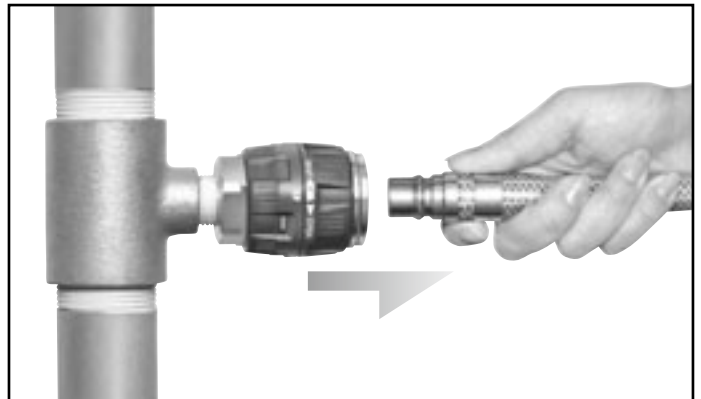
**3. Close the valve and unlock the sleeve**

Turning the operation ring back to its original position will close the valve and stop air flow, release the residual air pressure in the plug, and unlock the sleeve.



**4. Disconnection**

Disconnection can be made without an unpleasant popping noise and a hose whip back motion due to no residual air pressure inside the plug.



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 Low Pressure (Air)

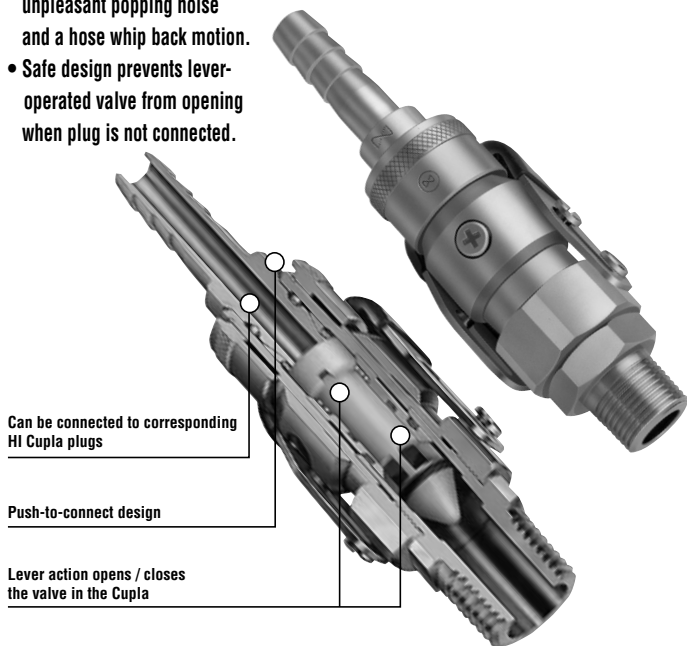
# Purge Hi Cupla

Air line coupling with residual pressure release function

<b>Working pressure</b> 1.0 1.0 MPa (10 kgf/cm <sup>2</sup> )	<b>Valve structure</b> One-way shut-off	<b>Applicable fluid</b> Air
--	--	--------------------------------

**Push-to-connect operation even with existing internal pressure! Eliminates an unpleasant popping noise and a hose whip back motion on disconnection.**

- Just push in the plug for connection. We take pride that this is single hand operation, regardless of internal pressure in socket.
- Even after connection, lever operation gives perfect control over valve opening/closing.
- In disconnection, lever action releases residual air pressure in the plug without an unpleasant popping noise and a hose whip back motion.
- Safe design prevents lever-operated valve from opening when plug is not connected.



## How to Operate

<b>1</b> 	Push-to-connect operation. (In this stage the valve of the socket is not open.)
<b>2</b> 	Turning down the lever opens the valve and allows the fluid to flow. (The turned-down lever works as a sleeve stopper and prevents disconnection.)
<b>3</b> 	When the lever is pulled up, residual air pressure in the plug is purged without an unpleasant popping noise and a hose whip back motion on disconnection. In this stage, the socket valve is still closed.

## Specifications

Body material	Brass (Chrome-plated)			
Size	1/4" (20 type) • 3/8" (30 type) • 1/2" (40 type, 400 type) • 3/4" (600 type)			
Working pressure MPa (kgf/cm <sup>2</sup> )	1.0 (10)			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	1.5 (15)			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+60°C	Standard material

## Max. Tightening Torque

N·m (kgf·cm)

Model	PV-20SM	PV-30SM	PV-40SM	PV-400SM	PV-600SM
Torque	9 (92)	11 (112)	30 (306)	30 (306)	50 (510)

## Flow Direction



## Interchangeability

Models 20, 30 and 40 can be connected to plugs of Hi Cupla Models 20, 30 and 40. Models 400, 600 and 800 can be connected to plugs of Hi Cupla Models 400, 600 and 800.

## Min. Cross-Sectional Area

(mm<sup>2</sup>)

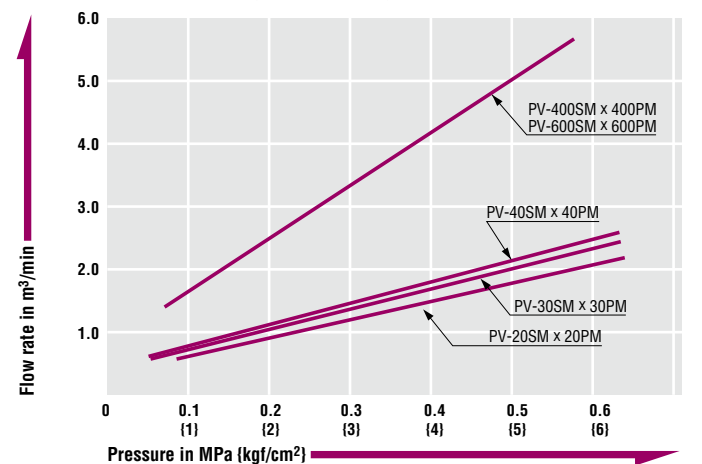
Model	PV-20SM	PV-30SM	PV-40SM	PV-400SM	PV-600SM
Min. cross-sectional area	38	41	41	94	94

## Suitability for Vacuum

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

## Pressure - Flow Characteristics

[Test conditions] • Fluid : Air • Temperature : Room temperature



## Models and Dimensions

WAF : WAF stands for width across flat.

### Socket




Model	Application	Mass (g)	Dimensions (mm)							
			Ls	øD	E <sub>1</sub>	E <sub>2</sub>	H(WAF)	øC	T	øBs
PV-20SM	Rc1/4	225	(79)	26.5	(50.5)	(70)	Hex.22	29	R1/4	7
PV-30SM	Rc3/8	229	(80)	26.5	(50.5)	(70)	Hex.22	29	R3/8	10
PV-40SM	Rc1/2	235	(82)	26.5	(50.5)	(70)	Hex.22	29	R1/2	14
PV-400SM	Rc1/2	411	(94)	35	(61.5)	(82)	Hex.30	37.5	R1/2	13
PV-600SM	Rc3/4	424	(97)	35	(61.5)	(82)	Hex.30	37.5	R3/4	18

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 Low Pressure (Air)

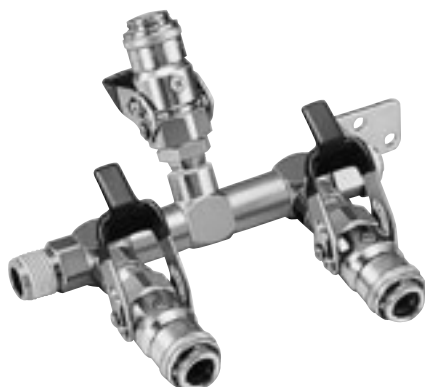
# Purge Line Cupla

Simple air line coupling manifold with residue pressure release function

Working pressure	Valve structure	Applicable fluid
 1.0 MPa (10 kgf/cm <sup>2</sup> )	 One-way shut-off	 Air

## Residual pressure released by a mere lever turn. Very smooth Cupla connection / disconnection!

- Single action, just push in the plug to connect.
- No unpleasant noise of air pressure discharge and no hose whip back motion on disconnection for safety operation.
- Extremely smooth connection. Easy handling, not affected by in-line pressure.
- Safe design – socket valve will not open or close unless plug is connected.
- Even after connection, a lever turn will open/close valve with perfect control of air flow or line shut-off.
- Enables simultaneous air supply to three outlets from a single air line.  
(A single outlet Purge Hi Cupla is also available – see the pages of Purge Hi Cupla for details.)



### Application Example



Specifications				
Body material	Brass (Chrome-plated)			
Size	Inlet	R 1/2		
	Outlet	3/8" socket (PV-30SM)		
Working pressure MPa (kgf/cm <sup>2</sup> )	1.0 {10}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	1.5 {15}			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+60°C	Standard material

Max. Tightening Torque		N·m (kgf·cm)
Size	R 1/2	
Torque	30 (306)	

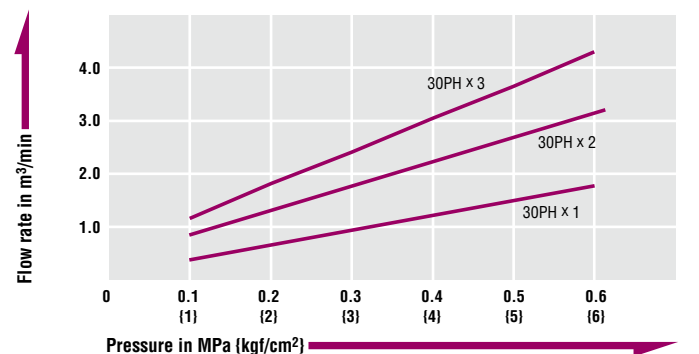
**Flow Direction**  
Fluid must run from the intake port to the outlet ports. Please refer to the flow directions (arrows) on the "Models and Dimensions."

**Interchangeability**  
Can be connected with plugs for Hi Cupla Models 20, 30 and 40. Interchangeable with each corresponding Hi Cupla Series models.

Min. Cross-Sectional Area	(mm <sup>2</sup> )
	41

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

**Pressure - Flow Characteristics**  
[Test conditions] • Fluid : Air • Temperature : Room temperature



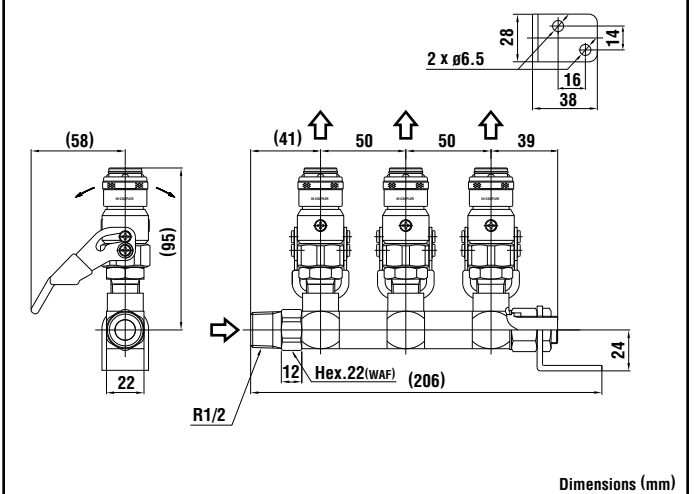
### Models and Dimensions

WAF : WAF stands for width across flat.

#### Socket RE-PV-30 type (For three outlets)

Mass : 1,090g

- Fluid must run in the direction of the arrow.



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 Low Pressure (Air)

# Rotary Line Cupla

Simple design air line couplings on free turn manifold

Working pressure



Valve structure



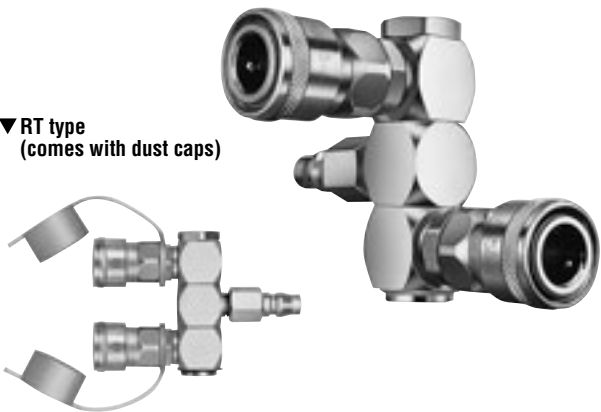
Applicable fluid



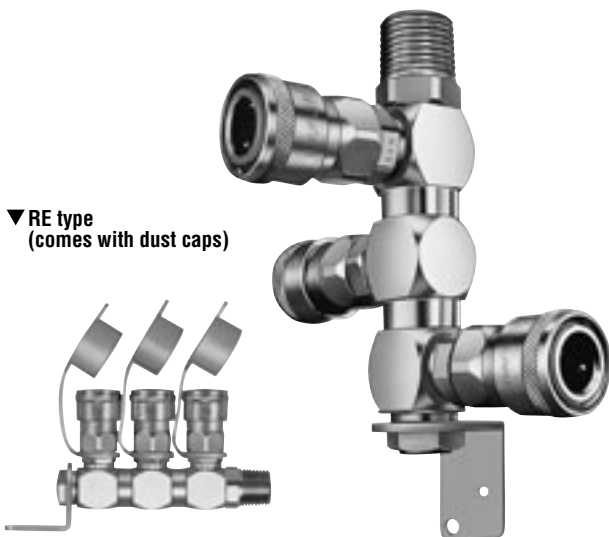
Each air outlet can be turned freely to any angle independently.

- Multiple outlets are available from single air supply source.
- Sideway air outlets are rotatable to any angle. Possible hose twists can be eliminated by the component Cuplas' swivel mechanism.
- Choose either RT type (2 outlets) or RE type (3 outlets) to suit your application.

▼ RT type (comes with dust caps)



▼ RE type (comes with dust caps)

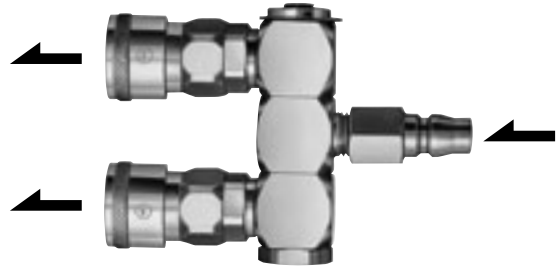


## Specifications

Body material	Body : Brass (Chrome-plated), Cupla : Steel (Chrome-plated)			
Model	RT Type (for two branch lines)		RE Type (for three branch lines)	
Size	Inlet	1/4" Hi Cupla (20PF)	Inlet	R 1/2 male thread
	Outlet	2 sockets (20 type)	Outlet	3 sockets (20 type)
Working pressure MPa (kgf/cm <sup>2</sup> )	1.5 {15}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	2.0 {20}			
Seal material	Nitrile rubber	Mark	NBR (SG)	Working temperature range
Working temperature range			-20°C~+60°C	Remarks
	Standard material			

## Fluid Flow Direction

Fluid must run from the inlet port to the outlet ports.



## Interchangeability

Can be connected with plugs for Hi Cupla Models 20, 30 and 40. Interchangeable with each corresponding Hi Cupla Series models.

## Min. Cross-Sectional Area

(mm<sup>2</sup>)

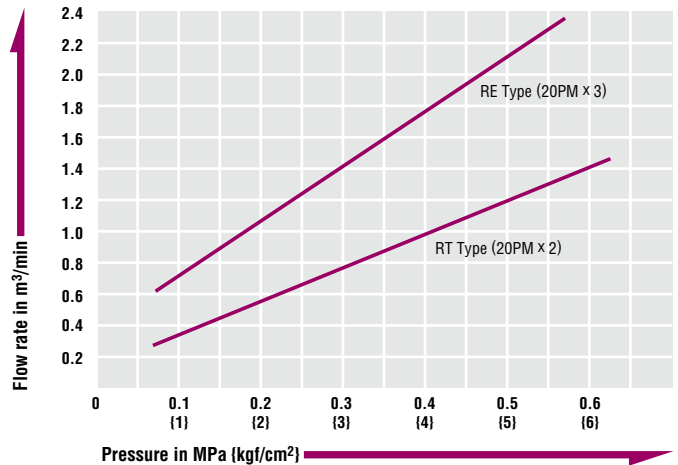
Model	RT type	RE type
Min. cross-sectional area	32	

## Suitability for Vacuum

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

## Pressure - Flow Characteristics

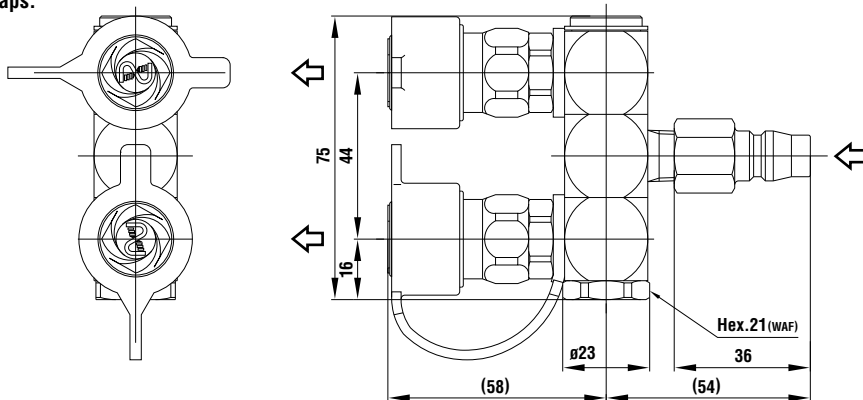
[Test conditions] • Fluid : Air • Temperature : Room temperature  
• Plug : 20PM (All the Socket valves are opened with 20PM)



**Socket RT type (For two outlets)**

Mass : 460g

- Fluid must run in the direction of the arrow.
- The product comes with dust caps.

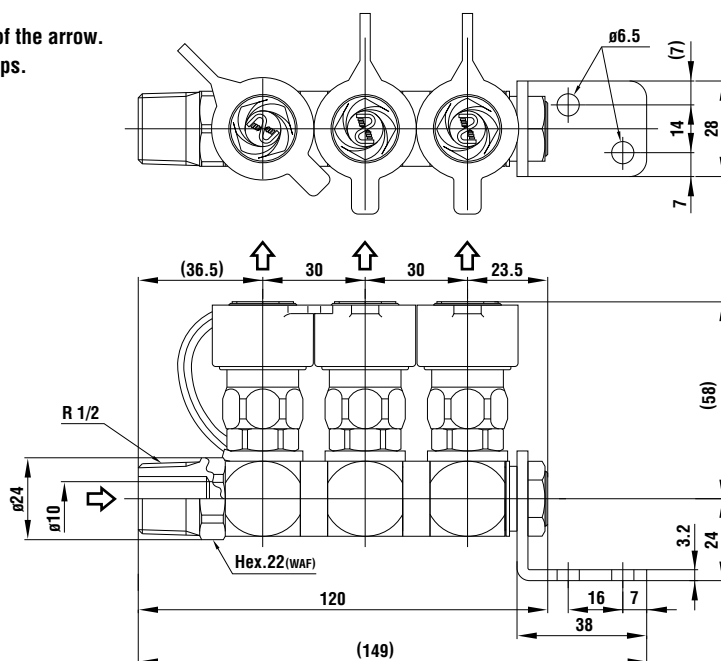


Dimensions (mm)

**Socket RE type (For three outlets)**

Mass : 630g

- Fluid must run in the direction of the arrow.
- The product comes with dust caps.



Dimensions (mm)

**Application Example**



Air line manifold

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 Low Pressure (Air)

# Line Cupla

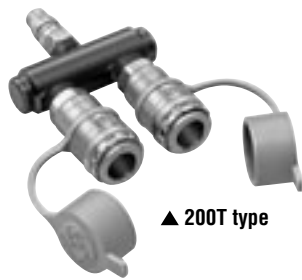
200T Type, 200L Type, 200S Type

Simple design air line coupling on manifold

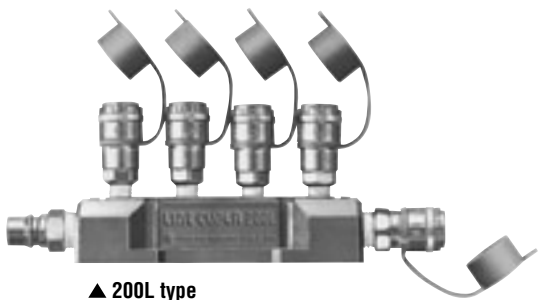
Working pressure  1.5 MPa (15 kgf/cm <sup>2</sup> )	Valve structure  One-way shut-off	Applicable fluid  Air
--	--	--

**Enables several air lines to be taken simultaneously from one supply line!**

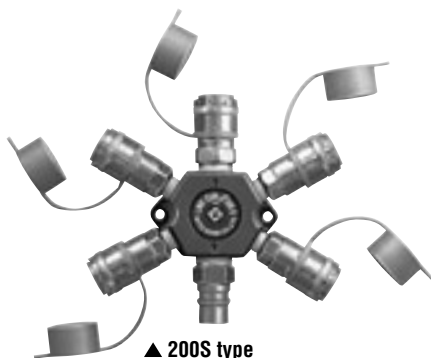
- Just push in the plug to socket for simple and secure connection!
- Multiple outlets are available from single air supply source.
- Choose from the 2-outlet type (Model 200T), the 5-outlet straight type (Model 200L) and the 5-outlet star type (Model 200S) to suit your application.



▲ 200T type



▲ 200L type  
(comes with extra 400SH)



▲ 200S type  
(comes with extra 400SH)

Specifications				
Body material	Body : Aluminum, Cupla : Steel (Chrome-plated)			
Size	Inlet	200T Type : 20PM	200L Type / 200S Type : 400PM	
	Outlet	200T Type : 200-20SM	200L Type / 200S Type : 200-20SM + 40SM	
Working pressure MPa (kgf/cm <sup>2</sup> )	1.5 {15}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	2.0 {20}			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+60°C	Standard material

### Flow Direction

Fluid must run from the inlet port to the outlet ports.

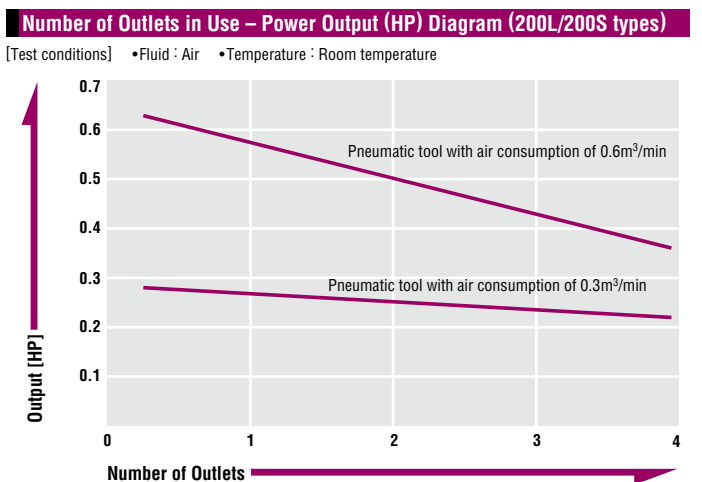
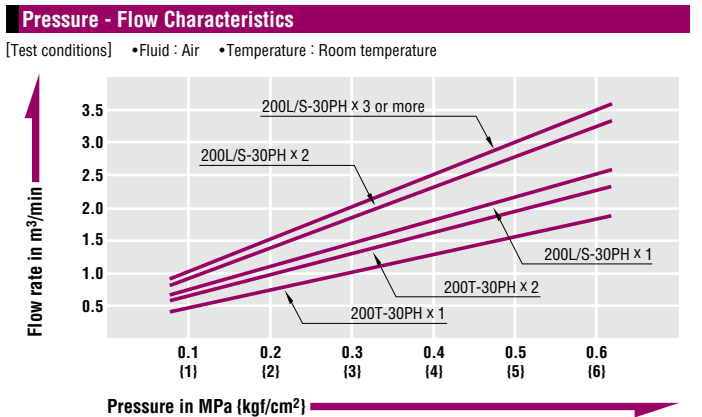
### Interchangeability

Can be connected with plugs for Hi Cupla Models 20, 30 and 40. Interchangeable with each corresponding Hi Cupla Series models.

Min. Cross-Sectional Area	(mm <sup>2</sup> )
Model	200T type, 200L type, 200S type
Min. cross-sectional area	19

### Suitability for Vacuum

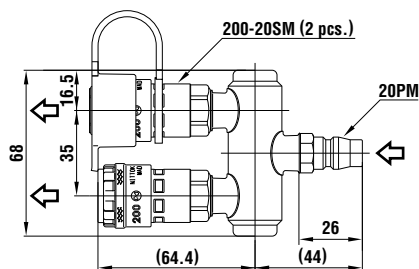
Not suitable for vacuum application in either connected or disconnected condition.



**Socket 200T type (For two outlets)**

Mass : 272g

- Fluid must run in the direction of the arrow.
- The product comes with dust caps.

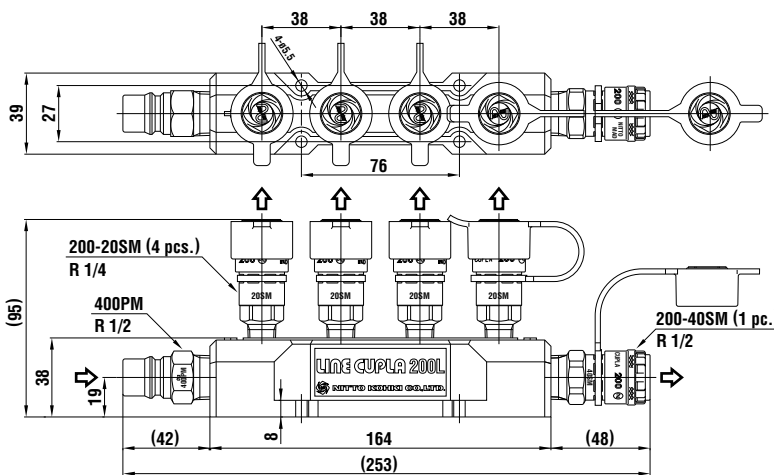


Dimensions (mm)

**Socket 200L type (For five outlets, in line type)**

Mass : 890g

- Fluid must run in the direction of the arrow.
- The product comes with dust caps.
- Accessory : 400SH

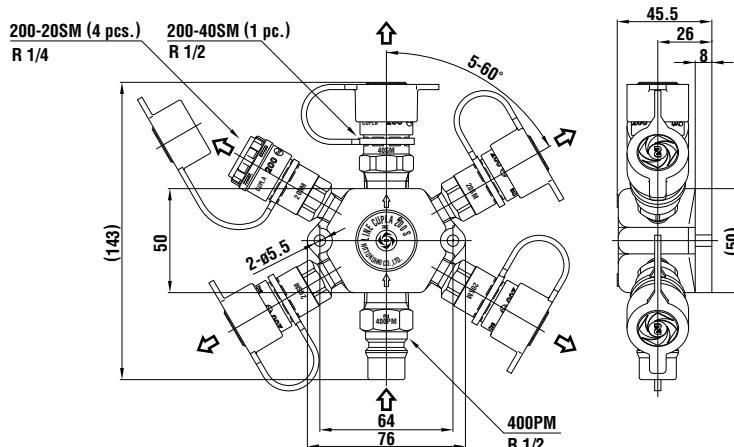


Dimensions (mm)

**Socket 200S type (For five outlets, star type)**

Mass : 769g

- Fluid must run in the direction of the arrow.
- The product comes with dust caps.
- Accessory : 400SH



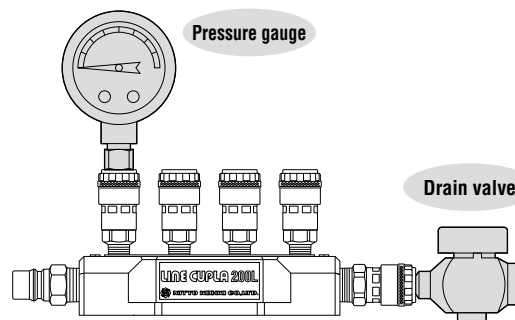
Dimensions (mm)

**Application Example**



**Optional Items : Pressure Gauge and Drain Valve**

“Pressure Gauge” and “Drain Cock” are available as optional items to be mounted on Line Cupla 200.



Actual appearance may differ due to incessant product improvements.

For Low Pressure (Air)

# Rotary Full-Blow Line Cupla

Free rotating branch air line coupling with low pressure loss & high flow rate

Working pressure



Valve structure



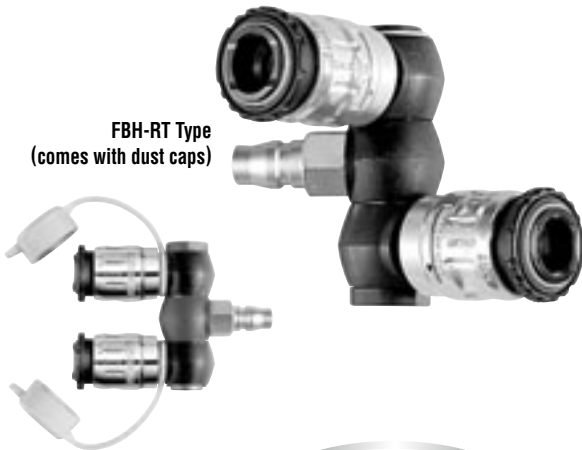
Applicable fluid



Each air outlet can be turned freely to any angle independently.

- Multiple outlets are available from single air supply source.
- Choose either RT type (2 outlets) or RE type (3 outlets) to suit your application.
- The flow rate increases by 40% to 50% over that of conventional Cuplas.
- During the connection or disconnection, the valve is closed and connection / disconnection can be made under zero line pressure.
- When the sleeve of socket is returned to its original position, the purge mechanism releases the residual pressure inside the plug, eliminating an unpleasant popping noise and a hose whip back motion.
- Built-in sleeve lock mechanism prevents accidental disconnection of Cuplas, assuring safe operation.
- The valve can be opened and closed while the socket and plug is connected.

FBH-RT Type  
(comes with dust caps)



FBH-RE Type  
(comes with dust caps)



Specifications				
Body material	Zinc alloy			
Size	RT type (For double outlets)		RE type (For triple outlets)	
	Inlet	1/4" Hi Cupla (20PFF)	Inlet	R 1/2
	Outlet	Full-Blow Cupla	Outlet	Full-Blow Cupla
Working pressure MPa (kgf/cm <sup>2</sup> )	1.5 {15}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	2.0 {20}			
Seal material	Nitrile rubber	Mark	NBR (SG)	Working temperature range -20°C~+60°C Standard material
Working temperature range				

• The product comes with dust caps.

Max. Tightening Torque (FBH-RE Type)		N·m {kgf·cm}
Size	1/2"	
Torque	30 {306}	

**Flow Direction**

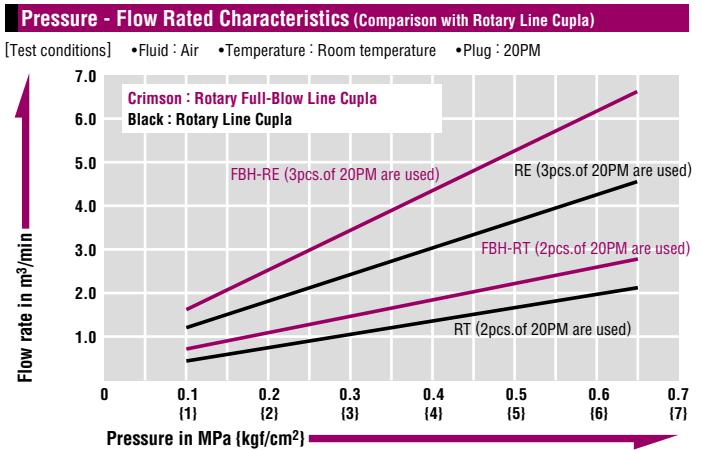
Fluid must run from the inlet port to the outlet ports.

**Interchangeability**

Can be connected with plugs for Hi Cupla Models 20, 30 and 40. Interchangeable with each corresponding Hi Cupla Series models. (Cannot be interchangeable with some plastic Hi Cupla plugs.)

Min. Cross-Sectional Area	(mm <sup>2</sup> )	
Model	FBH-RT	FBH-RE
Min. cross-sectional area	44.2	44.2

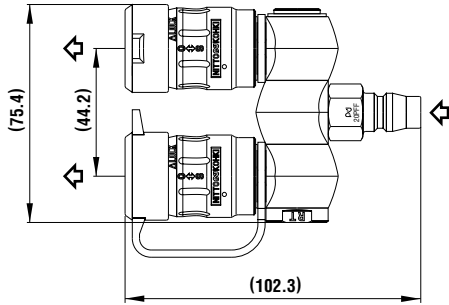
**Suitability for Vacuum**  
Not suitable for vacuum application in either connected or disconnected condition.



Models and Dimensions

**Socket FBH-RT type (For two branch lines)**

- Inlet : 1/4" Hi Cupla (20PFF)
- Outlet : Full-Blow Cupla
- Mass : 297g
- Fluid must run in the direction of the arrow.

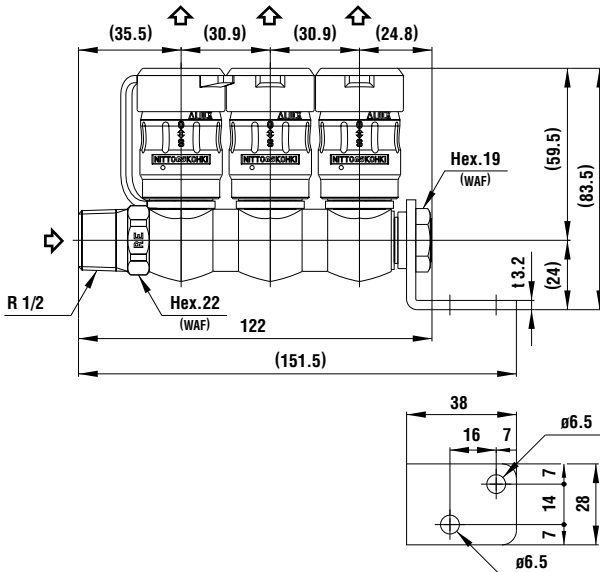


• The product comes with dust caps.

Dimensions (mm)

**Socket FBH-RE type (For three branch lines)**

- Inlet : R 1/2
- Outlet : Full-Blow Cupla
- Mass : 499g
- Fluid must run in the direction of the arrow.



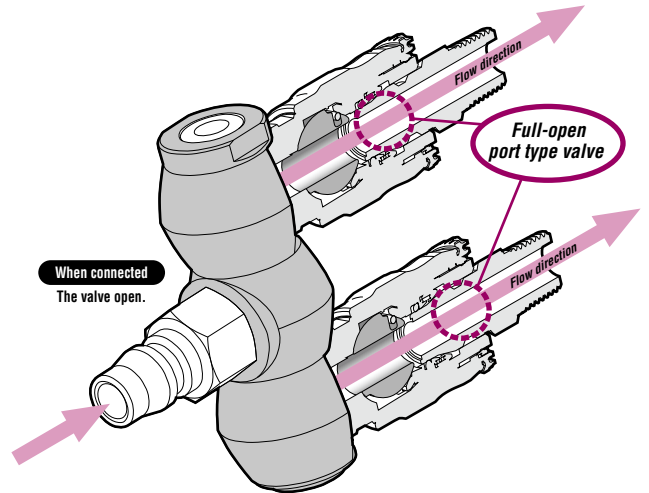
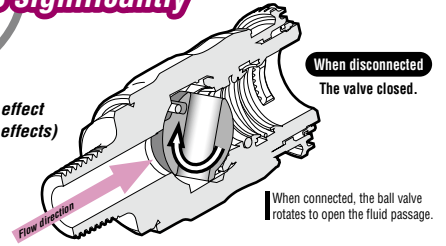
• The product comes with dust caps.

Dimensions (mm)

Features of Rotary Full-Blow Line Cupla

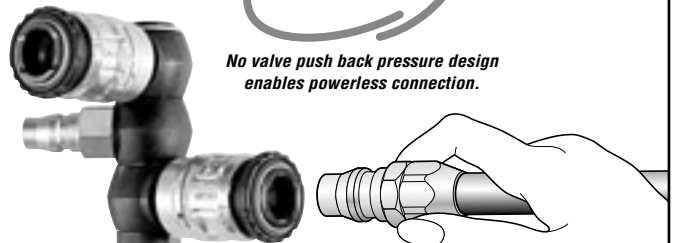
**Flow rate is significantly increased.**

Significant energy saving effect (Source pressure reduction effects)



**Far easier operation**

No valve push back pressure design enables powerless connection.



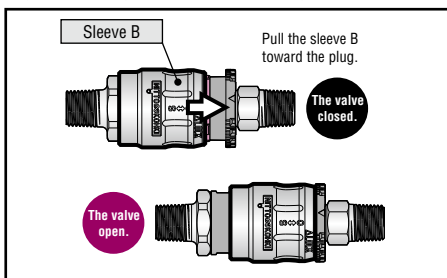
**Increased safety operation**

Purge function eliminates an unpleasant popping noise and a hose whip back motion.

How It Works

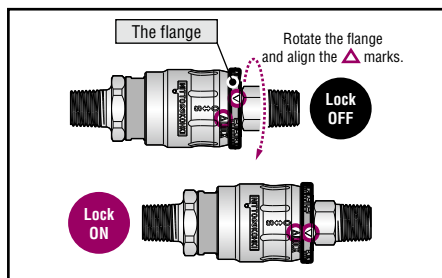
1. Open the valve

Only after connection with the plug, you can slide the socket sleeve B toward the plug in order to open the built-in valve. Full flow path is then obtained.



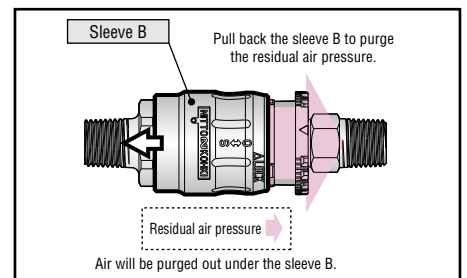
2. Lock the sleeve

Rotate the flange to lock the sleeve B. Without unlocking the plug you cannot disconnect.



3. Purge the residual air

To disconnect the plug, first turn the flange back to its original position for unlocking and then pull the sleeve B back to the original position. The built-in valve will be closed to purge the residual air pressure.



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 Low Pressure

# Hi Cupla Ace

Lightweight plastic coupling with automatic safety lock for air line applications

Working pressure



Valve structure



Applicable fluid



The weight is merely a quarter of steel Hi Cupla's and smooth push-in connection is achieved. Automatic sleeve lock for safety operation.

- Pressure ratings comparable to steel Cuplas.
- A built-in "automatic lock mechanism" to lock the sleeve when connected, thus prevents accidental disconnection.
- Just push plug into socket for simple connection.
- The weight is a quarter of steel Hi Cupla for easy handling.
- Can be used for air and water.
- Less likely to damage painted or easily dented surfaces than metal couplings.
- Air flows in either direction from plug or from socket side when coupled.
- Plug and socket with hose guard nut are also available (see the pages of NK Cupla Hose / NK Cupla Coil Hose for details).



## Specifications

Body material	Engineering plastics (PBT, POM)			
Size	1/4" (20 type) • 3/8" (30 type)			
	For ø5mm x ø8mm • ø6mm x ø9mm • ø6.5mm x ø10mm polyurethane hose			
	For ø8mm x ø12mm • ø8.5mm x ø12.5mm polyurethane hose			
	HA-T type • Inlet : 20P-PLA • Outlet : HA-65S x 2			
Working pressure MPa (kgf/cm <sup>2</sup> )	1.5 (15) / 1.0 (10) for Model HA-T			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	2.0 (20) / 1.5 (15) for Model HA-T			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+60°C	Standard material

• Plastic plug : Working pressure 1.0MPa (10kgf/cm<sup>2</sup>), Pressure resistance 1.5MPa (15kgf/cm<sup>2</sup>)

## Tightening Torque Range

Model	N·m (kgf·cm)		
	20SM/30SM	50SN/60SN/65SN	80SN/85SN
Torque	2.5~3.0 (26~31)	1.6~2.0 (16~20)	2.2~2.8 (22~29)

## Flow Direction

Air flows in either direction from plug or from socket side when coupled.



## Interchangeability

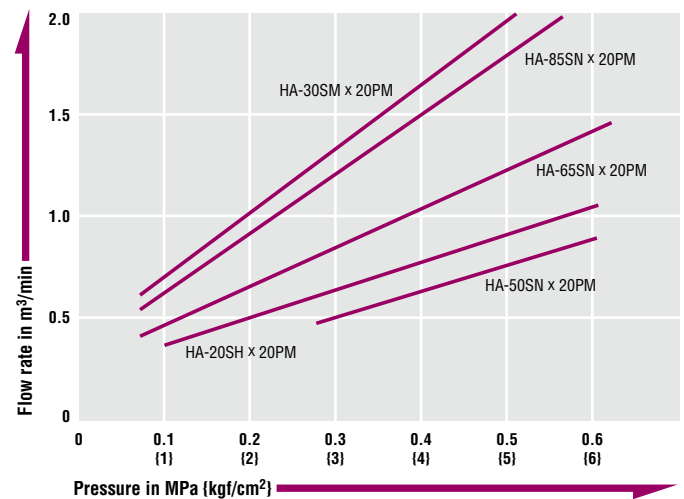
Can be connected with Hi Cupla Models 20, 30 and 40. Interchangeable with each corresponding Hi Cupla Series models except models 400, 600, and 800.

## Suitability for Vacuum

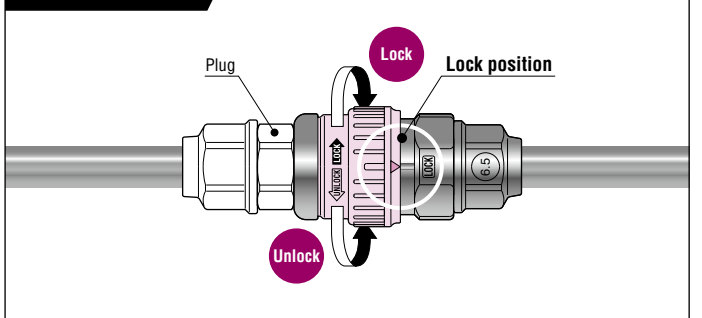
Not suitable for vacuum application in either connected or disconnected condition.

## Pressure - Flow Characteristics

[Test conditions] • Fluid : Air • Temperature : Room temperature



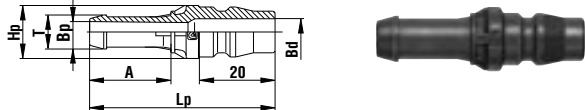
## Sleeve lock function





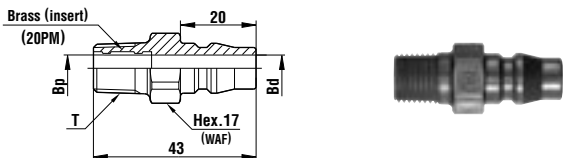
Models and Dimensions

**Plug PH type (Plastic plug / Hose barb)**



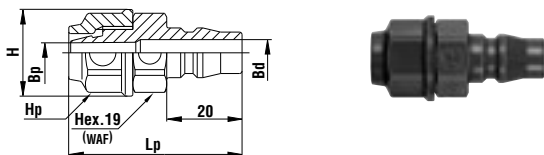
Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			Lp	øHp	A	øT	øBp	øBd
20PH-PLA	1/4"	3	49	14	21.5	9	5.5	7
30PH-PLA	3/8"	4	52	16	23.5	11.5	7	7

**Plug PM type (Plastic plug / Male thread)**



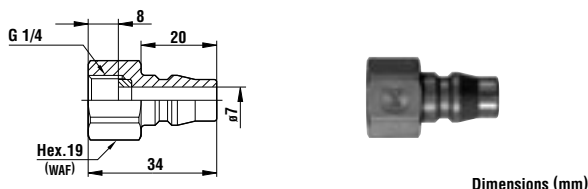
Model	Application	Mass (g)	Dimensions (mm)		
			T	øBp	øBd
20PM-PLA	Rc 1/4	8	R 1/4	7.1	7.4
30PM-PLA	Rc 3/8	6	R 3/8	10	7.4

**Plug PN type (Plastic plug / For urethane hose connection)**



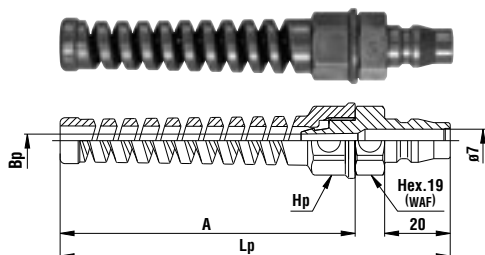
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			Lp	øH	Hp(WAF)	øBp	øBd
50PN-PLA	ø5 mm x ø8 mm	9	(46)	23	Hex.19	4	7
60PN-PLA	ø6 mm x ø9 mm	9	(46)	23	Hex.19	4.7	7
65PN-PLA	ø6.5 mm x ø10 mm	9	(46)	23	Hex.19	5.3	7
80PN-PLA	ø8 mm x ø12 mm	12	(48.5)	26	Hex.22	6.5	7
85PN-PLA	ø8.5 mm x ø12.5 mm	12	(48.5)	26	Hex.22	7	7

**Plug PFF type (Plastic plug / Parallel female thread)**



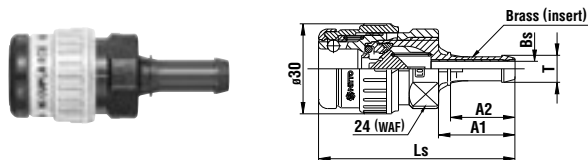
Model	Application	Mass (g)
20PFF-PLA	G 1/4	6

**Plug PNG type (For hose with hose guard nut connection)**



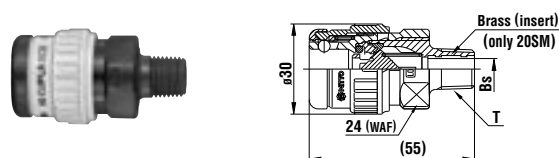
Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			Lp	Hp(WAF)	A	øBp
50PNG-PLA	ø5 mm x ø8 mm	14	(119)	Hex.19	(90)	4
65PNG-PLA	ø6.5 mm x ø10 mm	15	(119)	Hex.19	(90)	5.3
85PNG-PLA	ø8.5 mm x ø12.5 mm	17	(119)	Hex.22	(90)	7

**Socket SH type (Hi Cupla Ace / Hose barb)**



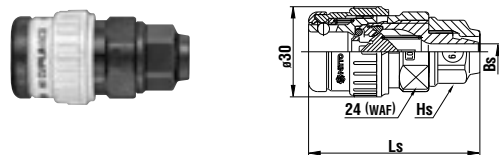
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			Ls	A1	A2	øT	øBs
HA-20SH	1/4"	26	(65.5)	25.5	21.5	9	5
HA-30SH	3/8"	28	(68)	28	23.5	11.5	7

**Socket SM type (Hi Cupla Ace / Male thread)**



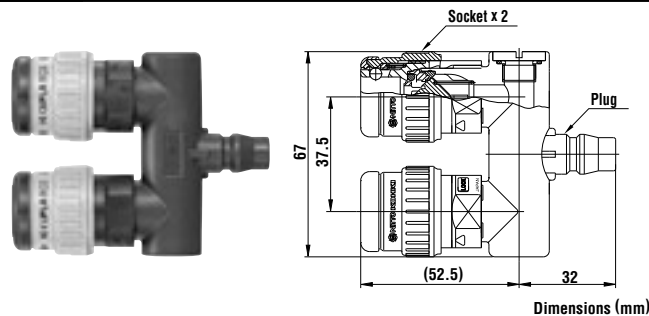
Model	Application	Mass (g)	Dimensions (mm)	
			T	øBs
HA-20SM	Rc 1/4	27	R 1/4	7
HA-30SM	Rc 3/8	26	R 3/8	8

**Socket SN type (Hi Cupla Ace / For urethane hose connection)**



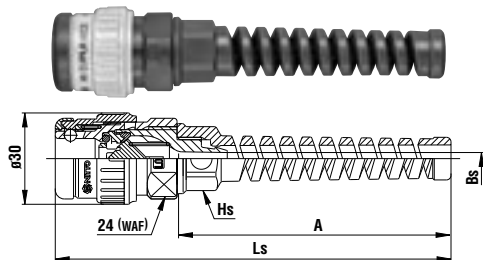
Model	Application (Hose)	Mass (g)	Dimensions (mm)		
			Ls	Hs(WAF)	øBs
HA-50SN	ø5 mm x ø8 mm	27	(57)	Hex.19	4
HA-60SN	ø6 mm x ø9 mm	27	(57)	Hex.19	4.7
HA-65SN	ø6.5 mm x ø10 mm	27	(57)	Hex.19	5.3
HA-80SN	ø8 mm x ø12 mm	29	(59.5)	Hex.22	6.5
HA-85SN	ø8.5 mm x ø12.5 mm	29	(59.5)	Hex.22	7

**Socket T type (Hi Cupla Ace / For two branch lines)**



Model	Inlet / Outlet	Mass (g)
HA-T	20P-PLA / HA-65S x 2	73

**Socket SNG type (For hose with hose guard nut connection)**



Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			Ls	Hs(WAF)	A	øBs
HA-50SNG	ø5 mm x ø8 mm	31	(130)	Hex.19	(90)	4
HA-65SNG	ø6.5 mm x ø10 mm	33	(130)	Hex.19	(90)	5.3
HA-85SNG	ø8.5 mm x ø12.5 mm	35	(130)	Hex.22	(90)	7

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 Low Pressure (Air)

# Rotary Plug

For pneumatic tools and devices

Working pressure



Valve structure



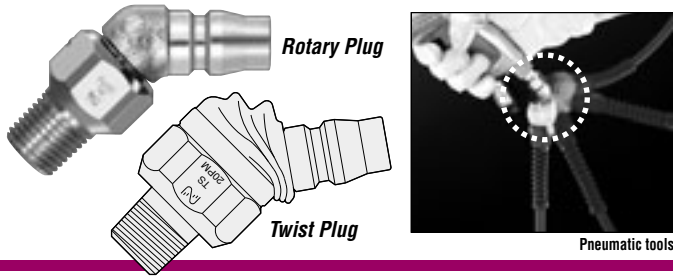
Applicable fluid



**Newly developed rotary function allows 360° swivelling!**  
**Big improvement for handling of pneumatic tools!**

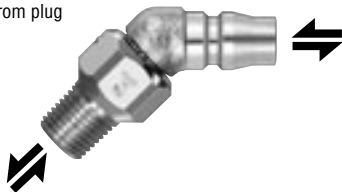
- Rotary neck plug for hose connection to pneumatic tools and pneumatic devices.
- Fits at 45° angle to the tool eliminating annoying offset load caused by connected hose.
- Ideal compact design enables optimum workability by simple body structure. Now far lighter and smaller than conventional models.
- New dust-proof design for increased durability.
- For air tackers, nailers, impact wrenches and other pneumatic tools.

■ Comparison by appearance



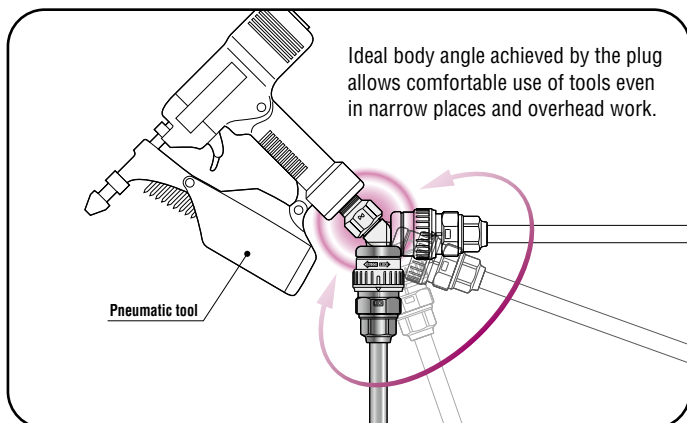
### Flow Direction

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



### Interchangeability

- Model RL-20PM • RL-30PM • RL-20PFF: Can be connected with sockets for Hi Cupla Models 20, 30 and 40 and interchangeable with each corresponding Hi Cupla Series models.
- Model RL-02PM • RL-02PFF: Can be connected with sockets for Super Cupla.



Ideal body angle achieved by the plug allows comfortable use of tools even in narrow places and overhead work.

### Specifications

Body material	Steel (Nickel-plated)			
Size	1/4" • 3/8"			
Working pressure MPa (kgf/cm <sup>2</sup> )	1.5 (15) / only RL-02PM • PFF type : 1.0 (10)			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	2.0 (20) / only RL-02PM • PFF type : 1.5 (15)			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+80°C	Standard material

### Max. Tightening Torque

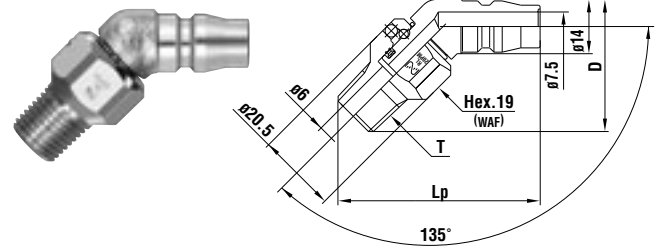
N·m (kgf·cm)

Size	R 1/4	R 3/8
Torque	15 (153)	25 (255)

### Models and Dimensions

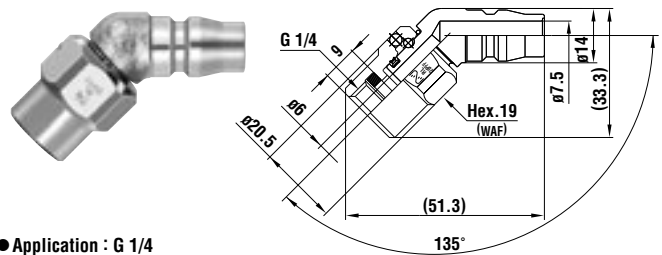
WAF : WAF stands for width across flat.

#### Plug PM type (Male thread)



Model	Application	Mass (g)	Dimensions (mm)		
			Lp	D	T
RL-20PM	Rc 1/4	52	(52.1)	(34.1)	R 1/4
RL-30PM	Rc 3/8	73	(50.8)	(32.8)	R 3/8

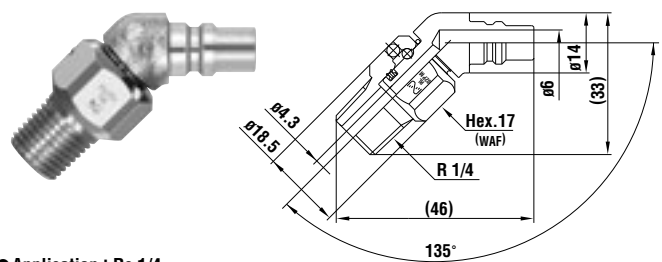
#### Plug Model RL-20PFF type (Female thread)



- Application : G 1/4
- Mass : 57g

Dimensions (mm)

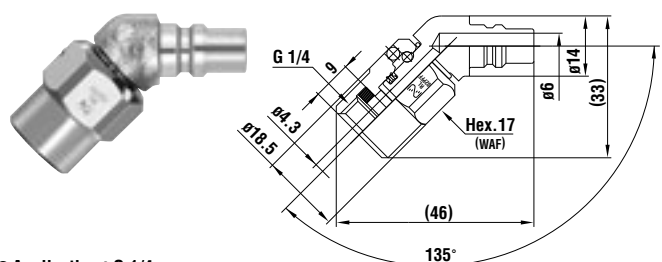
#### Plug Model RL-02PM type (Male thread)



- Application : Rc 1/4
- Mass : 50g

Dimensions (mm)

#### Plug Model RL-02PFF type (Female thread)



- Application : G 1/4
- Mass : 55g

Dimensions (mm)

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 Low Pressure (Air)

# Twist Plug

For pneumatic tools and devices

Working pressure



Valve structure

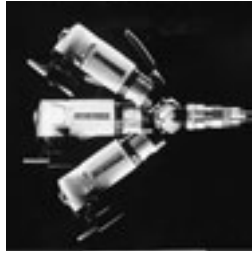


Applicable fluid



**Eliminates hose twisting, kinking, or bending! Greatly improves working efficiency!**

- A plug with a free twisting neck for hose connections to pneumatic tools and devices.
- Free angle control (max. 70° flexible) provides comfortable job positions, even in narrow spaces or with overhead works.
- The flexible part is reinforced with self-lubricating plastics to give smooth bending action and excellent durability.
- Since the flexible part is only in the middle of the plug, connection to the socket is smooth and easy.
- Dust protector over the flexible part prevents dirt and swarf from entering.

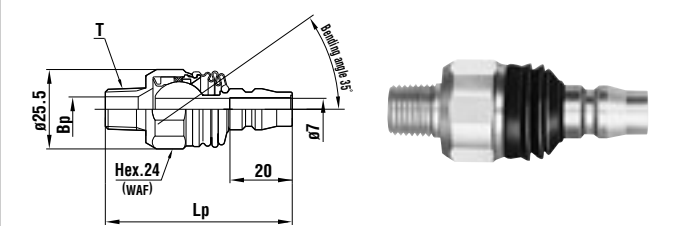


Pneumatic tools

## Models and Dimensions

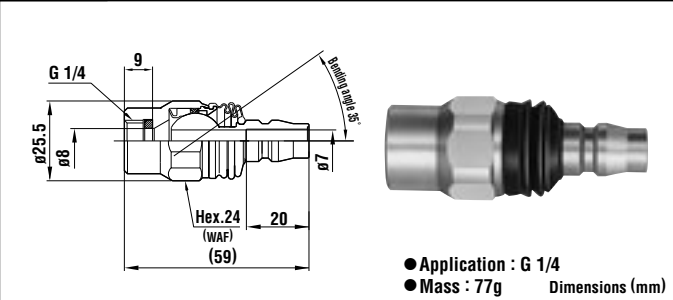
WAF : WAF stands for width across flat.

### Plug PM type (Male thread)



Model	Application	Mass (g)	Dimensions (mm)		
			Lp	ØBp	T
TS-10PM	Rc 1/8	59	(57.5)	4	R 1/8
TS-20PM	Rc 1/4	59	(60)	8	R 1/4
TS-30PM	Rc 3/8	65	(60)	10	R 3/8

### Plug Model TS-20PFF (Female thread)



- Application : G 1/4
  - Mass : 77g
- Dimensions (mm)

## Specifications

Body material	Steel (Nickel-plated)			
Size	1/8" • 1/4" • 3/8"			
Working pressure MPa (kgf/cm <sup>2</sup> )	1.0 {10}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	1.5 {15}			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+60°C	Standard material

## Tightening Torque Range

N·m (kgf·cm)

Size	R 1/8	R 1/4	R 3/8
Torque	8~10 {82~102}	12~15 {122~153}	22~25 {224~255}

## Flow Direction

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



## Interchangeability

Can be connected with socket for Hi Cupla Models 20, 30 and 40. Interchangeable with each corresponding Hi Cupla Series models.

## Suitability for Vacuum

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

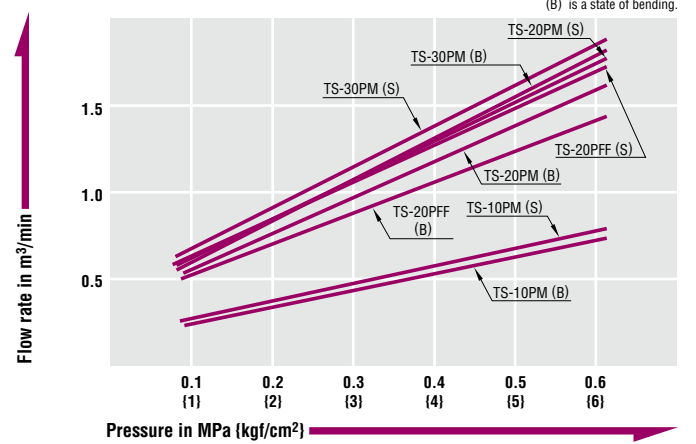
## Min. Cross-Sectional Area

(mm<sup>2</sup>)

Model	TS-10PM	TS-20PM	TS-30PM	TS-20PFF
Min. cross-sectional area	12.5	38.5	38.5	38.5

## Pressure - Flow Characteristics

[Test conditions] • Fluid : Air • Temperature : Room temperature



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 Low Pressure (Air)

# Purge Plug

For air lines with purge mechanism

Working pressure



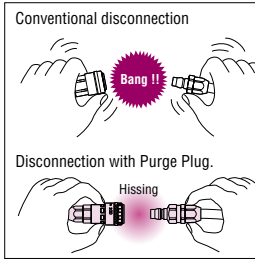
Valve structure



Applicable fluid



**Eliminates an unpleasant popping noise and a hose whip back motion when Cupla is disconnected.**



- When the Cupla is disconnected, the pressure left in the plug side hose is released gradually without an unpleasant popping noise and a hose whip back motion.
  - Unique design of air purge system enables the residual pressure release quickly and quietly.
  - A unique but simple purge valve design is good for long and repeated use.
  - The function is assured even under a high supply pressure or with a long hose.
- Note: This product is not a check valve to totally stop the air flow.



## Specifications

Body material	Steel (Chrome-plated)			
Size	1/4" • 3/8" • 1/2"			
Working pressure MPa (kgf/cm <sup>2</sup> )	1.0 {10}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	1.5 {15}			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+60°C	Standard material

## Tightening Torque Range

N·m {kgf·cm}

Torque	9~11 {92~112}
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## Flow Direction

Fluid must run from socket to plug.



## Interchangeability

Can be connected with sockets for Hi Cupla Models 20, 30 and 40. Interchangeable with each corresponding Hi Cupla Series models.

## Min. Cross-Sectional Area

(mm<sup>2</sup>)

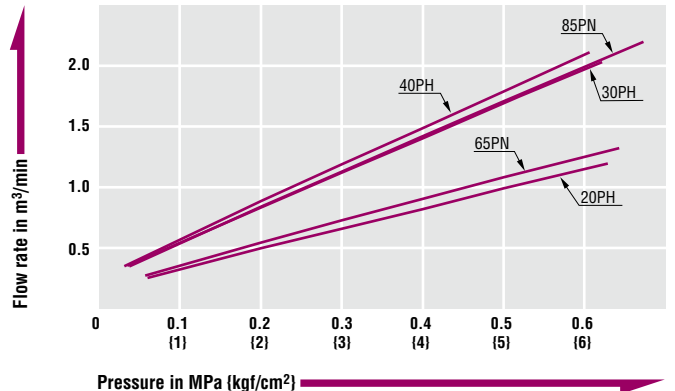
Model	PV-20PH	PV-30PH	PV-40PH	PV-65PN	PV-85PN
Min. cross-sectional area	19.6	44.1	50.4	22.0	44.1

## Suitability for Vacuum

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

## Pressure - Flow Characteristics

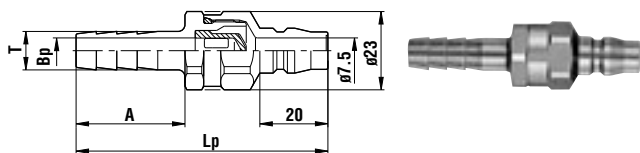
[Test conditions] • Fluid : Air • Temperature : Room temperature



## Models and Dimensions

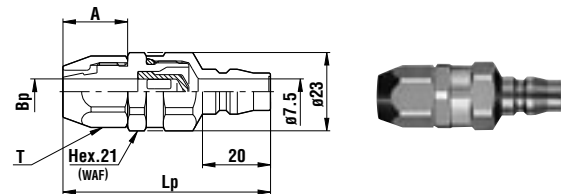
WAF : WAF stands for width across flat.

### Plug PH type (Hose barb)



Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			Lp	A	øBp	øT
PV-20PH	1/4"	59	(70)	28	5	8.4
PV-30PH	3/8"	62	(74)	32	7.5	11.3
PV-40PH	1/2"	76	(77)	35	9	14.8

### Plug PN type (For urethane hose connection)



Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			Lp	A	øBp	T(WAF)
PV-65PN	ø6.5 mm x ø10 mm	71	(59)	17	5.3	Hex.17
PV-85PN	ø8.5 mm x ø12.5 mm	78	(61)	19	7.5	Hex.19

For Low Pressure (Air)

# Anti-vibration Plug Hose

Plug hose for vibrating and percussive air tools

Working pressure



Valve structure



Applicable fluid



## SHA-3-3R

R3/8 male thread type

## SHA-3-2R

R1/4 male thread type

**Protects the Cupla from shocks generated by vibrating tools and impact tools.**

- Optimizes life and prevents wear of “Cupla” by absorbing strong shocks generated by connected vibrating tools.
- Prevents hard-to-notice flow reduction caused by “Cupla” wear under continuous vibration.
- Flexible rubber hose allows free and wide range of tool motion.
- Can be connected with sockets for Hi Cupla Models 20, 30 and 40. Interchangeable with each corresponding Hi Cupla models.

### Specifications

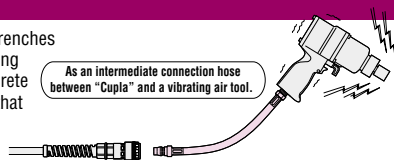
Applicable fluid	Air	
Model	SHA-3-2R	SHA-3-3R
Size	R 1/4"	R 3/8"
Inlet (Plug)	Hi Cupla (30PH)	
Working pressure MPa (kgf/cm <sup>2</sup> )	1.5 (15)	
Pressure resistance MPa (kgf/cm <sup>2</sup> )	2.0 (20)	
Air hose	Rubber hose for air	
Overall length	310 mm	
Min. bend radius	135 mm	

### Interchangeability

Can be connected with sockets for Hi Cupla Models 20, 30 and 40. Interchangeable with each corresponding Hi Cupla Series models.

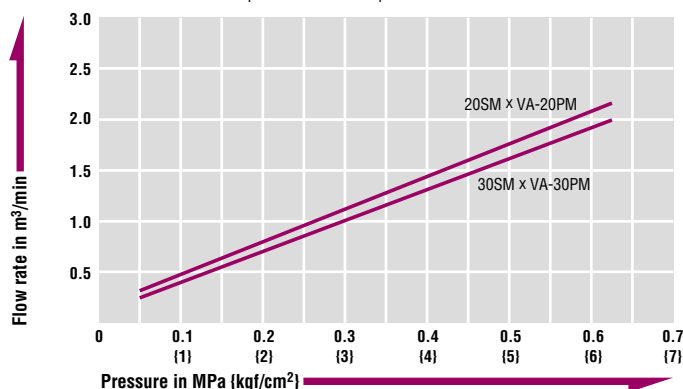
### Application

Suitable for air tools such as impact wrenches used in car maintenance or metalworking industries, and tackers, nailers or concrete breakers in the construction industry, that commonly cause incessant vibrations.



### Pressure - Flow Rated Characteristics (Anti-vibration Plug)

[Test conditions] • Fluid : Air • Temperature : Room temperature

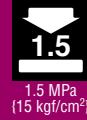


For Low Pressure (Air)

# Anti-vibration Plug VA Type

Plug for vibrating and percussive air tools

Working pressure



Valve structure



Applicable fluid



**Direct mounting onto vibrating and percussive air tools enabling to absorb strong shocks generated by the tools in order to minimize wear on the sockets.**

- Optimizes the life of the socket by reducing the impact of vibrating and percussive tools by between 1/5 and 1/9, enabling direct mount of the plug on tools.
- Prevents air leaks caused by vibration and maintains enough and steady air supply necessary to operate air tools.
- Adopted light and strong polyurethane cushion inside the plug.
- Direct mounting of the plug onto vibrating and percussive air tools enables quick tool change and easy handling.
- Can be connected with sockets for Full-Blow Cupla series, and Hi Cupla series Models 20, 30 and 40.

Note: Actual vibration absorption effect depends on each operating condition.

### Specifications

Body material / Cushion material	Steel • Brass (Chrome-plated) / Polyurethane (Black)
Size	1/4" (20 type) • 3/8" (30 type)
Working pressure MPa (kgf/cm <sup>2</sup> )	1.5 (15)
Pressure resistance MPa (kgf/cm <sup>2</sup> )	2.0 (20)
Working temperature range	-5°C~+60°C

### Max. Tightening Torque

N·m (kgf·cm)

Size	1/4"	3/8"
Torque	9 (92)	11 (112)

### Flow Direction

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



### Interchangeability

Can be connected with sockets for Full-Blow Cupla, and sockets for Hi Cupla series Models 20, 30 and 40. Interchangeable with each corresponding Hi Cupla Series models.

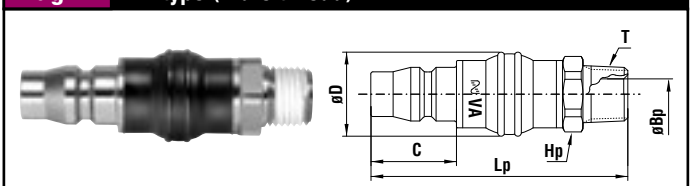
### Suitability for Vacuum

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

### Models and Dimensions

WAF : WAF stands for width across flat.

#### Plug PM type (Male thread)



Model	Application	Mass (g)	Dimensions (mm)					
			Lp	Hp(WAF)	C	T	øBp	øD
VA-20PM	Rc 1/4	37	(63)	Hex.17	21	R 1/4	7.5	20.6
VA-30PM	Rc 3/8	42	(64)	Hex.17	21	R 3/8	7.5	20.6




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 Low Pressure (Air)

# Duster Cupla

Air line coupling with air blower function

<p>Working pressure</p>  <p>1.0 MPa (10 kgf/cm<sup>2</sup>)</p>	<p>Valve structure</p>  <p>One-way shut-off</p>	<p>Applicable fluid</p>  <p>Air</p>
---	--	--

**Three functions in one: connection, air blow, hose twist release !  
Dust blow without detaching the tool !**

- Hi Cupla comes with compact air blow function.
- Improves job efficiency by air blow with tool still connected to hose.
- Ball bearing swivel mechanism prevents hose twist and relieves tension on operator's hand.
- Special design of air blow button switch is free from in line air pressure - no hard press down required.
- Also simple is routine water drain from air line before starting daily work.

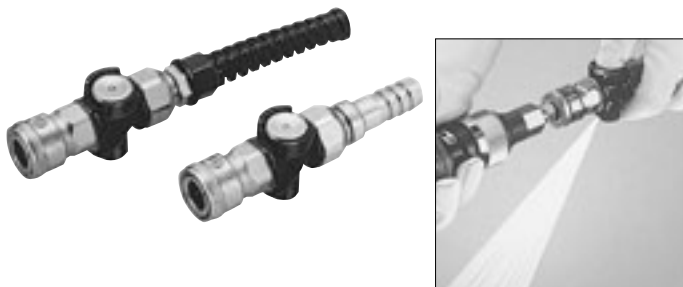
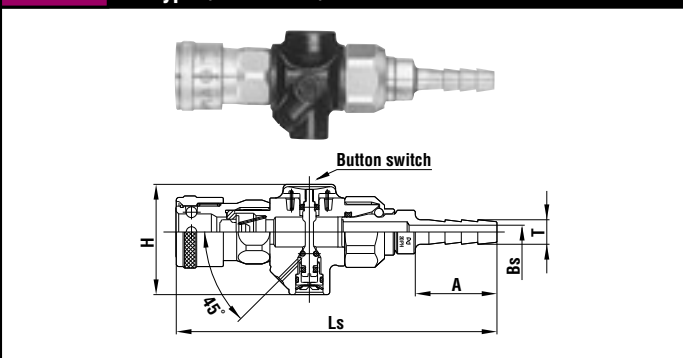


Photo shows simulated air flow.

## Models and Dimensions

WAF : WAF stands for width across flat.

### Socket PH type (Hose barb)



Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			Ls	A	H	øBs	øT
DCS-20PH	1/4"	168	(117.9)	30	40.5	5.0	9.0
DCS-30PH	3/8"	171	(121.9)	34	40.5	7.5	11.3
DCS-40PH	1/2"	193	(123.9)	36	40.5	7.5	15

## Specifications

Body material	Body: Aluminum, Cupla: Steel (Chrome-plated)			
Size	For 1/4" • 3/8" • 1/2" hose, for ø6.5 x ø10mm • ø8.5 x ø12.5mm polyurethane hose			
Working pressure MPa (kgf/cm <sup>2</sup> )	1.0 (10)			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	1.5 (15)			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+60°C	Standard material

## Tightening Torque Range

N·m (kgf·cm)

Model	65PNG	85PNG
Torque	5~6 (51~61)	7~8 (71~82)

## Flow Direction

Fluid must run from socket to plug.



## Interchangeability

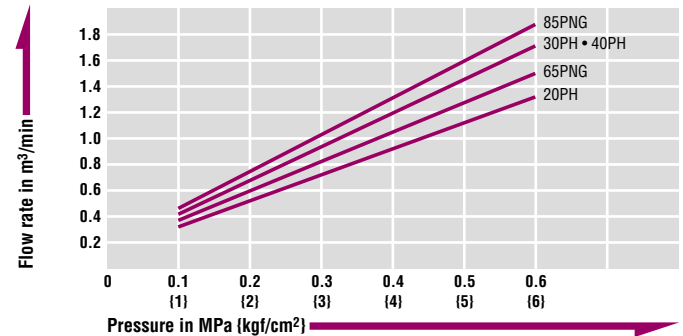
Can be connected with plugs for Hi Cupla Models 20, 30 and 40. Interchangeable with each corresponding Hi Cupla Series models.

## Suitability for Vacuum

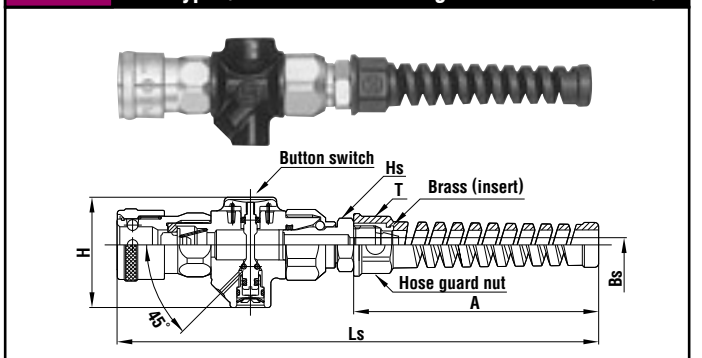
Not suitable for vacuum application in either connected or disconnected condition.

## Pressure - Flow Characteristics

[Test conditions] • Fluid : Air • Temperature : Room temperature



### Socket PNG type (For hose with hose guard nut connection)



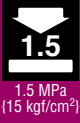
Model	Application (Hose)	Mass (g)	Dimensions (mm)						
			Ls	A	H	øBs	Hs(WAF)	T(WAF)	
DCS-65PNG	ø6.5 mm x ø10 mm	176	(176.9)	90	40.5	5.3	Hex.17	Hex.19	
DCS-85PNG	ø8.5 mm x ø12.5 mm	185	(176.9)	90	40.5	7.5	Hex.19	Hex.22	

For Low Pressure (Air)

# Oil Cupla

Air line coupling with lubricator function

Working pressure



Valve structure



Applicable fluid



Lube supply to connected pneumatic tool

**Coupling with lubricator function. One shot press button oiling for pneumatic tools.**

- Coupling and oiler in one compact unit. The tedious and often overlooked routine job to lubricate pneumatic tool air lines is now a simple handy push button operation, which increases tool life expectancy.



## Specifications

Body material	Steel (Chrome-plated) with diecast aluminum oiler tank			
Size	For $\phi 6.5$ mm x $\phi 10$ mm • $\phi 8.5$ mm x $\phi 12.5$ mm polyurethane hose			
Working pressure MPa (kgf/cm <sup>2</sup> )	1.5 {15}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	2.0 {20}			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+60°C	Standard material

## Tightening Torque Range

N·m (kgf·cm)

Model	OC-65SNG	OC-85SNG
Torque	5~6 {51~61}	7~8 {71~82}

## Flow Direction

Fluid must run from socket to plug.



## Interchangeability

Can be connected with plugs for Hi Cupla Models 20, 30 and 40. Interchangeable with each corresponding Hi Cupla Series models.

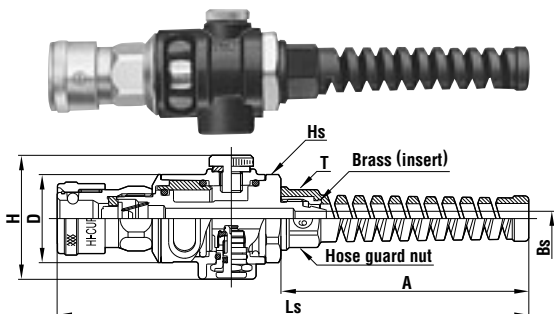
## Suitability for Vacuum

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

## Models and Dimensions

WAF : WAF stands for width across flat.

### Socket SNG type (For hose with hose guard nut connection)



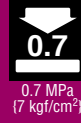
Model	Application (Hose)	Mass (g)	Dimensions (mm)						Hs(WAF)	T(WAF)
			Ls	A	H	$\phi D$	$\phi Bs$			
OC-65SNG	$\phi 6.5$ mm x $\phi 10$ mm	250	(172)	90	45	32	5.3	Hex.29	Hex.19	
OC-85SNG	$\phi 8.5$ mm x $\phi 12.5$ mm	260	(172)	90	45	32	7.5	Hex.29	Hex.22	

For Low Pressure (Air)

# NK Cupla Hose NK Cupla Coil Hose

Couplings with polyurethane hose for air lines

Working pressure



Valve structure



Applicable fluid



**Hi Cupla Ace sockets with polyurethane hoses are now standard stock items. Push-to-connect design for quick piping.**

- The Hi Cupla Ace socket is mounted on pliable polyurethane hose featuring excellent durability and wear resistant with hose guard nut to prevent possible kinking.
- Plastic socket will cause minimum risk of damage even in contact with tools or equipment.
- Air flows in either direction from plug or from socket side when coupled.
- Spiral polyurethane coil hoses processed from straight tube have self-recoiling feature.

## Specifications

Body material	Socket : Engineering plastics (PBT, POM) Plug : Steel (Chrome-plated)			
Size	$\phi 5$ mm x $\phi 8$ mm • $\phi 6.5$ mm x $\phi 10$ mm • $\phi 8.5$ mm x $\phi 12.5$ mm			
Working pressure MPa (kgf/cm <sup>2</sup> )	NK Cupla Hose : 1.0 {10}		NK Cupla Coil Hose : 0.7 {7}	
Pressure resistance MPa (kgf/cm <sup>2</sup> )	NK Cupla Hose : 1.5 {15}		NK Cupla Coil Hose : 1.0 {10}	
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+60°C	Standard material

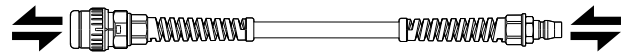
## Tightening Torque Range

N·m (kgf·cm)

Size	$\phi 5$ mm x $\phi 8$ mm	$\phi 6.5$ mm x $\phi 10$ mm	$\phi 8.5$ mm x $\phi 12.5$ mm
Torque (Socket)	1.6~2.0 {16~20}	1.6~2.0 {16~20}	2.2~2.8 {22~29}
Torque (Plug)	5~6 {51~61}	5~6 {51~61}	7~8 {71~82}

## Flow Direction

Air flows in either direction from plug or from socket side when coupled.



## Interchangeability

Interchangeable with Hi Cupla Models 20, 30 and 40. Interchangeable with each corresponding Hi Cupla models.

## Suitability for Vacuum

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

## Plug / Socket NK Cupla Hose / NK Cupla Coil Hose



Model	Hose size	Hose length	Socket	Plug
			Hi Cupla Ace	Nut Cupla
NKU-605B	$\phi 6.5$ mm x $\phi 10$ mm	5m	HA-65SNG	65PNG
NKU-610B	$\phi 6.5$ mm x $\phi 10$ mm	10m	HA-65SNG	65PNG
NKU-620B	$\phi 6.5$ mm x $\phi 10$ mm	20m	HA-65SNG	65PNG
NKU-810B	$\phi 8.5$ mm x $\phi 12.5$ mm	10m	HA-85SNG	85PNG
NKU-820B	$\phi 8.5$ mm x $\phi 12.5$ mm	20m	HA-85SNG	85PNG
Model	Hose size	Max. extensible length	Socket	Plug
			Hi Cupla Ace	Nut Cupla
NKC-503B	$\phi 5$ mm x $\phi 8$ mm	2m	HA-50SNG	50PNG
NKC-505B	$\phi 5$ mm x $\phi 8$ mm	4m	HA-50SNG	50PNG
NKC-603B	$\phi 6.5$ mm x $\phi 10$ mm	2m	HA-65SNG	65PNG
NKC-605B	$\phi 6.5$ mm x $\phi 10$ mm	4m	HA-65SNG	65PNG

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 Low Pressure

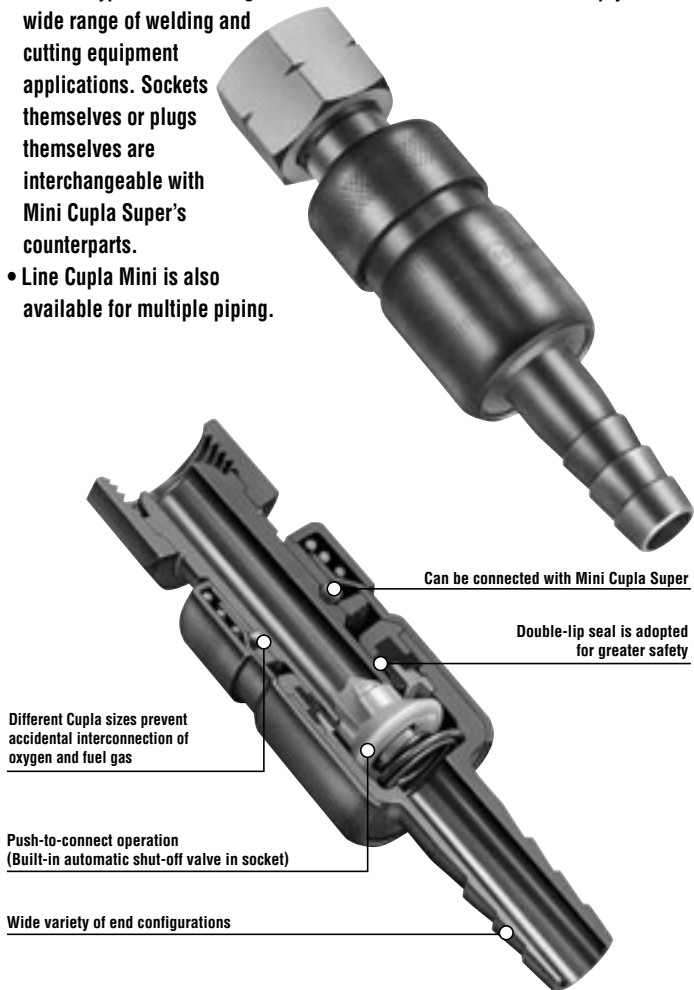
# Mini Cupla

Standard type for use on equipment for welding and gas cutting, etc.

<b>Working pressure</b> 0.7 0.7 MPa (7 kgf/cm <sup>2</sup> )	<b>Valve structure</b> One-way shut-off	<b>Applicable fluids</b> Oxygen, Fuel Gas
---	--	--

## Exclusively for oxyacetylene equipment. Many variations with higher flow rates!

- From cylinders to torches, all piping connections associated with welding and cutting equipment are push-to-connect operations.
- Double-lip seal prevents minor leak during connection. Oxygen and fuel gas Cuplas have different sizes to prevent accidental interconnection.
- Pressure loss is minimized to achieve higher flow rate.
- Various types of end configurations have been standardized to comply with a wide range of welding and cutting equipment applications. Sockets themselves or plugs themselves are interchangeable with Mini Cupla Super's counterparts.
- Line Cupla Mini is also available for multiple piping.

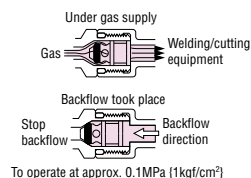
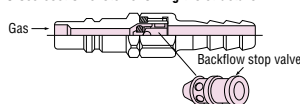


### Structure and Principle of Backflow Prevention

#### Plug with backflow stop valve

Plugs with backflow stop valve in Mini Cupla are designed exclusively for gas welding/cutting to prevent occurrence of gas mixing. Possible backflow of gas during operation can be stopped by cutting the back flow into the cylinder or line. Such valve is adopted in both fuel gas and oxygen plug.

Cross-section sketch showing the structure



Specifications				
Body material	Brass			
Size	1/4" • 5/16" • 3/8"			
Working pressure MPa (kgf/cm <sup>2</sup> )	0.7 (7)			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	1.0 (10)			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+80°C	Standard material

Max. Tightening Torque				N·m (kgf·cm)	
Model	22PF • 25PF • 33PF	22PFB • 33PFB	22SF • 33SF	22SM	33SM
Torque	12 (122)	12 (122)	12 (122)	9 (92)	11 (112)

### Flow Direction

Fluid must run from socket to plug.

### Interchangeability

To prevent accidental interconnection, no Cuplas for oxygen (1/4" and 5/16") can be connected with those for fuel gas Cuplas (5/16" and 3/8"). However, oxygen plugs and sockets are interchangeable and fuel gas plugs and sockets are interchangeable.

\*Also Mini Cupla models for oxygen are interchangeable with Mini Cupla Super models for oxygen, while fuel gas models are interchangeable.

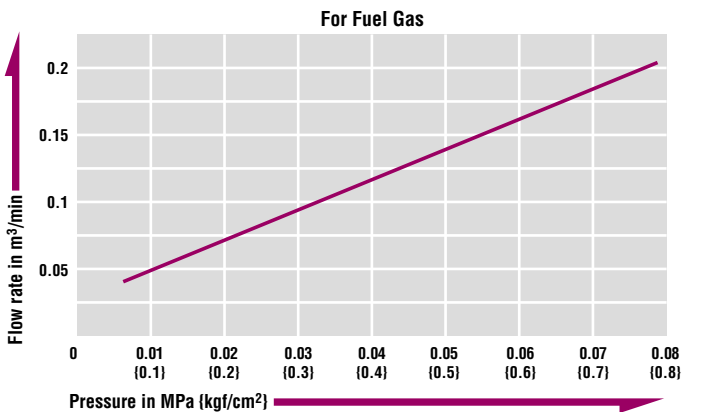
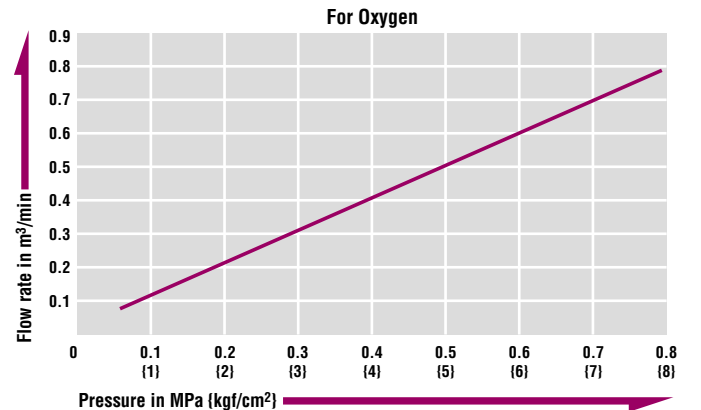
Min. Cross-Sectional Area	(mm <sup>2</sup> )	
Model	22SP • 25SP	33SP • 35SP
Min. cross-sectional area	20	44

### Suitability for Vacuum

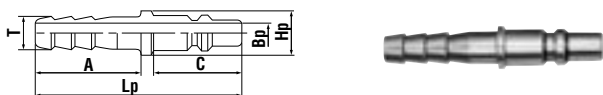
Not suitable for vacuum application in either connected or disconnected condition.

### Pressure - Flow Characteristics

[Test conditions] • Fluid : Air • Temperature : Room temperature

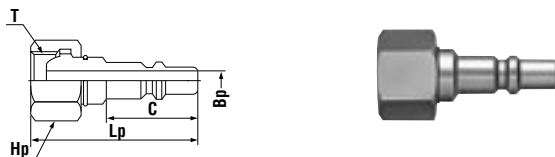


**Plug PH type (Hose barb)**



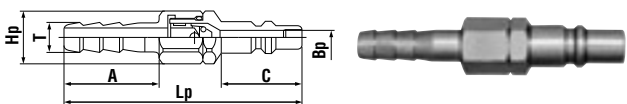
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				Lp	C	A	øHp	øT	øBp
For Oxygen	22PH	1/4"	16	55	23.5	28	11	7.8	5
	25PH	5/16"	19					9	
For Fuel Gas	33PH	3/8"	22	57	25.5	28	14	10.5	7.5
	35PH	5/16"	20					9	6

**Plug PF type (Female thread for torch connection)**



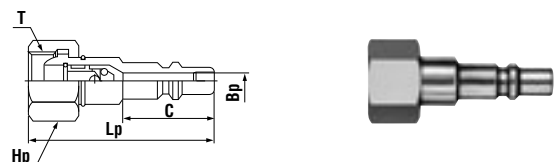
Usage	Model	Application	Mass (g)	Dimensions (mm)				
				Lp	C	Hp(WAF)	T	øBp
For Oxygen	22PF	For oxygen torch side	31	(43)	23.5	Hex.19	M16x1.5	5
	25PF		26	(43.5)		Hex.17	W12.5-20	
For Fuel Gas	33PF	For fuel gas torch side	36	(44.5)	25.5	Hex.19	M16x1.5 left-hand thread	7.5

**Plug PHB type (Hose barb with backflow stop valve)**



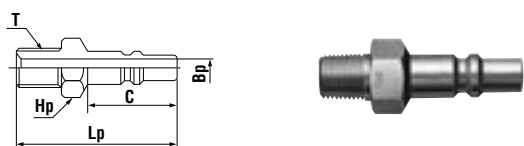
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				Lp	C	A	øHp	øT	øBp
For Oxygen	22PHB	1/4"	31	(69.6)	23.5	28	15.5	7.8	4.5
	25PHB	5/16"	34					9	
For Fuel Gas	33PHB	3/8"	41	(70.6)	25.5	28	15.5	10.5	4.5
	35PHB	5/16"	39					9	

**Plug PFB type (Female thread with backflow stop valve for torch connection)**



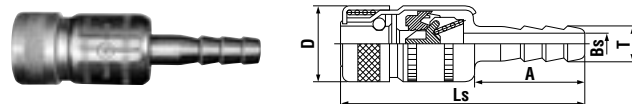
Usage	Model	Application	Mass (g)	Dimensions (mm)				
				Lp	C	Hp(WAF)	T	øBp
For Oxygen	22PFB	For oxygen torch side	36	(48.5)	23.5	Hex.19	M16x1.5	4.5
For Fuel Gas	33PFB	For fuel gas torch side	41	(49)	25.5	Hex.19	M16x1.5 left-hand thread	4.5

**Plug PMT type (Male thread)**



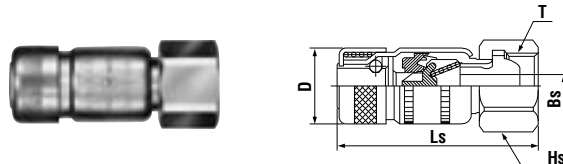
Usage	Model	Application	Mass (g)	Dimensions (mm)				
				Lp	C	Hp(WAF)	T	øBp
For Oxygen	21PMT	Rc 1/8	22	43.5	24	Hex.14	R 1/8	5
	22PMT	Rc 1/4	27	45	24	Hex.14	R 1/4	5

**Socket SH type (Hose barb)**



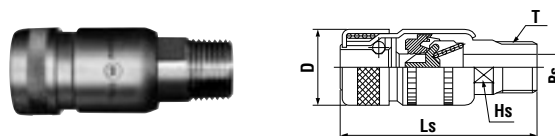
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)				
				Ls	øD	A	øT	øBs
For Oxygen	22SH	1/4"	52	(64)	19.8	29	7.8	5
	25SH	5/16"	55				9	
For Fuel Gas	33SH	3/8"	69	(65)	22.6	29	10.5	7.5
	35SH	5/16"	67				9	6

**Socket SF type (Female thread for cylinder connection)**



Usage	Model	Application	Mass (g)	Dimensions (mm)				
				Ls	øD	T	øBs	Hs(WAF)
For Oxygen	22SF	For oxygen gauge side	80	(52)	19.8	M16x1.5	5	Hex.19
For Fuel Gas	33SF	For fuel gas gauge sid	96	(54)	22.6	M16x1.5 left-hand thread	5	Hex.19

**Socket SM type (Male thread)**

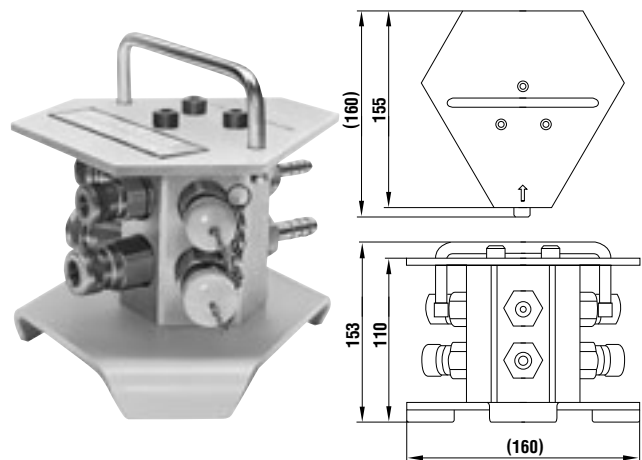


Usage	Model	Application	Mass (g)	Dimensions (mm)				
				Ls	øD	Hs(WAF)	T	øBs
For Oxygen	22SM	Rc 1/4	51	(52)	19.8	12	R 1/4	7.5
For Fuel Gas	33SM	Rc 3/8	77	(55)	22.6	14	R 3/8	10

**Socket Line Cupla Mini LM-32 (For three port branch piping)**

Mass : 4,300g

• Dust caps come with this product as the standard accessory.



Line Cupla Mini contains:				Dimensions (mm)	
	For Oxygen	For Fuel Gas	Qty		
Supply port	1/4"	3/8"	Each 1pc.		
Gas outlets	22SM	33SM	Each 3pc.		
Accessories (Plug with backflow stop valve)	22PHB	33PHB	Each 3pc.		

For Low Pressure

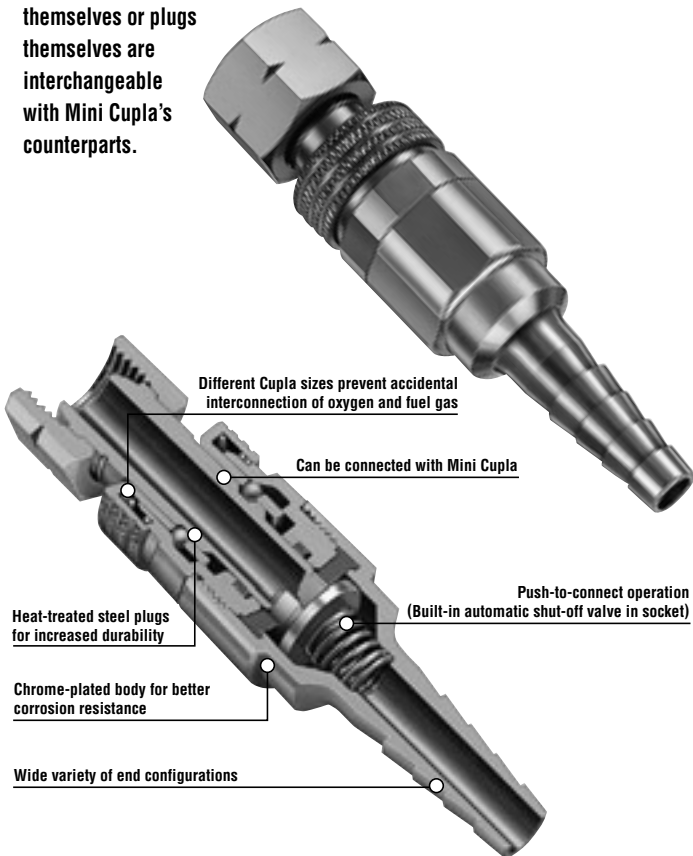
# Mini Cupla Super

Heavy-duty push-to-connect type for oxyacetylene piping

<b>Working pressure</b>	<b>Valve structure</b>	<b>Applicable fluids</b>
0.7 MPa (7 kgf/cm <sup>2</sup> )	One-way shut-off	Oxygen, Fuel Gas

## Exclusively for welding and cutting equipment.

- From cylinders to torches, all piping connections associated with welding and cutting equipment are push-to-connect operations.
- Chrome-plated body for better corrosion resistance.
- Heat-treated plugs for better durability.
- Oxygen and fuel gas Cuplas have different configuration sizes with sleeves in different appearances, chrome plating for oxygen and copper plating for fuel gas, to prevent accidental interconnection.
- Smaller diameter design enables wider range of applications.
- Various types of end configurations have been standardized to comply with a wide range of welding and cutting equipment applications. Sockets themselves or plugs themselves are interchangeable with Mini Cupla's counterparts.

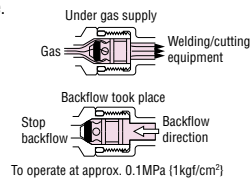
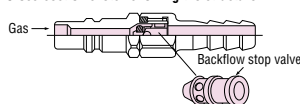


### Structure and Principle of Backflow Prevention

#### Plug with backflow stop valve

Plugs with backflow stop valve in Mini Cupla Super are designed exclusively for gas welding/cutting to prevent occurrence of gas mixing. Possible backflow of gas during operation can be stopped by cutting the back flow into the cylinder or line. Such valve is adopted in both fuel gas and oxygen plug.

Cross-section sketch showing the structure



### Specifications

Body material	Socket : Brass (Chrome-plated) Plug : Steel (Chrome-plated)			
Size	1/4" • 5/16" • 3/8"			
Working pressure MPa (kgf/cm <sup>2</sup> )	0.7 {7}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	1.0 {10}			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+80°C	Standard material

### Max. Tightening Torque

N·m (kgf·cm)

Model	S22PF • S22SF • S33PF • S33SF	S22SM	S33SM
Torque	12 {122}	9 {92}	11 {112}

### Flow Direction

Fluid must run from socket to plug.



### Interchangeability

To prevent accidental interconnection, no Cuplas for oxygen (1/4" and 5/16") can be connected with those for fuel gas Cuplas (5/16" and 3/8"). However, oxygen plugs and sockets are interchangeable and fuel gas plugs and sockets are interchangeable.

\*Also Mini Cupla Super models for oxygen are interchangeable with Mini Cupla models for oxygen, while fuel gas models are interchangeable.

### Min. Cross-Sectional Area

(mm<sup>2</sup>)

Model	S22SP	S33SP
Min. cross-sectional area	16	28

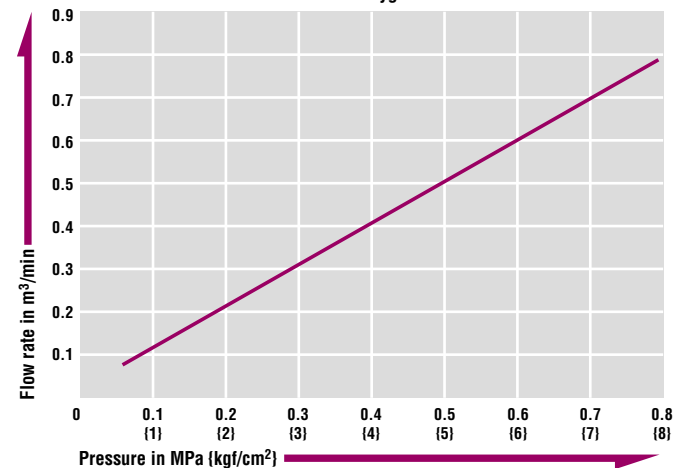
### Suitability for Vacuum

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

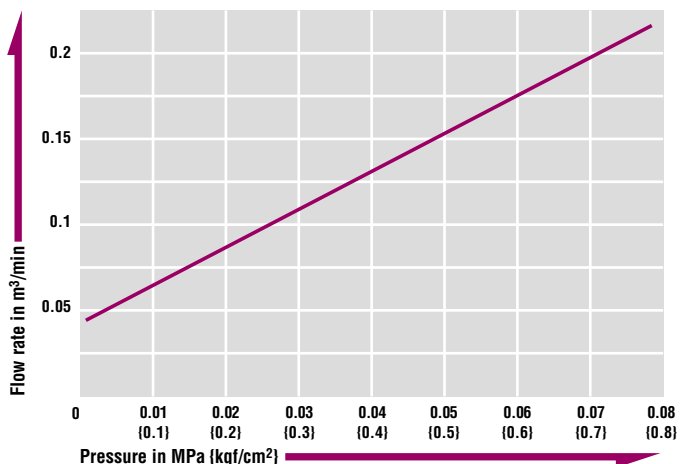
### Pressure - Flow Characteristics

[Test conditions] • Fluid : Air • Temperature : Room temperature

#### For Oxygen



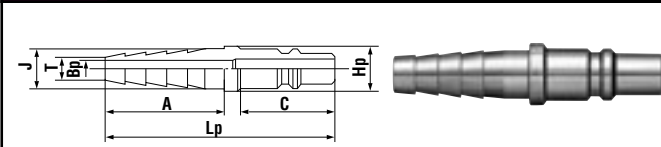
#### For Fuel Gas





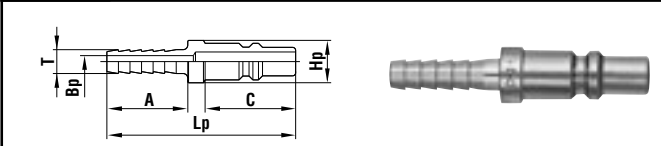
Models and Dimensions

**Plug PH type (Hose barb)**



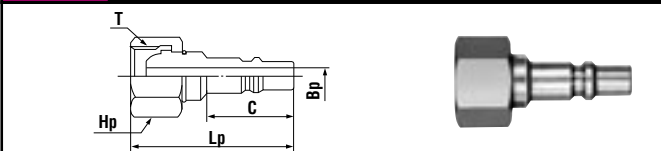
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)						
				Lp	C	A	øHp	øT	øJ	øBp
For Oxygen	S22PH	1/4" • 5/16"	17	58	23.5	30	11	6.7	9.5	4.5
For Fuel Gas	S33PH	5/16" • 3/8"	22	59.5	25.5	30	14	7.5	11	6
For Fuel Gas	S325PH *1	1/4" • 5/16"	20	59.5	25.5	30	14	6.2	9	4.5

**Plug PH type (Hose barb for smaller diameter hose)**



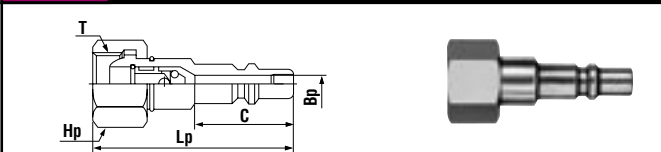
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				Lp	C	A	øHp	øBp	øT
For Oxygen	S225PH	5mm ID	12	49	23.5	21	11	3.1	6.2
For Fuel Gas	S335PH	5mm ID	15	50.5	25.5	21	14	3.1	6.2

**Plug PF type (Female thread for torch connection)**



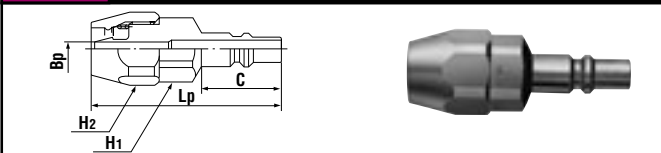
Usage	Model	Application	Mass (g)	Dimensions (mm)				
				Lp	C	Hp(WAF)	T	øBp
For Oxygen	S22PF	For oxygen torch side	35	(43)	23.5	Hex.19	M16x1.5	5
For Fuel Gas	S33PF	For fuel gas torch side	32	(44.5)	25.5	Hex.19	M16x1.5 left-hand thread	7.5

**Plug PFB type (Female thread with backflow stop valve for torch connection)**



Usage	Model	Application	Mass (g)	Dimensions (mm)				
				Lp	C	Hp(WAF)	øT	øBp
For Oxygen	S23PFB-2 *1	For oxygen torch side	48	(51)	23.5	Hex.21	BS 3/8	4.5
For Fuel Gas	S33PFB-2 *1	For fuel gas torch side	52	(51)	25.5	Hex.21	BS 3/8 left-hand thread	4.5

**Plug PN type (Nut type for small diameter hose)**



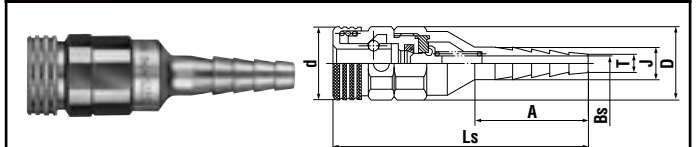
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)				
				Lp	C	H1(WAF)	H2(WAF)	øBp
For Oxygen	S22PN	5mm ID *2	54	(53.5)	23.5	Hex.17	Hex.19	4.5
For Fuel Gas	S33PN	5mm ID *2	57	(54.5)	25.5	Hex.17	Hex.19	4.5

Application Example



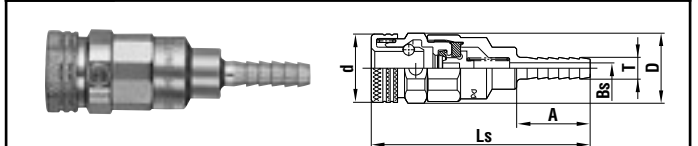
Welding and cutting torches

**Socket SH type (Hose barb)**



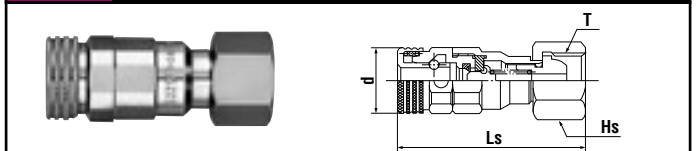
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)						
				Ls	ød	øD	A	øT	øJ	øBs
For Oxygen	S22SH	1/4" • 5/16"	50	(64.5)	19.5	20	30	6.7	9.5	4.5
For Fuel Gas	S33SH	5/16" • 3/8"	73	(68)	22	22	30	7.5	11	6
For Fuel Gas	S325SH *1	1/4" • 5/16"	74	(72.5)	22	22	30	6.2	9	4.5

**Socket SH type (Hose barb for smaller diameter hose)**



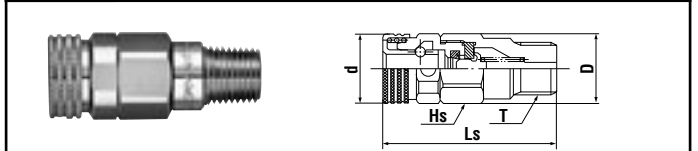
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				Ls	ød	øD	A	øBs	øT
For Oxygen	S225SH	5mm ID	54	(62.5)	19.5	20	21	3.1	6.2
For Fuel Gas	S335SH	5mm ID	65	(63)	22	22	21	3.1	6.2

**Socket SF type (Female thread for cylinder connection)**



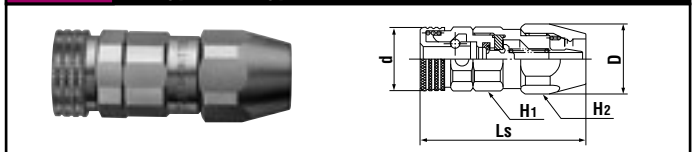
Usage	Model	Application	Mass (g)	Dimensions (mm)			
				Ls	øD	T	Hs(WAF)
For Oxygen	S22SF	For oxygen gauge side	74	(52.5)	19.5	M16x1.5	Hex.19
For Fuel Gas	S33SF	For fuel gas gauge side	97	(57.5)	22	M16x1.5 left-hand thread	Hex.19
For Oxygen	S23SF-BS *1	For oxygen gauge side	82	(55.5)	19.5	BS 3/8	Hex.21
For Fuel Gas	S33SF-BS *1	For fuel gas gauge side	88	(59)	22	BS 3/8 left-hand thread	Hex.21

**Socket SM type (Male thread)**



Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)				
				Ls	ød	øD	Hs(WAF)	T
For Oxygen	S22SM	Rc 1/4	58	(48.5)	19.5	20	Hex.18	R 1/4
For Fuel Gas	S33SM	Rc 3/8	85	(52)	22	23	Hex.21	R 3/8

**Socket SN type (Nut type for small diameter hose)**



Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)				
				Ls	ød	øD	H1(WAF)	H2(WAF)
For Oxygen	S22SN	5mm ID *2	74	(52)	19.5	20.5	Hex.18	Hex.19
For Fuel Gas	S33SN	5mm ID *2	91	(57)	22	20.5	Hex.21	Hex.19

\*1 : Made-to-order item.

\*2 : Available hose sizes are ø5mm x ø11.2mm, ø5mm x ø11.5mm and ø5mm x ø11.8mm.

Select the combination in accordance with your own application.

Male thread	For regulator	For extension hose	For torch
Suggested combination SM x PH	Suggested combination SF x PH	Suggested combination SH x PH	Suggested combination SH x PF

For Low Pressure

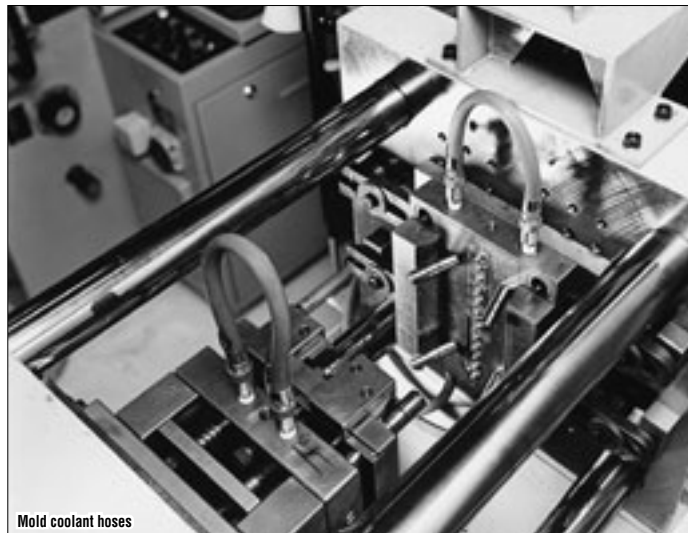
# Mold Cupla

General purpose and mold coolant port coupling

<b>Working pressure</b> 1.0 1.0MPa (10kgf/cm <sup>2</sup> )	<b>Valve structure</b> One-way shut-off	<b>Applicable fluids</b> Water Heated oil
--	--	---

**Designed for quick replacement for die and mold !**  
**Rust resistant models having many variations.**

- Space saving design for molds with closely spaced coolant ports.
  - Long sleeve socket facilitates connection/disconnection with plug embedded in mold.
  - Various sizes and end configurations to suit a wide variety of mold applications.
  - Can be connected with Super Cuplas, excluding K3 and K4 types.
  - Push-to-connect design. (Built-in automatic shut-off valve)
- Also available is Cupla without valve. (please specify the basic model).



Specifications				
Body material	Brass			
Size	1/8" • 1/4" • 3/8"			
Working pressure MPa (kgf/cm <sup>2</sup> )	1.0 (10)			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	1.5 (15)			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-20°C~+80°C	Standard material
	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Available on request

Max. Tightening Torque			N·m (kgf·cm)
Size	1/8"	1/4"	3/8"
Torque	5 (51)	9 (92)	11 (112)

**Flow Direction**

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

**Interchangeability**

Sockets and plugs can be connected regardless of end configurations and sizes. Can be connected to Super Cupla.

Min. Cross-Sectional Area (mm <sup>2</sup> )							
Plug \ Socket	K02SH	K03SH	K02SM	K03SM	K02SF	K02SHL	K03SHL
K02PH	15.5	15.5	15.5	15.5	15.5	15.5	15.5
K03PH	15.5	28	28	28	28	15.5	28
K01PM	15.5	23	23	23	23	15.5	23
K02PM	15.5	28	28	28	28	15.5	28
K03PM	15.5	28	28	28	28	15.5	28
K01PF	15.5	28	28	28	28	15.5	28
K02PF	15.5	28	28	28	28	15.5	28
K03PF	15.5	28	28	28	28	15.5	28
K01PML	15.5	19	19	19	19	15.5	19
K02PML	15.5	28	28	28	28	15.5	28
K03PML	15.5	28	28	28	28	15.5	28

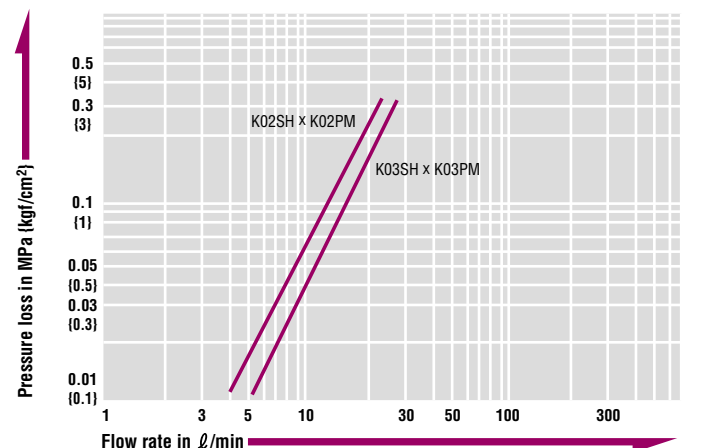
**Suitability for Vacuum**

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

Plug Embedment Dimensions (mm)					
Model	D*	C*	L	Remarks	
K01PM	20 or more	0~3	28	* Socket interference prevents connection/disconnection when C exceeds 3mm. * Size D should be bigger than the outer diameter of the socket wrench to be used. (See JISB4636-1, JISB4636-2)	
K02PM	20 or more	0~3	29		
K03PM	20 or more	0~3	30		

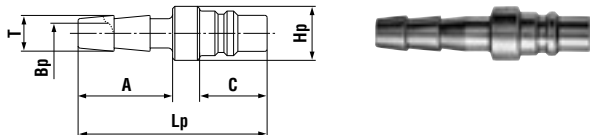
**Flow Rate – Pressure Loss Characteristics**

[Test conditions] • Fluid : Water • Temperature : Room temperature



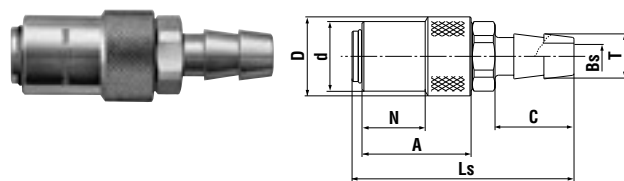
Models and Dimensions

**Plug PH type (Hose barb)**



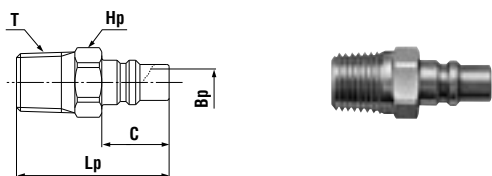
Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			Lp	A	C	øHp	øT	øBp
K02PH	1/4"	17	42	21	15	12	8	4.5
K03PH	3/8"	19	42	21	15	15	12	6

**Socket SH type (Hose barb)**



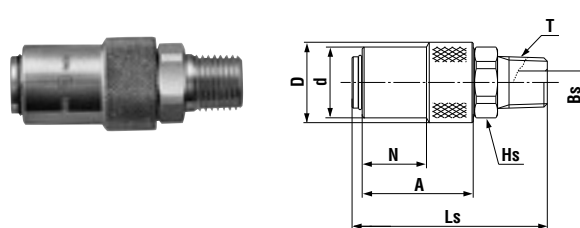
Model	Application (Hose)	Mass (g)	Dimensions (mm)							
			Ls	øD	ød	N	A	C	øT	øBs
K02SH	1/4"	52	(67)	21	18.5	16.8	29	29	8	5
K03SH	3/8"	60	(59)	21	18.5	16.8	29	21	12	7

**Plug PM type (Male thread)**



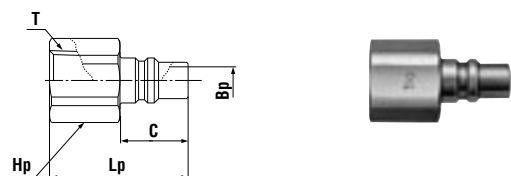
Model	Application	Mass (g)	Dimensions (mm)				
			Lp	Hp(WAF)	C	T	øBp
K01PM	Rc 1/8	14	31	Hex.12	15	R 1/8	5.5
K02PM	Rc 1/4	20	34	Hex.14	15	R 1/4	6
K03PM	Rc 3/8	35	35	Hex.17	15	R 3/8	6

**Socket SM type (Male thread)**



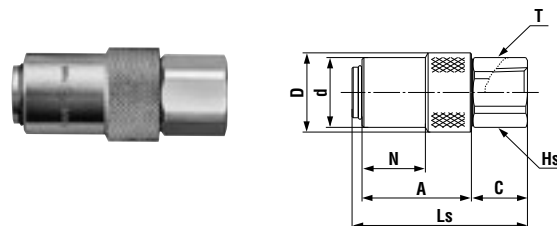
Model	Application	Mass (g)	Dimensions (mm)							
			Ls	øD	ød	N	A	Hs(WAF)	T	øBs
K02SM	Rc 1/4	70	(51)	21	18.5	16.8	29	Hex.17	R 1/4	6
K03SM	Rc 3/8	82	(52)	21	18.5	16.8	29	Hex.19	R 3/8	6

**Plug PF type (Female thread)**



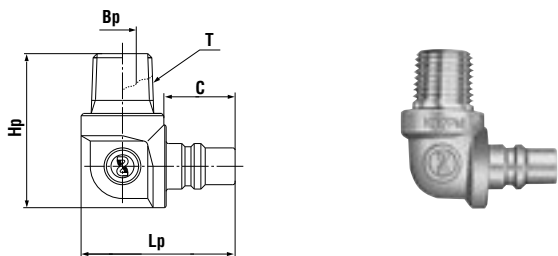
Model	Application	Mass (g)	Dimensions (mm)				
			Lp	Hp(WAF)	C	T	øBp
K01PF	R 1/8	16	28	Hex.14	15	Rc 1/8	6
K02PF	R 1/4	22	30.5	Hex.17	15	Rc 1/4	6
K03PF	R 3/8	35	32	Hex.21	15	Rc 3/8	6

**Socket SF type (Female thread)**



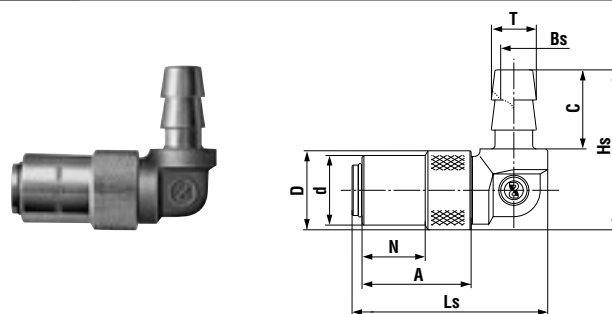
Model	Application	Mass (g)	Dimensions (mm)							
			Ls	øD	ød	N	A	C	T	Hs(WAF)
K02SF	R 1/4	57	(46.5)	21	18.5	16.8	29	14.5	Rc 1/4	Hex.17

**Plug PML type (With L-shaped male thread)**



Model	Application	Mass (g)	Dimensions (mm)				
			Lp	C	Hp	T	øBp
K01PML	Rc 1/8	43	33.5	15	30.5	R 1/8	5
K02PML	Rc 1/4	53	33.5	15	33.5	R 1/4	6
K03PML	Rc 3/8	71	33.5	15	33.5	R 3/8	6

**Socket SHL type (With L-shaped hose barb)**



Model	Application	Mass (g)	Dimensions (mm)								
			Ls	øD	ød	N	A	C	øT	Hs	øBs
K02SHL	1/4"	79	(52)	21	18.5	16.8	29	21	8	(42.5)	4.5
K03SHL	3/8"	87	(52)	21	18.5	16.8	29	21	12	(42.5)	7

Notes: Also available without socket valve, identified by product code TS (e.g. K03SH without valve is K03TSH).  
Also available are Cuplas with sleeve stopper (Made-to-order item).

# For Low Pressure

# Mold Cupla

## High flow type

High flow type mold coolant port coupling

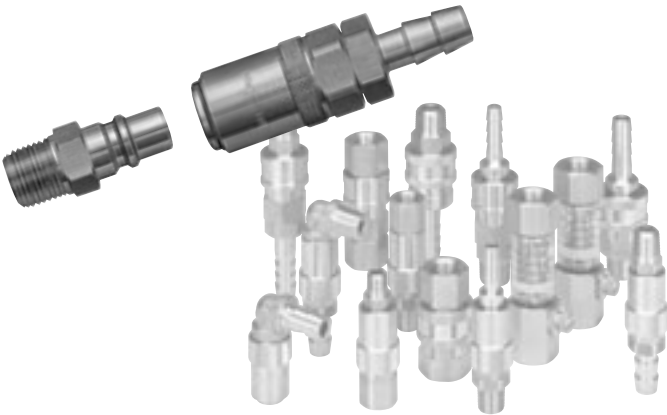
Working pressure: **1.0** (10MPa (10kgf/cm<sup>2</sup>))

Valve structure: One-way shut-off, Straight through

Applicable fluids: Water, Heated oil

## Flow rate has doubled to contribute to productivity.

- High flow type K3 and K4 series are added to mold Cupla series for mold coolant and heated oil port coupling.
- Almost double flow rate compared with our standard K01, K02, and K03 series contributing to productivity.
- Space saving design for molds with closely spaced coolant ports.
- Long sleeve socket facilitates connection/disconnection with plug embedded in mold.
- Enables quick mold coolant hose connection/disconnection.



### Plug Embedment Dimensions (mm)

Model	D*	C*	L	Remarks
K3-02PM	24 or more	0~3	31	* Socket interference prevents connection/disconnection when C exceeds 3mm.
K3-03PM	24 or more	0~3	31	* Size D should be bigger than the outer diameter of the socket wrench to be used. (See JISB4636-1, JISB4636-2)
K4-04PM	32 or more	0~3	39	

### Models and Dimensions

Model	Application	Mass (g)	Dimensions (mm)					
			Lp	C	Hp(WAF)	øE	øT	øBp
K3-02PM	Rc 1/4	16	36	17.5	Hex.14	15.5	R 1/4	9
K3-03PM	Rc 3/8	25	36	17.5	Hex.17	18.5	R 3/8	9.5
K4-04PM	Rc 1/2	50	46	21.5	Hex.22	24	R 1/2	13

Notes: Also available without socket valve, identified by product code TS (e.g. K03SH without valve is K03TSH)  
Also available are Cuplas with sleeve stopper. (Made-to-order item)

### Specifications

Body material	Brass			
Size	1/4" • 3/8" • 1/2"			
Working pressure MPa (kgf/cm <sup>2</sup> )	1.0 (10)			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	1.5 (15)			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-20°C~+80°C	Standard material
	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Available on request

### Max. Tightening Torque N·m (kgf·cm)

Size	1/4"	3/8"	1/2"
Torque	9 (92)	11 (112)	20 (204)

### Flow Direction

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



### Interchangeability

In K3 series sockets and plugs can be connected regardless of end configurations and sizes. In K4 series sockets and plugs can be connected regardless of end configurations and sizes. K3 series and K4 series can neither be connected with other mold Cuplas series, nor with K3 series and K4 series each other.

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

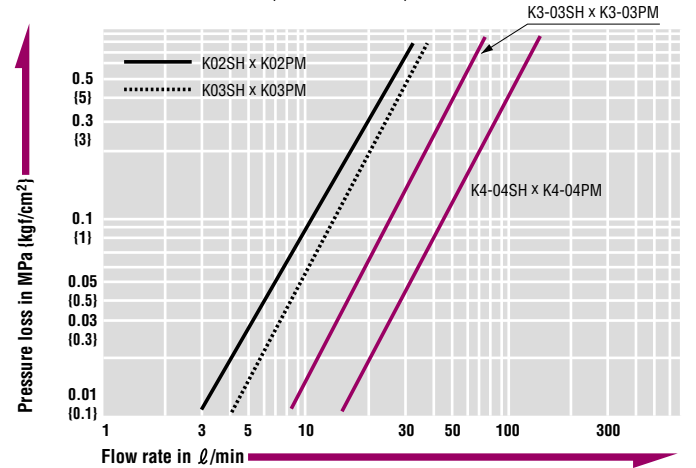
Plug / Socket	K3-03SH	K3-04SH	K4-04SH
K3-02PM	38	63.5	—
K3-03PM	38	70.5	—
K4-04PM	—	—	78.5

### Suitability for Vacuum

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

### Flow Rate – Pressure Loss Characteristics

[Test conditions] • Fluid : Water • Temperature : Room temperature



WAF : WAF stands for width across flat.

### Socket SH type (Hose barb / High flow type)

Model	Application (Hose)	Mass (g)	Dimensions (mm)						
			Ls	øD	ød	N	A	øT	øBs
K3-03SH	3/8"	100	(65)	24	22.5	19	25.5	12	7
K3-04SH	1/2"	102	(67)	24	22.5	19	25.5	15	10
K4-04SH	1/2"	226	(82)	32	30	26.5	34	15	10

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 Low Pressure

# Flow Meter

Flow meter with special valve for mold cooling line

Working pressure

**0.5**

0.5MPa  
(5kgf/cm<sup>2</sup>)

Applicable fluids



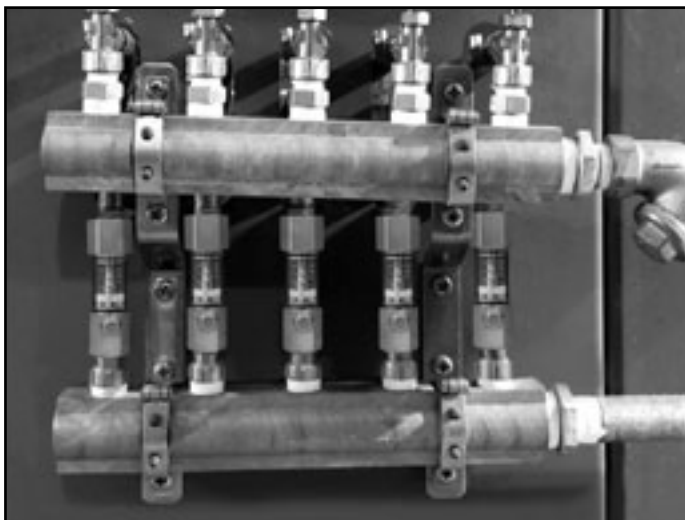
Water

## For even coolant flow and reproducing prescribed flow rate.

- Graduated scale enables visual check of coolant flow rate, so as not to vary cooling conditions by any operator.
- Built-in flow rate adjustment valve enables desired setting of mold conditions for each machine.
- Easy resumable previous molding conditions cuts lead time.
- T2 side is equipped with rotary function. Even after fixing the body on T1 side to the piping, additional screw tightening on T2 side is possible. (FM-03B)
- Maintenance is extremely simple.



### Application Example



### Specifications

Body material	Body: Brass Graduated tube: Polycarbonate			
Size	Both ends Rc3/8 female thread			
Working pressure MPa (kgf/cm <sup>2</sup> )	0.5 (5)			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	0.8 (8)			
Max. flow rate	ℓ/min	18 ℓ/min (0 to 18 ℓ/min adjustable)		
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	+10°C~+60°C	Standard material

• Plastic float limits the water temperature to +10°C ~ +60°C range.

### Max. Tightening Torque

N·m (kgf·cm)

Size	3/8"
Torque	11 (112)

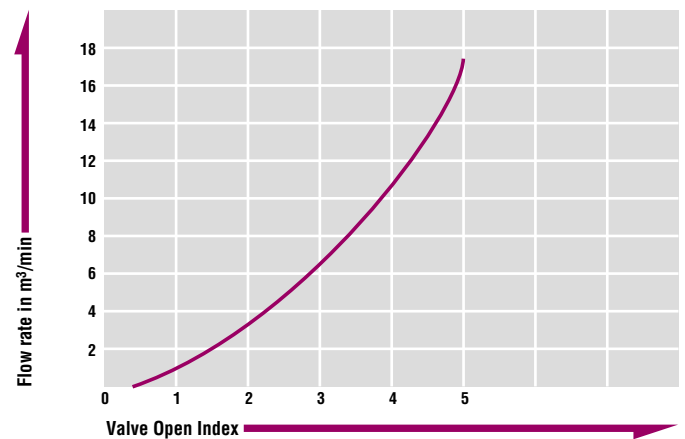
### Flow Direction

Fluid must flow in the direction of the arrows.



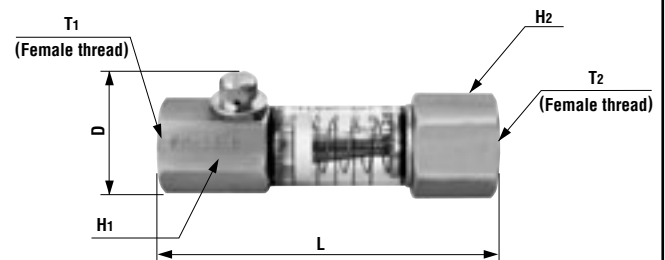
### Pressure - Flow Characteristics

[Test conditions] • Fluid : Air • Temperature : Room temperature • Inlet pressure : 0.3MPa (3kgf/cm<sup>2</sup>)



### Models and Dimensions

WAF : WAF stands for width across flat.



Model	Mass (g)	Dimensions (mm)					
		L	D	H1(WAF)	H2(WAF)	T1	T2
FM-03-B	190	(89)	(33)	Hex.23	Hex.26	Rc 3/8	Rc 3/8

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



For Low Pressure

# Lever Lock Cupla

## Metal body / Plastic body

For bulk flow, low pressure applications

Working pressure **0.7~1.8**  
0.7-1.8MPa (7-18kgf/cm<sup>2</sup>)

Working pressure **0.2~0.5**  
0.2-0.5MPa (2-5kgf/cm<sup>2</sup>)

Valve structure  
Straight through

Designs and specifications are subject to change for improvement without notice

Applicable fluids (plastic body Cuplas are for water or air only)

Water Hydraulic oil Air

Light lever pull-down will connect the plug and socket without fail ready to flow liquid or gases.

- This Cupla complies with diversified applications in liquid or gas transportation.
- End-face seal structure enables no bumps or hollows on the internal fluid passage, and ensures smooth fluid transportation.
- "Special lip seal" adopted (except 3/4", 1" sizes and silicon rubber seal) for light lever action and tight and sure sealing when connected.
- Connection part dimensions comply with US military specifications MIL-A-A-59326.
- The variety of body materials, sizes and end configurations has been standardized to comply with wide range of applications.
- Additional stopper function design will enhance safety (made-to-order product).



Specifications (Metal body)							
Body material (Material symbol)	Aluminum alloy (AL), Copper alloy (BR)			Stainless steel (SUS)			
Size	3/4"~2"	2 1/2"	3"	4"	3/4"~2"	2 1/2"~3"	4"
Working pressure MPa (kgf/cm <sup>2</sup> )	1.8 (18)	1.1 (11)	0.9 (9)	0.7 (7)	1.8 (18)	1.6 (16)	1.1 (11)
Pressure resistance MPa (kgf/cm <sup>2</sup> )	2.7 (27)	1.7 (17)	1.4 (14)	1.1 (11)	2.7 (27)	2.4 (24)	1.7 (17)
Seal material	Seal material		Mark		Working temperature range		
Working temperature range	Nitrile rubber		NBR (SG)		-20°C~+180°C		
Optional seal material	Seal material		Mark		Working temperature range		
	Silicone rubber		SI		-40°C~+150°C		
	Fluoro rubber		FKM (X-100)		-20°C~+180°C		
	Ethylene-propylene rubber		EPDM (EPT)		-40°C~+150°C		
	FEP-covered silicon rubber*		—		+5°C~+50°C		

\*Made-to-order item (Working pressure : 0.2MPa (2kgf/cm<sup>2</sup>) / Pressure resistance : 0.3MPa (3kgf/cm<sup>2</sup>)

Specifications (Plastic body)			
Body material (Material symbol)	Polypropylene (PP)		
Size	3/4" • 1" • 1 1/2"		2" • 3"
Working pressure* MPa (kgf/cm <sup>2</sup> )	0.5 (5)		0.2 (2)
Pressure resistance* MPa (kgf/cm <sup>2</sup> )	0.7 (7)		0.35 (3.5)
Seal material	Seal material		Mark
Working temperature range	Nitrile rubber		NBR (SG)
			Working temperature range
			-20°C~+180°C
Optional seal material	Seal material		Mark
	Silicone rubber		SI
	Fluoro rubber		FKM (X-100)
	Ethylene-propylene rubber		EPDM (EPT)
			Working temperature range
			+5°C~+50°C

\*Pressure at 20°C. Pressure reduces as temperature rises.

Max. Tightening Torque								N·m (kgf·cm)	
Size	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	
Torque	Aluminum alloy	50 (510)	70 (714)	120 (1224)	140 (1428)	260 (2652)	350 (3570)	410 (4182)	470 (4794)
	Copper alloy								
	Stainless steel	90 (918)	120 (1224)	220 (2244)	260 (2652)	350 (3570)	480 (4896)	520 (5304)	590 (6018)

**Flow Direction**

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

**Interchangeability**

Same size sockets and plugs are interchangeable regardless of their end configurations. Connection part dimensions are in compliance with MIL-A-A-59326.

Suitability for Vacuum (Metal body)			53.0kPa (400mmHg)
Socket only	Plug only	When connected	
—	—	Operational	

**Suitability for Vacuum (Plastic body)**

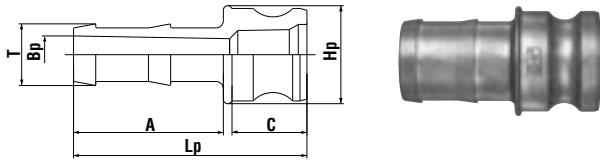
Not suitable for vacuum application in either connected or disconnected condition.

Dimensions with Lever Fully Opened				
Metal (This drawing is for LC Type.)				
Size	Dimensions E (mm)			
	Body material			
	AL	BR	SUS	
3/4"	122	122	111	
1"	132	132	125	
1 1/4"	183	183	179	
1 1/2"	191	187	187	
2"	201	196	196	
2 1/2"	213	209	209	
3"	249	249	249	
4"	280	277	277	
Plastic (This drawing is for LC Type.)				
Size	Dimensions E (mm)			
3/4"	114			
1"	126			
1 1/2"	185			
2"	195			
3"	249			

Models and Dimensions

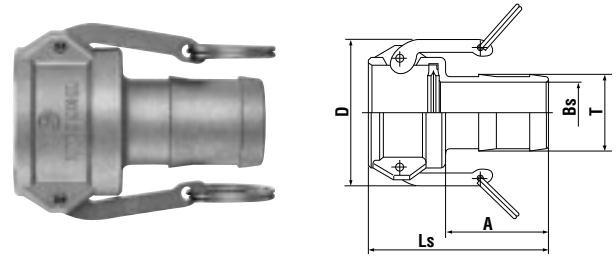
Dimensions of products may differ according to body material. / WAF : WAF stands for width across flat.

Plug LE type (Hose barb)



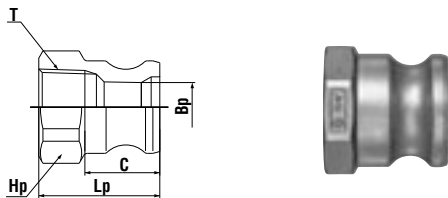
Material	Model	Size	Mass (g)	Dimensions (mm)					
				Lp	A	C	øHp	øT	øBp
Aluminum alloy	LE-6TPH	3/4"	65	81	52	26	34	21.5	11
	LE-8TPH	1"	100	95	58	34	40	27.5	17.5
	LE-10TPH	1 1/4"	140	102	58	40	48	34	23.5
	LE-12TPH	1 1/2"	190	107	61	42	58	40.5	29.5
	LE-16TPH	2"	290	122	70	48	69	53	40
	LE-20TPH	2 1/2"	390	134.5	80	50	81	67	50
	LE-24TPH	3"	545	167	101	61.5	97	79	68
	LE-32TPH	4"	850	176	106	63.5	133	105	93
	LE-6TPH	3/4"	215	90.5	52.5	26	39	21.5	12.5
Copper alloy	LE-8TPH	1"	305	107	60	34.5	41	27.5	20
	LE-10TPH	1 1/4"	440	102	58	40	48	34	25.5
	LE-12TPH	1 1/2"	560	107	61	42	58	40.5	31.5
	LE-16TPH	2"	865	131	73	54	70.5	53.5	44.5
	LE-20TPH	2 1/2"	1180	149	84	48	91	67	57
	LE-24TPH	3"	1800	171	104	50	102	79	70
	LE-32TPH	4"	3500	176	109	57	129	105	93
	LE-6TPH	3/4"	170	90	52	35.5	35	21	15
	LE-8TPH	1"	265	107	60	44	42	27	20
Stainless steel	LE-10TPH	1 1/4"	430	111	61	40	48	34	25.5
	LE-12TPH	1 1/2"	530	114	61	40	60	40	33
	LE-16TPH	2"	790	131	73	45	70	53	44
	LE-20TPH	2 1/2"	1195	137	80.5	50.5	83	67	56
	LE-24TPH	3"	1755	162	99.5	56.5	102	78	68
	LE-32TPH	4"	2595	174	109	59	130	105	94

Socket LC type (Hose barb) Model LC-6TSH has no rings.



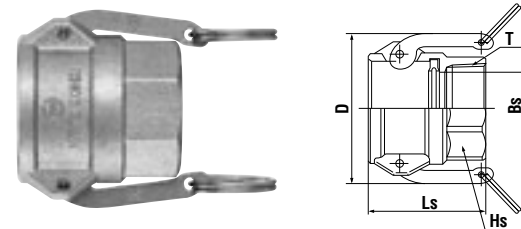
Material	Model	Size	Mass (g)	Dimensions (mm)				
				Ls	A	D	øT	øBs
Aluminum alloy	LC-6TSH	3/4"	140	85	52	(60.5)	21.5	11
	LC-8TSH	1"	190	99	58	(61)	27.5	17
	LC-10TSH	1 1/4"	320	104	58	(82)	34	23
	LC-12TSH	1 1/2"	350	108.5	61	(90)	40.5	29
	LC-16TSH	2"	430	122.5	70	(100)	53	41.5
	LC-20TSH	2 1/2"	560	136.5	80	(112)	66.5	54
	LC-24TSH	3"	915	175	100	(139)	79	68
	LC-32TSH	4"	1190	180	104	(165)	104	93
	LC-6TSH	3/4"	320	85	52	(61.5)	21.5	13
Copper alloy	LC-8TSH	1"	420	99	58	(61)	27.5	19.5
	LC-10TSH	1 1/4"	700	104	58	(82)	34	25.5
	LC-12TSH	1 1/2"	720	110	62	(91)	41	33
	LC-16TSH	2"	870	121	70	(100)	53	44
	LC-20TSH	2 1/2"	1530	137	83	(113)	67	57
	LC-24TSH	3"	1795	160	105	(139)	79	68
	LC-32TSH	4"	3100	163	107	(168)	104	92
	LC-6TSH	3/4"	230	86	52	(55)	21	15
	LC-8TSH	1"	340	99	60	(63)	27	20
Stainless steel	LC-10TSH	1 1/4"	615	107	61	(85)	34	25.5
	LC-12TSH	1 1/2"	645	108	61	(91)	40	33
	LC-16TSH	2"	1000	129	73	(101)	53	44
	LC-20TSH	2 1/2"	1270	134	81	(113)	67	57
	LC-24TSH	3"	2065	158	100	(139)	79	67
	LC-32TSH	4"	3020	165	107	(167)	105	94

Plug LA type (Female thread)



Material	Model	Size	Mass (g)	Dimensions (mm)					Oct. stands for octagon.	Dod. stands for dodecagon.
				Lp	C	Hp(WAF)	øBp	T		
Aluminum alloy	LA-6TPF	3/4"	45	42	26	Hex.36	17	Rc 3/4		
	LA-8TPF	1"	65	52	34	Hex.41	22.5	Rc 1		
	LA-10TPF	1 1/4"	110	59	40	Hex.50	27.5	Rc1 1/4		
	LA-12TPF	1 1/2"	130	58	42	Hex.60	34.5	Rc1 1/2		
	LA-16TPF	2"	170	63.5	48	Oct.70	44.5	Rc 2		
	LA-20TPF	2 1/2"	320	85	50	Oct.85	55.5	Rc2 1/2		
	LA-24TPF	3"	370	79	52.5	Dod.99	73.5	Rc 3		
	LA-32TPF	4"	640	82	54	Dod.130	100	Rc 4		
	LA-6TPF	3/4"	145	42	27	Oct.34	20	Rc 3/4		
Copper alloy	LA-8TPF	1"	190	46	32	Oct.41	24	Rc 1		
	LA-10TPF	1 1/4"	390	59	40	Hex.50	28	Rc1 1/4		
	LA-12TPF	1 1/2"	420	58	42	Hex.60	36	Rc1 1/2		
	LA-16TPF	2"	560	63.5	48	Oct.70	45	Rc 2		
	LA-20TPF	2 1/2"	950	79	50	Dod.84	56	Rc2 1/2		
	LA-24TPF	3"	1210	71	50	Dod.101	70	Rc 3		
	LA-32TPF	4"	1620	79	53	Dod.127	101	Rc 4		
	LA-6TPF	3/4"	120	39	27	Oct.33	19	Rc 3/4		
	LA-8TPF	1"	170	47	33	Oct.41	24	Rc 1		
Stainless steel	LA-10TPF	1 1/4"	270	53.5	41	Oct.50	28	Rc1 1/4		
	LA-12TPF	1 1/2"	375	55	40	Oct.58	35.5	Rc1 1/2		
	LA-16TPF	2"	505	62	47	Oct.69	45	Rc 2		
	LA-20TPF	2 1/2"	825	77	49	Dod.83	56	Rc2 1/2		
	LA-24TPF	3"	875	72	51	Dod.96	73	Rc 3		
	LA-32TPF	4"	1470	79	53	Dod.124	100	Rc 4		

Socket LD type (Female thread) Model LD-6TSF has no rings.



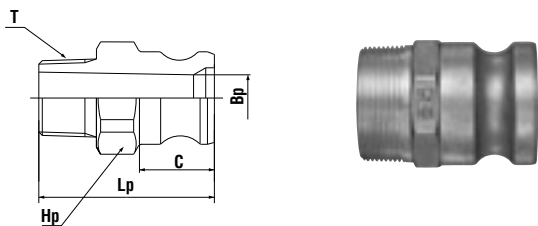
Material	Model	Size	Mass (g)	Dimensions (mm)					Oct. stands for octagon.	Dod. stands for dodecagon.
				Ls	D	Hs(WAF)	øBs	T		
Aluminum alloy	LD-6TSF	3/4"	130	53	(60.5)	Hex.36	21	Rc 3/4		
	LD-8TSF	1"	190	64.5	(61)	Hex.41	26	Rc 1		
	LD-10TSF	1 1/4"	330	72.5	(82)	Hex.50	34	Rc1 1/4		
	LD-12TSF	1 1/2"	360	70.5	(90)	Hex.60	39	Rc1 1/2		
	LD-16TSF	2"	420	79.5	(100)	Oct.70	49	Rc 2		
	LD-20TSF	2 1/2"	550	88.5	(112)	Oct.85	59	Rc2 1/2		
	LD-24TSF	3"	800	89	(140)	Dod.99	75	Rc 3		
	LD-32TSF	4"	1140	93	(165)	Dod.131	94	Rc 4		
	LD-6TSF	3/4"	310	53	(60.5)	Hex.36	21	Rc 3/4		
Copper alloy	LD-8TSF	1"	430	64.5	(61)	Hex.41	26	Rc 1		
	LD-10TSF	1 1/4"	730	72.5	(82)	Hex.50	34	Rc1 1/4		
	LD-12TSF	1 1/2"	770	70.5	(90)	Oct.60	39	Rc1 1/2		
	LD-16TSF	2"	990	79.5	(100)	Oct.70	49	Rc 2		
	LD-20TSF	2 1/2"	1290	81.5	(113)	Dod.84	61	Rc2 1/2		
	LD-24TSF	3"	1560	88	(139)	Dod.98	76	Rc 3		
	LD-32TSF	4"	3590	91	(165)	Dod.126	96	Rc 4		
	LD-6TSF	3/4"	225	52	(55)	Oct.32	19	Rc 3/4		
	LD-8TSF	1"	350	60	(63)	Oct.41	24	Rc 1		
Stainless steel	LD-10TSF	1 1/4"	600	68	(85)	Oct.50	30	Rc1 1/4		
	LD-12TSF	1 1/2"	715	72	(87)	Oct.58	37.5	Rc1 1/2		
	LD-16TSF	2"	940	78.5	(100)	Oct.69	50	Rc 2		
	LD-20TSF	2 1/2"	1050	82	(113)	Dod.83	61	Rc2 1/2		
	LD-24TSF	3"	1605	88	(139)	Dod.96	75	Rc 3		
	LD-32TSF	4"	2575	94	(167)	Dod.125	97	Rc 4		

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

Dimensions of products may differ according to body material. / WAF : WAF stands for width across flat.

Models and Dimensions

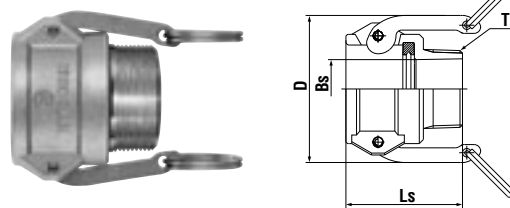
Plug LF type (Male thread)



Material	Model	Size	Mass (g)	Dimensions (mm)				
				Lp	C	Hp(wAF)	øBp	T
Aluminum alloy	LF-6TPM	3/4"	70	61	26	Hex.36	16	R 3/4
	LF-8TPM	1"	90	73	34	Hex.41	22	R 1
	LF-10TPM	1 1/4"	140	81	40	Hex.50	28	R1 1/4
	LF-12TPM	1 1/2"	150	80.5	42	Oct.55	34.5	R1 1/2
	LF-16TPM	2"	220	89.5	48	Oct.65	44.5	R 2
	LF-20TPM	2 1/2"	370	101	50	Oct.80	56	R2 1/2
	LF-24TPM	3"	470	106	52	Dod.99	73	R 3
	LF-32TPM	4"	875	116	54	Dod.130	100	R 4
	Copper alloy	LF-6TPM	3/4"	185	59	27	Oct.34	20
LF-8TPM		1"	280	69	32	Oct.41	24	R 1
LF-10TPM		1 1/4"	460	81	40	Hex.50	28	R1 1/4
LF-12TPM		1 1/2"	500	80.5	42	Oct.55	36	R1 1/2
LF-16TPM		2"	750	89.5	48	Oct.65	45	R 2
LF-20TPM		2 1/2"	1290	98	50	Dod.83	56	R2 1/2
LF-24TPM		3"	1480	103	51	Dod.96	73	R 3
LF-32TPM		4"	3155	113	53	Dod.126	100	R 4
Stainless steel		LF-6TPM	3/4"	175	59	27	Oct.33	19
	LF-8TPM	1"	255	69	33	Oct.41	24	R 1
	LF-10TPM	1 1/4"	415	80	42	Oct.50	29.5	R1 1/4
	LF-12TPM	1 1/2"	575	80	40	Oct.58	36.5	R1 1/2
	LF-16TPM	2"	735	87	47	Oct.69	46	R 2
	LF-20TPM	2 1/2"	1020	99	49	Dod.83	56	R2 1/2
	LF-24TPM	3"	1415	103	51	Dod.96	73	R 3
	LF-32TPM	4"	2275	112	53	Dod.124	100	R 4

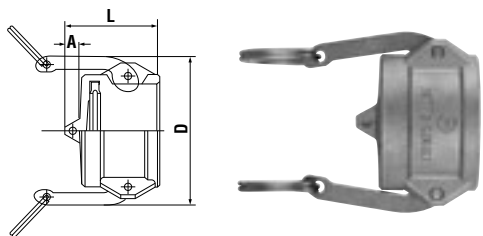
Socket LB type (Male thread)

Body materials other than aluminum alloy are made-to-order items.



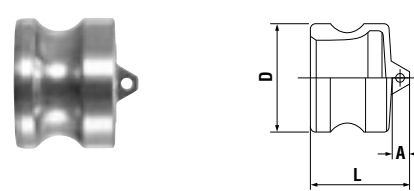
Material	Model	Size	Mass (g)	Dimensions (mm)			
				Ls	D	øBs	T
Aluminum alloy	LB-6TSM	3/4"	110	53	(60.5)	17	R 3/4
	LB-8TSM	1"	170	65	(61)	23.5	R 1
	LB-10TSM	1 1/4"	310	72	(82)	29.5	R1 1/4
	LB-12TSM	1 1/2"	340	71.5	(90)	36	R1 1/2
	LB-16TSM	2"	400	79.5	(100)	46	R 2
	LB-20TSM	2 1/2"	530	88.5	(112)	57.5	R2 1/2
	LB-24TSM	3"	715	90	(139)	76	R 3
	LB-32TSM	4"	920	92	(165)	99	R 4
	Copper alloy (Made-to-order item)	LB-6TSM	3/4"	260	52	(53)	19.5
LB-8TSM		1"	355	63	(62)	26	R 1
LB-10TSM		1 1/4"	620	71	(84)	28	R1 1/4
LB-12TSM		1 1/2"	700	71	(91)	36	R1 1/2
LB-16TSM		2"	950	81	(100)	51	R 2
LB-20TSM		2 1/2"	1250	86	(113)	63	R2 1/2
LB-24TSM		3"	1780	92	(139)	78	R 3
LB-32TSM		4"	2540	98	(168)	101	R 4
Stainless steel (Available on request)		LB-6TSM	3/4"	210	52.5	(55)	20
	LB-8TSM	1"	300	63	(63)	25.5	R 1
	LB-10TSM	1 1/4"	520	70.5	(85)	34	R1 1/4
	LB-12TSM	1 1/2"	580	71.5	(87)	38	R1 1/2
	LB-16TSM	2"	780	78.5	(101)	50.5	R 2
	LB-20TSM	2 1/2"	980	84	(113)	66	R2 1/2
	LB-24TSM	3"	1490	92	(139)	78.5	R 3
	LB-32TSM	4"	2080	92	(167)	103.5	R 4

Plug L-PD type (Plug cap)



Material	Model	Size	Mass (g)	Dimensions (mm)		
				L	A	D
Aluminum alloy	L-6PD	3/4"	100	46	12	(54)
	L-8PD	1"	145	54	12	(62)
	L-10PD	1 1/4"	230	60	13	(83)
	L-12PD	1 1/2"	295	68	17	(91)
	L-16PD	2"	360	68	11	(100)
	L-20PD	2 1/2"	435	72	15	(113)
	L-24PD	3"	690	72	10	(139)
	L-32PD	4"	870	76	15	(167)
	Copper alloy	L-6PD*	3/4"	220	45	11
L-8PD*		1"	315	53	12	(62)
L-10PD		1 1/4"	610	57	11	(84)
L-12PD		1 1/2"	645	69	17.5	(91)
L-16PD		2"	830	68	11	(100)
L-20PD		2 1/2"	980	71	14	(113)
L-24PD		3"	1380	81	20	(139)
L-32PD		4"	2700	90	26	(168)
Stainless steel		L-6PD	3/4"	180	45	12
	L-8PD	1"	265	52	11	(63)
	L-10PD	1 1/4"	475	60	12	(85)
	L-12PD	1 1/2"	545	63	15	(87)
	L-16PD	2"	720	65	11	(101)
	L-20PD	2 1/2"	945	71	15	(113)
	L-24PD	3"	1420	72	12	(139)
	L-32PD	4"	2055	77	14	(167)

Socket L-SD type (Socket cap)

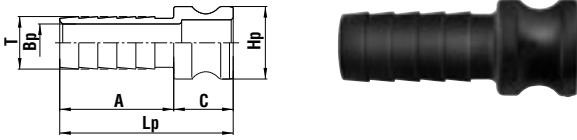


Material	Model	Size	Mass (g)	Dimensions (mm)		
				L	A	øD
Aluminum alloy	L-6SD	3/4"	35	32	8	32
	L-8SD	1"	45	44	10	36.5
	L-10SD	1 1/4"	70	57	14	45.5
	L-12SD	1 1/2"	90	54	15	53.5
	L-16SD	2"	140	62	13	63
	L-20SD	2 1/2"	210	69	20	76
	L-24SD	3"	290	71	15	91.5
	L-32SD	4"	960	74	16	119.5
	Copper alloy	L-6SD	3/4"	160	34	8
L-8SD		1"	150	44	10	36.5
L-10SD		1 1/4"	210	55	12	45.5
L-12SD		1 1/2"	290	54	15	53.5
L-16SD		2"	420	61	12	63
L-20SD		2 1/2"	630	69	19	75.5
L-24SD		3"	860	71	15	91.5
L-32SD		4"	1780	74.5	16	119.5
Stainless steel		L-6SD	3/4"	95	39	12
	L-8SD	1"	145	45	12	37
	L-10SD	1 1/4"	250	51	10	45
	L-12SD	1 1/2"	300	54	14	53
	L-16SD	2"	490	58	11	63
	L-20SD	2 1/2"	710	64	14	76
	L-24SD	3"	930	68	14	92
	L-32SD	4"	1275	68	14	120

## Models and Dimensions

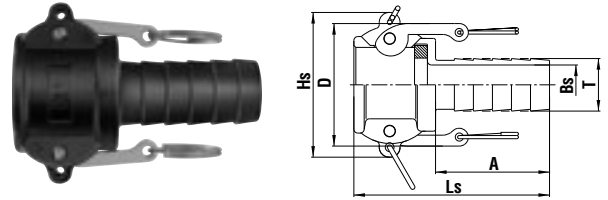
Designs and specifications are subject to change for improvement without notice. / WAF : WAF stands for width across flat.

### Plug LE type (Hose barb)



Material	Model	Size	Mass (g)	Dimensions (mm)					
				Lp	A	C	øHp	øT	øBp
Plastic	LE-6TPH	3/4"	16	74.5	51.5	(23)	32	21	14.5
	LE-8TPH	1"	29	87.5	57.5	(30)	36.5	26.5	19
	LE-12TPH	1 1/2"	73	103	61	(42)	54	40	30
	LE-16TPH	2"	122	119	71	(48)	63	53	41
	LE-24TPH	3"	221	152.5	108	(44.5)	91	80	65

### Socket LC type (Hose barb)



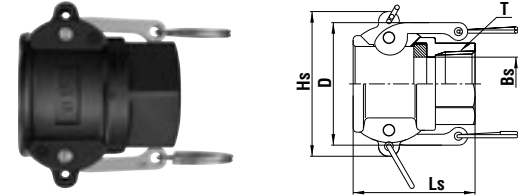
Material	Model	Size	Mass (g)	Dimensions (mm)						
				Ls	A	D	Hs	øT	øBs	
Plastic	LC-6TSH	3/4"	64	83.5	52	(65.5)	52	20	14	
	LC-8TSH	1"	104	99	57.5	(62)	73	26.5	20	
	LC-12TSH	1 1/2"	242	111	61	(91)	101	40	30	
	LC-16TSH	2"	269	126	71	(100)	106	51	41	
	LC-24TSH	3"	527	161	102	(136)	138	77.5	65	

### Plug LA type (Female thread)



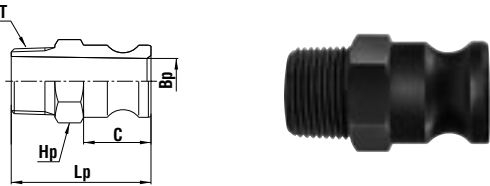
Material	Model	Size	Mass (g)	Dimensions (mm)				
				Lp	C	Hp(WAF)	øBp	T
Plastic	LA-6TPF	3/4"	19	42	26	Hex.34	21	Rc 3/4
	LA-8TPF	1"	27	59	34	Hex.43	22	Rc 1
	LA-12TPF	1 1/2"	65	67	42	Ribbed 65	37	Rc1 1/2
	LA-16TPF	2"	90	72.5	48.5	Ribbed 74	44	Rc 2
	LA-24TPF	3"	211	90	52.5	Ribbed 108	72	Rc 3

### Socket LD type (Female thread)



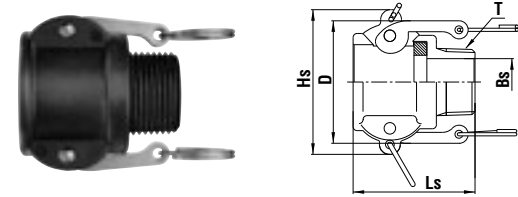
Material	Model	Size	Mass (g)	Dimensions (mm)				
				Ls	D	Hs(WAF)	øBs	T
Plastic	LD-6TSF	3/4"	65	50	(58)	Hex.32	20	Rc 3/4
	LD-8TSF	1"	98	61.5	(62)	Hex.41	27	Rc 1
	LD-12TSF	1 1/2"	260	78	(92)	Ribbed 68	39	Rc1 1/2
	LD-16TSF	2"	285	84	(101)	Ribbed 80	50	Rc 2
	LD-24TSF	3"	444	88.5	(138)	Ribbed 109	75	Rc 3

### Plug LF type (Male thread)



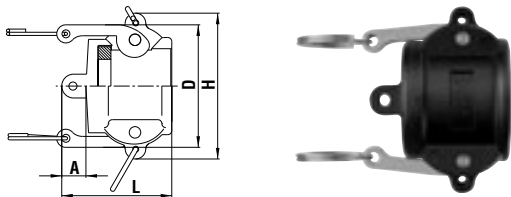
Material	Model	Size	Mass (g)	Dimensions (mm)				
				Lp	C	Hp(WAF)	øBp	T
Plastic	LF-6TPM	3/4"	23	60	26	Hex.32	19	R 3/4
	LF-8TPM	1"	19	70.5	34	Hex.37	23	R 1
	LF-12TPM	1 1/2"	72	77	42	Ribbed 63	32	R1 1/2
	LF-16TPM	2"	105	84.5	48	Ribbed 74	45	R 2
	LF-24TPM	3"	210	102	51	Ribbed 100	72	R 3

### Socket LB type (Male thread)



Material	Model	Size	Mass (g)	Dimensions (mm)				
				Ls	D	Hs	øBs	T
Plastic	LB-6TSM	3/4"	58	51	(65.5)	52	19	R 3/4
	LB-8TSM	1"	88	61.5	(62)	61	23.5	R 1
	LB-12TSM	1 1/2"	227	75	(91)	101	37.5	R1 1/2
	LB-16TSM	2"	251	84	(101)	108	48.5	R 2
	LB-24TSM	3"	397	91	(136)	122	75	R 3

### Plug L-PD type (Plug cap)



Material	Model	Size	Mass (g)	Dimensions (mm)			
				L	A	D	H
Plastic	L-6PD	3/4"	60	45	12	(65.5)	52
	L-8PD	1"	94	55.5	12	(62)	73.5
	L-12PD	1 1/2"	214	65	15	(91)	101
	L-16PD	2"	219	69	14	(100)	106
	L-24PD	3"	408	77	17.5	(136)	138

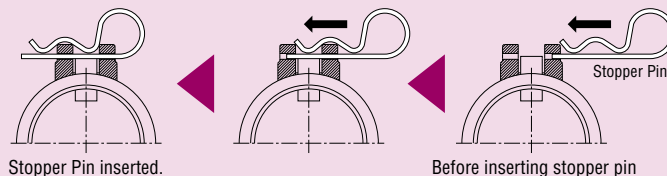
### Socket L-SD type (Socket cap)



Material	Model	Size	Mass (g)	Dimensions (mm)		
				L	A	øD
Plastic	L-6SD	3/4"	10	35.5	11	32
	L-8SD	1"	18	42	11	36.5
	L-12SD	1 1/2"	46	53.5	14	53
	L-16SD	2"	68	62	14	63
	L-24SD	3"	102	65	18	91

## Stopper Installation (For plastic only)

Equipped with lever stopper pin tabs to prevent unintended disconnection (for selected models only).



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 Medium Pressure

# TSP Cupla

For medium pressure general applications

Working pressure



1.5~7.5MPa  
(15~76kgf/cm<sup>2</sup>)

Valve structure



Straight through

Applicable fluids for braided hose connection type depend upon the specifications of braided hoses to be used.

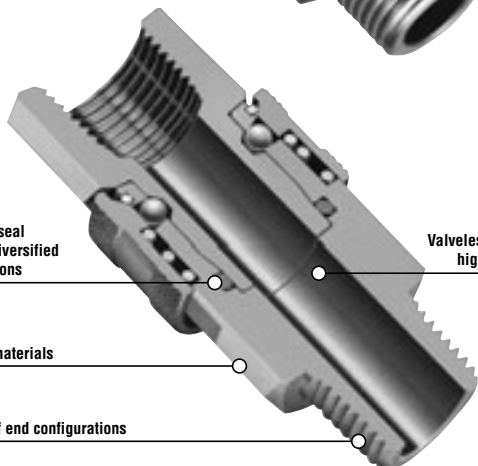
Applicable fluids



**Valveless structure suits high viscosity fluids! Various body materials, sizes and end configurations. Braided hose connection types are newly added.**

- Valveless construction drastically saves pressure loss and achieves high flow rate.
- Suitable for high viscosity fluids (such as grease).
- Available in various standard body materials, sizes and end configurations to cope with diversified applications and operating situations.

Note: See the pages of Seal Material Selection Table at the end of this catalog for the suitability of seal materials to fluids.



Wide range of seal materials for diversified fluids applications

Valveless structure suits high viscosity fluids

Various body materials

Wide variety of end configurations

Specifications									
Body material	Brass					Stainless steel•Steel (Nickel-plated)			
Size	1/8"•1/4" 3/8"•1/2"	3/4" 1"	1 1/4" 1 1/2"	2"	1/8"•1/4" 3/8"•1/2"	3/4" 1"	1 1/4" 1 1/2"	2"	
Working pressure MPa (kgf/cm <sup>2</sup> )	5.0 (51)	3.0 (31)	2.0 (20)	1.5 (15)	7.5 (76)	4.5 (46)	3.0 (31)	2.0 (20)	
Pressure resistance MPa (kgf/cm <sup>2</sup> )	7.5 (76)	4.5 (46)	3.0 (31)	2.3 (24)	10.0 (102)	6.5 (66)	4.5 (46)	3.0 (31)	
Seal material Working temperature range	Seal material	Mark		Working temperature range		Remarks			
	Nitrile rubber	NBR (SG)		-20°C~+80°C		Standard material			
	Fluoro rubber	FKM (X-100)		-20°C~+180°C					
Ethylene-propylene rubber	EPDM (EPT)		-40°C~+150°C						

- Standard stainless steel SUS316 is available as semi-standard body materials.
- Working pressure and working temperature range depend upon the specifications of braided hoses to be used.

Max. Tightening Torque										
		N•m (kgf•cm)								
Size		1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Torque	Steel	9 (92)	14 (143)	22 (224)	60 (612)	90 (918)	120 (1224)	260 (2652)	280 (2856)	500 (5100)
	Brass	5 (51)	9 (92)	12 (122)	30 (306)	50 (510)	65 (663)	150 (1530)	160 (1632)	260 (2652)
	Stainless steel	9 (92)	14 (143)	22 (224)	60 (612)	90 (918)	120 (1224)	260 (2652)	280 (2856)	500 (5100)

**Flow Direction**

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

**Interchangeability**

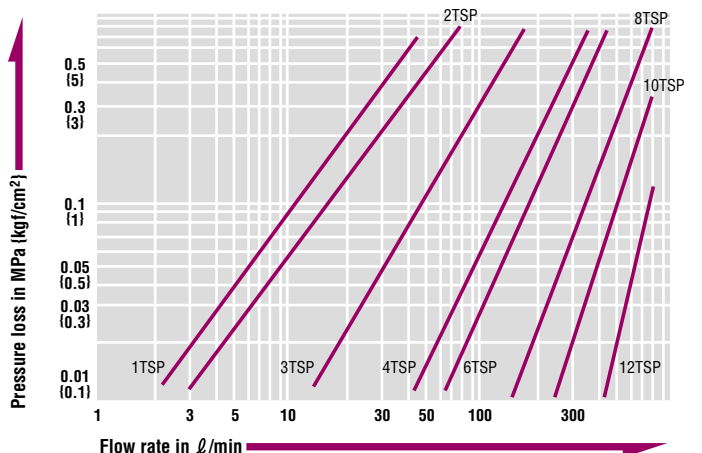
If the first digit of model number of socket is the same as that of plug, they can be connected regardless of the end configurations.

Min. Cross-Sectional Area (mm <sup>2</sup> )									
Model	1TSP (1/8")	2TSP (1/4")	3TSP (3/8")	4TSP (1/2")	6TSP (3/4")	8TSP (1")	10TSP (1 1/4")	12TSP (1 1/2")	16TSP (2")
End configurations									
H type (Hose barb)	7 (ø 3)	19.6 (ø 5)	38 (ø 7)	78.5 (ø 10)	176 (ø 15)	283 (ø 19)	530 (ø 26)	804 (ø 32)	1256 (ø 40)
M type / F type (Male thread / Female thread)	15.9 (ø 4.5)	33 (ø 6.5)	78.5 (ø 10)	132 (ø 13)	226 (ø 17)	452 (ø 24)	804 (ø 32)	1134 (ø 38)	1885 (ø 49)
Model	3TSPN-90		4TSPN-120		4TSPN-150		6TSPN-190		
End configurations									
N type (For braided hose connection)	56.7 (ø 8.5)		95.0 (ø 11)		132 (ø 13)		226 (ø 17)		

Suitability for Vacuum		
1.3 x 10 <sup>-1</sup> Pa (1 x 10 <sup>-3</sup> mmHg)		
Socket only	Plug only	When connected
—	—	Operational

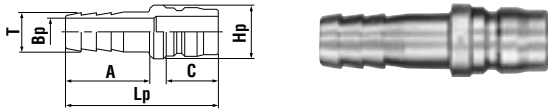
**Flow Rate – Pressure Loss Characteristics**

- [Test conditions]
- Fluid : Hydraulic oil
  - Temperature : 30°C ± 10°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>



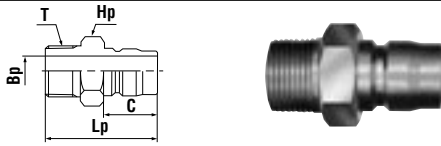


**Plug TPH type (Hose barb)**



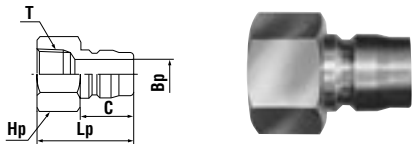
Model	Application (Hose)	Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	Lp	øHp	A	C	øT	øBp
1TPH	1/8"	12 ±1	13	12	41	12	20	15.5	6.5	3
2TPH	1/4"	21	23	21	53	14	29	18	8	5
3TPH	3/8"	38	41	38	60	18	32	21	11	7
4TPH	1/2"	71	77	71	70	22	39	24	15	10
6TPH	3/4"	134	146	135	84	28	48	28	21	15
8TPH	1"	327	356	329	105	40	57	36	27	19
10TPH	1 1/4"	495	530	500	121	48	70	39	34.5	26
12TPH	1 1/2"	665	715	660	132	55	75	45	41	32
16TPH	2"	1330	1430	1345	142	70	80	51	54	40

**Plug TPM type (Male thread)**



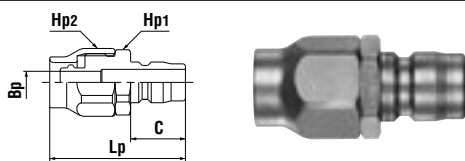
Model	Application	Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	Lp	Hp(WAF)	C	T	øBp
1TPM	Rc 1/8	16 ±1	17	17	32	Hex.12	15.5	R 1/8	4.5
2TPM	Rc 1/4	30	33	30	38	Hex.17	18	R 1/4	6.5
3TPM	Rc 3/8	38	42	38	43	Hex.17	21	R 3/8	10
4TPM	Rc 1/2	81	88	81	52	Hex.22	24	R 1/2	13
6TPM	Rc 3/4	164	179	165	59	Hex.32	28	R 3/4	17
8TPM	Rc 1	273	297	274	73	Hex.41	36	R 1	25
10TPM	Rc1 1/4	520	560	530	83	Hex.50	39	R1 1/4	32
12TPM	Rc1 1/2	655	705	665	93	Hex.54 ±2	45	R1 1/2	38
16TPM	Rc 2	1240	1345	1250	102	75 x ø80	51	R 2	50

**Plug TPF type (Female thread)**



Model	Application	Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	Lp	Hp(WAF)	C	T	øBp
1TPF	R 1/8	14 ±1	15	14	26	Hex.14	15.5	Rc 1/8	4.5
2TPF	R 1/4	28	31	29	34	Hex.17	18	Rc 1/4	6.5
3TPF	R 3/8	43	47	43	38	Hex.21	21	Rc 3/8	10
4TPF	R 1/2	103	113	104	45	Hex.29	24	Rc 1/2	13
6TPF	R 3/4	166	181	167	51	Hex.35	28	Rc 3/4	17
8TPF	R 1	321	350	323	60	Hex.41	36	Rc 1	26
10TPF	R1 1/4	567	615	573	64	Hex.54 ±3	39	Rc1 1/4	32
12TPF	R1 1/2	703	763	630	75	Hex.58 ±4	45	Rc1 1/2	38
16TPF	R 2	1226	1374	1190	83	77 x ø82	51	Rc 2	50

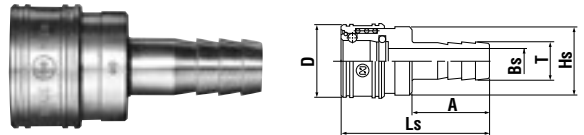
**Plug TPN type (For braided hose connection)**



**NEW**

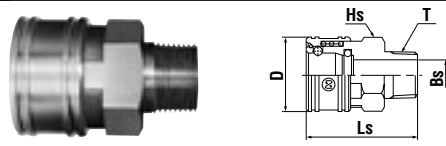
Model	Application (Hose)		Mass (g)	Dimensions (mm)				
	Size (mm)	Hose wall thickness (mm)		Brass	Lp	Hp1(WAF)	Hp2(WAF)	C
3TPN-90	ø9 x ø15	3±0.3	93	52	Hex.23	Hex.24	21	8.5
4TPN-120	ø12 x ø18			60	Hex.27	Hex.27	24	11
4TPN-150	ø15 x ø22	3.5±0.35	182	68	Hex.30	Hex.30	24	13
6TPN-190	ø19 x ø26			76	Hex.35	Hex.35	28	17

**Socket TSH type (Hose barb)**



Model	Application (Hose)	Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	Ls	øD	øHs	A	øT	øBs
1TSH	1/8"	24 ±1	26	24	40	17.5	16	20	6.5	3
2TSH	1/4"	63	69	64	55	24	22	29	8	5
3TSH	3/8"	95	104	96	62	28	25	32	11	7
4TSH	1/2"	176	192	177	74	35	32	39	15	10
6TSH	3/4"	348	379	350	90	45	40	48	21	15
8TSH	1"	586	685	633	102	58	52	57	27	19
10TSH	1 1/4"	1330	1385	1335	117	69	64	70	34.5	26
12TSH	1 1/2"	1755	1860	1780	128	75	70	75	41	32
16TSH	2"	2820	3040	2825	141	98	90	80	54	40

**Socket TSM type (Male thread)**



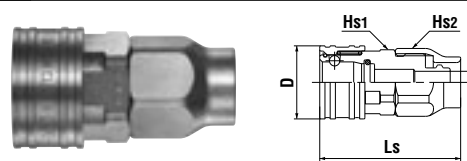
Model	Application	Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	Ls	øD	Hs(WAF)	T	øBs
1TSM	Rc 1/8	25 ±1	27	26	30	17.5	Hex.14	R 1/8	4.5
2TSM	Rc 1/4	66	72	67	42	24	Hex.19	R 1/4	6.5
3TSM	Rc 3/8	99	108	100	46	28	Hex.23	R 3/8	10
4TSM	Rc 1/2	178	194	179	56	35	Hex.29	R 1/2	13
6TSM	Rc 3/4	343	374	346	65	45	Hex.38	R 3/4	18
8TSM	Rc 1	629	685	633	76	58	Hex.50	R 1	24
10TSM	Rc1 1/4	950	1025	955	86	69	54 x ø64	R1 1/4	32
12TSM	Rc1 1/2	1160	1245	1180	95	75	58 x ø70	R1 1/2	38
16TSM	Rc 2	1990	2110	2000	108	98	77 x ø82	R 2	49

**Socket TSF type (Female thread)**



Model	Application	Mass (g)			Dimensions (mm)			
		Steel	Brass	Stainless steel	Ls	øD	Hs(WAF)	T
1TSF	R 1/8	25 ±1	27	25	27	17.5	Hex.14	Rc 1/8
2TSF	R 1/4	57	62	57	32	24	Hex.19	Rc 1/4
3TSF	R 3/8	83	90	83	35	28	Hex.23	Rc 3/8
4TSF	R 1/2	153	167	154	42	35	Hex.29	Rc 1/2
6TSF	R 3/4	288	314	289	48	45	Hex.38	Rc 3/4
8TSF	R 1	557	607	561	59	58	Hex.50	Rc 1
10TSF	R1 1/4	821	888	815	64	69	54 x ø64	Rc1 1/4
12TSF	R1 1/2	1003	1064	980	71	75	58 x ø70	Rc1 1/2
16TSF	R 2	1726	1865	1675	80	98	77 x ø82	Rc 2

**Socket TSN type (For braided hose connection)**



**NEW**

Model	Application (Hose)		Mass (g)	Dimensions (mm)				
	Size (mm)	Hose wall thickness (mm)		Brass	Ls	øD	Hs1(WAF)	Hs2(WAF)
3TSN-90	ø9 x ø15	3±0.3	139	54	28	Hex.23	Hex.24	8.5
4TSN-120	ø12 x ø18			62	35	Hex.29	Hex.27	11
4TSN-150	ø15 x ø22	3.5±0.35	255	70.5	35	Hex.30	Hex.30	13
6TSN-190	ø19 x ø26			81	45	Hex.38	Hex.35	17

\*1 : 1TSP steel are made-to-order items. \*2 : Stainless steel: 54 x 60mm dia. \*3 : Stainless steel: 54 x 59mm dia. \*4 : Stainless steel: 58 x 65mm dia.

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 Medium Pressure SP Cupla

## Type A

For medium pressure  
general applications

Working pressure



1.5~7.5MPa  
(15~76kgf/cm<sup>2</sup>)

Valve structure



Two-way shut-off

Applicable fluids



Flow is  
increased up  
to **60%**  
for Model 6SP-A



High flow type SP Cupla is  
now released!  
Plugs with male thread end are  
newly added.



### Specifications

Body material	Brass				Stainless steel•Steel (Nickel-plated)			
Size	1/8" • 1/4" 3/8"	1/2" • 3/4" 1"	1 1/4" 1 1/2"	2"	1/8" • 1/4" 3/8"	1/2" • 3/4" 1"	1 1/4" 1 1/2"	2"
Working pressure MPa (kgf/cm <sup>2</sup> )	5.0 (51)	3.0 (31)	2.0 (20)	1.5 (15)	7.5 (76)	4.5 (46)	3.0 (31)	2.0 (20)
Pressure resistance MPa (kgf/cm <sup>2</sup> )	7.5 (76)	4.5 (46)	3.0 (31)	2.3 (24)	10.0 (102)	6.5 (66)	4.5 (46)	3.0 (31)
Seal material * Working temperature range	Seal material	Mark	Working temperature range	Remarks				
	Nitrile rubber	NBR (SG)	-20°C~+80°C	Standard material				
	Fluoro rubber	FKM (X-100)	-20°C~+180°C					
Ethylene-propylene rubber	EPDM (EPT)	-40°C~+150°C						

\* Plugs with male thread end mounting nitrile rubber or ethylene-propylene rubber are made-to-order items.

### Max. Tightening Torque

N•m (kgf•cm)

Size	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Torque	Steel	9 (92)	14 (143)	22 (224)	60 (612)	90 (918)	120 (1224)	260 (2652)	500 (5100)
	Brass	5 (51)	9 (92)	12 (122)	30 (306)	50 (510)	65 (663)	150 (1530)	180 (1836)
	Stainless steel	9 (92)	14 (143)	22 (224)	60 (612)	90 (918)	120 (1224)	260 (2652)	280 (2856)

### Flow Direction

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



### Interchangeability

Different sizes are not interchangeable each other.  
Interchangeable with conventional SP Cupla in the same size.  
\* Interchangeable with SP-V Cuplas but take heed of flow rate.

### Min. Cross-Sectional Area

(mm<sup>2</sup>)

Model	1SP-A	2SP-A	3SP-A	4SP-A	6SP-A	8SP-A	10SP-A	12SP-A	16SP-A
Min. Cross-sectional area	14	26	51	73	178	229	395	553	803

### 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

(ml)

Model	1SP-A	2SP-A	3SP-A	4SP-A	6SP-A	8SP-A	10SP-A	12SP-A	16SP-A
Volume of air admixture	0.6	1.1	2.7	3.9	11	25	29	45	84

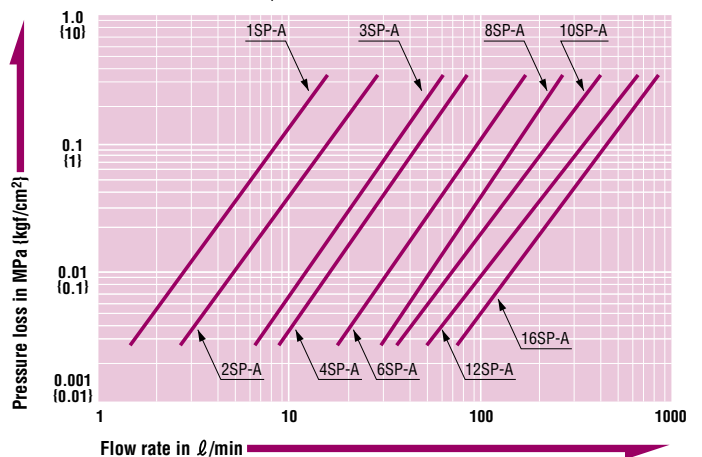
### Volume of Spillage per Disconnection

(ml)

Model	1SP-A	2SP-A	3SP-A	4SP-A	6SP-A	8SP-A	10SP-A	12SP-A	16SP-A
Volume of spillage	0.4	0.8	2.1	3.4	9.5	15	29	45	84

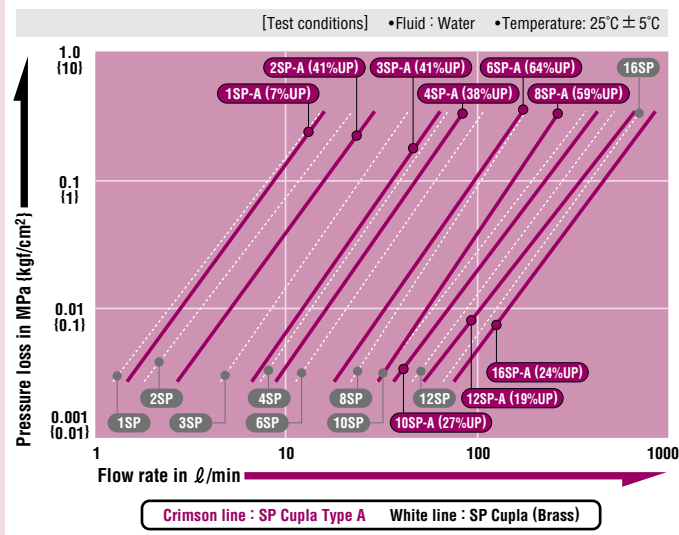
### Flow Rate – Pressure Loss Characteristics

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



## Increased flow volume ratio

Compared with conventional SP Cupla, the flow volume is increased by 7 to 64%.



## New self-aligned valve design provides better seal

The new design of the valve head makes smooth self-aligned return to its original position when socket and plug are disconnected. This mechanism enhances safety sealing of individual socket or plug when disconnected (1~8SP-A Type).



## Smooth and prompt connection

The plug with the new body design enables smooth and prompt connection.

## Adoption of stainless steel SUS304

SUS304 is adopted as the standard body material of stainless steel good for the applications that require high reliability.

\*Stainless steel complying with other standard, equivalent to SUS304, may be used for some parts.

## Interchangeability

Interchangeability of SP Type A with conventional SP is guaranteed, while no interchangeability with different sizes.

## Flow characteristics

Regardless of the body materials, the flow characteristics remain the same.

Flow ratio increase of SP Cupla Type A with conventional SP Cupla versus conventional SP Cupla sets. (Fluid: water)

Model	SP Type A is located upstream side.	SP Type A is located downstream side.
1SP	0%	7% UP
2SP	18% UP	18% UP
3SP	8% UP	12% UP
4SP	17% UP	8% UP
6SP	28% UP	20% UP
8SP	25% UP	9% UP
10SP	15% UP	9% UP
12SP	9% UP	5% UP
16SP	17% UP	2% UP

## Sleeve stopper (Optional. See the pages of Accessories for details)

A new sleeve snap-in stopper securely prevents unexpected and improper disconnection.

## Products complied to RoHS requirements

Nickel plating is applied for the surface treatment of the steel body to reduce the load on environment.

## Models and Dimensions

WAF : WAF stands for width across flat.

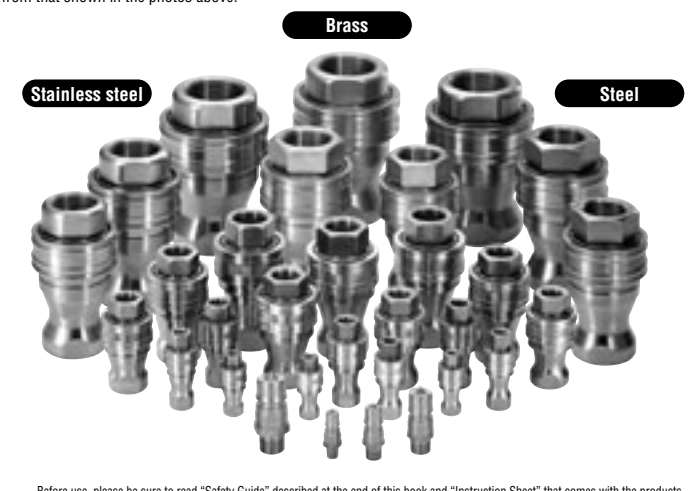
Model	Application	Mass (g)			Dimensions (mm)			
		Steel	Brass	Stainless steel	Lp	C	Hp(WAF)	T
1P-A	R 1/8	17 *1	19	17	29	19	Hex.14	Rc 1/8
2P-A	R 1/4	32	34	32	36	22	Hex.17	Rc 1/4
3P-A	R 3/8	56	61	56	40	25	Hex.21	Rc 3/8
4P-A	R 1/2	112	121	112	44	28	Hex.29	Rc 1/2
6P-A	R 3/4	190	205	190	52	36	Hex.35	Rc 3/4
8P-A	R 1	311	333	310	62	40	Hex.41	Rc 1
10P-A	R 1 1/4	590	630	620	70	45	Hex.54 *2	Rc 1 1/4
12P-A	R 1 1/2	870	920	880	75	49	Hex.63 *3	Rc 1 1/2
16P-A	R 2	1540	1640	1560	80	52	77 x ø84	Rc 2

Model	Application	Mass (g)			Dimensions (mm)			
		Steel	Brass	Stainless steel	Ls	øD	HS(WAF)	T
1S-A	R 1/8	73 *1	79	75	48	24	14	Rc 1/8
2S-A	R 1/4	119	128	130	58	28	19	Rc 1/4
3S-A	R 3/8	187	202	193	65	35	21	Rc 3/8
4S-A	R 1/2	368	397	391	72	45	29	Rc 1/2
6S-A	R 3/4	639	686	645	88	55	35	Rc 3/4
8S-A	R 1	951	1024	962	102	65	41	Rc 1
10S-A	R 1 1/4	1430	1520	1440	115	77	54	Rc 1 1/4
12S-A	R 1 1/2	2130	2270	2150	124	88	63	Rc 1 1/2
16S-A	R 2	3280	3510	3310	132	108	77	Rc 2

• The photos above show steel coupling. • The appearance of stainless steel coupling (SUS304) differs slightly from that shown in the photos above.

\*1 1P-A and 1S-A are made-to-order items. \*2 Stainless steel: 54 x ø59 \*3 Stainless steel: 63 x ø67

Model	Application	Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	Lp	C	Hp(WAF)	øBp	T
1P-M-A	Rc 1/8	24	24	40	19	Hex.14	5.5	R 1/8
2P-M-A	Rc 1/4	41	41	44	22	Hex.17	7.5	R 1/4
3P-M-A	Rc 3/8	71	71	51	25	Hex.21	11	R 3/8
4P-M-A	Rc 1/2	149	149	62	28	Hex.27	13	R 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.

For High Pressure

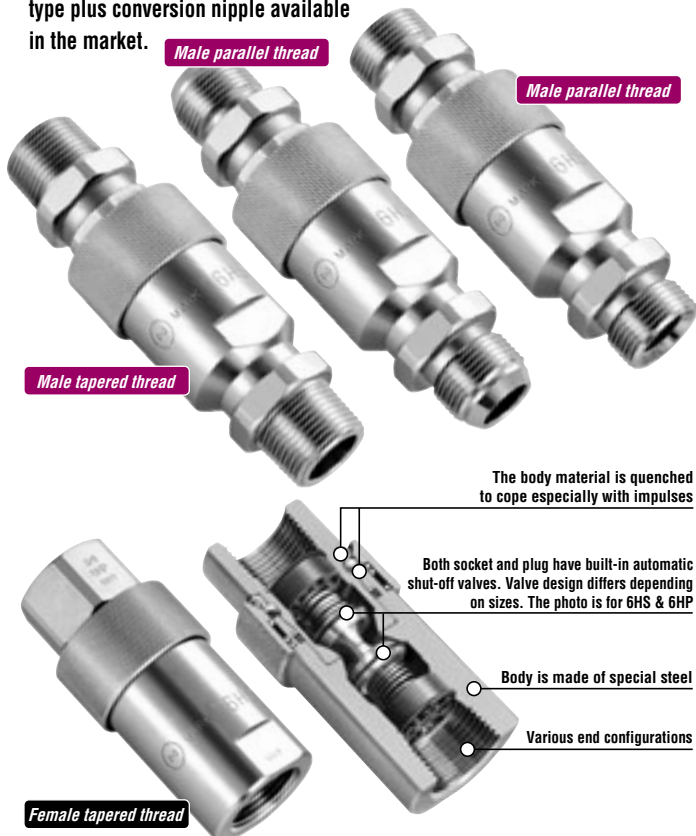
# HSP Cupla

For hydraulic pressure from 14.0 to 20.6MPa {142~210kgf/cm<sup>2</sup>}

Working pressure	Valve structure	Applicable fluids
 20.6MPa (210kgf/cm <sup>2</sup> )	 18.0MPa (183kgf/cm <sup>2</sup> )	 14.0MPa (142kgf/cm <sup>2</sup> )
 Two-way shut-off	 Hydraulic oil	

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

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



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

Max. Tightening Torque		N·m (kgf·cm)							
Size		1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Torque	Female thread	28 (286)	45 (459)	90 (918)	100 (1020)	180 (1836)	290 (2958)	350 (3570)	500 (5100)
	Male taper thread	28 (286)	45 (459)	90 (918)	100 (1020)	—	—	—	—
	Parallel male thread	25 (255)	35 (357)	60 (612)	120 (1224)	—	—	—	—

**Flow Direction**

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

**Interchangeability**

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

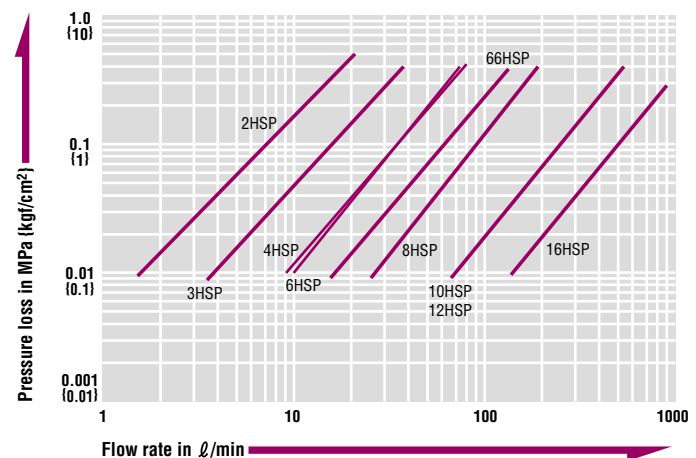
Min. Cross-Sectional Area	(mm <sup>2</sup> )								
Model	2HSP	3HSP	4HSP	6HSP	66HSP	8HSP	10HSP	12HSP	16HSP
Min. cross-sectional area	21	37	77	77	145	203	595	595	1084

Suitability for Vacuum	1.3 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	(ml)								
Model	2HSP	3HSP	4HSP	6HSP	66HSP	8HSP	10HSP	12HSP	16HSP
Volume of air	0.7	1.9	3.5	3.5	8.2	12.4	44	44	156

**Flow Rate – Pressure Loss Characteristics**

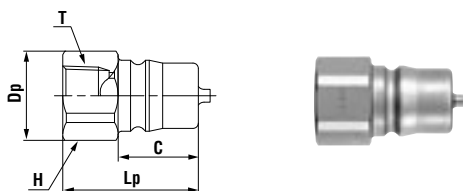
[Test conditions] • Fluid : Hydraulic oil • Temperature : 30°C ± 5°C  
• Fluid viscosity : 32 x 10<sup>-6</sup>m<sup>2</sup>/s • Density : 0.87 x 10<sup>3</sup>kg/m<sup>3</sup>



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

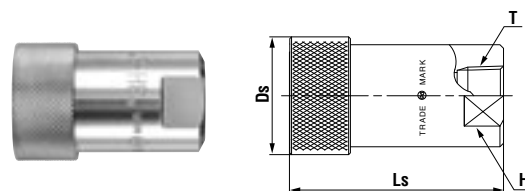


**Plug HP type (Female tapered thread)**



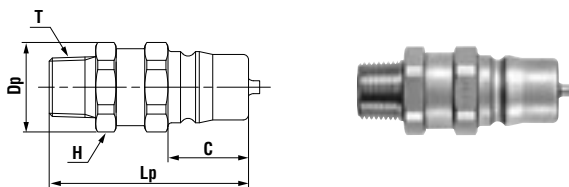
Model	Application	Mass (g)	Dimensions (mm)				
			Lp	øDp	C	H(WAF)	T
2HP	R 1/4	40	32	20.5	17.5	Hex.19	Rc 1/4
3HP	R 3/8	68	38	25	22.5	Hex.23	Rc 3/8
4HP	R 1/2	124	44	32	27.5	Hex.29	Rc 1/2
6HP	R 3/4	148	50	35	27.5	Hex.32	Rc 3/4
66HP	R 3/4	232	51	40	28	35	Rc 3/4
8HP	R 1	361	61	47	36	41	Rc 1
10HP	R1 1/4	886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

**Socket HS type (Female tapered thread)**



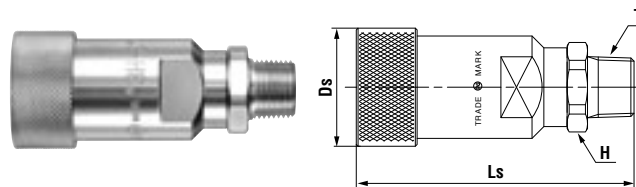
Model	Application	Mass (g)	Dimensions (mm)			
			Ls	øDs	H(WAF)	T
2HS	R 1/4	134	49	27.5	19	Rc 1/4
3HS	R 3/8	226	60	33	23	Rc 3/8
4HS	R 1/2	485	72	43	35	Rc 1/2
6HS	R 3/4	460	72	43	35	Rc 3/4
66HS	R 3/4	569	78.5	47	35	Rc 3/4
8HS	R 1	1042	93	58	46	Rc 1
10HS	R1 1/4	2586	138	87	58	Rc1 1/4
12HS	R1 1/2	2510	138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

**Plug HP-R type (Male tapered thread)**



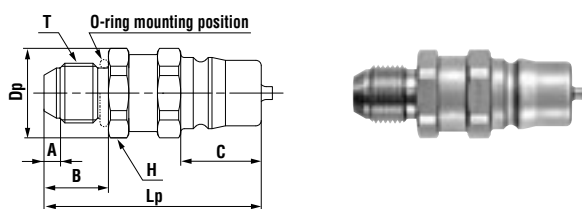
Model	Application	Mass (g)	Dimensions (mm)				
			Lp	øDp	C	H(WAF)	T
2HP-R	Rc 1/4	60	(49)	21	17.5	Hex.19	R 1/4
3HP-R	Rc 3/8	102	(55.5)	25	22.5	Hex.23	R 3/8
4HP-R	Rc 1/2	171	(63)	31	27.5	Hex.29	R 1/2
6HP-R	Rc 3/4	197	(66)	35	27.5	Hex.32	R 3/4

**Socket HS-R type (Male tapered thread)**



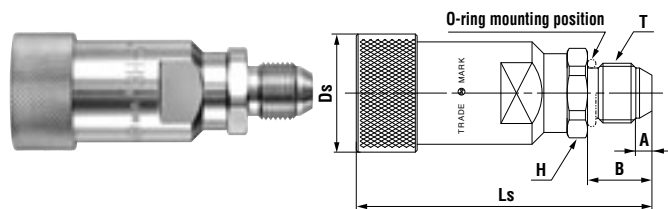
Model	Application	Mass (g)	Dimensions (mm)			
			Ls	øDs	H(WAF)	T
2HS-R	Rc 1/4	148	(66)	27.5	Hex.19	R 1/4
3HS-R	Rc 3/8	245	(77.5)	33	Hex.23	R 3/8
4HS-R	Rc 1/2	466	(90)	43	Hex.29	R 1/2
6HS-R	Rc 3/4	493	(93)	43	Hex.32	R 3/4

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



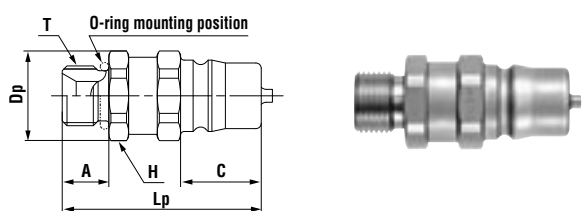
Model	Application*	Mass (g)	O-ring size	Dimensions (mm)						
				Lp	øDp	A	B	C	H(WAF)	T
2HP-GP	G 1/4	62	P-11	(52.5)	21	4.5	16	17.5	Hex.19	G 1/4B
3HP-GP	G 3/8	103	P-14	(60.5)	25	4.5	18	22.5	Hex.23	G 3/8B
4HP-GP	G 1/2	173	P-18	(66)	31	5.5	20	27.5	Hex.29	G 1/2B
6HP-GP	G 3/4	203	P-24	(69)	35	5.5	22	27.5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

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



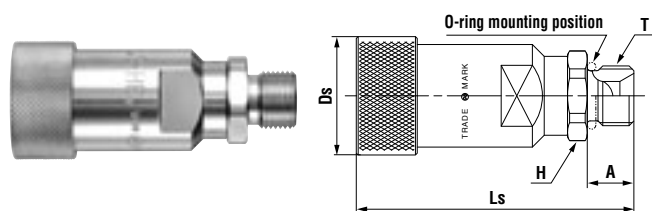
Model	Application*	Mass (g)	O-ring size	Dimensions (mm)					
				Ls	øDs	A	B	H(WAF)	T
2HS-GP	G 1/4	149	P-11	(69.5)	27.5	4.5	16	Hex.19	G 1/4B
3HS-GP	G 3/8	246	P-14	(82.5)	33	4.5	18	Hex.23	G 3/8B
4HS-GP	G 1/2	476	P-18	(93)	43	5.5	20	Hex.29	G 1/2B
6HS-GP	G 3/4	498	P-24	(96)	43	5.5	22	Hex.32	G 3/4B

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



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

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



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

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



For High Pressure

# Hyper HSP Cupla


Connects hydraulic piping even with residual pressure up to 20.6MPa (210kgf/cm<sup>2</sup>)

Working pressure



20.6MPa  
(210kgf/cm<sup>2</sup>)

Valve structure



Two-way shut-off

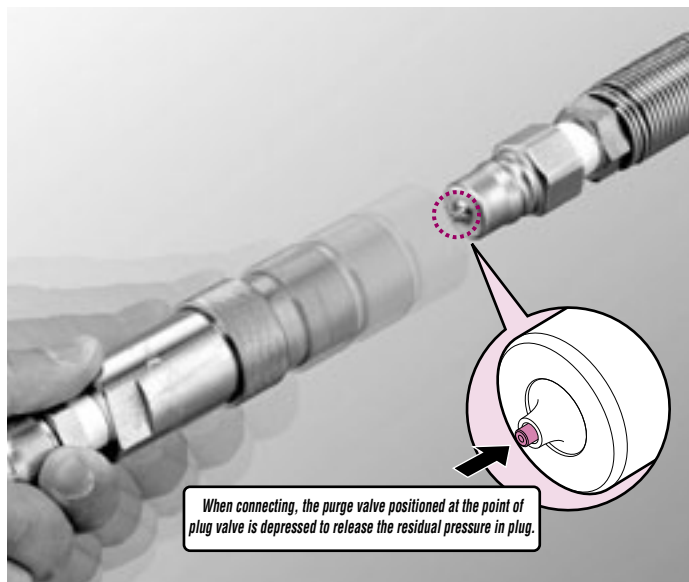
Applicable fluids



Hydraulic oil

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

- The special design to keep pressure loss extremely low is particularly ideal for hydraulic applications requiring high flow rates. Both socket and plug have built-in automatic shut-off valves to prevent fluid spill out when disconnected.
- Interchangeable with standard HSP Cupla plug or socket in the same size.




Specifications				
Body material	Special steel (Nickel-plated)			
Size	1/4" • 3/8" • 1/2" • 3/4" • 1"			
Working pressure MPa (kgf/cm <sup>2</sup> )	20.6 (210)			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	31.0 (316)			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+80°C	Standard material

Max. Tightening Torque		N·m (kgf·cm)				
Size		1/4"	3/8"	1/2"	3/4"	1"
Torque		28 (286)	45 (459)	90 (918)	100 (1020)	180 (1836)

**Flow Direction**

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



**Interchangeability**  
Interchangeable with standard HSP Cupla plug or socket in the same size.

Min. Cross-Sectional Area	(mm <sup>2</sup> )				
Model	2HP-PV/2HS-PV	3HP-PV/3HS-PV	4HP-PV/4HS-PV	6HP-PV/6HS-PV	8HP-PV/8HS-PV
Min. cross-sectional area	21	37	77	77	203

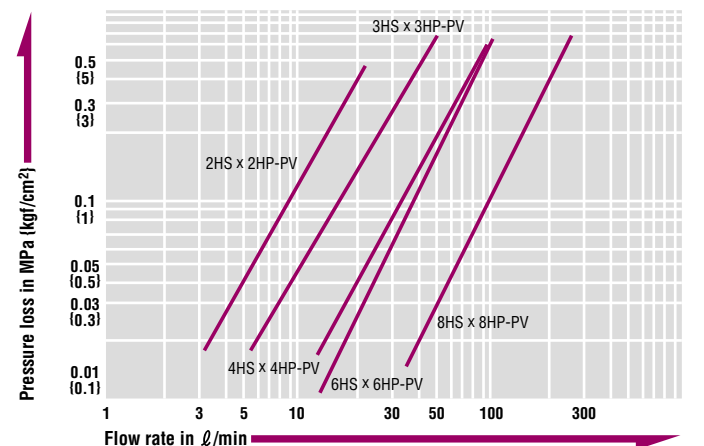
Suitability for Vacuum	1.3 x 10 <sup>-1</sup> Pa (1 x 10 <sup>-3</sup> mmHg)		
Socket only	Plug only	When connected	
—	—	Operational	

Admixture of Air on Connection	(ml)				
Model	2HP-PV/2HS-PV	3HP-PV/3HS-PV	4HP-PV/4HS-PV	6HP-PV/6HS-PV	8HP-PV/8HS-PV
Volume of air	0.7	1.9	3.5	3.5	12.4

Connection Load under Residual Pressure (For reference)	(N)				
Residual pressure / Model	2HP-PV/2HS-PV	3HP-PV/3HS-PV	4HP-PV/4HS-PV	6HP-PV/6HS-PV	8HP-PV/8HS-PV
at 5.0MPa	50	85	85	85	100
at 10.0MPa	70	85	85	85	130
at 15.0MPa	100	100	100	100	170

**Flow Rate – Pressure Loss Characteristics**

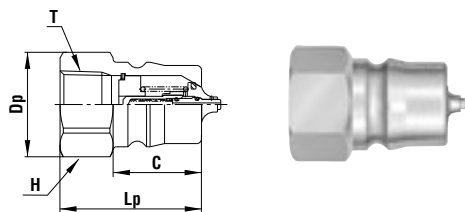
[Test conditions] •Fluid : Hydraulic oil •Temperature : 30°C ±5°C  
•Fluid viscosity : 32 x 10<sup>-6</sup>m<sup>2</sup>/s •Density : 0.87 x 10<sup>3</sup>kg/m<sup>3</sup>



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

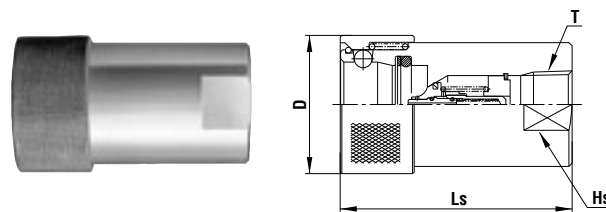
Models and Dimensions

**Plug** HP type (Female thread)



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

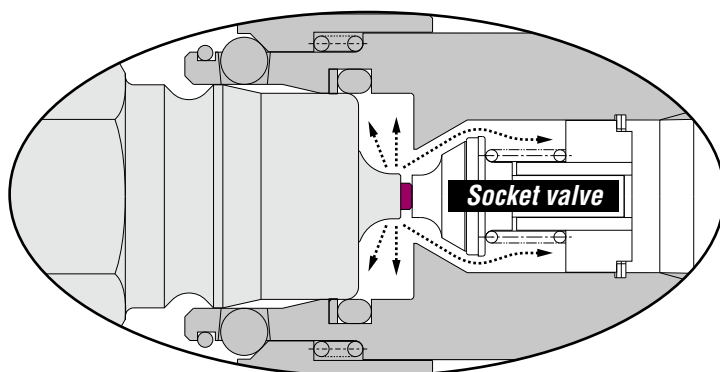
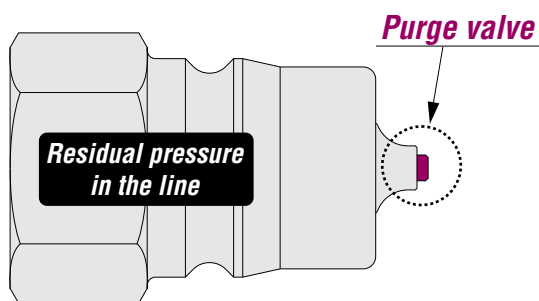
**Socket** HS type (Female thread)



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

**Residual Pressure Release (or purge) Mechanism**

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



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

For High Pressure

# Super HSP Cupla

Connects hydraulic piping even with residual pressure up to 20.6MPa (210kgf/cm<sup>2</sup>)

Working pressure



Valve structure

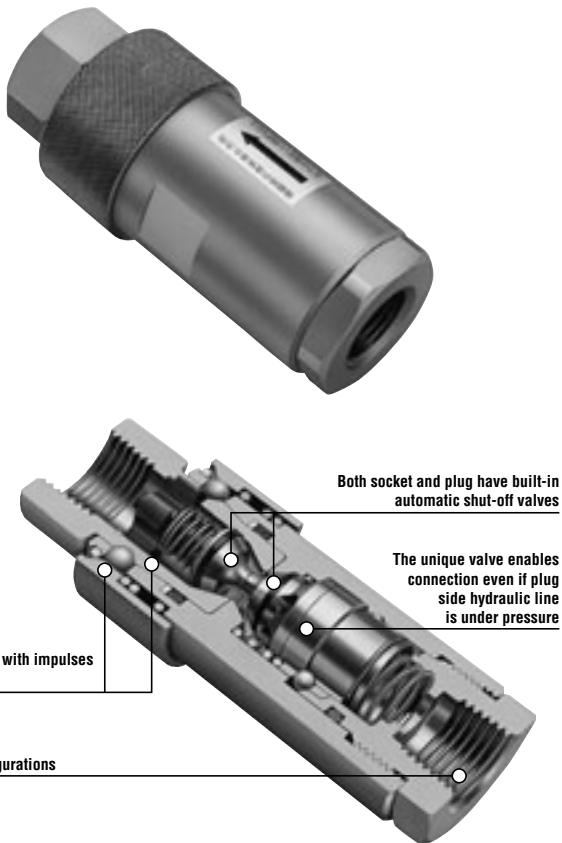


Applicable fluids



Can be connected even with residual pressure in plug side hydraulic line. This Cupla is best for frequent connection of pressurized hydraulic lines.

- Super HSP Cupla socket can be connected easily with small power to standard HSP Cupla plug even with residual pressure on the plug side of the hydraulic line.
- For impact resistance, especially repeated impulses, special quenched steel is used for the body. This ensures original performance over a long period.
- The design reduces pressure loss, and so particularly suitable for hydraulic applications where enough fluid flow is essential. Both socket and plug have built-in automatic shut-off valves to prevent fluid spill out on disconnection.



## Specifications

Body material	Special steel (Nickel-plated)			
Size	1/4" • 3/8" • 1/2" • 3/4" • 1"			
Working pressure MPa (kgf/cm <sup>2</sup> )	20.6 (210)			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	31.0 (316)			
Residual pressure allowance in plug	7.0MPa (70kgf/cm <sup>2</sup> )			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+80°C	Standard material

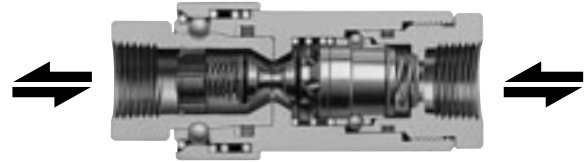
## Max. Tightening Torque

N·m (kgf·cm)

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

## Flow Direction

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



Note: When the socket is connected to the plug with residual pressure, pass fluid for at least 30 seconds from socket side at a pressure of minimum 1MPa plus the residual pressure in order to fix and keep the socket valve open.

## Interchangeability

Supre HSP socket should be used with existing HSP Cupla plug.

## Min. Cross-Sectional Area (When connected to a HSP Cupla) (mm<sup>2</sup>)

Model	2HS-RP×2HP	3HS-RP×3HP	4HS-RP×4HP	6HS-RP×6HP	8HS-RP×8HP
Min. cross-sectional area	17	30	77	77	203

## Suitability for Vacuum

1.3Pa (1 x 10<sup>-2</sup>mmHg)

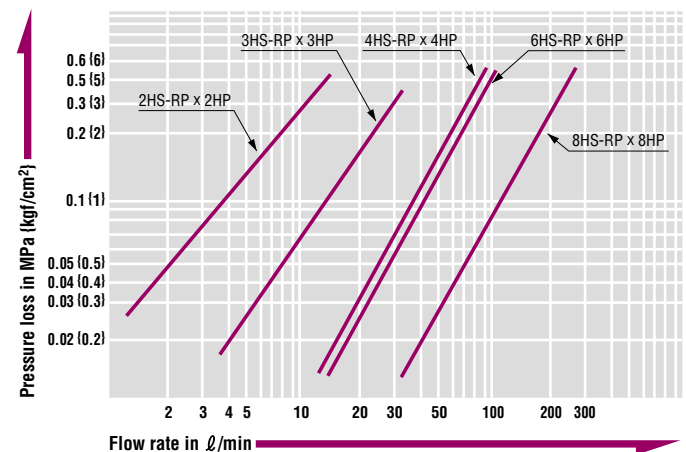
Socket only	Plug only	When connected
—	—	Operational

## Admixture of Air on Connection (mℓ)

Model	2HS-RP	3HS-RP	4HS-RP	6HS-RP	8HS-RP
Volume of air	0.64	1.84	3.47	3.47	12.4

## Flow Rate – Pressure Loss Characteristics

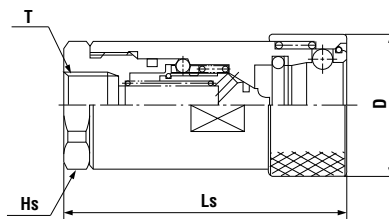
[Test conditions] • Fluid : Hydraulic oil • Temperature : 30°C ± 5°C  
• Fluid viscosity : 46 x 10<sup>-6</sup>m<sup>2</sup>/s • Density : 0.87 x 10<sup>3</sup>kg/m<sup>3</sup>



Note: Use in combination of Super HSP Cupla Socket and HSP Cupla Plug.

Models and Dimensions

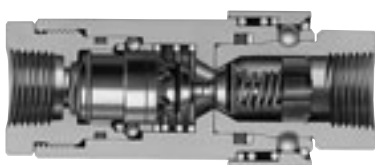
Socket HS type (Female thread)



Model	Application	Mass (g)	Dimensions (mm)			
			Ls	øD	HS(WAF)	T
2HS-RP	R 1/4	160	(57.5)	27.5	Hex.21	Rc 1/4
3HS-RP	R 3/8	275	(72.0)	33	Hex.27	Rc 3/8
4HS-RP	R 1/2	570	(88.5)	43	Hex.35	Rc 1/2
6HS-RP	R 3/4	550	(90.5)	43	Hex.35	Rc 3/4
8HS-RP	R 1	1,230	(114)	58	Hex.46	Rc 1

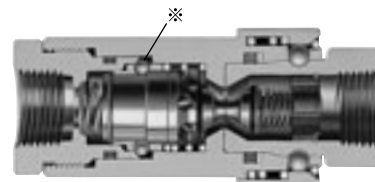
How to Use Super HSP Cupla

① Connected to plug with residual pressure.



When the socket is connected to the plug under residual pressure, the socket valve opens but the valve on the plug side does not open because of the internal residual pressure. However, in this state, the connection of socket and plug is completed.

② Valve is opened with appropriate pressure (residual pressure plus 1.0MPa (10kgf/cm<sup>2</sup>) or more) from the socket side and then locked.



In condition ①, if fluid with pressure (residual pressure plus 1.0MPa) flows, the plug valve is pushed in by socket valve under that pressure and open to flow the fluid. At this time the balls indicated by an asterisk on the sketch completely lock the socket valve. When the socket valve is locked completely, fluid may flow in either direction from plug to socket or from socket side.

When pressurized from the socket, it takes a few seconds until the valve of socket is locked.

Application Example



Hydraulic unit

Hydraulic unit

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

For High Pressure

# 210 Cupla

For hydraulic pressure up to 20.6MPa (210kgf/cm<sup>2</sup>)

Working pressure



Valve structure



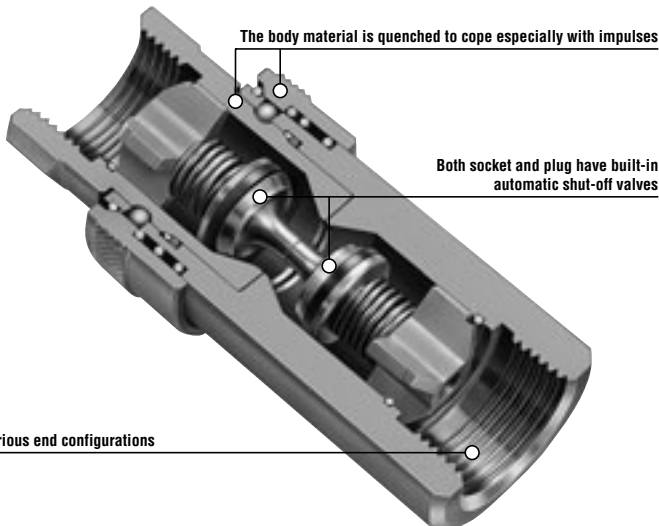
Applicable fluids



Standard hydraulic Cuplas for general purposes with a working pressure up to 20.6MPa.

Low pressure loss, suitable for hydraulic equipment.

- General purpose hydraulic Cuplas with a working pressure of 20.6MPa(210kgf/cm<sup>2</sup>).
- Structure is designed to reduce pressure loss to the lowest, and is best for hydraulic applications that need big flow rates.
- Both socket and plug have built-in automatic shut-off valves that prevent fluid outflow when disconnected. Easy to handle.



## Specifications

Body material	Special steel (Nickel-plated)			
Size	1/4" • 3/8" • 1/2" • 3/4" • 1"			
Working pressure MPa (kgf/cm <sup>2</sup> )	20.6 (210)			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	31.0 (316)			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-20°C~+80°C	Standard material
	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Available on request

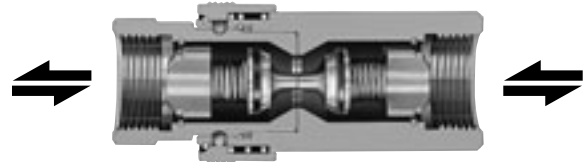
## Max. Tightening Torque

N·m (kgf·cm)

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

## Flow Direction

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



## Interchangeability

Different sizes are not interchangeable.

## Min. Cross-Sectional Area

(mm<sup>2</sup>)

Model	210-2SP	210-3SP	210-4SP	210-6SP	210-8SP
Min. cross-sectional area	24.5	42.8	77.4	146.5	235.6

## Suitability for Vacuum

1.3Pa (1 x 10<sup>-2</sup>mmHg)

Socket only	Plug only	When connected
—	—	Operational

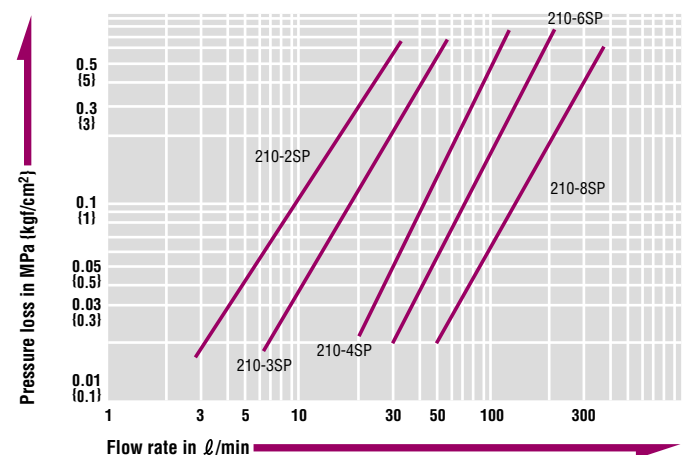
## Admixture of Air on Connection

(mℓ)

Model	210-2SP	210-3SP	210-4SP	210-6SP	210-8SP
Volume of air	0.85	1.02	2.63	8.83	16.04

## Flow Rate – Pressure Loss Characteristics

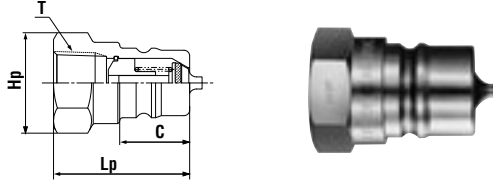
[Test conditions] •Fluid : Hydraulic oil •Temperature : 30°C ± 5°C  
•Fluid viscosity : 32 x 10<sup>-6</sup>m<sup>2</sup>/s •Density : 0.87 x 10<sup>3</sup>kg/m<sup>3</sup>





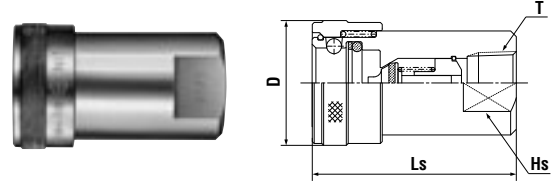
Models and Dimensions

**Plug Female thread**



Model	Application	Mass (g)	Dimensions (mm)			
			Lp	C	Hp(WAF)	T
210-2P	R 1/4	39	33	18	Hex.19	Rc 1/4
210-3P	R 3/8	57	36	18.5	Hex.23	Rc 3/8
210-4P	R 1/2	90	42.5	24	Hex.27	Rc 1/2
210-6P	R 3/4	195	51	28	Hex.35	Rc 3/4
210-8P	R 1	293	61	35	Hex.41	Rc 1

**Socket Female thread**



Model	Application	Mass (g)	Dimensions (mm)			
			Ls	øD	Hs(WAF)	T
210-2S	R 1/4	158	50.5	30	22	Rc 1/4
210-3S	R 3/8	193	54	33	23	Rc 3/8
210-4S	R 1/2	330	65	39	29	Rc 1/2
210-6S	R 3/4	566	78.5	48	35	Rc 3/4
210-8S	R 1	861	95	55	41	Rc 1

**Application Example**



Hydraulic control equipment



Construction machinery

For High Pressure

# S210 Cupla

Stainless steel Cupla for high pressure up to 20.6MPa {210kgf/cm<sup>2</sup>}

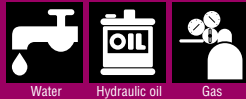
Working pressure



Valve structure



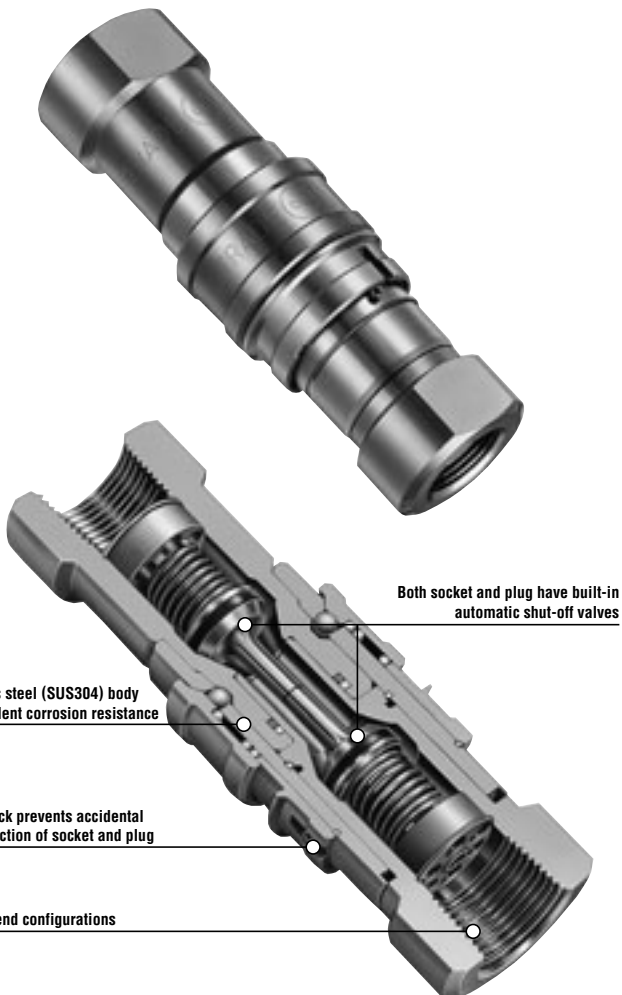
Applicable fluids



Stainless steel for excellent corrosion resistance!

The unique “inner seal mechanism” accepts a working pressure up to 20.6MPa.

- Body material is excellent corrosion resistant stainless steel (SUS304). Suited for use in tough conditions such as ocean development.
- Although it is made of stainless steel, the unique “inner seal mechanism” enables the working pressure of 20.6MPa (210kgf/cm<sup>2</sup>), the same as steel's.
- Safety lock ensures tight and secured connection (preventing accidental disconnection) under vibration or impacts.
- Both socket and plug have built-in automatic shut-off valves that prevent fluid outflow on disconnection. Easy to handle.



## Specifications

Body material	Stainless steel (SUS304)			
Size	1/4" • 3/8" • 1/2" • 3/4" • 1"			
Working pressure MPa (kgf/cm <sup>2</sup> )	20.6 (210)			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	31.0 (316)			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Standard material
	Nitrile rubber	NBR (SG)	-20°C~+80°C	Made-to-order item

• The product comes with a dust cap.

## Max. Tightening Torque

N·m {kgf·cm}

Size	1/4"	3/8"	1/2"	3/4"	1"
Torque	28 (286)	35 (357)	70 (714)	100 (1020)	180 (1836)

## Flow Direction

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



## Interchangeability

Different sizes are not interchangeable.

## Min. Cross-Sectional Area

(mm<sup>2</sup>)

Model	S210-2SP	S210-3SP	S210-4SP	S210-6SP	S210-8SP
Min. cross-sectional area	26	47	84	153	233

## Suitability for Vacuum

1.3Pa (1 x 10<sup>-2</sup>mmHg)

Socket only	Plug only	When connected
—	—	Operational

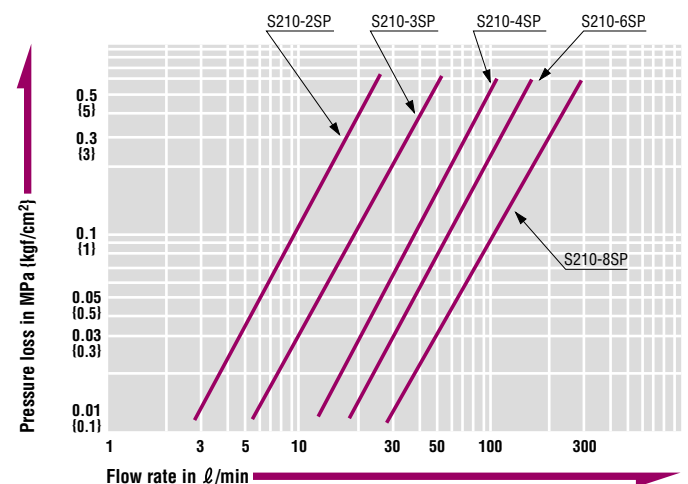
## Admixture of Air on Connection

(mℓ)

Model	S210-2SP	S210-3SP	S210-4SP	S210-6SP	S210-8SP
Volume of air	0.8	1.6	3.2	6.3	14.3

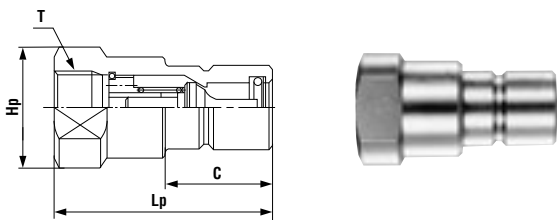
## Flow Rate – Pressure Loss Characteristics

[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>



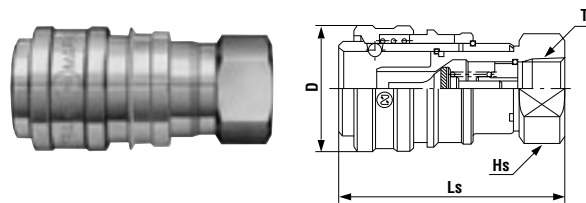
Models and Dimensions

**Plug** Female thread



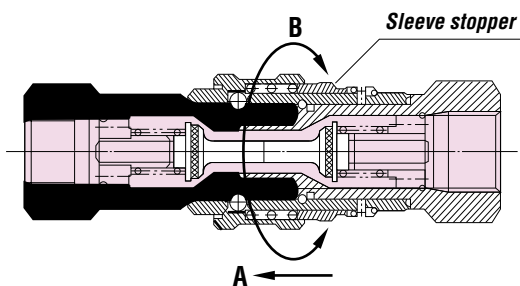
Model	Application	Mass (g)	Dimensions (mm)			
			Lp	C	Hp(WAF)	T
S210-2P	R 1/4	75	50.5	20	19 x ø22	Rc 1/4
S210-3P	R 3/8	131	59	24	24 x ø28	Rc 3/8
S210-4P	R 1/2	242	70.5	28	30 x ø35	Rc 1/2
S210-6P	R 3/4	452	81.5	35.5	38 x ø44	Rc 3/4
S210-8P	R 1	935	100	47.5	50 x ø58	Rc 1

**Socket** Female thread



Model	Application	Mass (g)	Dimensions (mm)			
			Ls	øD	Hs(WAF)	T
S210-2S	R 1/4	130	(59)	27	19	Rc 1/4
S210-3S	R 3/8	220	(68.5)	32	24	Rc 3/8
S210-4S	R 1/2	395	(81)	39.7	30	Rc 1/2
S210-6S	R 3/4	680	(97.5)	48	38	Rc 3/4
S210-8S	R 1	1,365	(118)	62	50	Rc 1

Construction of and How to Use Safety Lock (Fail Safe Mechanism) to Prevent Accidental Disconnection



**To lock the sleeve**

Push the sleeve stopper towards A and turn 90° (towards B) to the left or right to engage the sleeve stopper.

**To unlock the sleeve**

Push the sleeve stopper towards A and turn 90° (towards B) to the left or right to disengage the sleeve stopper. Socket and plug can now be easily disconnected.

Application Example



Ocean development

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

For High Pressure

# 280 Cupla

For hydraulic pressure up to 27.5~31.5MPa {281~321kgf/cm<sup>2</sup>}

Working pressure



31.5MPa  
{321kgf/cm<sup>2</sup>}



27.5MPa  
{281kgf/cm<sup>2</sup>}

Valve structure



Two-way shut-off

Applicable fluids



Hydraulic oil

**Generic Cupla copes with high pressure lines in hydraulic equipment! Low pressure loss is ideal for hydraulic equipment.**

- Complys with international standard ISO 7241-1A.
- General purpose hydraulic Cuplas with the working pressure up to 27.5~31.5MPa {281~321kgf/cm<sup>2</sup>}.
- Structure keeps pressure loss extremely low, particularly ideal for hydraulic applications requiring high flow rates.
- Both socket and plug have built-in automatic shut-off valves to prevent fluid spill out when disconnected. Easy to handle.
- Special steel body material is adopted for its excellent strength and additional quenching treatment is done to withstand hydro pressure impacts.
- Various end configurations.



Specifications				
Body material	Special steel (Bright chromate conversion coating : silver)			
Size	1/4" • 3/8"	1/2" • 3/4" • 1"		
Working pressure MPa (kgf/cm <sup>2</sup> )	31.5 {321}	27.5 {281}		
Pressure resistance MPa (kgf/cm <sup>2</sup> )	47.3 {482}	41.3 {421}		
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+80°C	Standard material

Max. Tightening Torque		N·m {kgf·cm}			
Size	1/4"	3/8"	1/2"	3/4"	1"
Torque	28 {286}	40 {408}	80 {816}	100 {1020}	180 {1836}

**Flow Direction**

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

**Interchangeability**  
Different sizes cannot be connected.

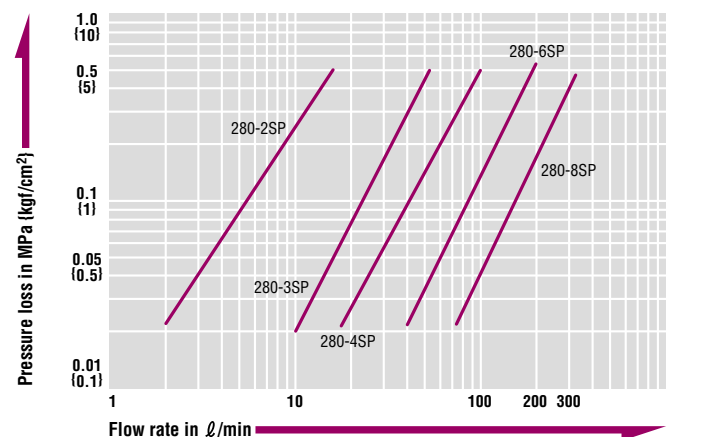
Min. Cross-Sectional Area	(mm <sup>2</sup> )				
Model	280-2SP	280-3SP	280-4SP	280-6SP	280-8SP
Min. cross-sectional area	11.4	42.8	79.1	146.5	235.6

Suitability for Vacuum		1.3Pa {1 × 10 <sup>-2</sup> mmHg}
Socket only	Plug only	When connected
—	—	Operational

Admixture of Air on Connection	(mℓ)				
Model	280-2SP	280-3SP	280-4SP	280-6SP	280-8SP
Volume of air	0.37	1.02	2.63	8.83	16.04

**Flow Rate – Pressure Loss Characteristics**

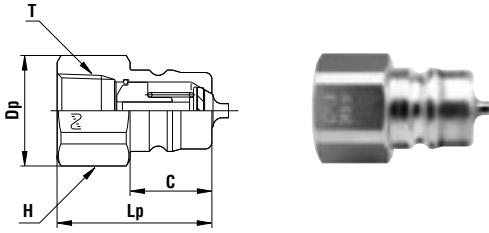
[Test conditions] •Fluid : Hydraulic oil •Temperature : 30°C ± 5°C  
•Fluid viscosity : 32 × 10<sup>-6</sup>m<sup>2</sup>/s •Density : 0.87 × 10<sup>3</sup>kg/m<sup>3</sup>





Models and Dimensions

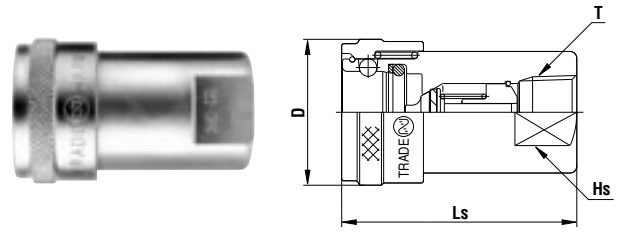
**Plug Female thread**



Model	Application	Mass (g)	Dimensions (mm)				
			Lp	øDp	C	H(WAF)	T
280-2P	R 1/4	35	31.5	20.5	15	Hex.19	Rc 1/4
280-3P	R 3/8	59	35	25	18.5	Hex.23	Rc 3/8
280-4P	R 1/2	115	44	32	24.5	Hex.29	Rc 1/2
280-6P	R 3/4	178	52.5	35	28	Hex.32	Rc 3/4
280-8P	R 1	331	63.5	44	35	41	Rc 1

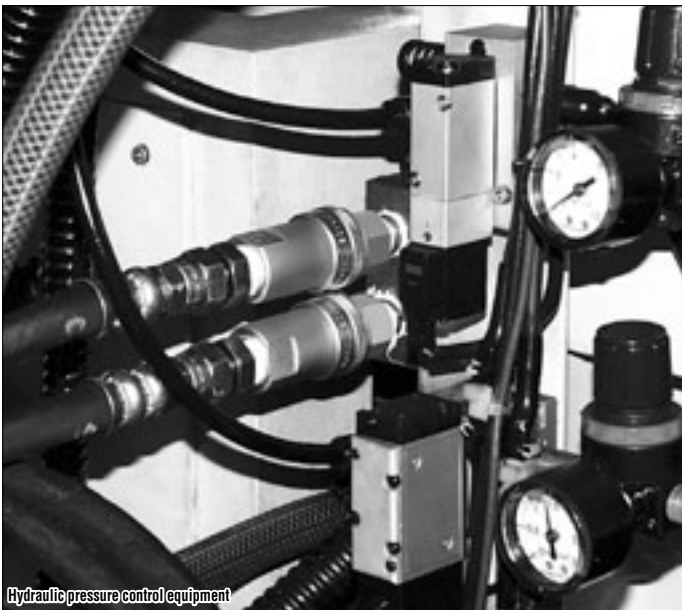
\* Internal structural design of 280-6S and 280-8S is partly different from the above drawing.

**Socket Female thread**

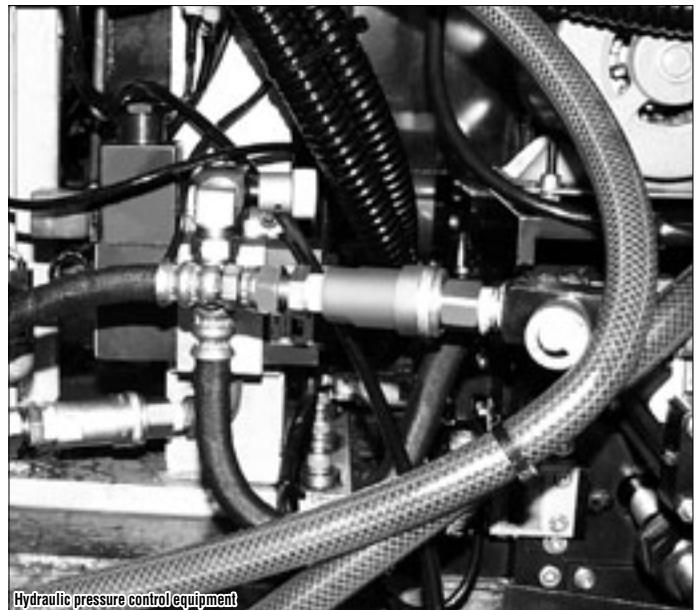


Model	Application	Mass (g)	Dimensions (mm)			
			Ls	øD	Hs(WAF)	T
280-2S	R 1/4	110	46	27	19	Rc 1/4
280-3S	R 3/8	185	53	33	23	Rc 3/8
280-4S	R 1/2	335	66.5	39	29	Rc 1/2
280-6S	R 3/4	571	81	48	35	Rc 3/4
280-8S	R 1	871	98	55	41	Rc 1

**Application Example**



Hydraulic pressure control equipment



Hydraulic pressure control equipment



For High Pressure

# 350 Cupla

For hydraulic pressures up to 34.5MPa {352kgf/cm<sup>2</sup>}

Working pressure



Valve structure

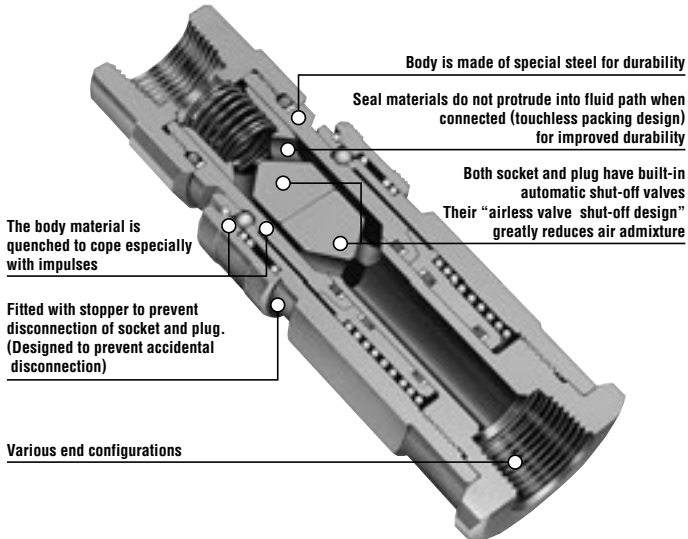


Applicable fluids



Their “airless valve shut-off design” greatly reduces air admixture! Ideal for hydraulic lines with larger pressure fluctuations.

- Locking mechanism to prevent accidental disconnection maintains tight connection even under vibration or impact.
- Both socket and plug have built-in automatic shut-off valves to prevent fluid spill out when disconnected. Easy to handle.



## Specifications

Body material	Special steel (Nickel-plated)			
Size	1/4" • 3/8" • 1/2" • 3/4" • 1" • 1 1/4" • 1 1/2" • 2"			
Working pressure MPa (kgf/cm <sup>2</sup> )	34.5 {352}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	51.5 {525}			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Standard material
	Nitrile rubber	NBR (SG)	-20°C~+80°C	Made-to-order item

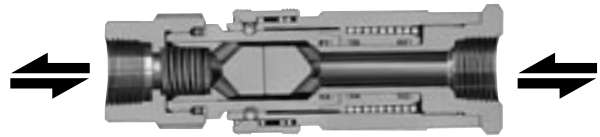
## Max. Tightening Torque

N·m (kgf·cm)

Size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Torque	28 {286}	40 {408}	80 {816}	150 {1530}	250 {2550}	500 {5100}	500 {5100}	700 {7140}

## Flow Direction

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



## Interchangeability

Different size socket and plug cannot be connected each other. However, 350-2SP with 350-3SP or 350-10SP with 350-12SP can be connected each other.

## Min. Cross-Sectional Area

(mm<sup>2</sup>)

Model	350-2SP	350-3SP	350-4SP	350-6SP	350-8SP	350-10SP	350-12SP	350-16SP
Min. cross-sectional area	32.2	32.2	78.5	149.6	227.0	452.4	452.4	907.9

## Suitability for Vacuum

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

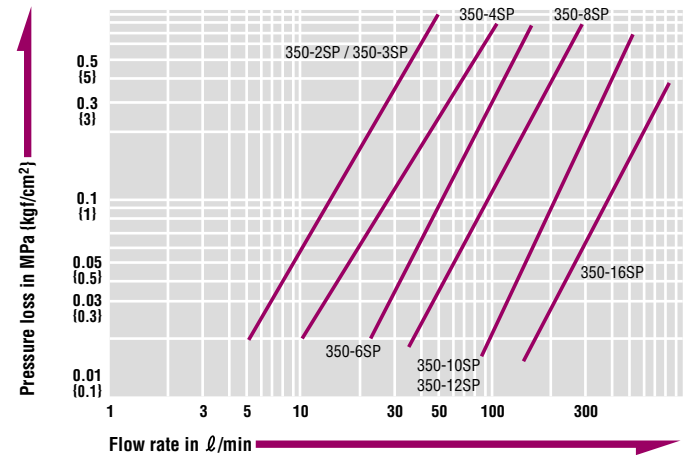
## Admixture of Air on Connection

(mℓ)

Model	350-2SP	350-3SP	350-4SP	350-6SP	350-8SP	350-10SP	350-12SP	350-16SP
Volume of air	0.1	0.1	0.2	0.3	0.5	0.9	0.9	2.0

## Flow Rate – Pressure Loss Characteristics

[Test conditions] • Fluid : Hydraulic oil • Temperature : 40°C ± 5°C  
• Fluid viscosity : 32 × 10<sup>-6</sup>m<sup>2</sup>/s • Density : 0.87 × 10<sup>3</sup>kg/m<sup>3</sup>

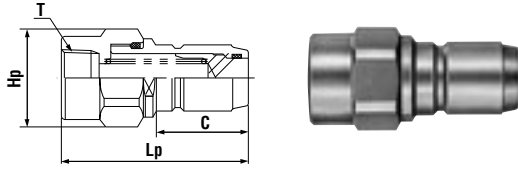


## ⚠ Precautions for use

Do not connect / disconnect Cuplas when pressure is applied or remaining.

Models and Dimensions

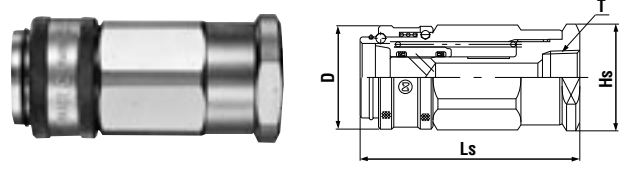
**Plug** Female thread



Model	Application	Mass (g)	Dimensions (mm)			
			Lp	C	Hp (WAF)	T
350-2P	R 1/4	170	(72)	36	Hex.27 x ø29	Rc 1/4
350-3P	R 3/8	167	(72)	36	Hex.27 x ø29	Rc 3/8
350-4P	R 1/2	245	85	40.5	Hex.27 x ø30	Rc 1/2
350-6P	R 3/4	415	(90)	44.5	Hex.41 x ø45	Rc 3/4
350-8P	R 1	1,035	(119)	57	Hex.50 x ø55	Rc 1
350-10P	R1 1/4	2,700	(144)	75	Hex.70 x ø78	Rc1 1/4
350-12P	R1 1/2	2,600	(144)	75	Hex.70 x ø78	Rc1 1/2
350-16P*	R 2	7,500	(198)	85.5	90 x ø105	Rc 2

\* Available on request

**Socket** Female thread



Model	Application	Mass (g)	Dimensions (mm)			
			Ls	øD	Hs (WAF)	T
350-2S	R 1/4	360	(82)	34	Hex.30	Rc 1/4
350-3S	R 3/8	353	(82)	34	Hex.30	Rc 3/8
350-4S	R 1/2	465	(93.5)	41	Hex.36	Rc 1/2
350-6S	R 3/4	660	(105.5)	49	46 x ø52	Rc 3/4
350-8S	R 1	1,740	(129)	63	55 x ø62	Rc 1
350-10S	R1 1/4	5,600	(180)	89	Hex.80 x ø90	Rc1 1/4
350-12S	R1 1/2	5,500	(180)	89	Hex.80 x ø90	Rc1 1/2
350-16S*	R 2	14,500	(239)	117	105	Rc 2

\* Available on request

Application Example



Hydraulic unit

For High Pressure

# Flat Face Cupla F35

For hydraulic pressures up to 35.0MPa (357kgf/cm<sup>2</sup>) with flat contact face

Working pressure



35.0MPa  
(357kgf/cm<sup>2</sup>)

Valve structure



Two-way shut-off  
(Non-Spill)

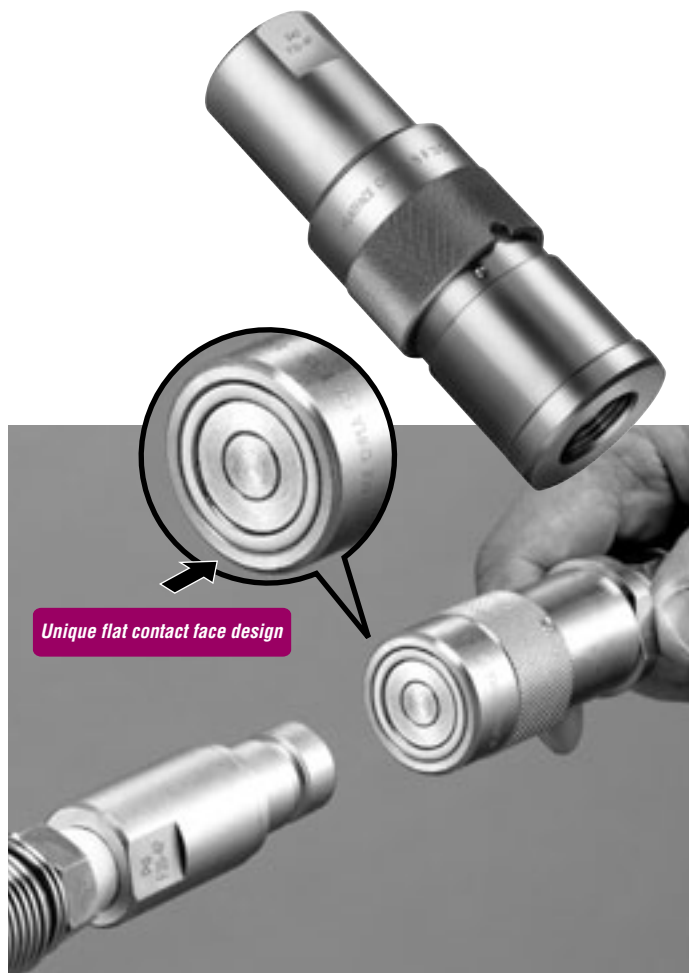
Applicable fluids



Hydraulic oil

**Flat contact face design reduces spill upon disconnection by less than half compared with that of conventional design.**

- Flat contact face design makes it easy to clean dust and foreign matters adhered on the surface of coupling so as to prevent them from entering inside and thus causing faulty operation of connection or disconnection.
- Flat contact face design minimizes air admixture during connection to keep the possible malfunction of equipment caused by the air bubbles in the hydraulic line at minimum level.
- Push-to-connect operation.
- Sleeve stopper mechanism is engaged by rotating sleeve after connection. It prevents accidental disconnection even when vibration or impact is applied to the Cupla.
- The special design reduces pressure loss considerably, and especially suited to hydraulic applications in which big flow is needed. Both socket and plug have built-in automatic shut-off valves that prevent fluid spill out on disconnection.



## Specifications

Body material	Special steel (Nickel-plated)			
Size	3/8" • 1/2" • 3/4" • 1"			
Working pressure MPa (kgf/cm <sup>2</sup> )	35.0 (357)			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	52.5 (536)			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Standard material
	Nitrile rubber	NBR (SG)	-20°C~+80°C	Made-to-order item

## Max. Tightening Torque

	N·m (kgf·cm)			
Size	3/8"	1/2"	3/4"	1"
Torque	40 (408)	80 (816)	150 (1530)	250 (2550)

## Flow Direction

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



## Interchangeability

Different sizes can not be connected each other.

## Min. Cross-Sectional Area

	(mm <sup>2</sup> )			
Model	F35-3	F35-4	F35-6	F35-8
Min. cross-sectional area	32.2	78.5	149.6	227.0

## Suitability for Vacuum

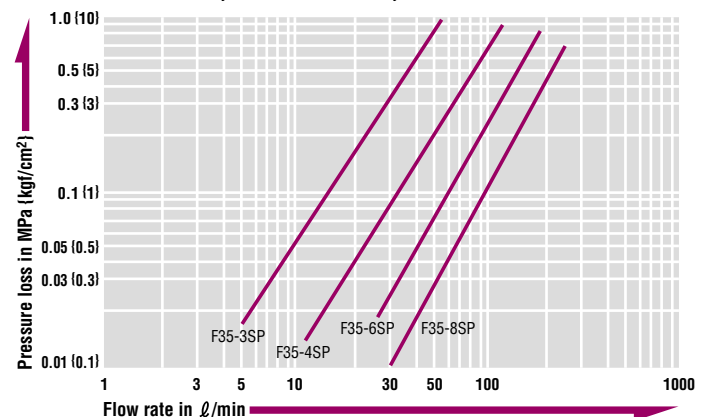
Not suitable for vacuum application in either connected or disconnected condition.

## Admixture of Air on Connection

	(ml)			
Model	F35-3	F35-4	F35-6	F35-8
Volume of air	0.01	0.04	0.08	0.1

## Flow Rate – Pressure Loss Characteristics

[Test conditions] • Fluid : Hydraulic oil • Temperature : 30°C ± 5°C  
• Fluid viscosity : 32 × 10<sup>-6</sup>m<sup>2</sup>/s • Density : 0.87 × /m<sup>3</sup>

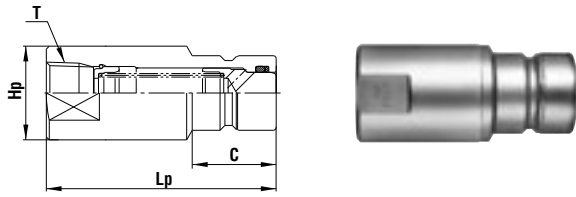


## ⚠ Precautions for use

**Do not connect / disconnect Cuplas when pressure is applied or remaining.**

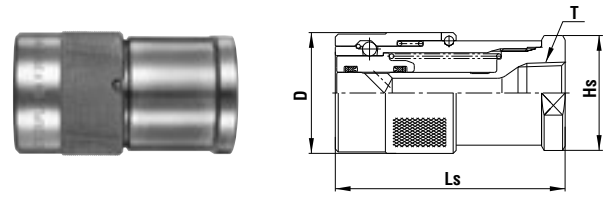
**Models and Dimensions**

**Plug F35-P type (Female thread)**



Model	Application	Mass (g)	Dimensions (mm)			
			Lp	C	Hp(WAF)	T
F35-3P	R 3/8	190	67.5	24	24 x ø27	Rc 3/8
F35-4P	R 1/2	290	78	28.5	27 x ø31.7	Rc 1/2
F35-6P	R 3/4	460	84.5	31	36 x ø40	Rc 3/4
F35-8P	R 1	1000	108	39	46 x ø50	Rc 1

**Socket F35-S type (Female thread)**



Model	Application	Mass (g)	Dimensions (mm)			
			Ls	øD	Hs(WAF)	T
F35-3S	R 3/8	320	(70)	34	30 x ø33	Rc 3/8
F35-4S	R 1/2	490	(78)	41	36 x ø39	Rc 1/2
F35-6S	R 3/4	815	(85)	49	46 x ø50	Rc 3/4
F35-8S	R 1	1520	(104)	63	55 x ø62	Rc 1

**Application Example**






Snow plow

For High Pressure

# Flat Face Cupla FF

For hydraulic pressure up to 35.0MPa {357kgf/cm<sup>2</sup>} with flat contact face

Working pressure  35.0MPa {357kgf/cm <sup>2</sup> }	Valve structure  Two-way shut-off (Non-Spill)	Applicable fluids  Hydraulic oil
--	---	---

**1.5 ~ 2 Times Higher Flow.**  
High flow type with "airless valve shut-off" design.

- Compared with Nitto's conventional 35MPa Cuplas, the flow volume is increased 1.5 to 2 times.  
\*Increase ratio of each flow volume depends on the Cupla size.
- "Airless valve shut-off" design minimizes spillage volume on disconnection and admixture volume of air on connection.
- Best suited for hydraulic lines with drastic high pressure pulsation such as in die-casting machines.
- Push-to-connect operation and sleeve stopper design preventing accidental disconnection under vibration or impacts enhances workability and safety.
- Sizes are Rc 3/8, Rc 1/2, Rc 3/4, and Rc 1.  
\*Only the same size of socket and plug can be connected.



**NEW**



Offset concave flat face enables quick and smooth connection

## Unique flat face design

Concaved offset for the flat face on socket guides plug for quick and smooth centering and connection, but still easy to wipe of dirt and dusts.



Hexagon nut for easy mount

Specifications				
Body material	Special steel (Autocatalytic nickel-phosphorus coating)			
Size	3/8" • 1/2" • 3/4" • 1"			
Working pressure	MPa (kgf/cm <sup>2</sup> )	35.0 (357)		
Pressure resistance	MPa (kgf/cm <sup>2</sup> )	52.5 (536)		
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR	-20°C ~ +80°C	Standard material

Max. Tightening Torque		N·m {kgf·cm}			
Size		3/8"	1/2"	3/4"	1"
Torque		40 {408}	80 {816}	150 {1530}	250 {2550}

**Flow Direction**

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

**Interchangeability**  
Different size socket and plug cannot be connected each other.

Min. Cross-Sectional Area		(mm <sup>2</sup> )			
Model		FF-3S x FF-3P	FF-4S x FF-4P	FF-6S x FF-6P	FF-8S x FF-8P
Min. cross-sectional area		51	106	215	332

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

Admixture of Air on Connection		(ml)			
Model		FF-3S x FF-3P	FF-4S x FF-4P	FF-6S x FF-6P	FF-8S x FF-8P
Volume of air admixture		0.018	0.029	0.033	0.080

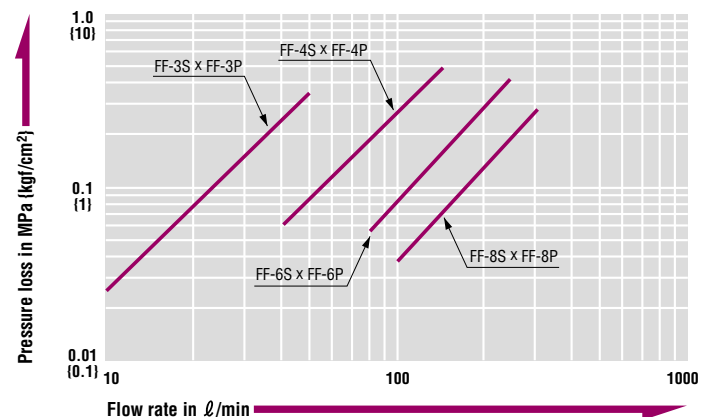
\*Admixture volume of air on each connection depends on usage conditions.

Volume of Spillage per Disconnection		(ml)			
Model		FF-3S x FF-3P	FF-4S x FF-4P	FF-6S x FF-6P	FF-8S x FF-8P
Volume of spillage		0.009	0.023	0.031	0.110

\*Spillage volume of liquid on each connection depends on usage conditions.

**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>



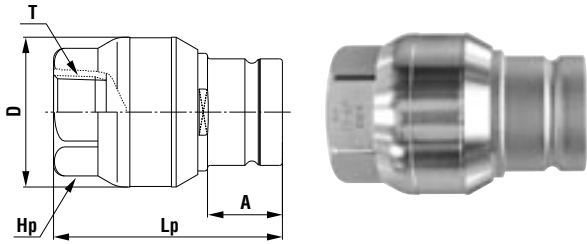
### ⚠ Precautions for use

Do not connect / disconnect Cuplas when pressure is applied or remaining.



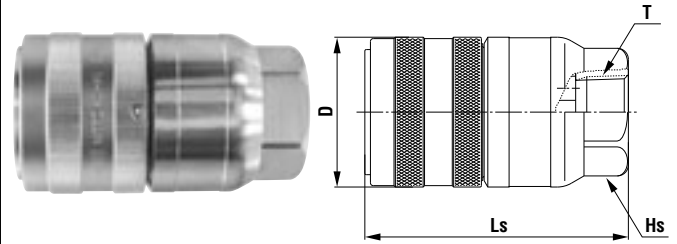
**Models and Dimensions**

**Plug Female thread**



Model	Application	Mass (g)	Dimensions (mm)				
			Lp	øD	A	Hp (WAF)	T
FF-3P	R 3/8	252	(66)	34	20.5	Hex.29	Rc 3/8
FF-4P	R 1/2	409	(74)	42	22.8	Hex.32	Rc 1/2
FF-6P	R 3/4	709	(82.5)	54	27	Hex.41	Rc 3/4
FF-8P	R 1	1314	(96.5)	66	29.5	Hex.54	Rc 1

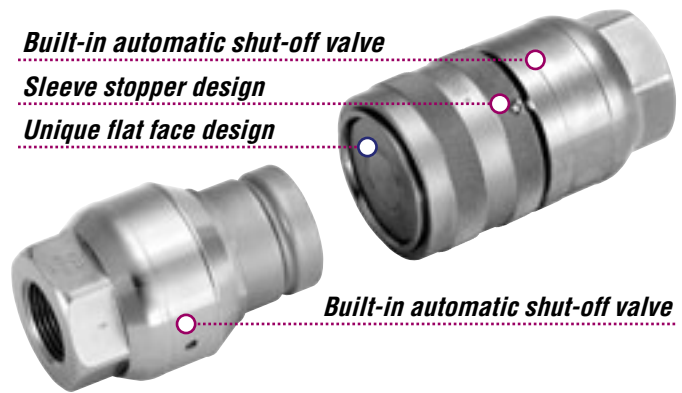
**Socket Female thread**



Model	Application	Mass (g)	Dimensions (mm)			
			Ls	øD	Hs (WAF)	T
FF-3S	R 3/8	345	(71)	35.5	Hex.29	Rc 3/8
FF-4S	R 1/2	608	(84)	44	Hex.32	Rc 1/2
FF-6S	R 3/4	1053	(95)	54	Hex.41	Rc 3/4
FF-8S	R 1	1865	(109.5)	66	Hex.54	Rc 1

**Applications**

- Hydraulic piping for die-casting machines
- Casting machines
- Electric furnaces
- Molding presses
- Forging press
- Powdery alloy presses
- Extrusion molding machines
- Machine tools
- Iron manufacturing blast furnaces
- Continuous casting machines
- Rolling mills
- Pipe forging machines
- Furnace opening / closing machines
- Glass molding machines, etc.



For High Pressure

# 450B Cupla

For hydraulic pressure up to 44.1MPa {450kgf/cm<sup>2</sup>}

Working pressure



44.1MPa  
{450kgf/cm<sup>2</sup>}

Valve structure



Two-way shut-off

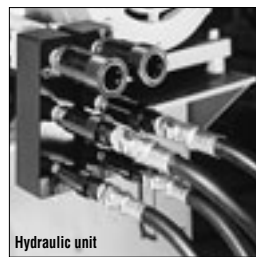
Applicable fluids



Hydraulic oil

## Metal-touch valve system with superior durability! Sleeve stopper mechanism gives secure connection.

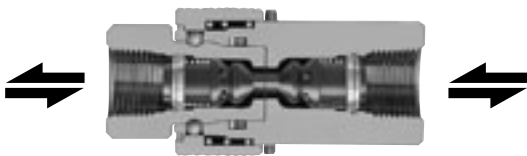
- Cupla for higher working pressure up to 44.1MPa {450kgf/cm<sup>2</sup>}.
- Mechanism to prevent accidental disconnection maintains tight connection even under vibration or impact when connected.
- Both socket and plug have metal-touch automatic shut-off valves that prevent fluid spill out on disconnection.



Hydraulic unit

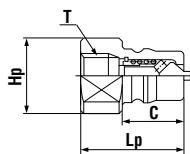
### Flow Direction

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



### Models and Dimensions

#### Plug Female thread



Model	Application	Mass (g)	Dimensions (mm)			
			Lp	C	Hp (WAF)	T
450B-3P	R 3/8	95	37.5	22.5	24 x ø28	Rc 3/8
450B-4P*	R 1/2	-	50	35	32 x ø35	Rc 1/2

\* Made-to-order item

### Specifications

Body material	Special steel (Nickel-plated)			
Size	3/8" • 1/2"			
Working pressure MPa (kgf/cm <sup>2</sup> )	44.1 {450}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	68.6 {700}			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-20°C~+80°C	Standard material
	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Made-to-order item
Stand-alone leakage rate on either socket or plug	0.1mℓ/min at 0.3MPa {3kgf/cm <sup>2</sup> }			
	* Owing to the metal contact seal structure design, there will be very minimal amount of leakage from both socket and plug respectively, when they are separated.			

### Max. Tightening Torque

N·m {kgf·cm}

Size	3/8"	1/2"
Torque	40 {408}	85 {867}

### Interchangeability

Different sizes are not connectable.

### Min. Cross-Sectional Area

(mm<sup>2</sup>)

Model	450B-3SP	450B-4SP
Min. cross-sectional area	37	66

### Suitability for Vacuum

Can be used to for vacuum applications up to 1.3Pa {1x10<sup>-2</sup>mmHg} only when socket and plug are connected.

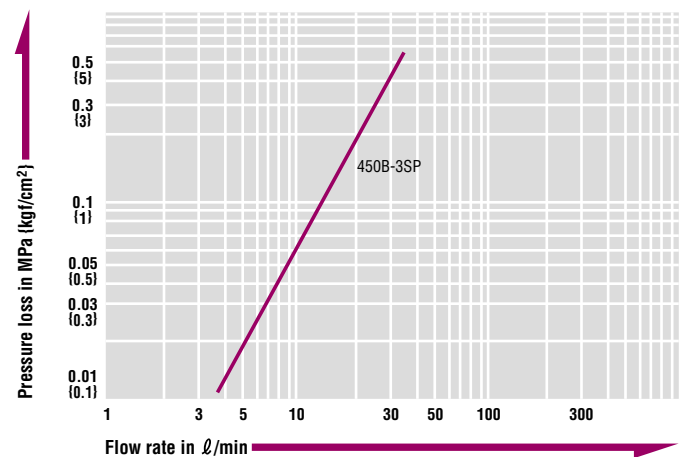
### Admixture of Air on Connection

(mℓ)

Model	450B-3SP	450B-4SP
Volume of air	1.43	3.44

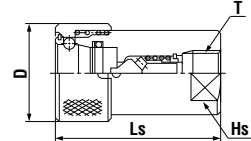
### Flow Rate – Pressure Loss Characteristics

[Test conditions] • Fluid : Hydraulic oil • Temperature : 30°C ± 5°C  
• Fluid viscosity : 32 × 10<sup>-6</sup>m<sup>2</sup>/s • Density : 0.87 × 10<sup>3</sup>kg/m<sup>3</sup>



WAF : WAF stands for width across flat.

#### Socket Female thread



Model	Application	Mass (g)	Dimensions (mm)			
			Ls	øD	Hs (WAF)	T
450B-3S	R 3/8	285	59.5	36	24	Rc 3/8
450B-4S*	R 1/2	-	85	46	36	Rc 1/2

\* Made-to-order item

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

For High Pressure

# 700R Cupla

For hydraulic pressure up to 68.6MPa {700kgf/cm<sup>2</sup>}

Working pressure



68.6MPa  
(700kgf/cm<sup>2</sup>)

Valve structure



Two-way shut-off

Applicable fluids



Hydraulic oil

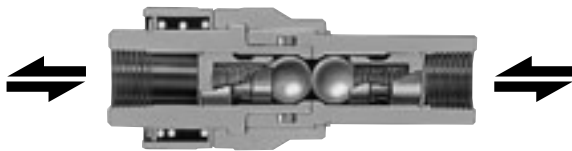
High pressure Cupla for working pressures up to 68.6MPa and pressure resistance of 98MPa! Unique sleeve ring-lock system copes with vibration and impact when connected.

- Cupla for extremely high working pressures up to 68.6MPa (700kgf/cm<sup>2</sup>) and pressure resistance of 98MPa (1,000kgf/cm<sup>2</sup>).
- Metal-touch valves use no rubber seal, and thus ensure excellent durability.
- Special sleeve ring-lock system maintains tight connection even under vibration or impact when connected.
- Both socket and plug have metal touch automatic shut-off valves that prevent fluid spill out on disconnection.



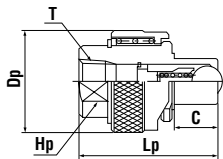
## Flow Direction

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



## Models and Dimensions

### Plug Female thread



Model	Application	Mass (g)	Dimensions (mm)				
			Lp	C	øDp	Hp (WAF)	T
700R-3P	R 3/8	210	54	18	39.5	24	Rc 3/8
700R-4P	R 1/2	418	70	22	50	27	Rc 1/2

## Specifications

Body material	Special steel (Nickel-plated)			
Size	3/8" • 1/2"			
Working pressure MPa (kgf/cm <sup>2</sup> )	68.6 (700)			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	98.0 (1000)			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-20°C~+80°C	Standard material
	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Made-to-order item
Stand-alone leakage rate on either socket or plug	For 3/8", 0.05m <sup>3</sup> /min at 0.2MPa (2kgf/cm <sup>2</sup> )			
	For 1/2", 0.05m <sup>3</sup> /min at 0.3MPa (3kgf/cm <sup>2</sup> )			
	* Owing to the metal contact seal structure, there will be very minimal leakage from socket and plug respectively, when they are separated.			

## Max. Tightening Torque

N·m (kgf·cm)

Size	3/8"	1/2"
Torque	40 (408)	85 (867)

## Interchangeability

Different sizes are not connectable.

## Min. Cross-Sectional Area

(mm<sup>2</sup>)

Model	700R-3SP	700R-4SP
Min. cross-sectional area	34	55

## Suitability for Vacuum

Can be used for vacuum applications up to 1.3Pa (1x10<sup>-2</sup>mmHg) only when socket and plug are connected.

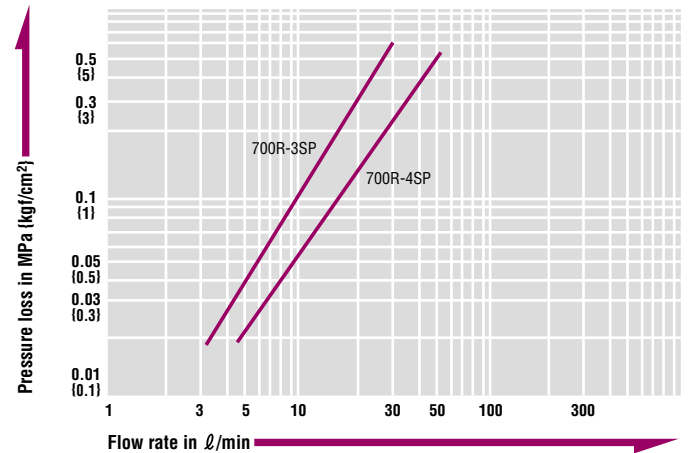
## Admixture of Air on Connection

(m<sup>3</sup>)

Model	700R-3SP	700R-4SP
Volume of air	1.0	2.2

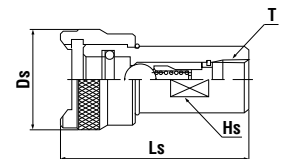
## Flow Rate – Pressure Loss Characteristics

[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>



WAF : WAF stands for width across flat.

### Socket Female thread



Model	Application	Mass (g)	Dimensions (mm)			
			Ls	øDs	Hs (WAF)	T
700R-3S	R 3/8	270	(73)	39.5	22	Rc 3/8
700R-4S	R 1/2	562	(91)	50	27	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.

## For Multi-Port Connection (Manual)

# Multi Cupla MAM Type

Multiple air port system

Working pressure



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

Valve structure



One-way shut-off

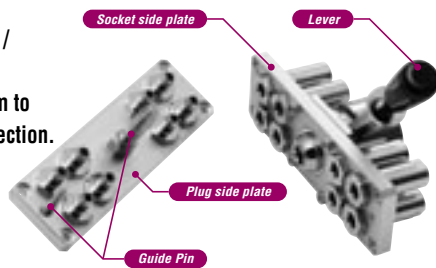
Applicable fluid



Air

**Simultaneously connects several ports securely in one operation!  
Greatly cuts cycle time in multiple ports replacement.**

- Handles several ports at once.
- Simple manual lever action completes easy connection / disconnection.
- Comes with lock mechanism to prevent accidental disconnection.
- Valve on socket side only.



### Specifications

Body material	Cupla : Brass (Chrome-plated)		
	Plate : Aluminum alloy (4, 8, 12 ports) / Plate : Steel (16 ports) Locking unit : Steel and others		
Size	1/8"		
Working pressure MPa (kgf/cm <sup>2</sup> )	0.7 (7)		
Pressure resistance MPa (kgf/cm <sup>2</sup> )	1.0 (10)		
Seal material	Seal material	Mark	Working temperature range
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+60°C

### Max. Tightening Torque

N·m (kgf·cm)

Torque	5 (51)
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### Interchangeability

No connection is possible between plates with different number of ports.

### Min. Cross-Sectional Area

(mm<sup>2</sup>)

Per port	15.9
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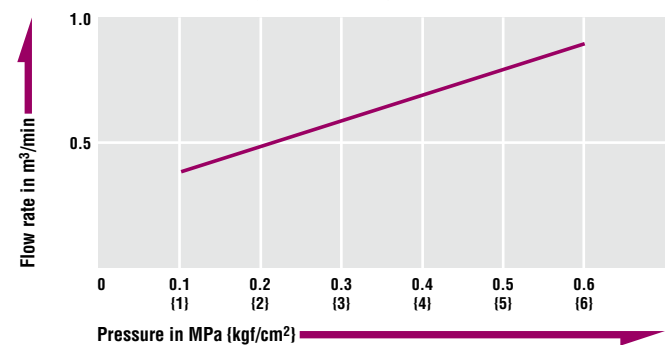
### Suitability for Vacuum

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

### Pressure - Flow Characteristics

Per port with Cupla

[Test conditions] •Fluid : Air •Temperature : Room temperature



### Models and Dimensions

WAF : WAF stands for width across flats.

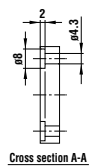
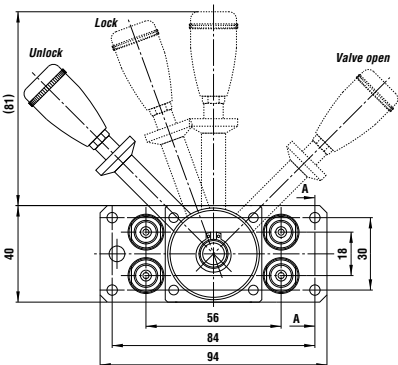
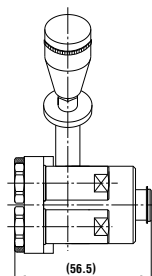
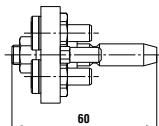
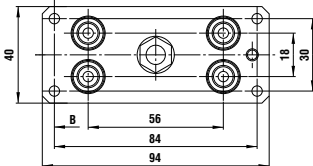
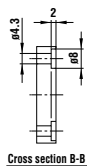
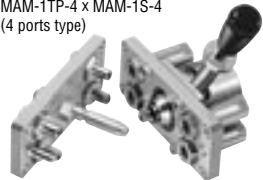
#### Model MAM-1TP-4 × MAM-1S-4 (4 ports type)

Application: R1/8 Mass: 150g (Plug), 500g (Socket)

Plug: Model **MAM-1TP-4**

Socket: Model **MAM-1S-4**

MAM-1TP-4 × MAM-1S-4  
(4 ports type)



Dimensions (mm)

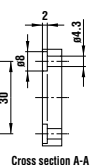
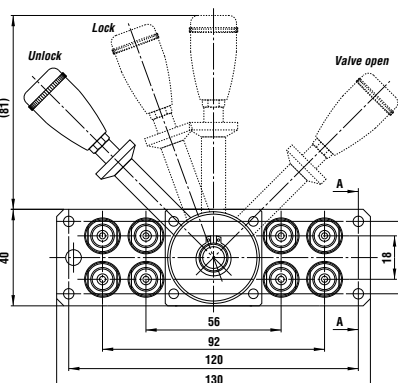
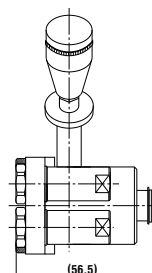
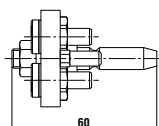
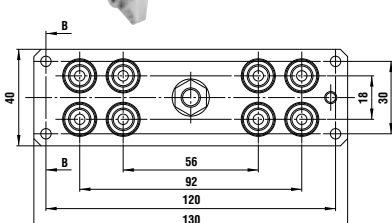
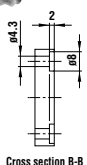
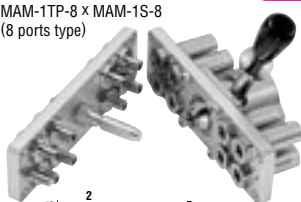
#### Model MAM-1TP-8 × MAM-1S-8 (8 ports type)

Application: R1/8 Mass: 250g (Plug), 650g (Socket)

Plug: Model **MAM-1TP-8**

Socket: Model **MAM-1S-8**

MAM-1TP-8 × MAM-1S-8  
(8 ports type)



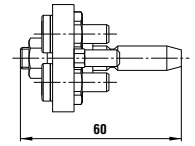
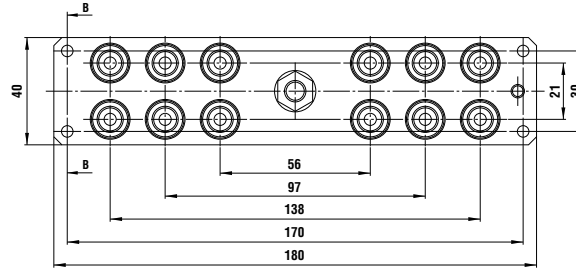
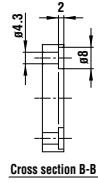
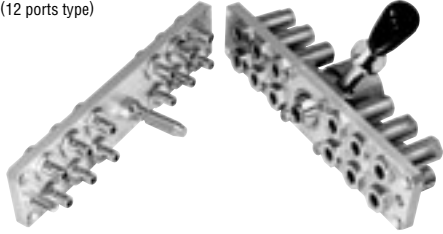
Dimensions (mm)

Model MAM-1TP-12 x MAM-1S-12 (12 ports type)

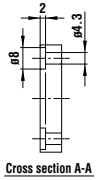
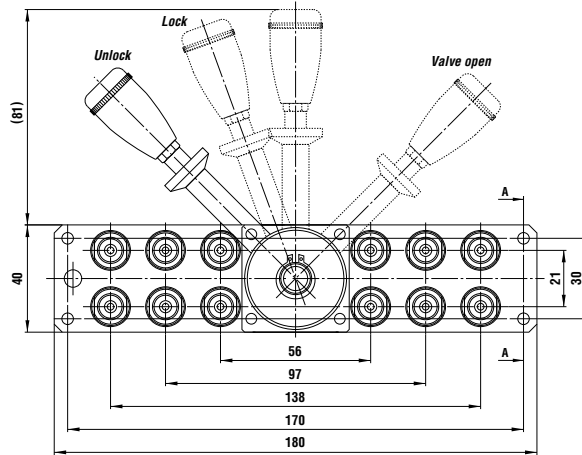
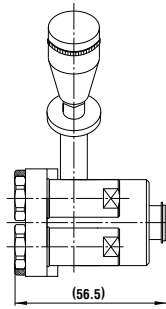
Application: R1/8 Mass: 350g (Plug), 800g (Socket)

Plug: Model MAM-1TP-12

MAM-1TP-12 x MAM-1S-12  
(12 ports type)



Socket: Model MAM-1S-12



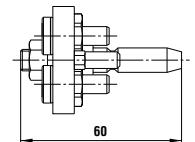
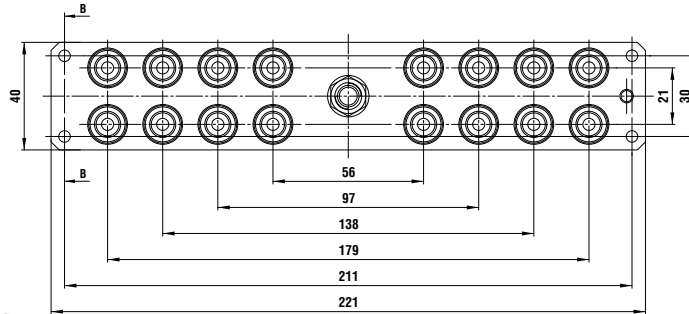
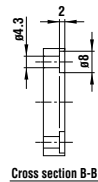
Dimensions (mm)

Model MAM-1TP-16 x MAM-1S-16 (16 ports type)

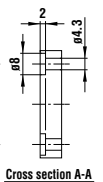
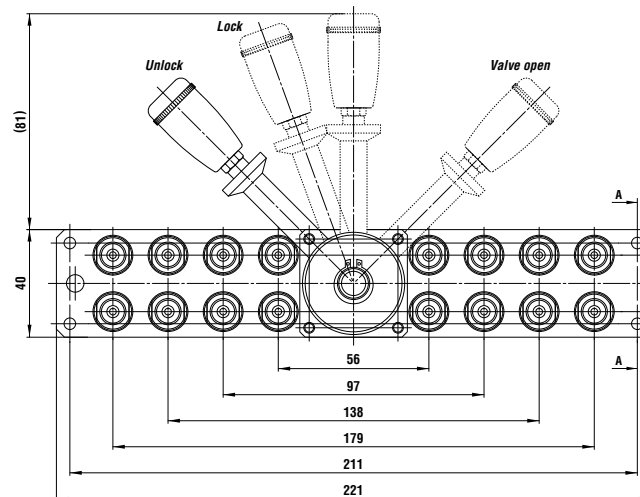
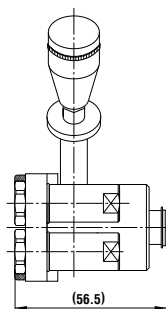
Application: R1/8 Mass: 680g (Plug), 1180g (Socket)

Plug: Model MAM-1TP-16

MAM-1TP-16 x MAM-1S-16  
(16 ports type)



Socket: Model MAM-1S-16



Dimensions (mm)

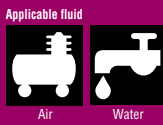
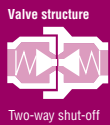


For Multi-Port Connection (Manual)

# Multi Cupla

## MAM-B Type

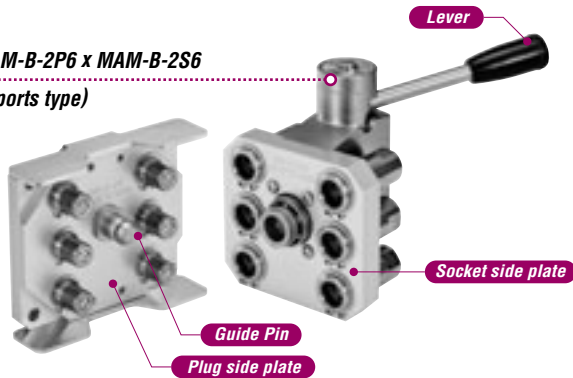
Multiple port system



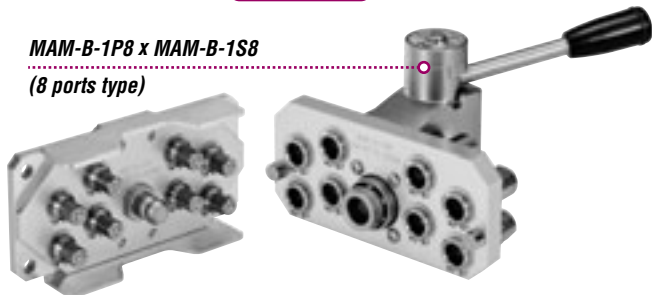
Simultaneously connects several ports securely in one operation. Greatly reduces changeover time in multiple ports replacement.

- Handles several ports at once.
- Simple manual lever action completes easy connection / disconnection.
- Two-stage lever operation prevents Cupla from accidental dropping due to sudden detachment.
- Comes with lock mechanism to prevent accidental disconnection.
- Large flow equivalent to that of SP Cupla Type A.
- Two kinds of plates are available for each size.
- Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection.
- Self-aligned valve design provides safety sealing of individual socket or plug when disconnected.

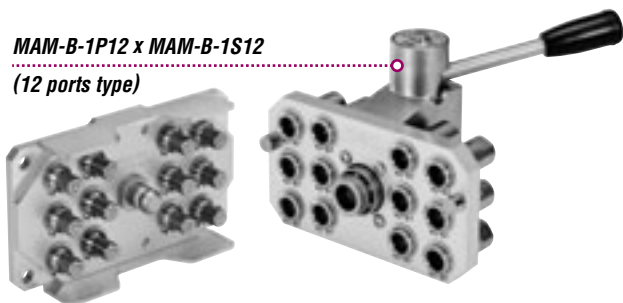
MAM-B-2P6 x MAM-B-2S6  
(6 ports type)



MAM-B-1P8 x MAM-B-1S8  
(8 ports type)



MAM-B-1P12 x MAM-B-1S12  
(12 ports type)



### Specifications

Model	Plug	MAM-B-1P8	MAM-B-1P12	MAM-B-2P6	MAM-B-2P8
	Socket	MAM-B-1S8	MAM-B-1S12	MAM-B-2S6	MAM-B-2S8
Number of ports		8	12	6	8
Size		1/8"		1/4"	
Body material		Cupla: Brass (Nickel-plated) Plate: Aluminum alloy Locking unit: Steel (Autocatalytic nickel-phosphorus coating)			
Working pressure MPa (kgf/cm <sup>2</sup> )		1.0 (10)			
Pressure resistance MPa (kgf/cm <sup>2</sup> )		1.5 (15)			
Ambient temperature range		0°C~+60°C			
Sealing material	Sealing material	Mark	Working temperature range	Remarks	
Working temperature range	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Standard material	

### Max. Tightening Torque

N·m (kgf·cm)

Size	1/8"	1/4"
Torque	5 (51)	9 (92)

### Interchangeability

No connection is possible between plates with different number of ports.

### Min. Cross-Sectional Area per Port

(mm<sup>2</sup>)

Model	1SP	2SP
Min. cross-sectional area	14	26

### 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 per Port

(mℓ)

Model	1SP	2SP
Volume of air	0.6	1.1

### Volume of Spillage on Disconnection per Port

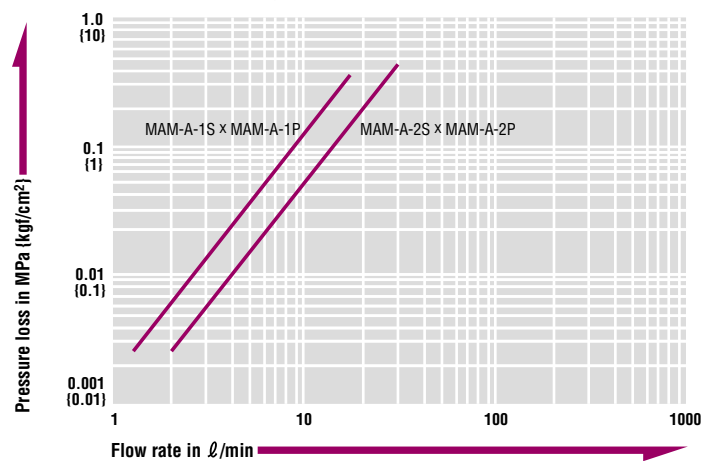
(mℓ)

Model	1SP	2SP
Volume of spillage	0.4	0.8

### Flow Rate - Pressure Loss Characteristics

Per port of Cupla

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



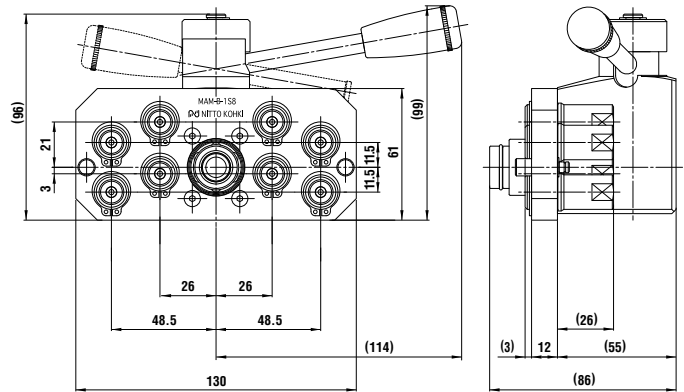
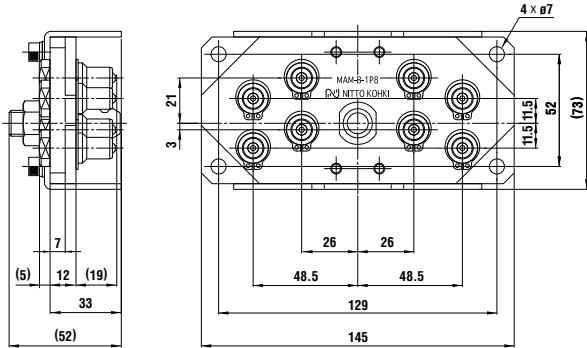
Models and Dimensions

Model MAM-B-1P8 × MAM-B-1S8 (8 ports type)

• Application: R1/8 Mass: 660g (Plug), 1210g (Socket)

Plug: Model MAM-B-1P8

Socket: Model MAM-B-1S8



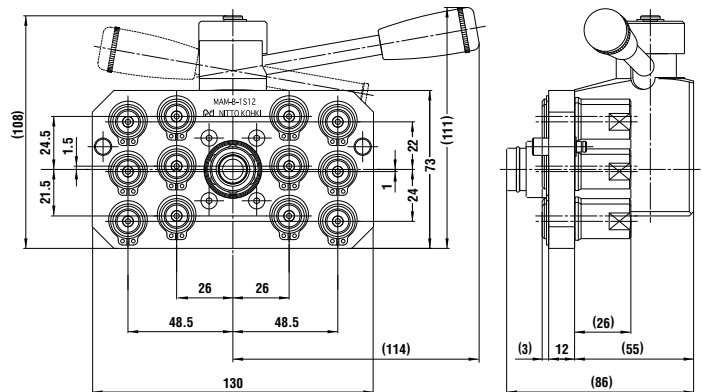
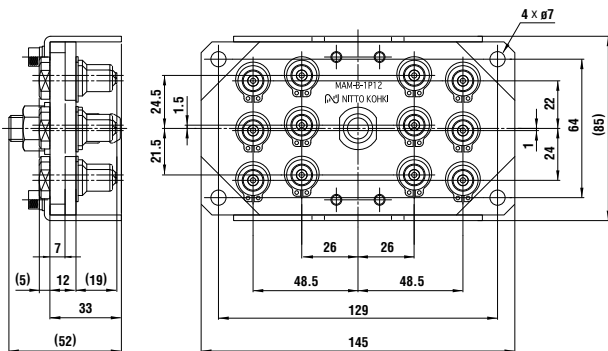
Dimensions (mm)

Model MAM-B-1P12 × MAM-B-1S12 (12 ports type)

• Application: R1/8 Mass: 790g (Plug), 1430g (Socket)

Plug: Model MAM-B-1P12

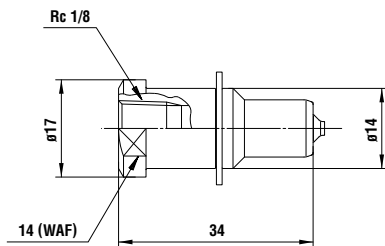
Socket: Model MAM-B-1S12



Dimensions (mm)

Plug Model MAM-A-1P (Individual Cupla)

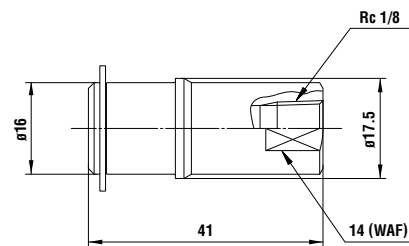
- Application: R1/8 Mass: 25g
- Can be mounted on model MAM-B-1P8 and MAM-B-1P12.



Dimensions (mm)

Socket Model MAM-A-1S (Individual Cupla)

- Application: R1/8 Mass: 49g
- Can be mounted on model MAM-B-1S8 and MAM-B-1S12.



Dimensions (mm)

Made-to-order Multi Cuplas are available on request, such as a combination of different sizes on the flange plate.

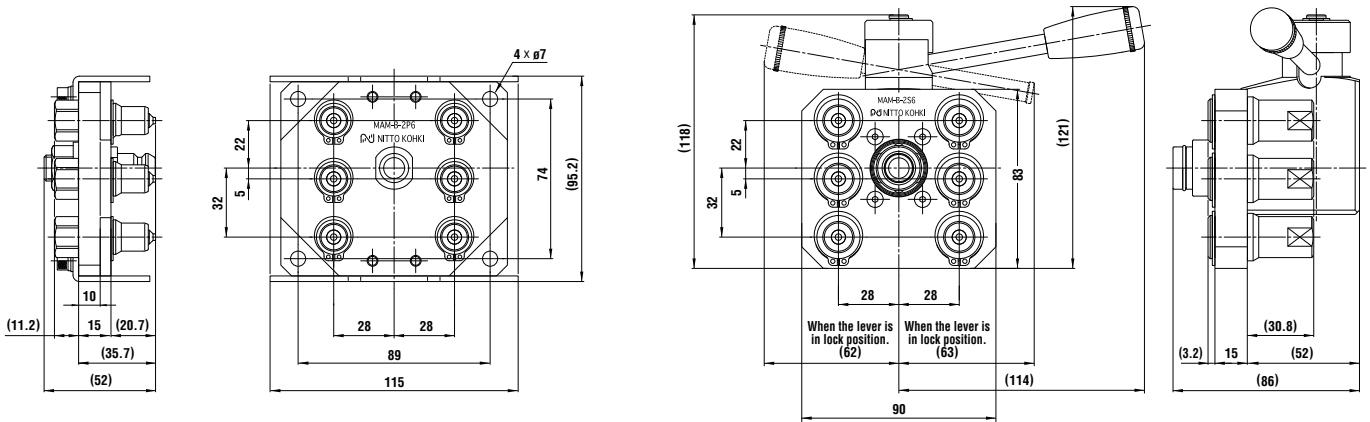
Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.

**Model MAM-B-2P6 × MAM-B-2S6 (6 ports type)**

• Application: R1/4 Mass: 740g (Plug), 1280g (Socket)

Plug: Model **MAM-B-2P6**

Socket: Model **MAM-B-2S6**



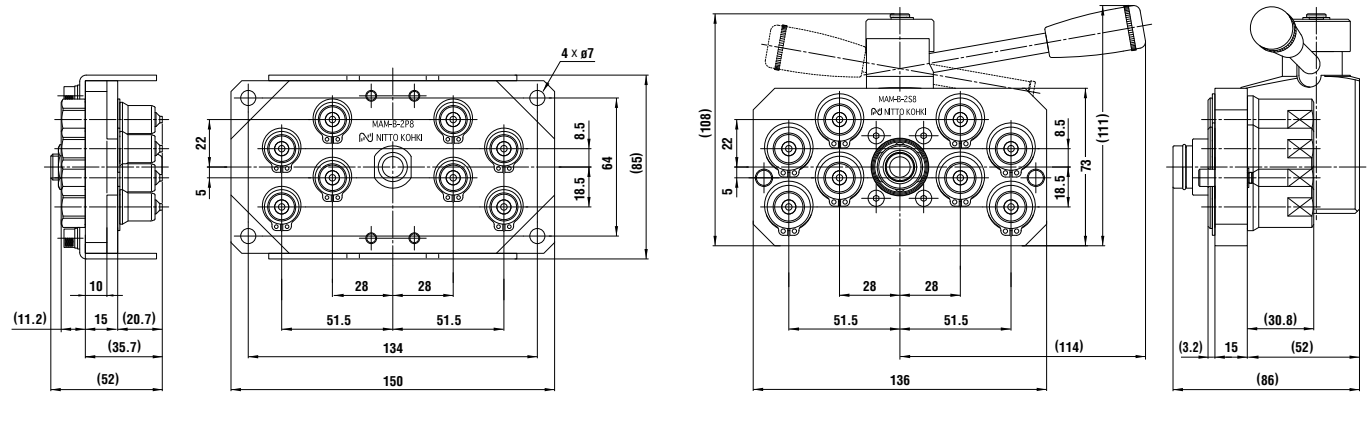
Dimensions (mm)

**Model MAM-B-2P8 × MAM-B-2S8 (8 ports type)**

• Application: R1/4 Mass: 920g (Plug), 1550g (Socket)

Plug: Model **MAM-B-2P8**

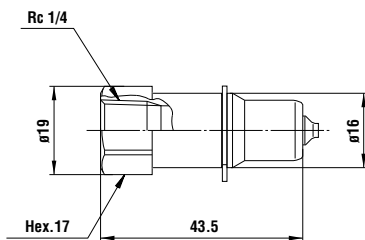
Socket: Model **MAM-B-2S8**



Dimensions (mm)

**Plug Model MAM-A-2P (Individual Cupla)**

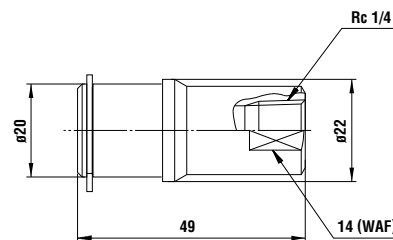
• Application: R1/4 Mass: 40g  
• Can be mounted on model MAM-B-2P6 and MAM-B-2P8.



Dimensions (mm)

**Socket Model MAM-A-2S (Individual Cupla)**

• Application: R1/4 Mass: 82g  
• Can be mounted on model MAM-B-2S6 and MAM-B-2S8.

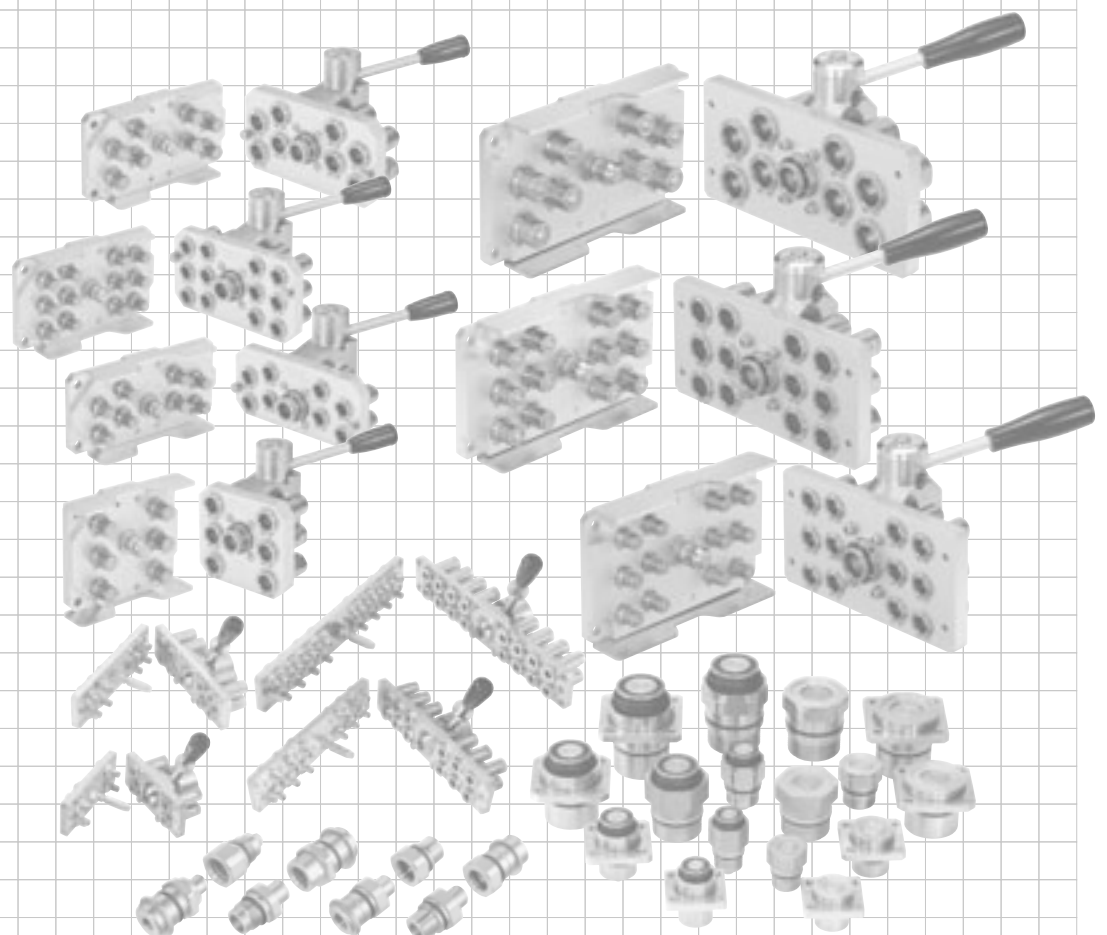


Dimensions (mm)

Made-to-order Multi Cuplas are available on request, such as a combination of different sizes on the flange plate.

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 SERIES



For Multi-Port Connection (Manual)

# Multi Cupla MAM-A Type

Multiple port system

Working pressure



Valve structure

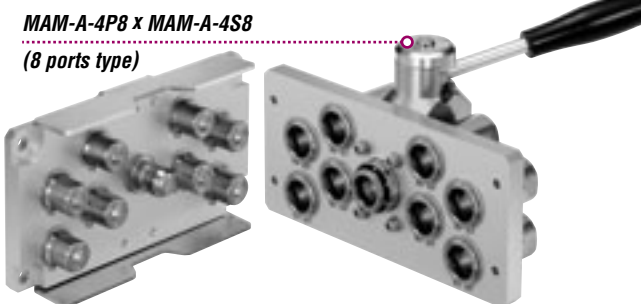
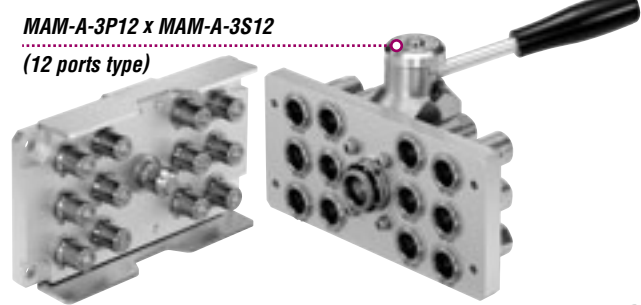
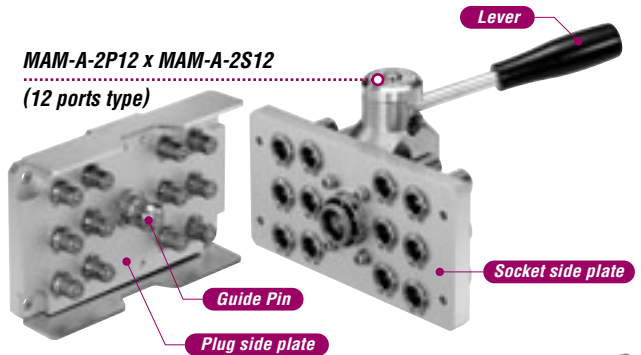


Applicable fluid



**Simultaneously connects several ports securely in one operation! Greatly reduces changeover time in multiple ports replacement.**

- Handles several ports at once.
- Simple manual lever action completes easy connection / disconnection.
- Two-stage lever operation prevents Cupla from accidental dropping due to sudden detachment.
- Comes with lock mechanism to prevent accidental disconnection.
- Large flow equivalent to that of SP Cupla Type A.
- Two kinds of plates are available for each size.
- Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection.
- Self-aligned valve design provides safety sealing of individual socket or plug when disconnected.



## Specifications

Model	Plug	MAM-A-2P6	MAM-A-2P12	MAM-A-3P6	MAM-A-3P12	MAM-A-4P4	MAM-A-4P8
	Socket	MAM-A-2S6	MAM-A-2S12	MAM-A-3S6	MAM-A-3S12	MAM-A-4S4	MAM-A-4S8
Number of ports		6	12	6	12	4	8
Size		1/4"		3/8"		1/2"	
Body material		Cupla: Brass (Nickel-plated)				Plate: Aluminum alloy	
		Locking unit: Steel (Autocatalytic nickel-phosphorus coating)					
Working pressure MPa (kgf/cm <sup>2</sup> )		1.0 (10)					
Pressure resistance MPa (kgf/cm <sup>2</sup> )		1.5 (15)					
Ambient temperature range		0°C~+60°C					
Sealing material	Sealing material	Fluoro rubber	Mark	FKM (X-100)	Working temperature range	-20°C~+180°C	Remarks
Working temperature range		Standard material					

## Max. Tightening Torque

N·m (kgf·cm)

Size	1/4"	3/8"	1/2"
Torque	9 (92)	12 (122)	30 (306)

## Interchangeability

No connection is possible between plates with different number of ports.

## Min. Cross-Sectional Area per Port

(mm<sup>2</sup>)

Model	2SP	3SP	4SP
Min. cross-sectional area	26	51	73

## 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 per Port

(mℓ)

Model	2SP	3SP	4SP
Volume of air	1.1	2.7	3.9

## Volume of Spillage on Disconnection per Port

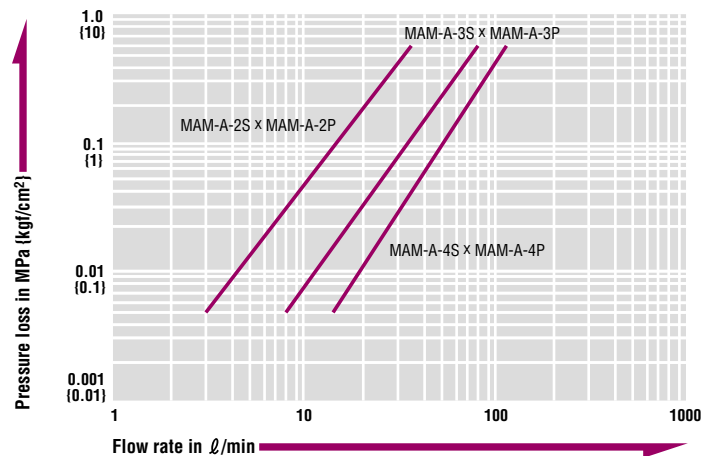
(mℓ)

Model	2SP	3SP	4SP
Volume of spillage	0.8	2.1	3.4

## Flow Rate - Pressure Loss Characteristics

Per port of Cupla

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





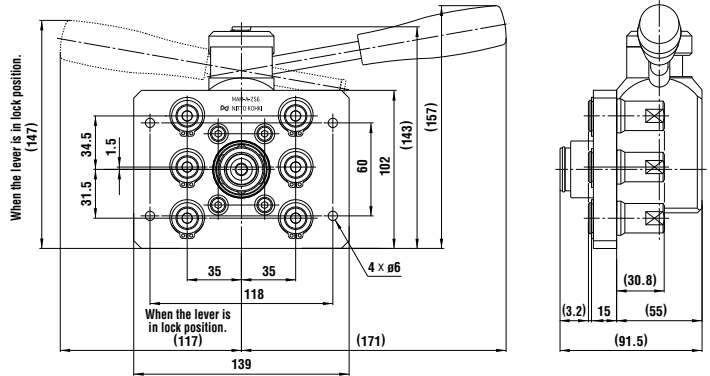
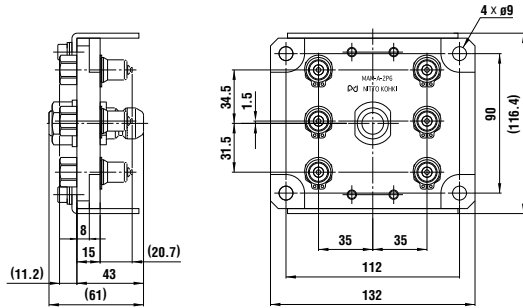
Models and Dimensions

**Model MAM-A-2P6 × MAM-A-2S6 (6 ports type)**

• Application: R1/4 Mass: 1100g (Plug), 2150g (Socket)

Plug: Model **MAM-A-2P6**

Socket: Model **MAM-A-2S6**



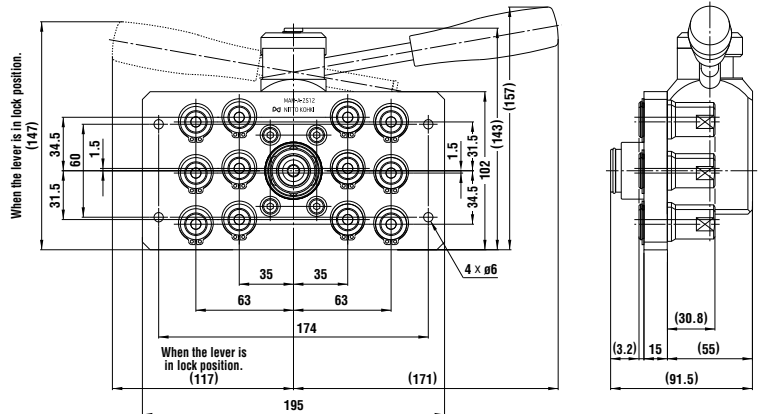
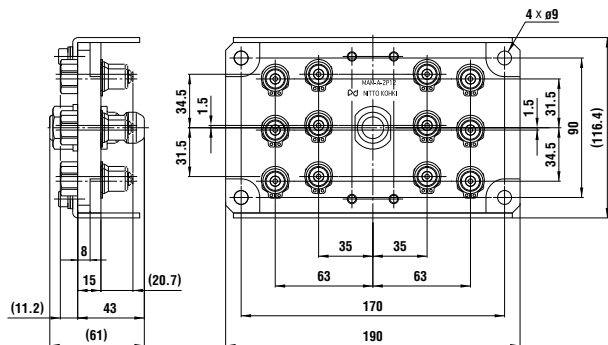
Dimensions (mm)

**Model MAM-A-2P12 × MAM-A-2S12 (12 ports type)**

• Application: R1/4 Mass: 1650g (Plug), 2800g (Socket)

Plug: Model **MAM-A-2P12**

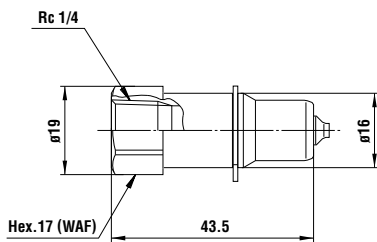
Socket: Model **MAM-A-2S12**



Dimensions (mm)

**Plug Model MAM-A-2P (Individual Cupla)**

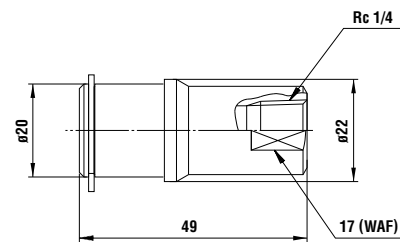
• Application: R1/4 Mass: 40g



Dimensions (mm)

**Socket Model MAM-A-2S (Individual Cupla)**

• Application: R1/4 Mass: 82g



Dimensions (mm)

Made-to-order Multi Cuplas are available on request, such as a combination of different sizes on the flange plate.

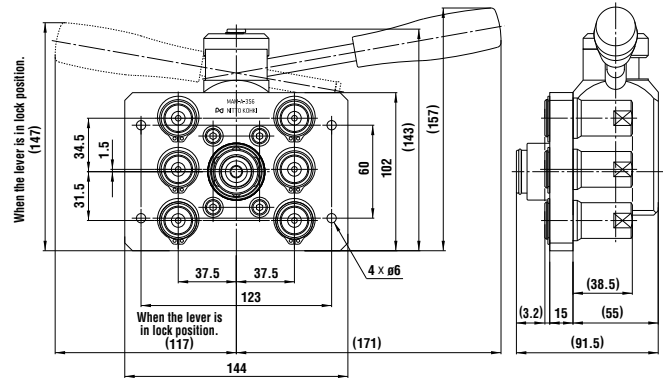
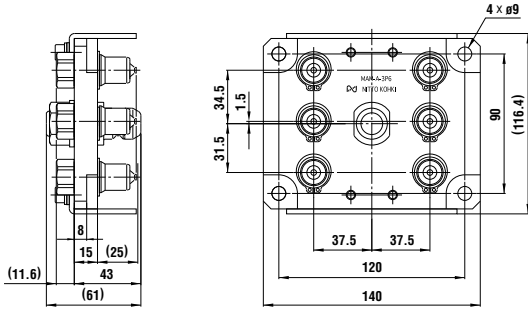
Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.

**Model MAM-A-3P6 × MAM-A-3S6 (6 ports type)**

• Application: R3/8 Mass: 1250g (Plug), 2400g (Socket)

Plug: Model **MAM-A-3P6**

Socket: Model **MAM-A-3S6**



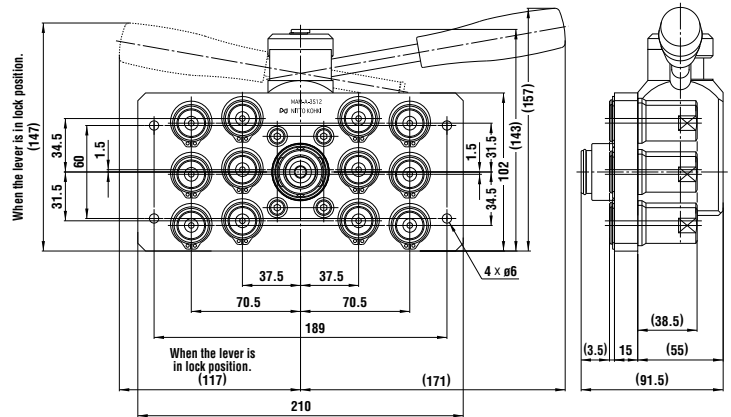
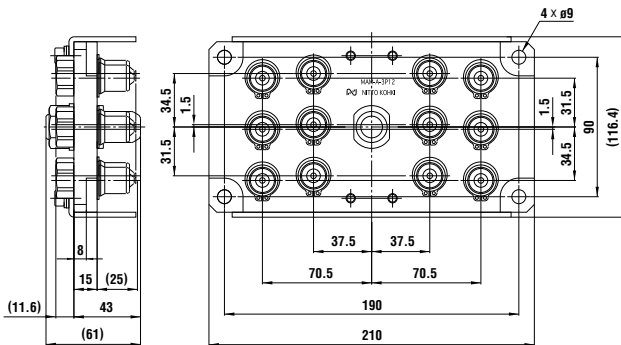
Dimensions (mm)

**Model MAM-A-3P12 × MAM-A-3S12 (12 ports type)**

• Application: R3/8 Mass: 1950g (Plug), 3300g (Socket)

Plug: Model **MAM-A-3P12**

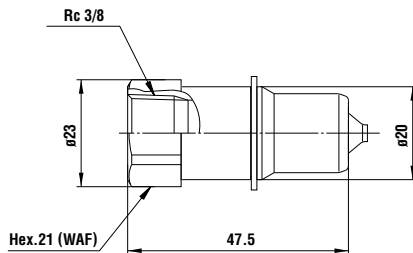
Socket: Model **MAM-A-3S12**



Dimensions (mm)

**Plug Model MAM-A-3P (Individual Cupla)**

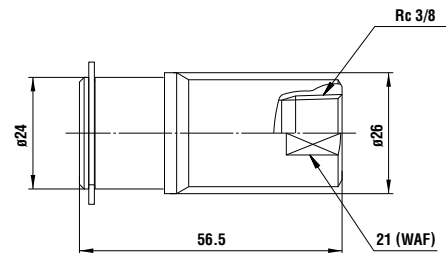
• Application: R3/8 Mass: 62g



Dimensions (mm)

**Socket Model MAM-A-3S (Individual Cupla)**

• Application: R3/8 Mass: 122g



Dimensions (mm)

Made-to-order Multi Cuplas are available on request, such as a combination of different sizes on the flange plate.

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

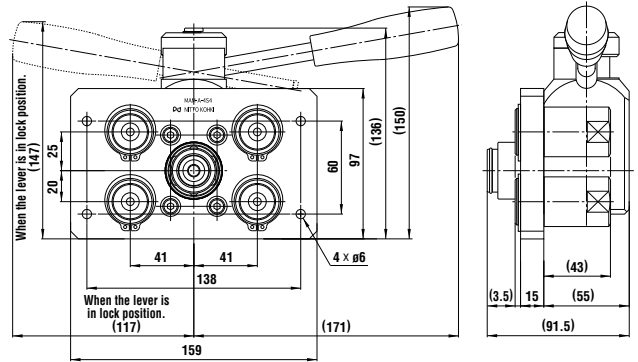
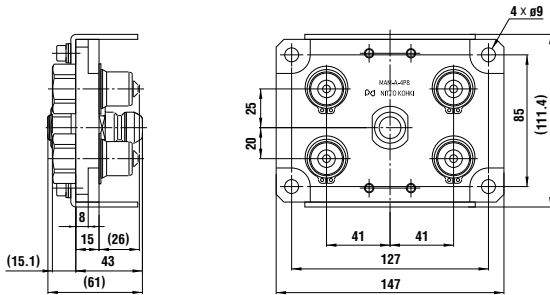
Models and Dimensions

Model MAM-A-4P4 × MAM-A-4S4 (4 ports type)

• Application: R1/2 Mass: 1400g (Plug), 2700g (Socket)

Plug: Model MAM-A-4P4

Socket: Model MAM-A-4S4



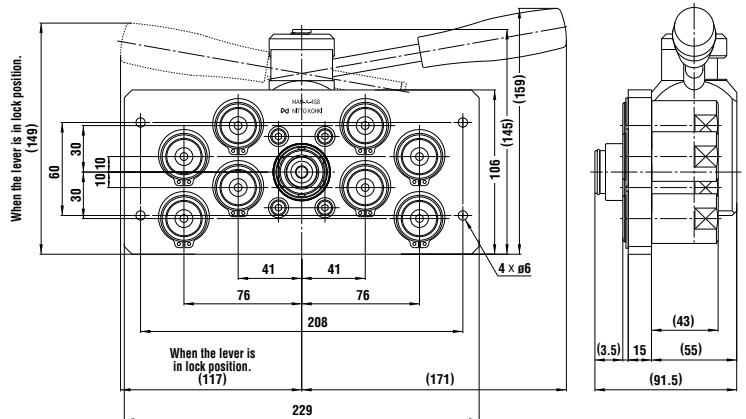
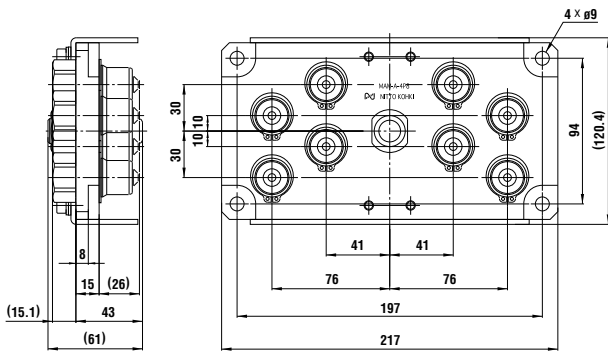
Dimensions (mm)

Model MAM-A-4P8 × MAM-A-4S8 (8 ports type)

• Application: R1/2 Mass: 2300g (Plug), 4000g (Socket)

Plug: Model MAM-A-4P8

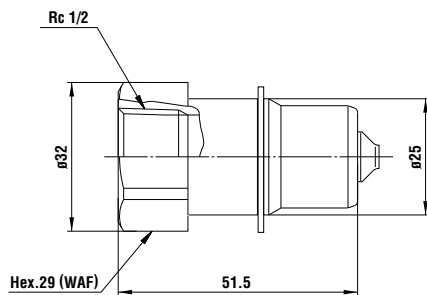
Socket: Model MAM-A-4S8



Dimensions (mm)

Plug Model MAM-A-4P (Individual Cupla)

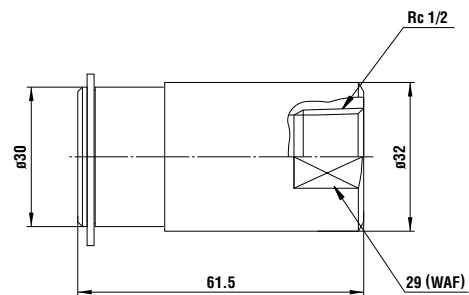
• Application: R1/2 Mass: 127g



Dimensions (mm)

Socket Model MAM-A-4S (Individual Cupla)

• Application: R1/2 Mass: 256g



Dimensions (mm)

Made-to-order Multi Cuplas are available on request, such as a combination of different sizes on the flange plate.

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)

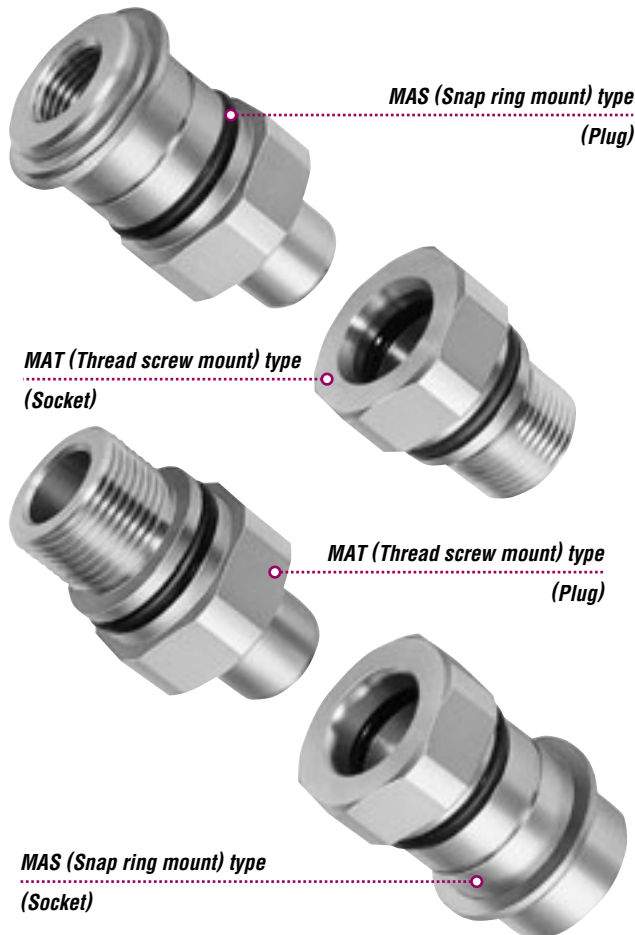
# Multi Cupla MAS Type / MAT Type

7.0MPa {71kgf/cm<sup>2</sup>} general purpose type

<b>Working pressure</b> 7.0 7.0 MPa (71 kgf/cm <sup>2</sup> )	<b>Valve structure</b> Two-way shut-off	<b>Applicable fluids</b> Air Water Hydraulic oil
--	--	---

## Connects multiple lines simultaneously with a single operation for different fluids and sizes.

- Ideal for automated hydraulic or pneumatic cylinder operated systems that need to connect and disconnect several lines simultaneously.
- Automatic shut-off valves in both sockets and plugs ensure no outflow of fluid on disconnection.
- Body materials other than stainless steel are available, which can be ordered with or without valves (made-to-order products).
- Snap ring and screw thread-in types to mount on the base plate are standardized.
- MAS type can accept axial eccentricity between socket and plug.
- The allowance of eccentricity is within the radius range of 0.3mm.
- \* Cupla connection with fluid under dynamic pressure cannot be made.



Specifications			
Body material	Stainless steel (Autocatalytic nickel-phosphorus coating)		
Size	1/4" • 3/8" • 1/2" • 3/4" • 1", M20 • M24 • M30 • M39 • M45		
Working pressure MPa (kgf/cm <sup>2</sup> )	7.0 (71)		
Pressure resistance MPa (kgf/cm <sup>2</sup> )	10.0 (102)		
Sealing material	Sealing material	Mark	Working temperature range
Working temperature range	Fluoro rubber	FKM (X-100)	-20°C~+180°C

Max. Tightening Torque		N·m (kgf·cm)				
Size		1/4"	3/8"	1/2"	3/4"	1"
Torque (MAS type)		14 {143}	22 {224}	60 {612}	90 {918}	120 {1224}
Size		M20	M24	M30	M39	M45
Torque (MAT type)		50 {510}	50 {510}	50 {510}	70 {714}	80 {816}

- Interchangeability**
- MAS & MAT or MAS & MAS types of the same size are to be connected.
  - Connection between the same MAT types is virtually not possible because there is no allowance for eccentricity.

Min. Cross-Sectional Area		(mm <sup>2</sup> )				
Model		2SP	3SP	4SP	6SP	8SP
Min. cross-sectional area		23	41	76	145	224

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	

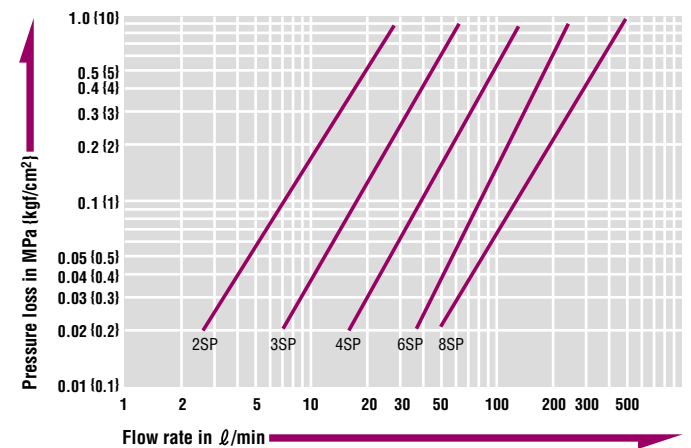
Admixture of Air on Connection		(ml)				
Model		2SP	3SP	4SP	6SP	8SP
Volume of air		1.1	2.4	3.2	10.5	17.0

Load Required to Maintain Connection When Line Is Pressurized						
Model		2SP	3SP	4SP	6SP	8SP
Maximum acceptable load N (kgf)		3200 {327}	5200 {531}	9000 {919}	13900 {1419}	20200 {2062}
Minimum load required to maintain connection N (kgf) *		Px185+45 {p×1.85+4.5}	Px310+70 {p×3.1+7}	Px545+75 {p×5.45+7.5}	Px850+95 {p×8.5+9.5}	Px1225+120 {p×12.25+12}

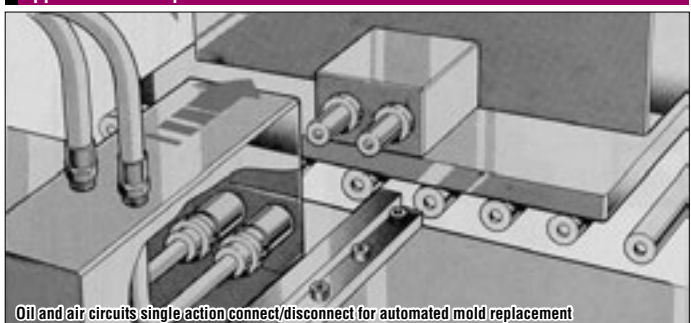
\* Assign the actual value of pressure [P(MPa), p(kgf/cm<sup>2</sup>)] to the above formula to calculate the load. Maintain the connection with the minimum load or more, but not more than the maximum acceptable load.

### 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>

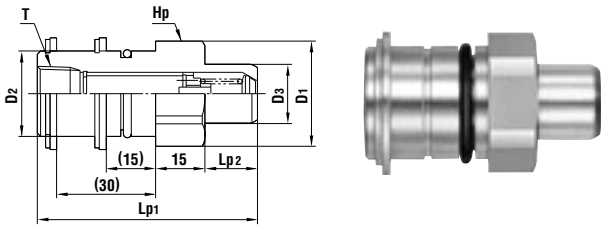


### Application Example



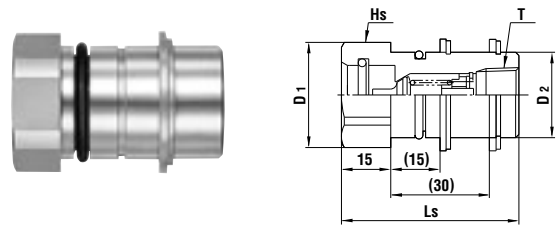
Models and Dimensions

**Plug MAS type (Snap ring mount type)**



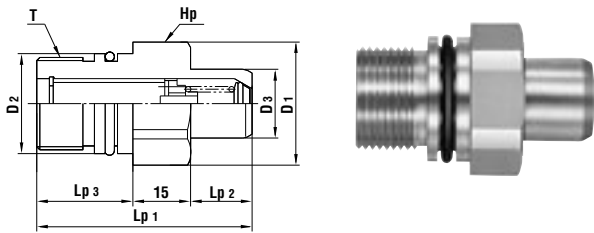
Model	Application	Mass (g)	Dimensions (mm)						
			Lp1	Lp2	øD1	øD2	øD3	Hp(WAF)	T
MAS-2P	R 1/4	150	65	14	28	21.9	14	Hex.26	Rc 1/4
MAS-3P	R 3/8	203	67	16	35	25.9	18	Hex.32	Rc 3/8
MAS-4P	R 1/2	412	73	20	44	35.9	24	Hex.41	Rc 1/2
MAS-6P	R 3/4	579	76.5	23.5	50	41.9	30	Hex.46	Rc 3/4
MAS-8P	R 1	720	78	24	58	47.9	36	Hex.54	Rc 1

**Socket MAS type (Snap ring mount type)**



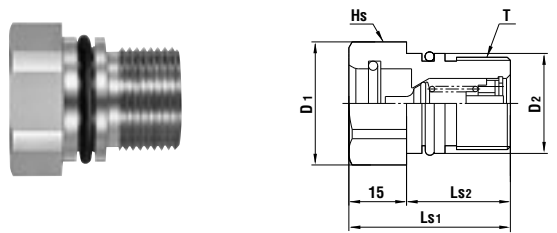
Model	Application	Mass (g)	Dimensions (mm)				
			Ls	øD1	øD2	Hp(WAF)	T
MAS-2S	R 1/4	126	51.5	28	21.9	Hex.26	Rc 1/4
MAS-3S	R 3/8	171	55	35	25.9	Hex.32	Rc 3/8
MAS-4S	R 1/2	406	65	44	35.9	Hex.41	Rc 1/2
MAS-6S	R 3/4	604	76	50	41.9	Hex.46	Rc 3/4
MAS-8S	R 1	825	87	58	47.9	Hex.54	Rc 1

**Plug MAT type (Thread screw mount type)**



Model	Application	Mass (g)	Dimensions (mm)							
			Lp1	Lp2	Lp3	øD1	øD2	øD3	Hp(WAF)	T
MAT-2P	See the diagram below.	121	53	14	(24)	28	21.9	14	Hex.26	M20x1.5
MAT-3P		164	56	16	(25)	32	25.9	18	Hex.29	M24x1.5
MAT-4P		332	67	20	(32)	44	35.9	24	Hex.41	M30x2
MAT-6P		453	73	23.5	(34.5)	50	41.9	30	Hex.46	M39x2
MAT-8P		571	76	24	(37)	54	47.9	36	Hex.50	M45x2

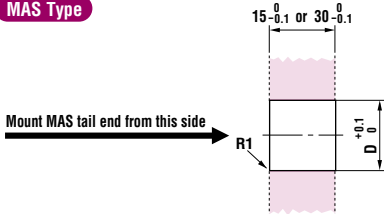
**Socket MAT type (Thread screw mount type)**



Model	Application	Mass (g)	Dimensions (mm)					
			Ls1	Ls2	øD1	øD2	Hp(WAF)	T
MAT-2S	See the diagram below.	95	39	(24)	28	21.9	Hex.26	M20x1.5
MAT-3S		124	42	(27)	32	25.9	Hex.29	M24x1.5
MAT-4S		246	48	(33)	44	35.9	Hex.41	M30x2
MAT-6S		382	58	(43)	50	41.9	Hex.46	M39x2
MAT-8S		506	66	(51)	54	47.9	Hex.50	M45x2

Tail End Configuration

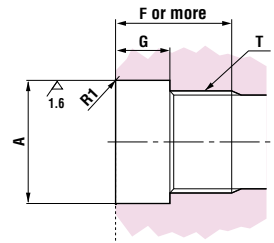
MAS Type



Mount MAS tail end from this side

Size	Diameter (mm)	
	øD	
1/4"	23	
3/8"	27	
1/2"	37	
3/4"	43	
1"	49	

MAT Type



Size	Dimensions (mm)				
	øA	G	F		T
1/4"	+0.06	13	25	25	M20 x 1.5
3/8"	0	13	26	28	M24 x 1.5
1/2"	+0.08	16	34	35	M30 x 2
3/4"		17	36.5	45	M39 x 2
1"	0	17	39	50	M45 x 2

14.0MPa {142kgf/cm<sup>2</sup>} Airless Type

Multi Cupla  
MALS Type / MALT Type

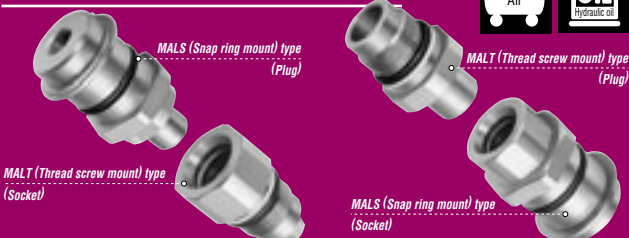
Working pressure

14.0MPa  
{142kgf/cm<sup>2</sup>}

Valve structure



Applicable fluids



Minimal air admixture during Cupla connection

- Special valve structure allows minimal air admixture in fluid lines during Cupla connection.
- Liquid bleeding on Cuplas disconnection is very little, which makes it best for frequent connection/disconnection applications.
- Snap ring and thread screw mount types to mount on the base plate are standard.
- MALS type can accept axial eccentricity of socket and plug, or allow a plate hole position tolerance of ±0.3mm because of the O-ring around the body.

Specifications

Body material	Steel (Autocatalytic nickel-phosphorus coating)		
Size	1/4" • 3/8" • 1/2" • 3/4"		
Working pressure MPa (kgf/cm <sup>2</sup> )	14.0 (142)		
Pressure resistance MPa (kgf/cm <sup>2</sup> )	20.6 (210)		
Sealing material	Fluoro rubber	Mark	FKM (X-100)
Working temperature range	-20°C~+180°C		

Please check with us for details on these products.



For Multi-Port Connection (Automatic)

# Multi Cupla

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

Airless type for medium pressure use

Working pressure



5.0 MPa  
(51 kgf/cm<sup>2</sup>)

Valve structure



Two-way shut-off  
(Non-Spill)

Applicable fluids



Water

Hydraulic oil

Air

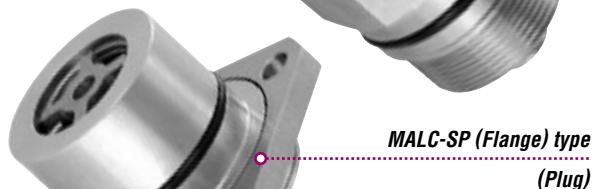
**A single operation makes simultaneous connections for multiple lines that have a variety of different fluids and sizes. A special design minimizes air admixture in fluid lines upon connection.**

- Compared with conventional Multi Cuplas, 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 2mm axial eccentricity allowance, while the conventional Multi Cupla is only 0.6mm.
- Special valve design enables connection of socket and plug under dynamic pressure of up to 2MPa.
- When connected, the distance between the socket plate and the plug plate is designed to be 30mm for all sizes. This means that any size of Cupla can be mounted and used on the same plate.
- Airless structure valves prevent outflow of fluid and admixture of air into the fluid line.



MALC-SP (Thread screw mount) type  
(Plug)

MALC-SP (Thread screw mount) type  
(Socket)



MALC-SP (Flange) type  
(Plug)

MALC-SP (Flange) type  
(Socket)



Specifications			
Body material	Socket body: Stainless steel (Autocatalytic nickel-phosphorus coating)		
Working pressure MPa (kgf/cm <sup>2</sup> )	5.0 (51) (Either socket or plug only: 2.0 (21))		
Pressure resistance MPa (kgf/cm <sup>2</sup> )	7.5 (76.5) (Either socket or plug only: 3.0 (31))		
Sealing material	Sealing material	Mark	Working temperature range
Working temperature range	Fluoro rubber	FKM (X-100)	-20°C~+180°C

Max. Tightening Torque				N·m (kgf·cm)
Model	2SP	3SP	4SP	6SP
Torque (Thread screw mount)	30 (306)	35 (357)	45 (460)	60 (612)
Torque (Flange)	7 (71.5)			

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

Min. Cross-Sectional Area				(mm <sup>2</sup> )
Model	2SP	3SP	4SP	6SP
Min. cross-sectional area	49.5	87	153	227

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

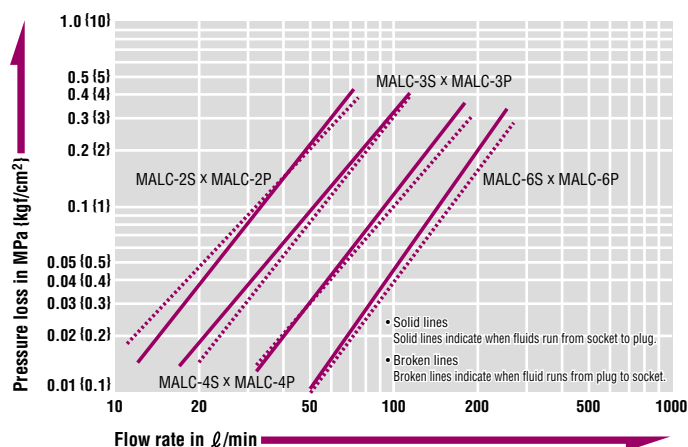
Admixture of Air on Connection				(mℓ)
Model	2SP	3SP	4SP	6SP
Volume of air	0.13	0.13	0.17	0.17

Load Required to Maintain Connection When Line Is Pressurized				
Model	2SP	3SP	4SP	6SP
Maximum acceptable load N (kgf)	4500 (459)	5600 (571)	10000 (1019)	14000 (1427)
Minimum load required to maintain connection N (kgf)*	Px345+180 (p×3.45+18)	Px460+190 (p×4.6+19)	Px855+260 (p×8.55+26)	Px1160+260 (p×11.6+26)

\* 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.

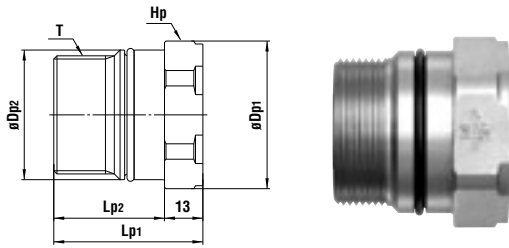
### Flow Rate - Pressure Loss Characteristics

[Test conditions] • Fluid : Hydraulic oil • Temperature : 30°C ± 5°C  
• Fluid viscosity : 32 × 10<sup>-6</sup>m<sup>2</sup>/s • Density : 0.8659 × 10<sup>3</sup>kg/m<sup>3</sup>



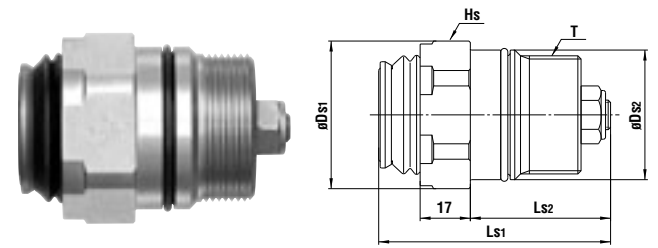
Models and Dimensions

**Plug MALC-SP type (Thread screw mount)**



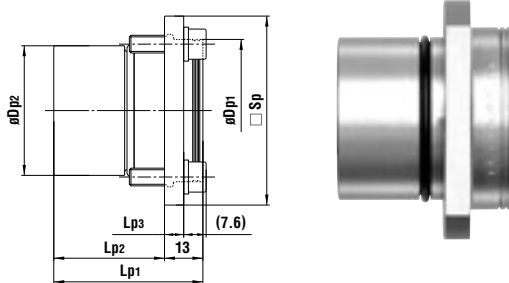
Model	Application	Mass (g)	Dimensions (mm)					
			$L_{p1}$	$L_{p2}$	$\phi D_{p1}$	$\phi D_{p2}$	$H_p$ (WAF)	T
MALC-2P	See the diagram below.	75	33	(20)	28	22.9	Hex.26	M20 x 1.5
MALC-3P		95	33	(20)	32	26.5	Hex.29	M24 x 1.5
MALC-4P		248	41	(28)	45	38.4	Hex.41	M35 x 1.5
MALC-6P		369	50.5	(37.5)	50	43.9	Hex.46	M40 x 2

**Socket MALC-SP type (Thread screw mount)**



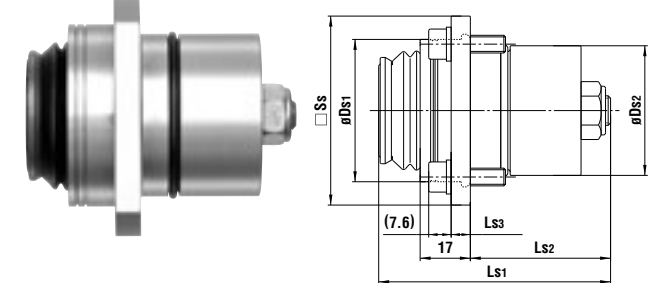
Model	Application	Mass (g)	Dimensions (mm)					
			$L_{s1}$	$L_{s2}$	$\phi D_{s1}$	$\phi D_{s2}$	$H_s$ (WAF)	T
MALC-2S	See the diagram below.	95	(49)	(26)	28	22.9	Hex.26	M20 x 1.5
MALC-3S		120	(51)	(26)	32	26.5	Hex.29	M24 x 1.5
MALC-4S		306	(64)	(36.5)	45	38.4	Hex.41	M35 x 1.5
MALC-6S		471	(78.5)	(47.5)	50	43.9	Hex.46	M40 x 2

**Plug MALC-SP type (With flange)**



Model	Application	Mass (g)	Dimensions (mm)					
			$L_{p1}$	$L_{p2}$	$L_{p3}$	$\phi D_{p1}$	$\phi D_{p2}$	$\phi Sp$
MALC-2P-FL	See the diagram below.	146	30	(17)	6	27.2	22.9	40
MALC-3P-FL		180	33	(20)	6	30.7	26.5	45
MALC-4P-FL		390	41	(28)	6.5	43.2	38.4	58
MALC-6P-FL		553	50.5	(37.5)	6.5	48.2	43.9	64

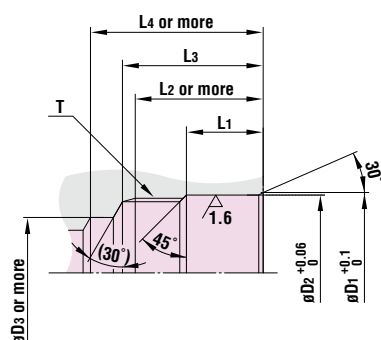
**Socket MALC-SP type (With flange)**



Model	Application	Mass (g)	Dimensions (mm)					
			$L_{s1}$	$L_{s2}$	$L_{s3}$	$\phi D_{s1}$	$\phi D_{s2}$	$\phi Ss$
MALC-2S-FL	See the diagram below.	173	(49)	(26)	6	27.2	22.9	40
MALC-3S-FL		208	(51)	(26)	6	30.7	26.5	45
MALC-4S-FL		449	(64)	(36.5)	6.5	43.2	38.4	58
MALC-6S-FL		663	(78.5)	(47.5)	6.5	48.2	43.9	64

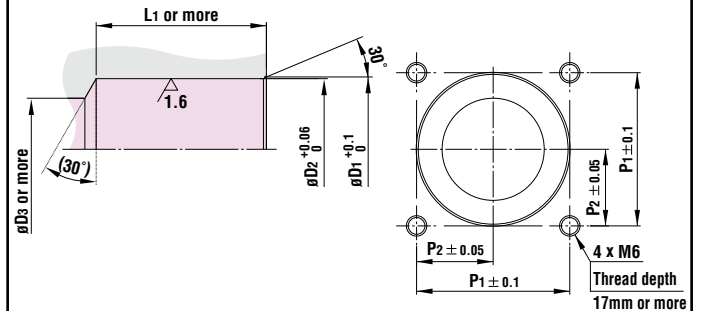
Dimensions of End Configurations

**MALC-SP type (Thread screw mount)**



Model	Dimensions (mm)							
	$\phi D_1$	$\phi D_2$	$\phi D_3$	$L_1$	$L_2$	$L_3$	$L_4$	T
MALC-2S	24	23	16	11.5	22	25	28	M20 x 1.5
MALC-2P								
MALC-3S	27.6	26.6	18	11	22	25	29	M24 x 1.5
MALC-3P								
MALC-4S	39.5	38.5	26	15.5	30	33	40.5	M35 x 1.5
MALC-4P								
MALC-6S	45	44	30	20	40	44	51.5	M40 x 2
MALC-6P								

**MALC-SP type (With flange)**



Model	Dimensions (mm)					
	$\phi D_1$	$\phi D_2$	$\phi D_3$	$L_1$	$P_1$	$P_2$
MALC-2S-FL	24	23	16	28	28	14
MALC-2P-FL						
MALC-3S-FL	27.6	26.6	18	28	31	15.5
MALC-3P-FL						
MALC-4S-FL	39.5	38.5	26	39	40	20
MALC-4P-FL						
MALC-6S-FL	45	44	30	50	45	22.5
MALC-6P-FL						

For Multi-Port Connection (Automatic)

# Multi Cupla

## MALC-HSP Type For high pressure use

Airless type for high pressure use

Working pressure



21.0 MPa  
(214 kgf/cm<sup>2</sup>)

Valve structure



Two-way shut-off  
(Non-Spill)

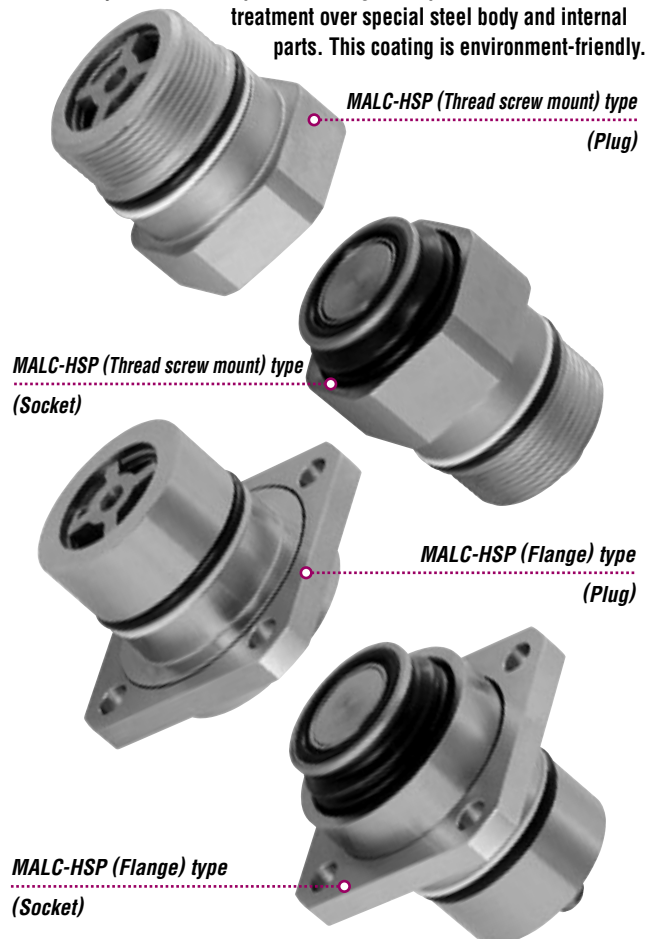
Applicable fluids



Hydraulic oil

**A single operation makes simultaneous connections for multiple lines that have a variety of different fluids and sizes. A special design minimizes air admixture in fluid lines upon connection.**

- Compared with conventional Multi Cuplas, approximately double flow rates are realized. This could reduce the size of required plates. (Rate of flow increase depends on Cupla size.)
- The MALC type realizes a 2mm axial eccentricity allowance, while the conventional Multi Cupla is only 0.6mm.
- Special valve design enables connection of socket and plug under dynamic pressure of up to 8MPa.
- When connected, the distance between the socket plate and plug plate is designed to be 30mm for all sizes. This means any size of Cupla can be mounted and used on the same plate.
- Airless structure valves prevent outflow of fluid and admixture of air into the fluid line.
- Autocatalytic Nickel-Phosphorus coating is adopted for surface treatment over special steel body and internal parts. This coating is environment-friendly.



### Specifications

Body material	Special steel (Autocatalytic nickel-phosphorus coating)		
Working pressure MPa (kgf/cm <sup>2</sup> )	21.0 (214) (Either socket or plug only: 8.0 (81))		
Pressure resistance MPa (kgf/cm <sup>2</sup> )	31.5 (321) (Either socket or plug only: 12.0 (122))		
Sealing material	Sealing material	Mark	Working temperature range
Working temperature range	Fluoro rubber	FKM (X-100)	-20°C~+180°C

### Max. Tightening Torque N·m (kgf·cm)

Model	2HSP	3HSP	4HSP	6HSP
Torque (Thread screw mount)	50 (510)	53 (540)	65 (664)	80 (817)
Torque (Flange)	9 (92)			

### Interchangeability

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

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

Model	2HSP	3HSP	4HSP	6HSP
Min. cross-sectional area	49.5	87	153	227

### Suitability for Vacuum

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

### Admixture of Air on Connection (mℓ)

Model	2HSP	3HSP	4HSP	6HSP
Volume of air	0.13	0.13	0.17	0.17

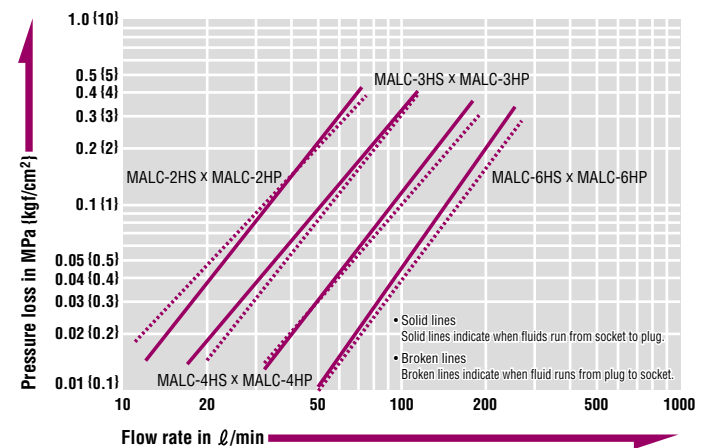
### Load Required to Maintain Connection When Line Is Pressurized

Model	2HSP	3HSP	4HSP	6HSP
Maximum acceptable load N (kgf)	16500 (1683)	22000 (2244)	40500 (4130)	55000 (5609)
Minimum load required to maintain connection N (kgf) *	Px345+180 (p×3.45+18)	Px460+190 (p×4.6+19)	Px855+260 (p×8.55+26)	Px1160+260 (p×11.6+26)

\* 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.

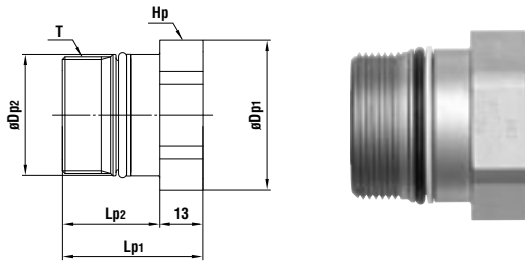
### Flow Rate - Pressure Loss Characteristics

[Test conditions] • Fluid : Hydraulic oil • Temperature : 30°C ± 5°C  
• Fluid viscosity : 32 × 10<sup>-6</sup>m<sup>2</sup>/s • Density : 0.8659 × 10<sup>3</sup>kg/m<sup>3</sup>



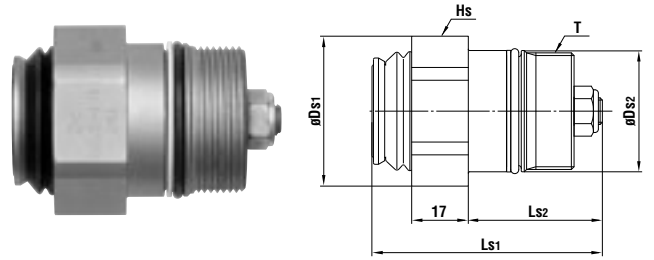
Models and Dimensions

**Plug** MALC-HSP type (Thread screw mount)



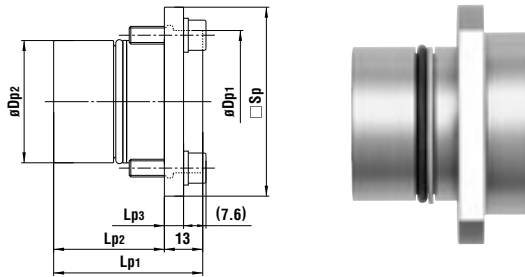
Model	Application	Mass (g)	Dimensions (mm)					
			$L_{p1}$	$L_{p2}$	$\phi D_{p1}$	$\phi D_{p2}$	$H_p$ (WAF)	T
MALC-2HP	See the diagram below.	73	33	(20)	28	21.9	Hex.26	M20 x 1.5
MALC-3HP		96	33	(20)	32	25.9	Hex.29	M24 x 1.5
MALC-4HP		250	41	(28)	45	36.4	Hex.41	M35 x 1.5
MALC-6HP		357	50.5	(37.5)	50	41.4	Hex.46	M40 x 2

**Socket** MALC-HSP type (Thread screw mount)



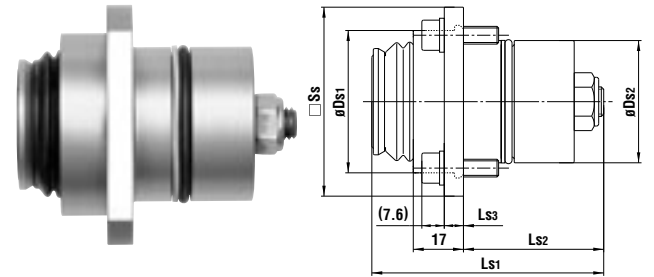
Model	Application	Mass (g)	Dimensions (mm)					
			$L_{s1}$	$L_{s2}$	$\phi D_{s1}$	$\phi D_{s2}$	$H_s$ (WAF)	T
MALC-2HS	See the diagram below.	89	(49)	(26)	28	21.9	Hex.26	M20 x 1.5
MALC-3HS		117	(51)	(26)	32	25.9	Hex.29	M24 x 1.5
MALC-4HS		290	(64)	(36.5)	45	36.4	Hex.41	M35 x 1.5
MALC-6HS		447	(78.5)	(47.5)	50	41.4	Hex.46	M40 x 2

**Plug** MALC-HSP type (With flange)



Model	Application	Mass (g)	Dimensions (mm)					
			$L_{p1}$	$L_{p2}$	$L_{p3}$	$\phi D_{p1}$	$\phi D_{p2}$	$\square S_p$
MALC-2HP-FL	See the diagram below.	142	30	(17)	6	27.2	21.9	40
MALC-3HP-FL		179	33	(20)	6	30.7	25.9	45
MALC-4HP-FL		367	41	(28)	6.5	43.2	36.4	58
MALC-6HP-FL		514	50.5	(37.5)	6.5	48.2	41.4	64

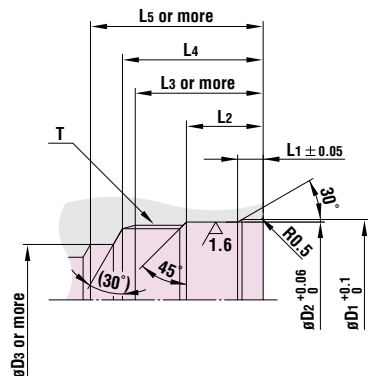
**Socket** MALC-HSP type (With flange)



Model	Application	Mass (g)	Dimensions (mm)					
			$L_{s1}$	$L_{s2}$	$L_{s3}$	$\phi D_{s1}$	$\phi D_{s2}$	$\square S_s$
MALC-2HS-FL	See the diagram below.	163	(49)	(26)	6	27.2	21.9	40
MALC-3HS-FL		200	(51)	(26)	6	30.7	25.9	45
MALC-4HS-FL		418	(64)	(36.5)	6.5	43.2	36.4	58
MALC-6HS-FL		611	(78.5)	(47.5)	6.5	48.2	41.4	64

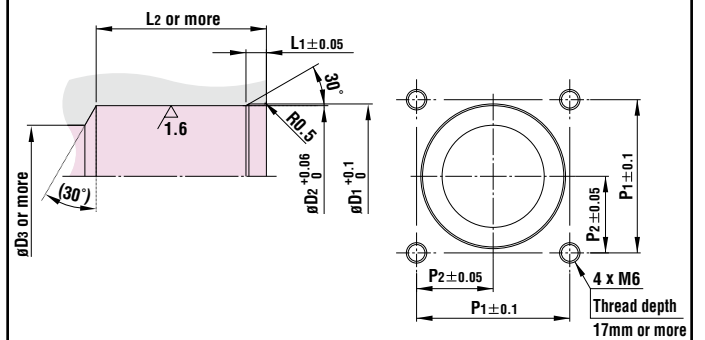
Dimensions of End Configurations

MALC-HSP type (Thread screw mount)



Model	Dimensions (mm)								
	$\phi D_1$	$\phi D_2$	$\phi D_3$	$L_1$	$L_2$	$L_3$	$L_4$	$L_5$	T
MALC-2HS MALC-2HP	23	22	16	2.8	11	22	25	28	M20 x 1.5
MALC-3HS MALC-3HP	27.1	26	18	2.8	11	22	25	29	M24 x 1.5
MALC-4HS MALC-4HP	37.7	36.5	26	6	18	30	33	40.5	M35 x 1.5
MALC-6HS MALC-6HP	42.5	41.5	30	6	23	40	44	51.5	M40 x 2

MALC-HSP type (With flange)






Model	Dimensions (mm)						
	$\phi D_1$	$\phi D_2$	$\phi D_3$	$L_1$	$L_2$	$P_1$	$P_2$
MALC-2HS-FL MALC-2HP-FL	23	22	16	2.8	28 19	28	14
MALC-3HS-FL MALC-3HP-FL	27.1	26	18	2.8	28 22	31	15.5
MALC-4HS-FL MALC-4HP-FL	37.7	36.5	26	6	39 30.5	40	20
MALC-6HS-FL MALC-6HP-FL	42.5	41.5	30	6	50 40	45	22.5

# For High Purity Chemicals

# Semicon Cupla

## SP Type

For semiconductor manufacturing production installation

<b>Working pressure</b>  0.2 MPa (2 kgf/cm <sup>2</sup> )	<b>Valve structure</b>  Two-way shut-off	<b>Applicable fluids</b>  High purity chemicals Water Gas Air
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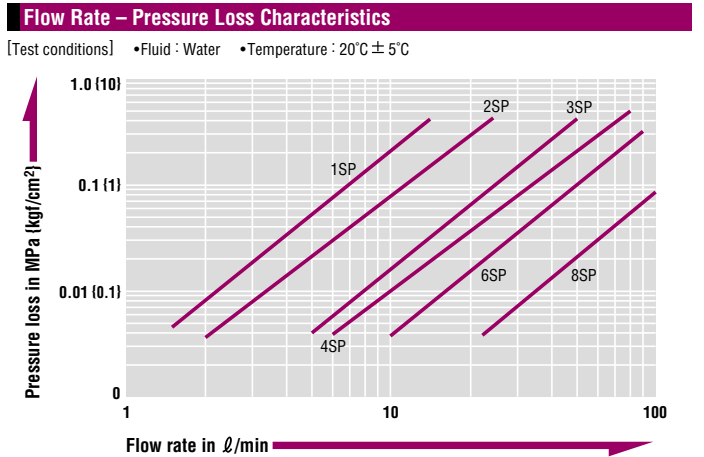
**General purpose type with stainless steel body and rubber seal.**  
**Electro-polished body for enhanced corrosion resistance.**

- Body and valve springs are stainless steel (SUS304, SUS316). 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.
- Abundant size variations allow choice to suit your application and flow rate.
- Each plug comes with a dust cap.



Specifications				
Body material	Electropolished stainless steel (SUS304, 316)			
Size	1/8" • 1/4" • 3/8" • 1/2" • 3/4" • 1"			
Working pressure MPa (kgf/cm <sup>2</sup> )	0.2 {2}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	0.3 {3}			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Fluoro rubber	FKM (X-100)	0°C~+50°C	Standard material
	Ethylene-propylene rubber	EPDM (EPT)	0°C~+50°C	Standard material
	Perfluoroelastomer	P	0°C~+50°C	Standard material
	Kalrez	KL	0°C~+50°C	Standard material

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



### Models and Dimensions

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

\* May have 2 spanner flat design instead of hex nut depending on packing material.  
\* The appearance of SUS304 and 316 bodies are different. (Above shown is that of SUS304.)

WAF : WAF stands for width across flat.

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

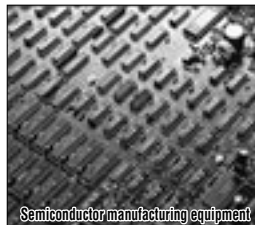
## SCS Type

For semiconductor manufacturing equipment

<b>Working pressure</b> 0.2 MPa (2 kgf/cm <sup>2</sup> )	<b>Valve structure</b> Two-way shut-off	<b>Applicable fluids</b> High purity chemicals Water Gas Air
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## Adopted stainless steel body and fluorine contained resin valves.

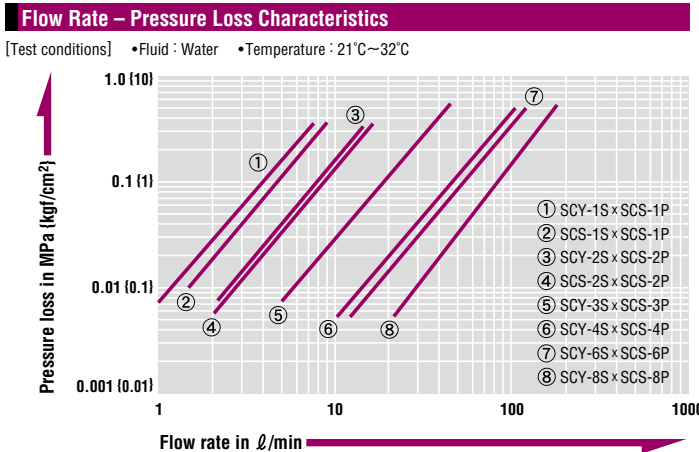
- The body and spring material of stainless steel (SUS304), and valve of fluorine contained resin ensure excellent performance with various chemicals.
- Body (SUS304) is electropolished for enhanced corrosion resistance.
- Plug comes with a dust cap.



Specifications				
Body material	Electropolished stainless steel (SUS304)			
Size	1/8" • 1/4" • 3/8" • 1/2" • 3/4" • 1"			
Working pressure MPa (kgf/cm <sup>2</sup> )	0.2 {2}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	0.3 {3}			
Seal material (Socket O-ring)	Seal material	Mark	Working temperature range	Remarks
	Perfluoroelastomer	P	0°C~+50°C	Standard material
	Ethylene-propylene rubber *	EPDM (EPT)	0°C~+50°C	Standard material
Working temperature range	Fluoro rubber *	FKM (X-100)	0°C~+50°C	Standard material
Valve	Fluorine contained resin (1/8"•1/4") Fluorine contained resin+SUS304 (3/8"•1/2"•3/4"•1")			

\*Available on request.

Min. 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



### 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	-1S	-2S	-3S	-4S	-6S	-8S
	-1P	●		●					
	-2P		●		●				
	-3P					●			
	-4P						●		
	-6P							●	
	-8P								●

### Models and Dimensions

WAF : WAF stands for width across flat.

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

Socket		Female thread					
Model	Container capacity	Mass (g)	Dimensions (mm)				
			Ls	øD	Hs(WAF)	T(Female thread)	
SCS-1S-NPT	For 10ℓ~20ℓ	84	48	24	14	1/8-27NPT	
SCS-2S-NPT	For 10ℓ~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

<b>Working pressure</b> 0.2 0.2 MPa (2 kgf/cm <sup>2</sup> )	<b>Valve structure</b> Two-way shut-off	<b>Applicable fluids</b> High purity chemicals Water Gas Air
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**Fluorine contained resin packing seal and perfluoroelastomer packing seal are used to reduce required connection load and to achieve tight sealing.**

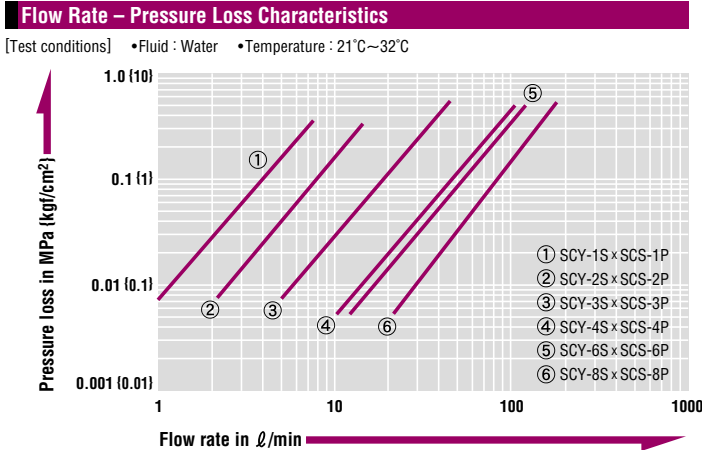
- The material of body and spring are of stainless steel (SUS304), while that of valve is of fluorine contained resin. The combination shows excellent performance with various types of chemicals.
- Body (SUS304) is electropolished for enhanced corrosion resistance.
- Flanged body makes it easy to operate even with gloves.



Specifications				
Body material	Electropolished stainless steel (SUS304)			
Size	1/8" • 1/4" • 3/8" • 1/2" • 3/4" • 1"			
Working pressure MPa (kgf/cm <sup>2</sup> )	0.2 {2}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	0.3 {3}			
Seal material (Socket packing)	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Perfluoroelastomer	P	0°C~+50°C	Standard material
Valve	Fluorine contained resin			

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

Min. 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



**Interchangeability**  
Can be connected with plugs of SCS Type of the same size.

**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	-6S	-8S		
SCS Type	-1P	●		●					
	-2P		●		●				
	-3P				●				
	-4P					●			
	-6P						●		
	-8P							●	

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

**Socket Female thread**

Model	Container capacity	Mass (g)	Dimensions (mm)			
			Ls	φD	Hs(WAF)	T(Female thread)
SCY-1S	For 10ℓ~20ℓ	116	(48)	29	18	Rc 1/8
SCY-1S-NPT	For 10ℓ~20ℓ					1/8-27NPT
SCY-2S	For 10ℓ~20ℓ	180	(58)	33	22	Rc 1/4
SCY-2S-NPT	For 10ℓ~20ℓ					1/4-18NPT
SCY-3S	For 100ℓ~200ℓ	292	(65)	39	27	Rc 3/8
SCY-4S	For 100ℓ~200ℓ	519	(72)	50	35	Rc 1/2
SCY-6S	For 100ℓ~200ℓ	862	(88)	59	41	Rc 3/4
SCY-8S	For 100ℓ~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 production installation using fluororesin pipe lines

<b>Working pressure</b>	<b>Valve structure</b>	<b>Applicable fluids</b>			
 0.2 MPa (2 kgf/cm <sup>2</sup> )	 Two-way shut-off	 High purity chemicals	 Water	 Gas	 Air

## Adopted is polytetrafluoroethylene (PTFE) for the body.

- Polytetrafluoroethylene (PTFE) body gives excellent resistance to chemicals.
- Automatic shut-off valves in both socket and plug prevent fluid outflow from lines on disconnection.
- 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 an abundant variety of sizes to suit your application and fluid.

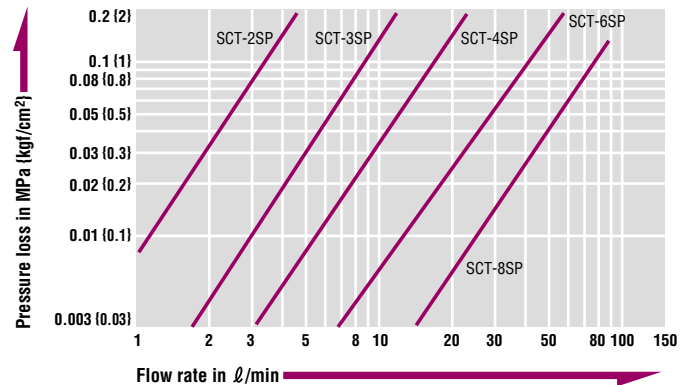


Specifications				
Body material	Polytetrafluoroethylene (PTFE)			
Size	1/4" • 3/8" • 1/2" • 3/4" • 1"			
Working pressure MPa (kgf/cm <sup>2</sup> )	0.2 (2)			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	0.3 (3)			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	FEP-coated fluoro-rubber	—	+5°C~+50°C	Standard material
Valve	Fluorine contained resin (+5°C~+50°C)			

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

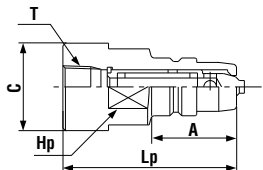

### Flow Rate – Pressure Loss Characteristics

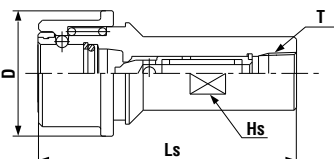

[Test conditions] • Fluid : Water • Temperature : 20°C ± 5°C



### Models and Dimensions

WAF : WAF stands for width across flat.

Plug		Female thread				
 						
Model	Mass (g)	Dimensions (mm)				
		Lp	A	øC	Hp(WAF)	T(Female thread)
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)			
		Ls	øD	Hp(WAF)	T(Female thread)
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 the end configurations other than female thread, such as 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

## SCF Type

For semiconductor manufacturing equipment

<b>Working pressure</b>	<b>Valve structure</b>	<b>Applicable fluids</b>			
0.2 MPa (2 kgf/cm <sup>2</sup> )	Two-way shut-off	High purity chemicals	Water	Gas	Air

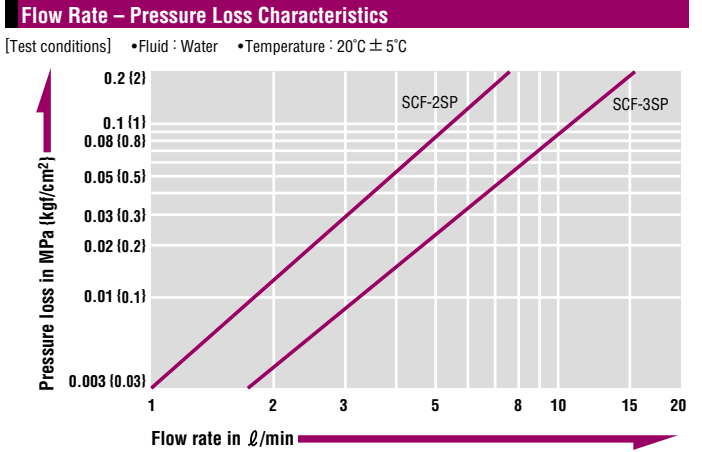
**All plastic model. Fluorine contained resin (PFA) body is injection molded.**

- All parts made of fluorine contained resin. O-rings in particular are FEP-coated fluoro-rubber with excellent chemical resistance and no rubber elution.
- Unique new techniques such as “injection molding”, “tube connect system” and “nut type plug mount design” are used to prevent the generation of particles, incessant headache for semiconductor parts manufacturers.
- 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.



Specifications				
Body material	Fluorine contained resin (PFA)			
Size	1/4" • 3/8"			
Working pressure MPa (kgf/cm <sup>2</sup> )	0.2 (2)			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	0.3 (3)			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	FEP-coated fluoro-rubber	-	+5°C~+50°C	Standard material
Valve	Fluorine contained resin			

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



■ Please see page 126 for details how to cut and mount a tube on to the socket.

### Models and Dimensions

WAF : WAF stands for width across flat.

**Plug Female thread**

Model	Container capacity	Mass (g)	Dimensions (mm)			
			Lp	D(WAF)	C	T(Female thread)
SCF-2P-M26	For 10ℓ~20ℓ	33	(53.7)	Hex.30 x ø32.5	(31.2)	M26 x 1.5
SCF-3P-M32	For 10ℓ~20ℓ	50	(57.7)	Hex.36 x ø39	(35.2)	M32 x 1.5

**Socket For tube connection**

Model	Container capacity	Mass (g)	Dimensions (mm)			
			Ls	D	E	Applicable tube
SCF-2SL-N08	For 10ℓ~20ℓ	76	77	(45)	33	ø6 x ø8
SCF-3SL-N10	For 10ℓ~20ℓ	116	85	(51)	39	ø8 x ø10

**Plug Straight type (Female thread)**

Model	Mass (g)	Dimensions (mm)						
		Lp	C	øD	Hp(WAF)	A(WAF)	øB	T(Female thread)
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)					
		Ls	øA	HS(WAF)	D	E	T(Female thread)
SCF-2S-3	83	(92)	27	24	(45)	33	Rc 3/8
SCF-3S-4	124	(102.5)	33	30	(51)	39	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.

For Paint

# Paint Cupla

Piping for painting equipment

Working pressure



1.0 MPa  
(10 kg/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.
- Small and lightweight design (80g per set) reduces the weight to be held by hand of operators.
- Built-in sleeve lock mechanism prevents unexpected disconnection of Cuplas, assuring safe operation.
- Wide variety of end configurations (standard thread: G3/8) are available in response to various paint spray guns.



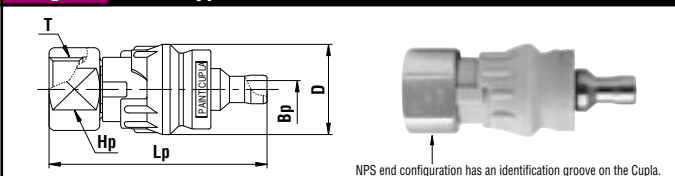
### Flow Direction

Fluid must run from socket to plug.



### Models and Dimensions

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



Model	Application	Mass (g)	Dimensions (mm)				
			Lp	øD	øBp	Hp (WAF)	T
PE-3P-G	G 3/8	31	(58)	24	4.5	19 x ø22	G 3/8
PE-3P-NPS	3/8 NPS	31	(58)	24	4.5	19 x ø22	3/8 NPS

### Specifications

Body material	Socket: Aluminum Plug: Stainless steel			
Size	3/8"			
Working pressure MPa (kg/cm <sup>2</sup> )	1.0 (10)			
Pressure resistance MPa (kg/cm <sup>2</sup> )	1.5 (15)			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Fluoro-resin	PFA	0°C~+50°C	Standard material

### Tightening Torque Range

N·m (kgf·cm)

Torque	15 (153)
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### Interchangeability

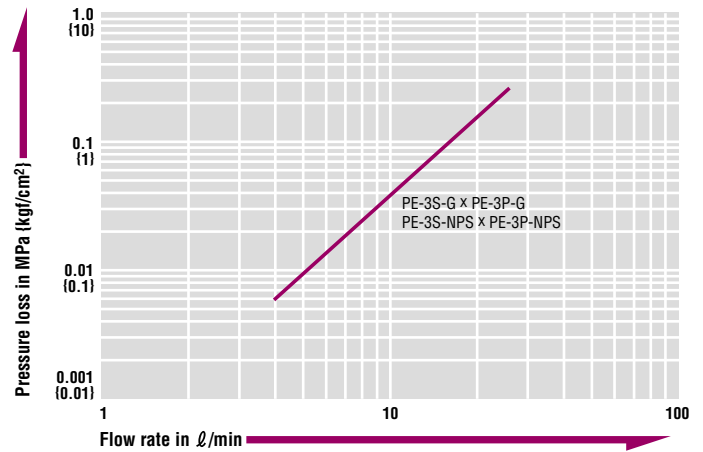
Only the same size of paint Cuplas can be connected each other.

### Suitability for Vacuum

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

### Flow Rate – Pressure Loss Characteristics

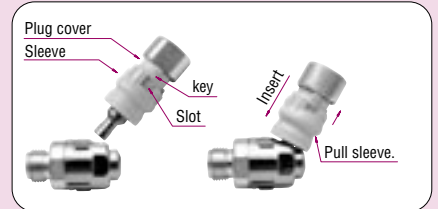
[Test conditions] • Fluid viscosity : 8 x 10<sup>-3</sup> m<sup>2</sup>/s (Equivalent to water) • Temperature : 30°C ± 5°C



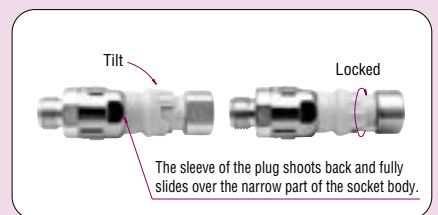
### Connection and Disconnection

#### Connection

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



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.

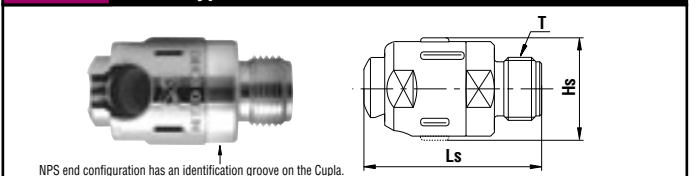


#### Disconnection

Disconnect in the reverse order of connection.

WAF : WAF stands for width across flat.

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



Model	Application	Mass (g)	Dimensions (mm)		
			Ls	Hs (WAF)	T
PE-3S-G	G 3/8	48	(47)	23 x ø27	G 3/8
PE-3S-NPS	3/8 NPS	48	(47)	23 x ø27	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 Inert Gas and Vacuum

# SP-V Cupla

For vacuum

Working pressure



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

Valve structure



Two-way shut-off

Applicable fluids



Inert gas,  
Vacuum

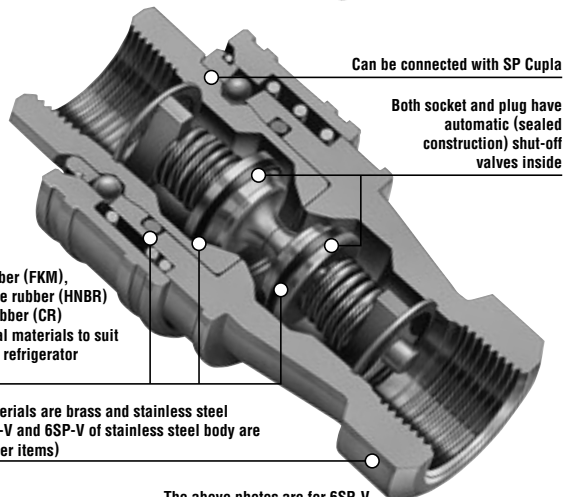
Gas

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.



The above photos are for 6SP-V

## Specifications

Body material	Brass (Standard material)	Stainless steel (Standard material)	Stainless steel (Made-to-order item)
Size	1/4" • 3/8"	1/2" • 3/4"	1/4" • 3/8" 1/2" • 3/4"
Working pressure MPa (kgf/cm <sup>2</sup> )	5.0 (51)	3.0 (31)	7.5 (76) 4.5 (46)
Pressure resistance MPa (kgf/cm <sup>2</sup> )	7.5 (76)	4.5 (46)	10.0 (102) 6.5 (66)
Seal material Working temperature range	Seal material	Mark	Working temperature range
	Chloroprene rubber	CR (C308)	-20°C~+80°C
	Fluoro rubber	FKM (X-100)	-20°C~+180°C
	Hydrogenated nitrile rubber	HNBR (H708)	-20°C~+120°C
			Remarks
			Standard material
			Standard material
			Standard material

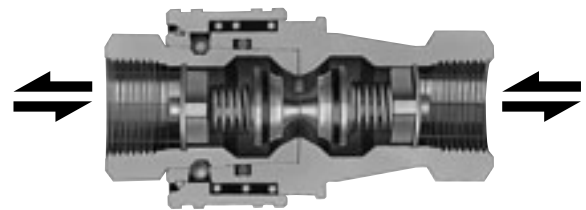
## Max. Tightening Torque

N·m (kgf·cm)

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



## Interchangeability

Socket and plug with different sizes cannot be connected to each other. Interchangeable with SP Cuplas but take heed of flow rate reduction.

## Min. Cross-Sectional Area

(mm<sup>2</sup>)

Model	2SP-V	3SP-V	4SP-V	6SP-V
Min. cross-sectional area	17	48	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

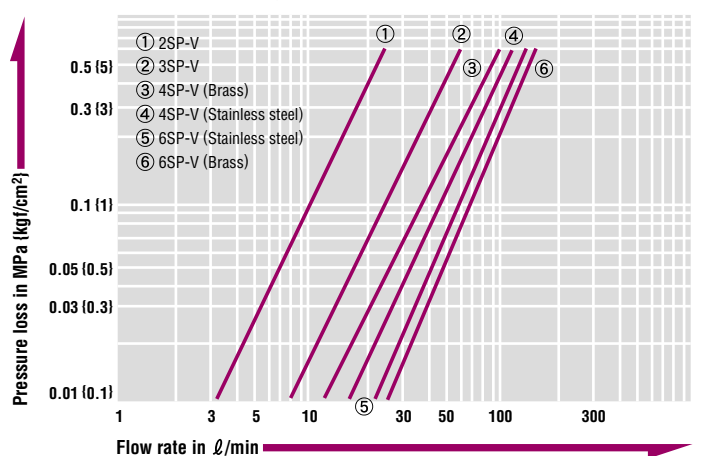
## Admixture of Air on Connection

(ml)

Model	2SP-V	3SP-V	4SP-V	6SP-V
Volume of air	1.02	2.40	3.20	10.50

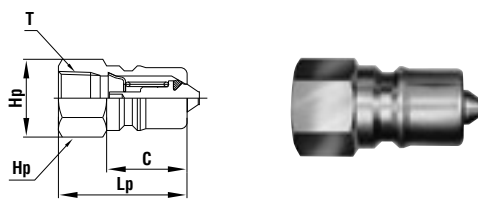
## Flow Rate – Pressure Loss Characteristics

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



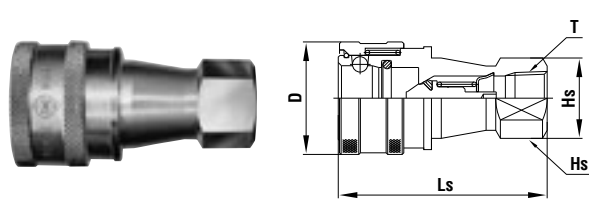
Models and Dimensions

**Plug Female thread**



Model	Application	Mass (g)		Dimensions (mm)			
		Brass	Stainless steel	Lp	Hp(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	Mass (g)		Dimensions (mm)			
		Brass	Stainless steel	Ls	øD	Hs(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

Seal Materials for HFC (Hydrochlorofluorocarbon)

Freon R11 and R12 gas coolants have been replaced with hydrochlorofluorocarbons in car air conditioners and refrigerators. With many years of research on seal materials resistant to fluorocarbon gases and freezer oils, the seal materials suitable for new hydrochlorofluorocarbons (such as HFC134a, HFC407C, HFC410A and HFC404A) have been developed.

	Packing material	
	Hydrogenated nitrile rubber	Chloroprene rubber
Mark	HNBR (H708)	CR (C308)
Features	Resistant to hydrochlorofluorocarbons (HFC134a, HFC407, HFC410A, HFC404A), and PAG type and ester type oils. Also resistant to heat up to 120°C.	Excellent resistance to conventional Freons (R12 and R22) and also hydrochlorofluorocarbon HFC134a.
Application	Refrigerator production lines Air conditioner production lines	Air conditioner production lines

Comparison of External Appearance

When both Freon gases and hydrochlorofluorocarbons 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.

	Socket	Plug
SP-V Cupla		
SP-V-GN Cupla		
SP-V-GNN Cupla		

X indicates incompatibility.

Application Example



For Inert Gas and Vacuum

# PCV Pipe Coupla

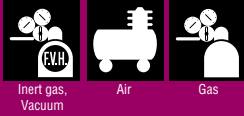
For connection to copper pipes

Working pressure

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

Valveless

Applicable fluids



**Clamps directly on straight copper pipes !**  
**Double seal construction withstands a vacuum of up to  $1.3 \times 10^{-1}$  Pa.**

- Clamps direct on to a straight copper pipe 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, evacuation and refrigerant gas 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.



Wide variations of end configurations; 1/4", 3/8" and blind plug

Standard seal materials fluoro-rubber (FKM), hydrogenated nitrile rubber (HNBR) and chloroprene rubber (CR) to suit air conditioner and refrigerator production lines

Double seal design for tight fit on both end and outside of pipe

Many models to cover various pipe sizes

One lever operation simultaneously clamps and seals pipe

For exclusive use on straight copper pipes

## Specifications

Model	PCV400	PCV470	PCV500	PCV600	PCV630	PCV800	PCV950	PCV1000	PCV1270	PCV1590
Copper pipe OD	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									
Working pressure MPa (kgf/cm <sup>2</sup> )	4.5 (46)									
Pressure resistance MPa (kgf/cm <sup>2</sup> )	5.0 (51)									
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks						
	Chloroprene rubber	CR (C308)	-20°C~+80°C	Standard material						
	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Standard material						
	Hydrogenated nitrile rubber	HNBR (H708)	-20°C~+120°C	Standard material						

## Max. Tightening Torque

N·m (kgf·cm)

Size	1/4"	3/8"
Torque	9 (92)	12 (122)

## Flow Direction

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



## Interchangeability

If the pipe size is the same, connection to the pipe is possible even if the end configurations are different.

## Min. 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

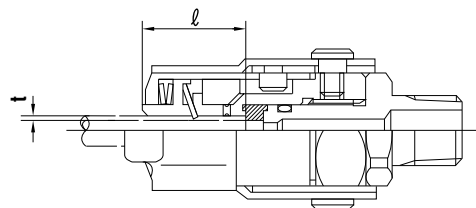
## Suitability for Vacuum

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

Only when connected to a pipe

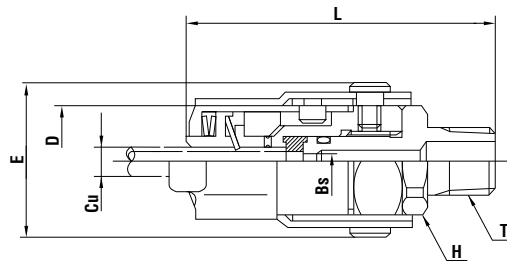
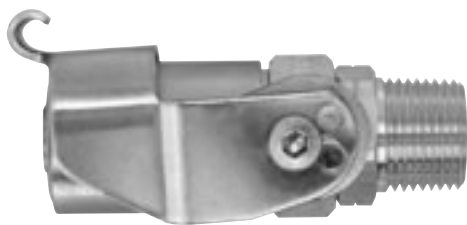
Operational

## Insert Length of Pipe into Coupling and Essential Thickness of Pipe Wall (mm)



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

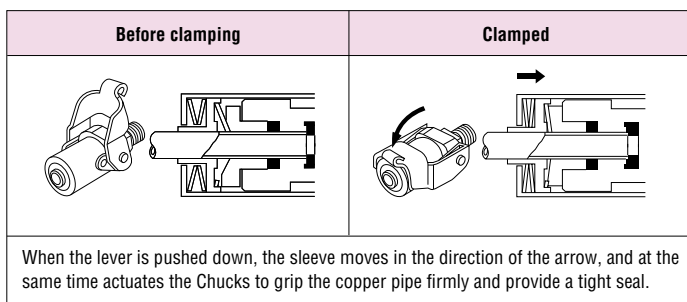
Model	Insert length of pipe into coupling (ℓ)	Essential thickness of pipe wall (t)
PCV400*	19	Minimum 0.8
PCV470		
PCV500*		
PCV600		
PCV630	20.5	Minimum 1.0
PCV800		
PCV950		
PCV1000*	30	Minimum 1.0
PCV1270		
PCV1590		



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

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

Clamping Mechanism



Application Example



Compressor pressure test

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

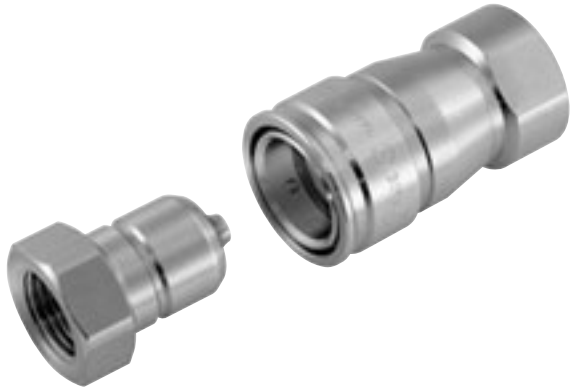
Piping for water and fluids for temperature control

Working pressure  
**1.0**  
1.0 MPa  
(10 kg/cm<sup>2</sup>)

Valve structure  
Two-way shut-off

Applicable fluids  
Water  
Cooling water

- Minimizes pressure drop and increases flow volume drastically. Compared with conventional SP Cupla, flow volume has been increased by up to 80%.
- 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.
- Installation and maintenance can be done within a short time.



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

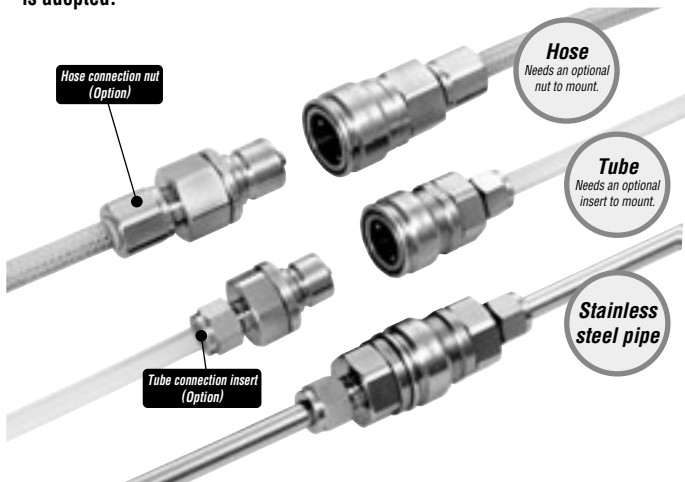
Cupla with ferrule flange for piping of water and fluids for temperature control

Working pressure  
**1.0**  
1.0 MPa  
(10 kg/cm<sup>2</sup>)

Valve structure  
Two-way shut-off

Applicable fluids  
Water  
Cooling water

- High Flow Cupla and ferrule flange mount are united to realize efficient piping.
- Easy connection with stainless steel pipe.  
Connection with hose can be done, too.
- With an optional hose connection kit, connection to plastic hose is possible.
- Connection with various tubes can be done if an appropriate insert to the tube is adopted.



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	Stainless steel • Brass			
Size	1/4" • 3/8" • 1/2"			
Working pressure MPa (kg/cm <sup>2</sup> )	1.0 (10)			
Pressure resistance MPa (kg/cm <sup>2</sup> )	1.5 (15)			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Ethylene-propylene rubber	EPDM (EPT)	-40°C~+150°C	Standard material
	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Made-to-order item

## Min. Cross-Sectional Area

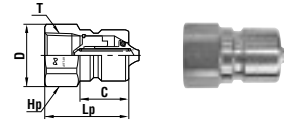
(mm<sup>2</sup>)

Model	HFL-2SP	HFL-3SP	HFL-4SP
Min. cross-sectional area	33	59	93

## Models and Dimensions

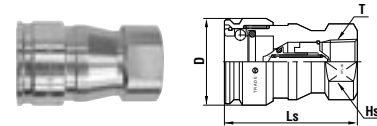
WAF : WAF stands for width across flat.

### Plug HFL-P type (Female thread)



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

### Socket HFL-S type (Female thread)



Model	Application	Mass (g)	Dimensions (mm)			
			Ls	øD	Hs(WAF)	T
HFL-2S	R 1/4	99	(47)	26	19	Rc 1/4
HFL-3S	R 3/8	150	(49)	32	24	Rc 3/8
HFL-4S	R 1/2	211	60	35	29	Rc 1/2

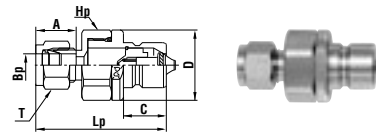
## Specifications

Body material	Stainless steel			
Applicable pipe size	1/8" • 1/4" • 3/8" • 1/2"			
Working pressure MPa (kg/cm <sup>2</sup> )	1.0 (10)			
Pressure resistance MPa (kg/cm <sup>2</sup> )	1.5 (15)			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Ethylene-propylene rubber	EPDM (EPT)	-40°C~+150°C	Standard material
	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Made-to-order item

## Models and Dimensions

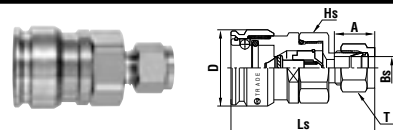
WAF : WAF stands for width across flat.

### Plug HFL-P-BI type (For pipe connection)



Model	Application (Pipe size)	Dimensions (mm)						
		Lp	C	A	øD	øBp	Hp(WAF)	T(WAF)
CO-1P-BI 1/8	1/8"	(42.4)	11.3	(13)	15.5	3.18	Hex.9/16"	Hex.7/16"
HFL-2P-BI 1/4	1/4"	(51.9)	16.5	(15.4)	23	6.35	Hex.13/16"	Hex.9/16"
HFL-2P-BI 3/8	3/8"	(53.4)	16.5	(17)	23	9.53	Hex.13/16"	Hex.11/16"
HFL-3P-BI 3/8	3/8"	(54.8)	18	(17)	29.5	9.53	Hex.1 1/16"	Hex.11/16"
HFL-3P-BI 1/2	1/2"	(59)	18	(23)	29.5	12.7	Hex.1 1/16"	Hex.7/8"
HFL-4P-BI 1/2	1/2"	(68.7)	22.5	(23)	32	12.7	Hex.1 1/8"	Hex.7/8"

### Socket HFL-S-BI type (For pipe connection)



Model	Application (Pipe size)	Dimensions (mm)					
		Ls	A	øD	øBp	Hs(WAF)	T(WAF)
CO-1S-BI 1/8	1/8"	(45.2)	(13)	16.5	3.18	Hex.9/16"	Hex.7/16"
HFL-2S-BI 1/4	1/4"	(54.9)	(15.4)	26	6.35	Hex.13/16"	Hex.9/16"
HFL-2S-BI 3/8	3/8"	(56.5)	(17)	26	9.53	Hex.13/16"	Hex.11/16"
HFL-3S-BI 3/8	3/8"	(60.3)	(17)	32	9.53	Hex.1 1/16"	Hex.11/16"
HFL-3S-BI 1/2	1/2"	(64.6)	(23)	32	12.7	Hex.1 1/16"	Hex.7/8"
HFL-4S-BI 1/2	1/2"	(73.2)	(23)	35	12.7	Hex.1 1/8"	Hex.7/8"

# Two-way Shut-off Type Small Size Cuplas

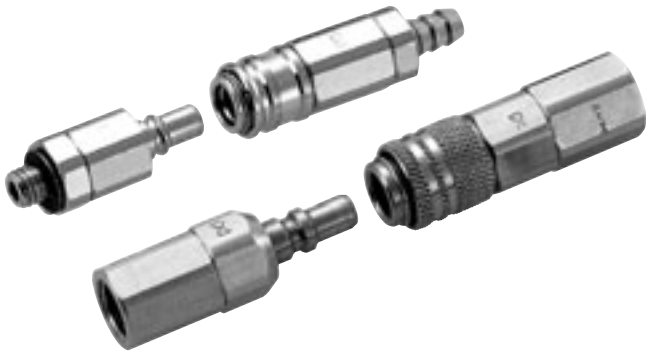
For temperature controllers

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

Valve structure  
Two-way shut-off

Applicable fluids  
Water Gas Air

- 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: Stainless steel • Brass (Nickel-plated)			
	Little Cupla: Stainless steel • Brass (Chrome-plated)			
Size	Please check with us.			
Working pressure MPa (kgf/cm <sup>2</sup> )	1.0 {10}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	1.5 {15}			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-20°C~+80°C	Standard material
	Ethylene-propylene rubber	EPDM (EPT)	-40°C~+150°C	Standard material
	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Standard material

## Two-way Shut-off Type Small Size Cupla Series

Please check with us about the end configurations and sizes.

### MYU Cupla / MYU type

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

Plug

Socket



### Little Cupla / MSV type

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

Plug

Socket



# TSP-HP Cupla for High Pressure

For high pressure and general purposes

Working pressure  
**9.0**  
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

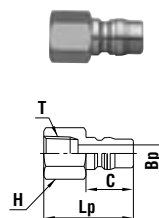
Body material	Stainless steel			
Size	1/4" • 3/8" • 1/2"			
Working pressure MPa (kgf/cm <sup>2</sup> )	9.0 {92}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	15.0 {153}			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-20°C~+80°C	Available on request
	Ethylene-propylene rubber	EPDM (EPT)	-40°C~+150°C	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

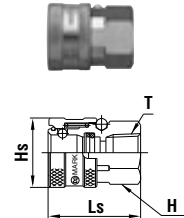
WAF : WAF stands for width across flat.

### Plug TPF type (Female thread)



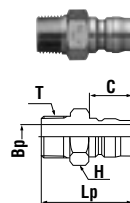
Model	Application	Dimensions (mm)				
		Lp	H(WAF)	C	T	øBp
2TPF-HP	R 1/4	34	Hex.17	18	Rc 1/4	6.5
3TPF-HP	R 3/8	38	Hex.21	21	Rc 3/8	10
4TPF-HP	R 1/2	47.5	Hex.29	26.5	Rc 1/2	13

### Socket TSF type (Female thread)



Model	Application	Dimensions (mm)			
		Ls	øHs	H(WAF)	T
2TSF-HP	R 1/4	32	24	Hex.19	Rc 1/4
3TSF-HP	R 3/8	35	28	Hex.23	Rc 3/8
4TSF-HP	R 1/2	44.5	35	Hex.29	Rc 1/2

### Plug TPM type (Male thread)



Model	Application	Dimensions (mm)				
		Lp	H(WAF)	C	T	øBp
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

# Plastic Cupla BC Type Valveless

For low pressure air piping

Working pressure  
**0.07**  
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.

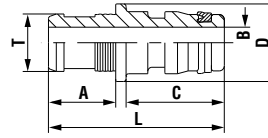
## Specifications

Body material	Plastic (Plug and socket)			
Size	1/4" • 3/8"			
Working pressure MPa (kgf/cm <sup>2</sup> )	0.07 {0.7}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	0.1 {1.0}			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+50°C	Standard material

## Models and Dimensions

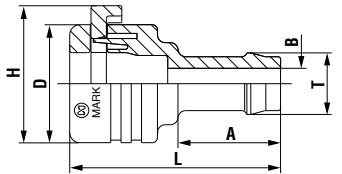
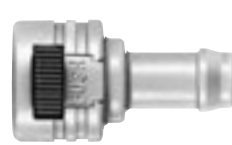
WAF : WAF stands for width across flats.

### Plug PH type (Hose barb)



Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			L	C	A	øB	øT	øD
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)



Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			L	A	øB	øT	øD	H
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)

# Plastic Cupla

## BCC Type with flow controller

For low pressure air piping

Working pressure  
**0.07**  
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.

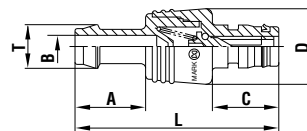
## Specifications

Body material	Plastic (Plug and socket)			
Size	3/8"			
Working pressure MPa (kgf/cm <sup>2</sup> )	0.07 {0.7}			
Pressure resistance MPa (kgf/cm <sup>2</sup> )	0.1 {1.0}			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range	Nitrile rubber	NBR (SG)	-20°C~+50°C	Standard material

## Models and Dimensions

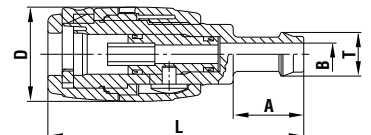
WAF : WAF stands for width across flats.

### Plug PH type (Hose barb)



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

### Socket SH type (Hose barb)



Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	øD	A	øT	øB
BC-3SH	3/8"	25	(73)	26	20	12	6

# Accessories for Cuplas

## Index



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## Dip Mold Cap

Dust caps for Hi Cupla, SP Cupla Type A, TSP Cupla, and Hydraulic Cupla



- PVC Dust Caps produced by dip molding are available for Hi Cuplas, SP Cuplas Type A, TSP Cuplas, and Hydraulic Cuplas. Dust Caps prevent dust from getting inside the fluid line and protects the sealability and life of the O-ring.

	Part number	Cap for Hi Cupla	Sales unit		Part number	Cap for SP Cupla Type A	Sales unit		Part number	Cap for TSP Cupla	Sales unit		Part number	Cap for HSP Cupla	Sales unit				
Socket	CA96462	For 20 type	1	Socket	CA96462	For 1S-A	1	Socket	CA96542	For 1TS	1	Socket	CA96463	For 2HS	1				
		For 30 type	1		CA96463	For 2S-A	1		CA96462	For 2TS	1		CA96476	For 3HS	1				
		For 40 type	1		CA96464	For 3S-A	1		CA96463	For 3TS	1		CA96477	For 4HS	1				
	CA96464	For 400 type	1		CA96465	For 4S-A	1		CA96464	For 4TS	1		CA96477	For 6HS	1				
		For 600 type	1		CA96466	For 6S-A	1		CA96465	For 6TS	1		CA96478	For 66HS	1				
		For 800 type	1		CA96467	For 8S-A	1		CA96467	For 8TS	1		CA96479	For 8HS	1				
	Plug	CA96453	For 20 type		1	Plug	CA96453		For 1P-A	1	Plug		CA96541	For 1TP	1	Plug	CA96481	For 10HS	1
			For 30 type		1		CA96454		For 2P-A	1			CA96541	For 1TP	1		CA96481	For 10HS	1
			For 40 type		1		CA96455		For 3P-A	1			CA96453	For 2TP	1		CA96481	For 12HS	1
		CA96455	For 400 type		1		CA96456		For 4P-A	1			CA96454	For 3TP	1		CA96482	For 16HS	1
			For 600 type		1		CA96457		For 6P-A	1			CA96455	For 4TP	1		CA96454	For 2HP	1
			For 800 type		1		CA96458		For 8P-A	1			CA96456	For 6TP	1		CA96455	For 3HP	1
				CA96459	For 10P-A		1	CA96551	For 8TP	1		CA96456	For 4HP	1					
				CA96460	For 12P-A		1	CA96552	For 10TP	1		CA96471	For 66HP	1					
				CA96461	For 16P-A		1	CA96459	For 12TP	1		CA96472	For 8HP	1					
								CA96556	For 16TP	1		CA96473	For 10HP	1					
												CA96473	For 12HP	1					
												CA96475	For 16HP	1					

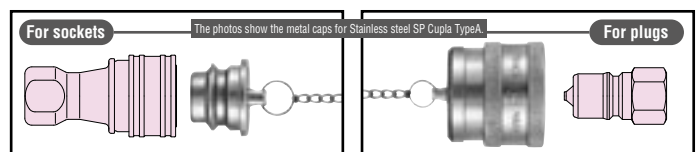
	Part number	Cap for 210 Cupla	Sales unit		Part number	Cap for 280 Cupla	Sales unit		Part number	Cap for F35/350 Cupla	Sales unit		Part number	Cap for 700R Cupla	Sales unit	
Socket	CA96463	For 210-2S	1	Socket	CB17082	For 280-2S	1	Socket	CA81551	For F35/350-3S	1	Socket	CB00614	For 700R-3S	1	
	CA96476	For 210-3S	1		CA96476	For 280-3S	1		CA81555	For F35/350-4S	1		CA82644	For 700R-4S	1	
	CA81555	For 210-4S	1		CA81555	For 280-4S	1		CA97213	For F35/350-6S	1		Plug	CA83164	For 700R-3P	1
	CA96478	For 210-6S	1		CA96478	For 280-6S	1		CA80401	For F35/350-8S	1			CA82643	For 700R-4P	1
	CA96466	For 210-8S	1		CA96466	For 280-8S	1		Plug	CA81553	For F35/350-3P			1		
CA96454	For 210-2P	1	CA96453	For 280-2P	1	CA81557	For F35/350-4P	1								
CA96455	For 210-3P	1	CA96455	For 280-3P	1	CA97215	For F35/350-6P	1								
CA82643	For 210-4P	1	CA82643	For 280-4P	1	CA80402	For F35/350-8P	1								
Plug	CA96471	For 210-6P	1	CA96471	For 280-6P	1										
	CA96551	For 210-8P	1	CA96551	For 280-8P	1										

## Safety Cap

Metal caps for Hi Cupla Series, SP Cupla Type A, TSP Cupla and Hydraulic Cupla

(Semi-standard)

- Metal Cap equipped with dust-proof and leak prevention function.
- Caps with metal material corresponding to that of Cupla body are available.



Model	Applicable Cuplas	Sales unit
<p>Model name of Safety Cap is stated in the following manner.</p> <p><b>Model= Cupla Model (normal Cupla) + SD (safety cap)</b></p>	<p>Example: "2S-A-SD" identifies a safety cap for SP Cupla Type A Model 2S-A.</p> <p>Sockets and plugs for Hi Cupla, SP Cupla Type A, TSP Cupla, HSP Cupla, 210 Cupla, S210 Cupla, 350 Cupla, 450B Cupla and SP-V Cupla</p>	1pc.

When ordering, please indicate Model Name or part number. Semi standard items: As these items are not always in stock, delivery time is subject to confirmation.

# Sleeve Cover

Plastic cover for Hi Cupla Series (5pcs.per package)

- Easier sliding operation is achieved by attaching an additional plastic cover over the socket sleeve of Hi Cupla Series.
- Plastic covers reduce the risk of damage if the Cupla strikes other components or products.
- Sleeve covers in various colors allow for easier identification of various air lines.

The sleeve cover cannot be used together with the dust cap or dip mold cap.

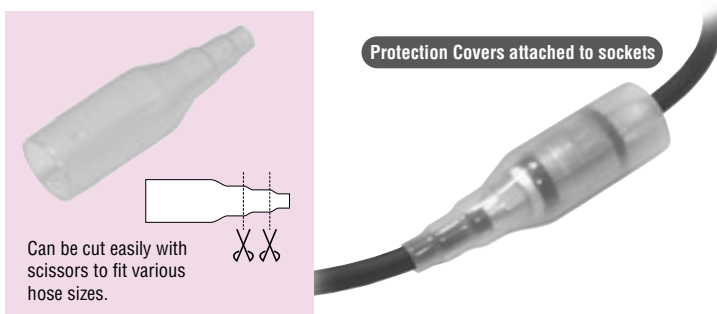


Part number	Model	Color	Applicable Cuplas	Sales unit	Material
CB23588	SLC-HI-R	Red	For Hi Cupla Series Sockets  Note: Sleeve covers cannot be attached to sockets for the Full-Blow Cupla, 400/600/800 Hi Cupla, Hi Cupla Ace, Stainless Hi Cupla and Brass Hi Cupla.	5	Thermoplastic elastomer (TPE)
CB23590	SLC-HI-B	Blue		5	
CB23589	SLC-HI-Y	Yellow		5	
CB23591	SLC-HI-W	White		5	
CB23587	SLC-HI-K	Black		5	

# Protection Cover

Plastic Cover for Nut Cupla and Full-Blow Cupla Nut Type (Semitransparent)

- For Nut Cupla and Full-Blow Cupla Nut Type.
- Protection cover wraps up the whole Cupla to absorb impacts and to reduce the risk of damage if the Cupla accidentally strikes other components or products.
- Protection covers can be cut to fit the hose diameter which the Cupla is connected to.
- Can be attached to either the socket or the plug, and can be used as a dust cap.



Part number	Model	Applicable Cuplas	Sales unit	Material
CB23784	SOC-HI	Can be attached to Nut Cupla socket or plug (SN type & PN type) and the Full-Blow Cupla socket (SN Type).	1	Polyvinyl chloride (PVC)

# Dust Cap

Plastic Cap for Hi Cupla Series

- Dust caps prevent dust from getting inside Cuplas.



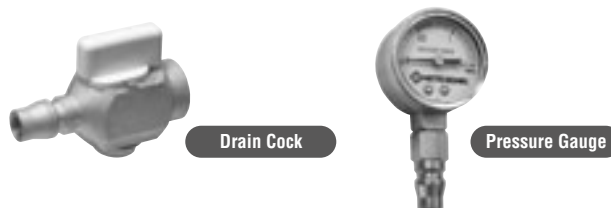
Dust covers cannot be used together with sleeve covers.

Part number	Model	Applicable Cuplas	Sales unit	Material
CQ12434	20S-D	Sockets for 20/30/40 type Hi Cupla Series Note: Dust caps cannot be attached to the sockets for Full- Blow Cupla, 400/600/800 type of Hi Cupla and Hi Cupla Ace.	1	Polyvinyl chloride (PVC)

# Accessories for Air Lines

Air Lines for Hi Cupla Series

- Connects directly to 20/30/40 type Hi Cupla sockets.
- Convenient to control drainage and pressure in air lines.

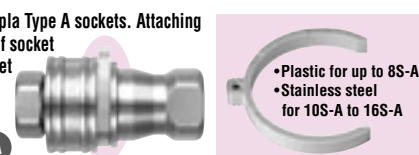


Part number	Model	Cuplas that accessories can be mounted on	Sales unit	Description
CB23625	DC-30PF	Hi Cupla sockets	1	Drain Cock
CB11253	PG-10P	Hi Cupla sockets	1	Pressure Gauge

# Sleeve Stopper

Sleeve Stopper for SP Cupla Type A

- Sleeve stopper exclusively for SP Cupla Type A sockets. Attaching the sleeve stopper after connection of socket and plug locks the sleeve of the socket and prevents unexpected disconnection.



Part number	Stopper for SP Cupla type A socket	Applicable Cuplas	Sales unit	Material	Part number	Stopper for SP Cupla type A socket	Applicable Cuplas	Sales unit	Material
CB24350	For 1S-A	SP Cupla type A sockets	10	Engineering plastics (POM)	CB26456	For 10S-A	SP Cupla type A sockets	1	SUS 304
CB24351	For 2S-A		10		CB26457	For 12S-A		1	
CB24352	For 3S-A		10		CB26458	For 16S-A		1	
CB24353	For 4S-A		10						
CB24354	For 6S-A		10						
CB24355	For 8S-A		10						

When ordering, please indicate Model Name or part number.



# Accessories for O-ring Maintenance

Jigs & grease for replacement of O-rings for SP Cupla Type A, TSP Cupla and HSP Cupla

- Quality of seal materials plays an important role in maintaining the performance of a Cupla. O-rings or seal materials of SP Cupla, TSP Cupla and HSP Cupla are designed to be replaceable. Please be certain to choose the correct and genuine Nitto kohki O-ring in order to maintain the performance of Cuplas.

### Jig for O-ring replacement

- Model: PMJ-1 (Small)**  
(Part.No.CB23687)  
• Sales unit: 1pc.
- Model: PMJ-2 (Large)**  
(Part.No.CB23688)  
• Sales unit: 1pc.

PMJ-1 (Small)

PMJ-2 (Large)

### Grease for O-ring

- GRE-M1 (Mineral oil) for NBR, FKM O-ring or packing**  
(Part.No.CB23701)  
• Sales unit: 1pc.

5mℓ container

### Grease for O-ring

- GRE-S1 (Silicon oil) for NBR, FKM, and EPDM O-ring or packing**  
(Part.No.CB23702)  
• Sales unit: 1pc.

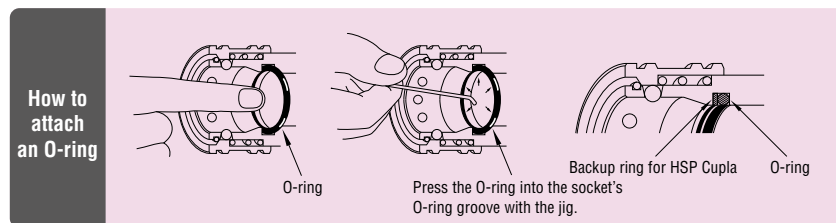
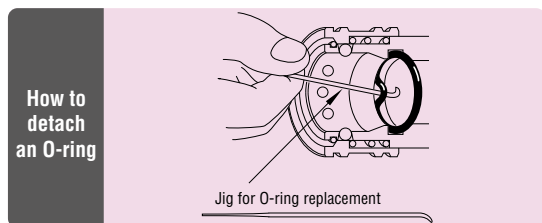
5mℓ container

O-ring for SP Cupla Type A	Part number			Sales unit
	NBR	FKM	EPDM	
For 1S-A	CP01314	CP00907	CP03270	1
For 2S-A	CP00927	CP00928	CP03333	1
For 3S-A	CP00955	CP00956	CP03276	1
For 4S-A	CP00978	CP00979	CP03283	1
For 6S-A	CP01003	CP01004	CP03292	1
For 8S-A	CP01029	CP01030	CP03298	1
For 10S-A	CP00398	CP01053	CP07179	1
For 12S-A	CP01076	CP01077	CP03902	1
For 16S-A	CP01099	CP01100	CP06953	1

O-ring for TSP Cupla	Part number			Sales unit
	NBR	FKM	EPDM	
For 1TS	CP03987	CP04984	CP09795	1
For 2TS	CP01314	CP00907	CP03270	1
For 3TS	CP00927	CP00928	CP03333	1
For 4TS	CP00955	CP00956	CP03276	1
For 6TS	CP00978	CP00979	CP03283	1
For 8TS	CP00387	CP01258	CP04923	1
For 10TS	CP01273	CP01274	CP09221	1
For 12TS	CP00398	CP01053	CP07179	1
For 16TS	CP01304	CP01305	CP09794	1

O-ring for HSP Cupla	Part number		Sales unit
	NBR	FKM	
For 2HS	CP01185	CP02215	1
For 3HS	CP01194	CP03335	1
For 4HS	CP00294	CP02093	1
For 6HS	CP00294	CP02093	1
For 66HS	CP09658	CP25937	1
For 8HS	TP00293	CP01179	1
For 10HS	CP01516	CP03371	1
For 12HS	CP01516	CP03371	1
For 16HS	CP03035	CP03453	1

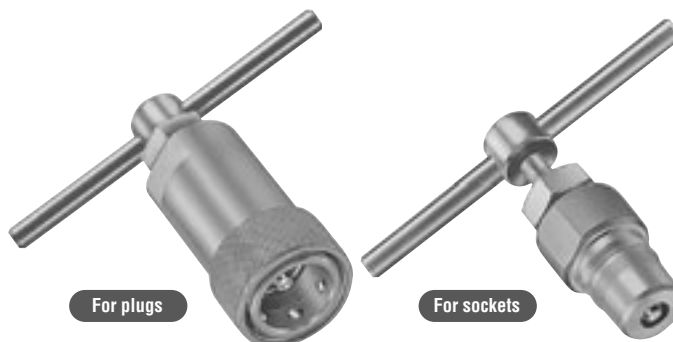
Backup ring for HSP Cupla	Part number	Sales unit
	PTFE	
For 2HS	CP01186	1
For 3HS	CP01195	1
For 4HS	CP01203	1
For 6HS	CP01203	1
For 66HS	CP09659	1
For 8HS	CP01211	1
For 10HS	CP01517	1
For 12HS	CP01517	1
For 16HS	CP03036	1



# Residual Pressure Release Jig

## Residual Pressure Release Metal Jig

- Residual pressure within socket or plug can be released easily just by turning the handle.
- Residual pressure release jigs are available in two types; socket type for use with plugs and plug type for use with sockets.
- Connecting to sockets or plugs is the same as connecting normal Cuplas.



The photos show the jigs for HSP Cupla.

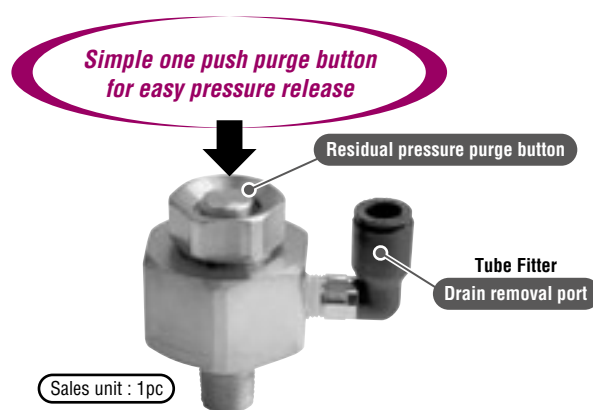
Model	Attachable Cuplas	Sales unit
The model name is to be defined in the following manner. <b>Z N</b> – Type of Cupla to be attached Residual pressure release jig	Sockets and plugs for SP Cupla Type A, HSP Cupla, 210 Cupla, S210 Cupla, 280 Cupla and 350 Cupla	1pc.
Example: For the Cupla model 350-3S, the jig name would be <b>ZN-350-3S</b>		

# Purge Adapter

## Metal Purge Adapter for hydraulic lines (Semi-standard)

- Can be attached to hydraulic lines to purge residual pressure effectively.

Model	PAD-2 (Part No.CB19855)		
Applicable fluid	Hydraulic oil		
Material	Steel (With autocatalytic nickel-phosphorus coating)		
Working pressure	MPa(kg/cm <sup>2</sup> )	35.0 (357)	
Pressure resistance	MPa(kg/cm <sup>2</sup> )	52.5 (536)	
Working temperature range	-5°C ~ +80		
Application	Rc 1/4		



When ordering, please indicate Model Name or part number. Semi standard items: As these items are not always in stock, delivery time is subject to confirmation.

# Maintenance of Cuplas

Cuplas should be inspected periodically to ensure safe operation and to prevent a drop in performance or faulty action. If you notice something abnormal or obviously worn-out, please replace it with a new one or contact Nitto Kohki or the shop where you bought it.

## O-ring Replacement Procedure

The internal O-ring is a consumable item. If leakage occurs due to the O-ring in the socket with wear and tear or deterioration, take the following steps to replace with a new one. Always use genuine Nitto O-rings.

### Accessories for O-ring maintenance

#### Grease for O-ring

- GRE-M1 (Mineral oil) for NBR, FKM
- GRE-SI (Silicon oil) for NBR, FKM and EPDM

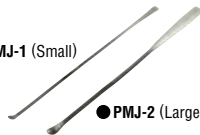
5ml container



#### Jig for O-ring replacement

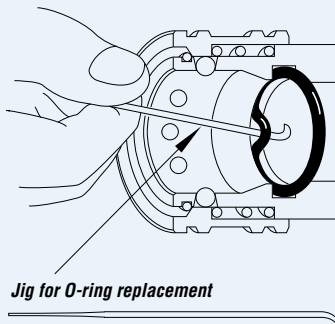
- PMJ-1 (Small)

- PMJ-2 (Large)



## How to take out the O-Ring

- Use an optional "Jig for O-ring replacement" to remove the O-ring. Be careful not to damage the groove of O-ring with the jig. Even used O-rings with wear and tear or deterioration can be removed easily with the jig.

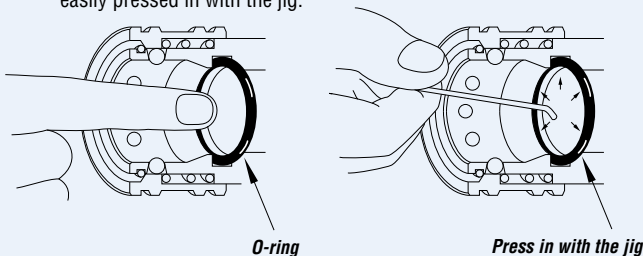


Jig for O-ring replacement

- After removing the O-ring, wipe the groove clean with a cloth.

## Install a new O-ring

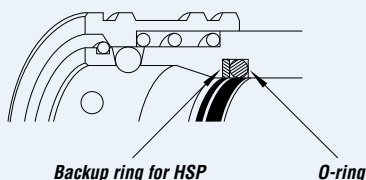
- After making sure that no dust or foreign matter exists on the groove of O-ring, press in part of the O-ring and the remaining part can be easily pressed in with the jig.



O-ring

Press in with the jig

- A HSP Cupla has a backup ring. Insert an O-ring in the place shown in the figure. If Cupla connection/disconnection is hard and not smooth after the O-ring has been replaced, apply a little grease to the O-ring.



Backup ring for HSP

O-ring

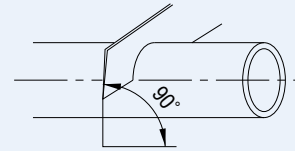
# Semicon Cupla SCF Type

(See page 113)

## How to attach a tube to the socket

### 1 Cut the tube

Cut the tube (PFA) as shown below with a cutter blade or a knife.

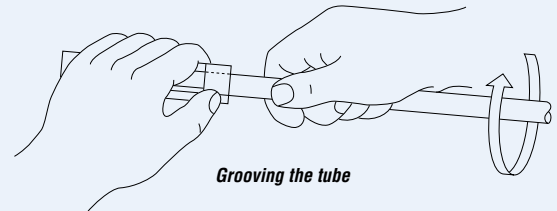


### 2 Groove the tube

Insert the tube to the hilt into the special jig (see the below figure.) and keep the jig's cutter blade pressed down while you rotate the tube about 1-1/2 turns. It will give you complete groove on the tube good for ferrule mount. Special jigs to suit different tube sizes are available in the market as indicated below.



Special jig



Grooving the tube

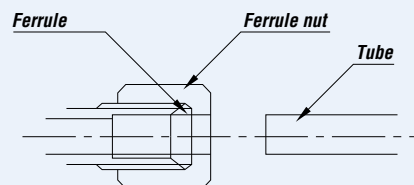
### Special jigs

Socket type	Tube size	Jig Model No.
SCF-2SL-N08	ø8 × ø6	T-8
SCF-3SL-N10	ø10 × ø8	T-10

You may buy the jigs through Nitto Kohki.

### 3 Inserting the tube

Insert the grooved tube firmly into the Cupla. In this procedure, be careful not to take out the ferrule nut.



Note ferrule position (taper facing towards Cupla)

### 4 Tightening the nut

After lightly tightening the ferrule nut with your fingers, further turn it another 1-1/2 turns with a spanner tool. Be careful not to over-tighten.

# Production Facilities that assure our Product Quality

Large scale production facilities in Tochigi Prefecture, Japan and Ayutthaya, Thailand, having the capability of flexible mass production, are in full operation around the clock and constitute a complete high-grade supply system, from the machining of components to the assembly and testing of finished products, that is forever ready and able to respond to our user's reliance.

## Production Facilities Assure Flexible Supply System

### **TOCHIGI NITTO KOHKI CO., LTD.**

Production of Cuplas, Linear-Motor-Driven Piston Pumps and their Applied Products



### **Tochigi Nitto Kohki factory is accredited under ISO 14001 & 9001.**

In November 1995, the Japan Quality Assurance Foundation, authority for inspection and registration, awarded Tochigi Nitto Kohki "ISO 9001" for quality control and quality assurance in the manufacture of Cupla products (Quick connect couplings) as well as 1kW or smaller Linear Drive air compressors, vacuum pumps and applied products, and in November 2001 "ISO 14001", also awarded International Standard for environment management systems intended to perform global environment preservation and pollution control.

### **NITTO KOHKI COUPLING (THAILAND) CO.,LTD.**

Production of Cuplas



### **NITTO KOHKI (THAILAND) CO.,LTD.**

Production of Linear-Motor-Driven Piston Pumps





# From Development to Production, Management and Marketing of “Cuplas”

Nitto Kohki has introduced the “integrated product assurance system” that can respond promptly to “users’ requirements” by covering the range of development, quality control, production and marketing in order to ensure supply of high-performance high-quality “Cuplas”.

## Nitto Kohki’s Integrated Product Assurance System

### Research and Development

The needs of the time and the latest information are gathered and analyzed, and unique technology is utilized to the challenge for ceaseless development of better Cuplas, Cuplas that suggest new applications.



### Quality Control

The careful selection of materials, painstaking pursuit of machining precision, and strict surveillance processes such as severe endurance tests have earned trust for our Cuplas as a global brand.



### Production

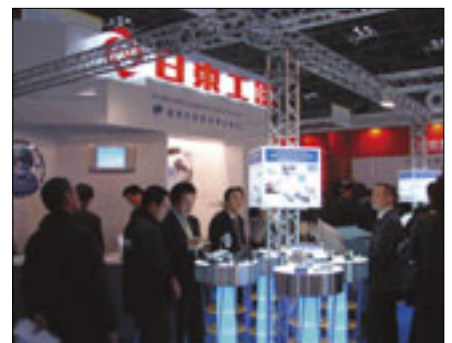
High-grade, rationalized, and integrated production system extends from the machining of parts to the assembly and testing of completed products. Robots that we make ourselves for our own plants and many other state-of-the-art facilities that cannot be seen elsewhere have marvelous capacity for mass production. And with them all, we aim to be an establishment of a flexible supply system.

*Tochigi Nitto Kohki factory is accredited under ISO 14001 & 9001.*



### Marketing

Meticulous marketing activities include advertising in the general industrial press and specialist papers, national and local exhibitions, training sessions, catalogs, promotion videos, other presentation tools and technical data sheets for new launches, and unique yet dynamic campaigns, etc.



# Nitto Kohki's Laborsaving Products

Nitto Kohki is capturing the needs of users by introducing to the world not only "Cuplas" quick connect couplings, but also next-generation laborsaving devices, including various "machine tools and hand tools", high precision "Delvo" electric screwdrivers, and linear-motor-driven piston "compressors/vacuum pumps".

## Nitto Kohki's Quality Products

### Machines and Tools



#### *Machines and Tools to achieve energy and labor savings in processing work*

Machines and tools are used at various processing sites for such work as cutting, polishing, scaling, drilling and chamfering of steel materials. We have created a product line up of pneumatic, electric and hydraulic machines and tools to match the diversification of processing modes and the conditions of work operations.



#### *High precision "Delvo" electric screwdrivers for professional use*

NITTO KOHKI "delvo" Electric Screwdrivers are high-quality tools for professional use, with special emphasis on precise control of torque and long life. They apply just the correct amount of torque—with sure, positive control always at your fingertips. They are smooth and shockless in operation, too.

### Linear



#### *Compressors, Vacuum Pumps and Their Applied Products*

MEDO pumps are unique products featuring a linear-motor-driven free piston system. NITTO KOHKI has made available a complete series of air compressors and suction pumps that incorporate this uniquely functional design. These are quite appropriate as air sources or suction power units for various pneumatically operated equipment and apparatus in advanced industries.



# Cupla Inquiry Form

If you are unable to find a Cupla that you are looking for, or the type that suits your particular requirements in this catalog, please fill in this form and fax it to our distributor in your country or directly to us. We will select the most suitable Cupla for your applications and contact you directly or through our distributor.

## FAX Sheet

To Nitto Kohki Co., Ltd.

Company Name		Factory / Branch	
Department / Section		Full Name	
Address		TEL	
E-mail		FAX	

### Cupla Usage Conditions

Application	(Product / Machinery) Name ( )	Quantity to Be Used	( ) pieces
Size	( ) Standard or Code to be conformed with, if any ( )	Location	Indoors • Outdoors
Product Name	Hi Cupla • Super Cupla • Molding Cupla • SP Cupla Type A • HSP • 350 • TSP • Mini Cupla • Others ( )		
Body Material	( )	Seal Material	( )
Surface Treatment	( )	Connection Disconnection Frequency	( ) times / day • ( ) times / month
Valve	Socket ( with • without ) Plug ( with • without )		
Fluid	Air • Water • Oil • Steam (Others: )		
Pressure	Maximum ( ) MPa	Normal ( ) MPa	Minimum ( ) MPa Impulse ( with • without )
Maximum Flow	( ) ℓ/min		
Vacuum	( ) kPa		
Temperature	Maximum ( ) °C	Normal ( ) °C	Minimum ( ) °C
Type of Thread	1. Unified Thread 2. Male Thread 3. Female Thread 4. Special thread / hose barb Standard or Code to be conformed with, if any ( )		
Other Requirements			

• Please do not write in the following section.

Processing	Model		Seal Material		Approved Drawing No.			
	Body Material		Surface Treatment					

Please make your blank copy of this form to fill in.

# Taper Pipe Threads

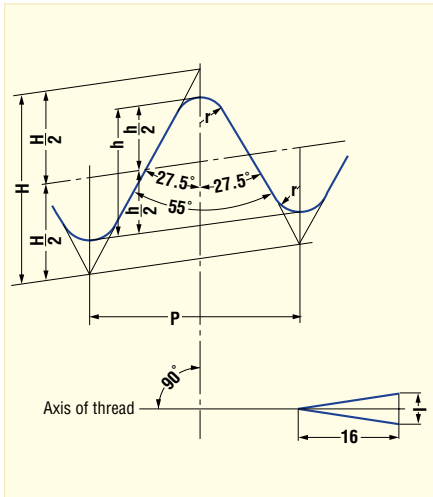
JIS B 0203:1999  
ISO 7-1:1994  
(BS21)

UDC 621.882.082.2 JIS  
Japanese Industrial Standard

This Japanese Industrial Standard specifies taper pipe threads and is applicable to the threads used mainly for pressure-tight joints on the threads for joining pipes, pipe fittings, fluid machinery, etc.

## Attached Table: Basic Profiles, Basic Dimensions and Tolerance

Basic Profile Applied for Taper External and Taper Internal Threads



Thick continuous line shows basic profile.

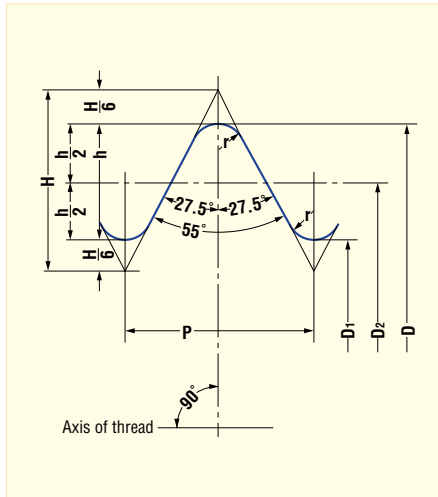
$$P = \frac{25.4}{n}$$

$$H = 0.960237 P$$

$$h = 0.640327 P$$

$$r = 0.137278 P$$

Basic Profile Applied for Parallel Internal Threads



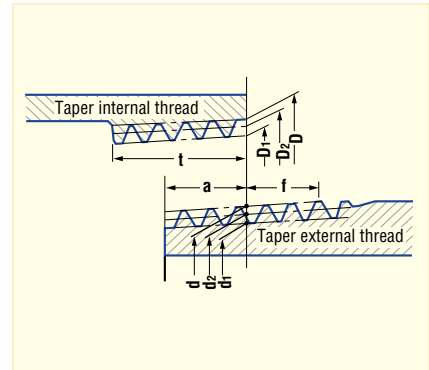
Thick continuous line shows basic profile.

$$P = \frac{25.4}{n}$$

$$H = 0.960491 P$$

$$h = 0.640327 P$$

$$r = 0.137329 P$$



How to symbolize taper pipe threads:

Taper external thread	<b>R 3/8</b>
Taper internal thread	<b>Rc 3/8</b>

Unit: mm

Designation of thread	Thread				Gauge dia.			Position of gauge plane			Tolerance on $D$ , $D_2$ and $D_1$ of parallel internal thread $\pm$	Length of useful thread (min.)				Size of carbon steel pipe for ordinary piping (Given for reference)	
	Number of threads (in 25.4mm) $n$	Pitch $P$ (Given for reference)	Height of thread $h$	Radius $r$ or $r'$	External thread			External thread		Internal thread		From position of gauge plane toward larger dia. end $f$	Internal thread		Outer dia.	Thickness	
					Major dia. $d$	Pitch dia. $d_2$	Minor dia. $d_1$	From pipe end	At pipe end	When there is incomplete thread part							
										From position of gauge plane toward smaller dia. end $l$			When there is no incomplete thread part				
R 1/8	28	0.9071	0.581	0.12	9.728	9.147	8.566	3.97	0.91	1.13	0.071	2.5	6.2	7.4	4.4	10.5	2.0
R 1/4	19	1.3368	0.856	0.18	13.157	12.301	11.445	6.01	1.34	1.67	0.104	3.7	9.4	11.0	6.7	13.8	2.3
R 3/8	19	1.3368	0.856	0.18	16.662	15.806	14.950	6.35	1.34	1.67	0.104	3.7	9.7	11.4	7.0	17.3	2.3
R 1/2	14	1.8143	1.162	0.25	20.955	19.793	18.631	8.16	1.81	2.27	0.142	5.0	12.7	15.0	9.1	21.7	2.8
R 3/4	14	1.8143	1.162	0.25	26.441	25.279	24.117	9.53	1.81	2.27	0.142	5.0	14.1	16.3	10.2	27.2	2.8
R 1	11	2.3091	1.479	0.32	33.249	31.770	30.291	10.39	2.31	2.89	0.181	6.4	16.2	19.1	11.6	34.0	3.2
R 1-1/4	11	2.3091	1.479	0.32	41.910	40.431	38.952	12.70	2.31	2.89	0.181	6.4	18.5	21.4	13.4	42.7	3.5
R 1-1/2	11	2.3091	1.479	0.32	47.803	46.324	44.845	12.70	2.31	2.89	0.181	6.4	18.5	21.4	13.4	48.6	3.5
R 2	11	2.3091	1.479	0.32	59.614	58.135	56.656	15.88	2.31	2.89	0.181	7.5	22.8	25.7	16.9	60.5	3.8
R 2-1/2	11	2.3091	1.479	0.32	75.184	73.705	72.226	17.46	3.46	3.46	0.216	9.2	26.7	30.1	18.6	76.3	4.2
R 3	11	2.3091	1.479	0.32	87.884	86.405	84.926	20.64	3.46	3.46	0.216	9.2	29.8	33.3	21.1	89.1	4.2
R 4	11	2.3091	1.479	0.32	113.030	111.551	110.072	25.40	3.46	3.46	0.216	10.4	35.8	39.3	25.9	114.3	4.5
R 5	11	2.3091	1.479	0.32	138.430	136.951	135.472	28.58	3.46	3.46	0.216	11.5	40.1	43.5	29.3	139.8	4.5
R 6	11	2.3091	1.479	0.32	163.830	162.351	160.872	28.58	3.46	3.46	0.216	11.5	40.1	43.5	29.3	165.2	5.0

# Hi Cupla Series Interchangeability

Following Plugs and Sockets Can Be Connected with Each Other

Plug	
Type	Model
Hi Cupla	17PH, 20PH, 30PH, 40PH 20PM, 30PM, 40PM 20PF, 30PF, 40PF 20PFF 60PC, 80PC, 100PC
	Anti-vibration Plug Hose SHA-3-2R, SHA-3-3R
	Anti-vibration Plug VA Type VA-20PM, VA-30PM
	Nut Cupla 50PN (10PAH), 60PN (20PAH), 65PN 80PN (30PAH), 110PN (40PAH) 50PNG, 65PNG, 85PNG
	Hi Cupla Ace 20PH-PLA, 30PH-PLA 20PM-PLA, 30PM-PLA 50PN-PLA, 60PN-PLA, 65PN-PLA, 80PN-PLA, 85PN-PLA 20PFF-PLA 50PNG-PLA, 65PNG-PLA, 85PNG-PLA
Rotary Plug RL-20PM, RL-30PM RL-20PFF	
Twist Plug TS-10PM, TS-20PM, TS-30PM TS-20PFF	
Purge Plug PV-20PH, PV-30PH, PV-40PH PV-65PN, PV-85PN	
NK Cupla Hose	NKU-605B, NKU-610B, NKU-620B (HA-65PNG)
	NKU-810B, NKU-820B (HA-85PNG)
Nk Cupla Coil Hose	NKC-503B, NKC-505B (HA-50PNG)
	NKC-603B, NKC-605B (HA-65PNG)
Rotary Line Cupla	RT Type (Inlet Port)
Line Cupla 200	200T Type (Inlet Port)
Rotary Full-Blow Line Cupla	FBH-RT Type (Inlet Port)
Hi Cupla Ace	HA-T Type (Inlet Port)



Socket	
Model	Type
17SH, 20SH, 30SH, 40SH 10SM, 20SM, 30SM, 40SM 20SF, 30SF, 40SF	Hi Cupla
TW20SH, TW30SH, TW40SH TW20SM, TW30SM, TW40SM TW20SF, TW30SF, TW40SF	Hi Cupla TW Type
200-17SH, 200-20SH, 200-30SH, 200-40SH 200-20SM, 200-30SM, 200-40SM 200-20SF, 200-30SF, 200-40SF 200-60SC, 200-80SC, 200-100SC	Hi Cupla 200
FBH-20SH, FBH-30SH, FBH-40SH FBH-20SM, FBH-30SM, FBH-40SM FBH-20SF, FBH-30SF, FBH-40SF FBH-65SN, FBH-80SN, FBH-85SN, FBH-110SN	Full-Blow Cupla
50SN (10SAH), 60SN (20SAH), 65SN 80SN (30SAH), 85SN, 110SN (40SAH)	Nut Cupla
200-50SN, 200-60SN, 200-65SN, 200-80SN 200-85SN, 200-110SN 200-50SNG, 200-65SNG, 200-85SNG	Nut Cupla 200
65SNR, 85SNR 65SNRG, 85SNRG	Rotary Nut Cupla
OC-65SNG, OC-85SNG	Oil Cupla
DCS-20PH, DCS-30PH, DCS-40PH DCS-65PNG, DCS-85PNG	Duster Cupla
L200-20SH, L200-30SH, L200-40SH L200-20SM, L200-30SM, L200-40SM L200-20SF, L200-30SF, L200-40SF L200-65SNR, L200-85SNR	Lock Cupla 200
PV-20SM, PV-30SM, PV-40SM	Purge Hi Cupla
RT Type RE Type	Rotary Line Cupla
200T Type 200L Type 200S Type	Line Cupla 200
FBH-RE Type FBH-RT Type	Rotary Full-Blow Line Cupla
HA-20SH, HA-30SH HA-20SM, HA-30SM, HA-50SN, HA-60SN HA-65SN, HA-80SN, HA-85SN HA-T HA-50SNG, HA-65SNG, HA-85SNG	Hi Cupla Ace
NKU-605B, NKU-610B, NKU-620B (HA-65SNG) NKU-810B, NKU-820B (HA-85SNG)	NK Cupla Hose
NKC-503B, NKC-505B (HA-50SNG) NKC-603B, NKC-605B (HA-65SNG)	NK Cupla Coil Hose

Plug	
Type	Model
Hi Cupla	400PH, 600PH, 800PH 400PM, 600PM, 800PM 400PF, 600PF, 800PF
	Line Cupla 200 200L Type (Inlet Port) 200S Type (Inlet Port)



Socket	
Model	Type
400SH, 600SH, 800SH 400SM, 600SM, 400SF 800SM, 600SF, 800SF	Hi Cupla
PV-400SM, PV-600SM	Purge Hi Cupla
PVR-400SH, PVR-600SH, PVR-800SH PVR-400SM, PVR-600SM, PVR-800SM PVR-400SF, PVR-600SF, PVR-800SF	Purge Hi Cupla PVR Type

# Seal Material Selection Table (For reference)

For seal parts in the Cupla (the important parts that prevent leaking to the outside), it is important to select the most appropriate seal material to suit the property and temperature of the fluid. It is so important that wrong selection may not only completely malfunction the Cupla but also cause an unexpected accident.

\*When the fluid in question is not listed in "Seal Material Selection Table (For reference)," the seal material that you select should be tested under actual environment. Even if the fluid is stated in the following list, the test could be required in some cases.

	Fluids	Seal Material						
		Nitrile rubber	Chloroprene rubber	Fluoro rubber	Ethylene-propylene rubber	Perfluoroelastomer	Silicon rubber	
A	Acetaldehyde	—	—	—	○	⊙	—	
	Acetic acid	○	⊙	⊙	⊙	⊙	⊙	
	Acetic anhydride	—	○	—	○	⊙	○	
	Acetone	—	—	—	△	⊙	—	
	Acetonitrile	—	—	—	⊙	—	—	
	Acetophenone	—	—	—	⊙	⊙	—	
	Acetyl chloride	—	—	⊙	—	—	⊙	
	Acetylacetone	—	—	—	⊙	⊙	—	
	Acetylene	⊙	○	⊙	⊙	—	△	
	Air (50°C)	⊙	⊙	⊙	⊙	—	⊙	
	Aluminium bromide (65°C)	⊙	⊙	⊙	⊙	—	○	
	Aluminium chloride (65°C)	⊙	⊙	⊙	⊙	—	⊙	
	Aluminium nitrate (65°C)	⊙	○	—	⊙	—	○	
	Aluminium sulfate (65°C)	⊙	⊙	—	⊙	—	⊙	
	Amine	—	—	—	○	—	—	
	Ammonia (65°C)	—	○	—	○	—	⊙	
	Ammonia (anhydrous)	○	⊙	—	⊙	—	○	
	Ammonia (cool)	⊙	⊙	—	⊙	—	⊙	
	Ammonia gas	⊙	⊙	—	⊙	—	⊙	
	Ammonium carbonate	—	⊙	—	⊙	—	—	
	Ammonium chloride	⊙	⊙	—	⊙	—	—	
	Ammonium hydroxide	—	⊙	○	⊙	—	⊙	
	Ammonium nitrate (65°C)	⊙	○	—	⊙	—	○	
	Ammonium phosphate (65°C)	⊙	⊙	—	⊙	—	⊙	
	Ammonium sulfate (65°C)	⊙	⊙	—	⊙	—	—	
	Ammonium sulfite	—	—	—	⊙	—	—	
	Ammonium thiosulfate	○	⊙	⊙	⊙	—	⊙	
	Amyl acetate	—	—	—	△	—	—	
	Amyl alcohol	○	○	○	⊙	—	△	
	Aniline	—	—	△	○	⊙	—	
	Animal oil	⊙	○	⊙	○	—	○	
	Arsenic trichloride	—	—	—	—	—	—	
	Asphalt	○	○	⊙	—	—	○	
	B	Barium chloride	⊙	⊙	⊙	⊙	—	⊙
		Barium hydroxide (65°C)	⊙	⊙	⊙	⊙	—	⊙
		Barium nitrate (65°C)	—	—	⊙	—	—	—
		Barium sulfate (65°C)	⊙	⊙	—	—	—	⊙
		Barium sulfide	⊙	⊙	⊙	⊙	—	⊙
		Beer	△	○	⊙	⊙	—	⊙
		Benzaldehyde	—	—	—	⊙	—	—
Benzene		—	—	⊙	—	—	—	
Benzyl alcohol (65°C)		—	⊙	⊙	○	—	—	
Benzyl chloride		—	—	⊙	—	—	—	
Brake oil		—	—	○	⊙	—	—	
Bromine		—	—	⊙	—	—	—	
Bromine water		—	—	⊙	—	—	—	
Butadiene		—	○	○	△	—	—	
Butane		○	○	⊙	—	—	—	
Butane (2,2-, 3-dimethyl)		⊙	○	⊙	—	—	—	
Butane (liquid)		⊙	○	⊙	—	—	—	
Butanol (Butyl alcohol)		⊙	⊙	⊙	○	—	○	
Butter and butter oil		⊙	—	⊙	○	—	○	

	Fluids	Seal Material					
		Nitrile rubber	Chloroprene rubber	Fluoro rubber	Ethylene-propylene rubber	Perfluoroelastomer	Silicon rubber
B	Butyl acetate	—	—	—	○	—	—
	Butyl stearate	○	—	⊙	—	—	—
	Butylene	○	△	⊙	—	—	—
	Butyraldehyde	△	—	—	○	—	△
	C	Cadmium cyanide	⊙	⊙	⊙	⊙	—
Calcium acetate		○	○	—	⊙	—	—
Calcium acetate (65°C)		○	○	—	⊙	—	—
Calcium carbide		—	—	—	—	—	—
Calcium carbonate		—	—	—	—	—	—
Calcium hydroxide (65°C)		⊙	⊙	⊙	⊙	—	—
Calcium nitrate (65°C)		⊙	⊙	⊙	⊙	—	⊙
Calcium perchlorate		—	—	—	—	—	—
Calcium sulfate		—	—	—	—	—	—
Calcium sulfate (65°C)		—	—	—	—	—	—
Calcium sulfite		—	—	⊙	—	—	—
Carbitol		○	○	○	○	—	○
Carbon dioxide gas (65°C)		⊙	○	○	○	—	○
Carbon disulfide		—	—	⊙	—	—	—
Carbon monoxide (65°C)		⊙	○	⊙	⊙	—	⊙
Carbon tetrachloride		○	—	⊙	—	⊙	—
Castor oil		⊙	⊙	⊙	○	—	⊙
Chlorine (liquid)		—	—	—	—	—	—
Chlorine gas		—	—	⊙	—	—	—
Chlorine water		△	—	⊙	○	—	—
Chloroacetone		—	—	—	⊙	—	—
Chlorobenzene		—	—	⊙	—	—	—
Chloroform		—	—	⊙	—	⊙	—
Chlorophenol		—	—	⊙	—	—	—
Coconut oil		⊙	—	⊙	⊙	—	—
Cod liver oil		—	—	—	—	—	—
Coffee		⊙	—	—	—	—	—
Copper chloride (65°C)		⊙	○	⊙	⊙	—	—
Copper cyanide		⊙	⊙	⊙	⊙	—	⊙
Copper sulfate		⊙	⊙	⊙	⊙	—	⊙
Corn oil		⊙	○	⊙	△	—	⊙
Cotton seed oil		⊙	○	⊙	△	—	△
Cresol (50°C)		—	—	⊙	—	—	—
Crude oil		○	—	⊙	—	—	—
D		Diacetone alcohol	—	⊙	—	⊙	⊙
	Dibenzyl ether	—	—	—	○	—	—
	Dichlorophenol	—	—	⊙	—	—	—
	Diesel oil	⊙	△	⊙	—	—	—
	Diethanolamine	○	○	—	○	—	○
	Diethylene glycol	⊙	⊙	⊙	⊙	—	○
	E	Ethanol	⊙	⊙	⊙	⊙	—
Ethyl acetate		—	—	—	○	—	○
Ethyl alcohol		⊙	⊙	⊙	⊙	⊙	○
Ethyl benzene		—	—	⊙	—	⊙	—
Ethyl cellulose		○	○	—	○	—	○
Ethyl chloride		⊙	○	⊙	⊙	—	—
Ethylene glycol		⊙	⊙	⊙	⊙	⊙	○
Ethylene trichloride		△	—	⊙	—	—	—

**How to read the selection tables**

- ⊙ Practically no harm, and can be used (Excellent)
- Some harm may be inevitable but can be used under restrictions (Good)
- △ Should be avoided if at all possible (Not recommended)
- Should not be used (Unsuitable)

**Note:**

When selecting the seal material, please consider the following suggestions carefully:

1. If there is no comment in the column of the fluid name, the condition of the fluid is under saturation at room temperature.
2. Please check with us for applications at a high fluid temperature or with different fluid concentrations.
3. For applications related to foods, please order separately specifying the detailed applications.

	Fluids	Seal Material						
		Nitrile rubber	Chloroprene rubber	Fluoro rubber	Ethylene-propylene rubber	Perfluoroelastomer	Silicon rubber	
F	Fish oil	⊙	—	⊙	—	—	⊙	
	Fluorine (dry)	—	—	—	—	—	—	
	Formaldehyde	○	⊙	—	—	—	—	
	Freon 11	⊙	—	○	—	—	—	
	Freon 12	⊙	⊙	⊙	○	—	—	
	Freon 22	—	⊙	—	⊙	—	—	
	Fruits	—	—	—	—	—	—	
	Fuel oil	⊙	○	⊙	—	—	—	
	Furfural	—	—	—	○	⊙	—	
	G	Gasoline	⊙	—	⊙	—	—	—
Gelatin		⊙	⊙	⊙	⊙	—	⊙	
Glucose		⊙	⊙	⊙	⊙	—	⊙	
Glycerine (65°C)		⊙	⊙	⊙	⊙	—	⊙	
Glycol		⊙	⊙	⊙	⊙	—	⊙	
Grease (65°C)		⊙	⊙	⊙	—	—	⊙	
H		Helium	⊙	⊙	⊙	⊙	—	⊙
	Heptane	—	—	—	—	—	—	
	Hexane	—	—	—	—	⊙	—	
	Hydraulic fluid (oil base)	⊙	△	⊙	—	—	△	
	Hydraulic fluid (water base)	⊙	△	⊙	△	—	△	
	Hydrogen	⊙	⊙	⊙	⊙	—	△	
	Hydrogen bromide	⊙	—	—	—	—	—	
	Hydrogen peroxide (30%)	○	○	○	○	—	⊙	
	I	Iron chloride	⊙	⊙	⊙	⊙	—	○
		Iron nitrate (65°C)	⊙	⊙	⊙	⊙	—	○
Iron sulfate (10%)		⊙	⊙	—	—	—	○	
Iron sulfite (100%)		⊙	—	—	—	—	—	
Isoamyl alcohol		—	—	—	—	—	—	
Isooctane		⊙	○	⊙	—	⊙	—	
Isopropyl acetate		—	—	—	○	—	—	
Isopropyl alcohol		○	○	⊙	⊙	—	⊙	
Isopropyl ether		○	△	—	—	—	—	
K		Kerosene	⊙	○	⊙	—	—	—
	L	Lard and lard oil	⊙	—	—	—	—	—
Latex		—	—	—	—	—	—	
Liquefied petroleum gas (LPG)		⊙	○	⊙	—	—	△	
Liquid glass (Sodium silicate)		—	—	—	—	—	—	
Liquors (beet)		⊙	⊙	⊙	⊙	—	⊙	
Liquors (sucrose)		⊙	⊙	⊙	⊙	—	⊙	
Lubricating oil		⊙	△	⊙	—	—	○	
M		Magnesium chloride (65°C)	⊙	⊙	⊙	⊙	—	⊙
	Magnesium hydroxide (65°C)	○	○	⊙	⊙	—	—	
	Magnesium nitrate	⊙	—	—	—	—	—	
	Magnesium sulfate (65°C)	⊙	⊙	⊙	⊙	—	⊙	
	Maleic anhydride	—	—	⊙	—	—	—	
	Mercury	⊙	⊙	⊙	⊙	—	—	
	Methanol	⊙	⊙	—	⊙	—	⊙	
	Methyl bromide	○	—	⊙	—	—	—	
	Methyl butyl ketone	—	—	—	⊙	—	—	
	Methyl propyl ketone	—	—	—	○	—	—	
	Methyl chloride	—	—	⊙	△	—	—	
	Methyl ethyl ketone	—	—	—	⊙	⊙	—	

	Fluids	Seal Material						
		Nitrile rubber	Chloroprene rubber	Fluoro rubber	Ethylene-propylene rubber	Perfluoroelastomer	Silicon rubber	
M	Methyl salicylate	—	—	—	○	—	—	
	Methylene bromide	—	—	○	—	—	—	
	Methylene chloride	—	—	⊙	△	⊙	—	
	Milk	⊙	⊙	⊙	⊙	—	⊙	
	Mineral oil	⊙	△	⊙	—	—	△	
	Molasses	—	—	—	—	—	—	
	Monobromobenzene	—	—	⊙	—	—	—	
	Monochlorobenzene	—	—	—	—	—	—	
	Monoethanolamine	—	—	—	○	—	○	
	N	Naphtha	○	—	⊙	—	—	—
		Naphthalene	—	—	⊙	—	—	—
		Naphthenic oil	⊙	—	⊙	—	—	—
		Nickel acetate	○	○	—	⊙	—	—
Nickel acetate (65°C)		—	—	—	⊙	—	—	
Nickel ammonium sulfate		—	—	—	—	—	—	
Nickel chloride		⊙	⊙	⊙	⊙	—	⊙	
Nickel nitrate		—	—	—	—	—	—	
Nickel sulfate		—	—	—	—	—	—	
Nitrobenzene		—	—	○	—	⊙	—	
Nitrogen (gas)		⊙	⊙	⊙	⊙	—	⊙	
Normal heptane		⊙	○	⊙	—	—	—	
Normal pentane		⊙	⊙	⊙	—	—	—	
O	Octyl alcohol	○	○	⊙	⊙	—	○	
	Oleic acid (65°C)	△	—	○	—	—	—	
	Olive oil	⊙	○	⊙	○	—	—	
	Ortho-dichlorobenzene	—	—	⊙	—	—	—	
	Oxygen (gas)	○	⊙	⊙	⊙	—	⊙	
	Ozone	—	△	⊙	⊙	—	⊙	
	P	Palm oil	—	—	—	—	—	—
		Paraffin oil	⊙	—	⊙	—	—	—
Peanut oil		⊙	○	⊙	△	—	⊙	
Pentane (2-,3-,4-methyl)		—	—	—	—	—	—	
Phenol		—	—	⊙	—	—	—	
Phosphorous oxychloride (dry)		○	○	⊙	⊙	—	○	
Phosphorous oxychloride (wet)		○	○	⊙	⊙	—	○	
Phosphorus		—	—	—	—	—	—	
Phthalic anhydride		—	—	—	—	—	—	
Pine oil		○	—	⊙	—	—	—	
Potassium acetate (65°C)		○	○	—	⊙	—	—	
Potassium bichromate		⊙	⊙	⊙	⊙	—	⊙	
Potassium carbonate		—	—	—	—	—	—	
Potassium cyanide		⊙	⊙	⊙	⊙	—	⊙	
Potassium hydroxide (65°C)		○	⊙	—	⊙	—	△	
Potassium nitrate (65°C)		⊙	⊙	⊙	⊙	—	⊙	
Potassium nitrite		—	—	—	⊙	—	—	
Potassium phosphate		—	—	—	—	—	—	
Potassium silicate		⊙	⊙	⊙	⊙	—	—	
Potassium sulfate		⊙	⊙	⊙	⊙	—	⊙	
Potassium thiosulfate		—	—	—	—	—	—	
Printing ink		⊙	—	—	—	—	—	
Propane		⊙	○	⊙	—	—	—	
Propionaldehyde	△	△	—	○	—	○		





# Body Material Selection Table

The selection of appropriate body material for the Cupla is closely related to its usage application, the type of fluid run through, its concentration (%), the pressure, its working environment, etc. So the material must be carefully considered in order to use the Cupla efficiently and obtain its full performance. Since there are some metals that should not be used with certain fluids, please refer to this table when making your selection.

○ Suitable    △ Not suitable under certain conditions

	Fluids	Brass	Stainless Steel	Steel	
A	Acetic acid	△	○		
	Acetic anhydride		○		
	Acetone	○	○	○	
	Air	○	○	○	
	Aluminium fluoride				
	Aluminum chloride		△		
	Aluminum sulfate		△		
	Ammonia		○		
	Ammonium nitrate		○		
	Ammonium phosphate		○		
	Ammonium sulfate				
	Aniline		○		
	Arsenic acid		○		
	B	Barium chloride			
		Barium hydroxide		○	
Barium sulfide			○	○	
Beer		○	○		
Benzene		○	○	○	
Benzine		○	○	○	
Boric acid			○		
Butane		○	○	○	
Butyl acetate		○	○	○	
C		Calcium chloride			
		Calcium hydroxide	○	○	○
		Carbon dioxide	○	○	○
	Carbon disulfide	○	○	○	
	Carbon tetrachloride		○		
	Carbonic acid		○		
	Caustic soda		○		
	Chlorine		○	○	
	Chromic acid		○		
	Citric acid		○		
	Cresol acid	○	○	○	
	D	Diesel fuel	○	○	○
		Dowtherm		○	
Drinking water		△	○		
E	Ether	○	○	○	
	Ethyl acetate	○	○	○	
	Ethyl alcohol	○	○	○	
	Ethylene chloride				
	Ethylene glycol	○	○	○	
F	Fatty acid		○		
	Ferric chloride				
	Ferric sulfate		△		
	Formaldehyde		○		
	Formalin		○		
	Formic acid		○		

	Fluids	Brass	Stainless Steel	Steel	
F	Freon	○	○	○	
G	Glycerine	○	○	○	
H	Hexane	○	○		
	Hydrobromic acid				
	Hydrochloric acid				
	Hydrofluoric acid			○	
	Hydrogen	○	○	○	
	Hydrogen peroxide			○	
	Hydrogen sulfide			△	
I	Industrial water	○	○	△	
J	Jet fuel		○	△	
L	Lactic acid		○		
	Liquefied petroleum gas (LPG)	○	○	○	
M	Magnesium chloride				
	Mercury		○	○	
	Methyl alcohol	○	○	○	
N	Naphtha	○	○	○	
	Naphthalene	○	○	○	
	Natural gas	○	○	○	
	Nickel chloride		○	○	
	Nitric acid			△	
	Nitrobenzene			○	
O	Octane				
	Oxygen	○	○	○	
P	Paraffin	○	○	○	
	Phenol		○		
	Phosphoric acid		○		
	Potassium chloride			△	
	Potassium hydroxide			○	
	Pure water	△	○		
	R	Refined gasoline	○	○	○
		Refined petroleum	○	○	○
S	Salt water		△		
	Sodium carbonate		○	○	
	Sodium chloride	○	○	○	
	Sodium hydroxide			○	
	Sodium nitrate			○	
	Sodium phosphate			△	
	Sodium sulfate	○	○		
T	Sulfuric acid				
	Sulfurous acid				
T	Tannic acid		○		
W	Wine		○		
Z	Zinc chloride				

Notes: 1. Since fluid concentration (%) and conditions of use may affect the performance, detailed study is necessary when choosing materials.

Notes: 2. For the cells that have no symbol marks, please consult us for appropriate body material.

# Unit Conversion Tables

## Length

m	cm	in	ft	yd	km	mile	n-mile
1	$1 \times 10^2$	$3.937 \times 10$	3.281	1.094	1	$6.214 \times 10^{-1}$	$5.400 \times 10^{-1}$
$1 \times 10^{-2}$	1	$3.937 \times 10^{-1}$	$3.281 \times 10^{-2}$	$1.094 \times 10^{-2}$	1.6093	1	$8.690 \times 10^{-1}$
$2.54 \times 10^{-2}$	2.540	1	$8.333 \times 10^{-2}$	$2.778 \times 10^{-2}$	1.852	1.151	1
$3.048 \times 10^{-1}$	$3.048 \times 10$	$1.2 \times 10$	1	$3.333 \times 10^{-1}$			
$9.144 \times 10^{-1}$	$9.144 \times 10$	$3.9 \times 10$	3	1			

## Area

m <sup>2</sup>	in <sup>2</sup>	ft <sup>2</sup>	yd <sup>2</sup>	km <sup>2</sup>	acre	mile <sup>2</sup>	ha
1	$1.550 \times 10^3$	$1.076 \times 10$	1.196	1	$2.471 \times 10^2$	$3.861 \times 10^{-1}$	$1.00 \times 10^2$
$6.452 \times 10^{-4}$	1	$6.944 \times 10^{-3}$	$7.716 \times 10^{-4}$	$4.046 \times 10^{-3}$	1	$1.562 \times 10^{-3}$	$4.047 \times 10^{-2}$
$9.290 \times 10^{-2}$	$1.44 \times 10^2$	1	$1.111 \times 10^{-1}$	2.590	$6.40 \times 10^2$	1	$2.590 \times 10^2$
$8.361 \times 10^{-1}$	$1.296 \times 10^3$	9	1	$1 \times 10^{-2}$	2.471	$3.861 \times 10^{-3}$	1

## Mass (Weight)

kg	gr	oz	lb	t (metric ton)	ltn (long ton)	stn (short ton)
1	$1.5432 \times 10^4$	$3.527 \times 10$	2.205	$1 \times 10^{-3}$	$9.842 \times 10^{-4}$	$1.102 \times 10^{-3}$
$6.480 \times 10^{-5}$	1	$2.286 \times 10^{-3}$	$1.429 \times 10^{-4}$	$6.480 \times 10^{-8}$	$6.328 \times 10^{-8}$	$7.143 \times 10^{-8}$
$2.835 \times 10^{-2}$	$4.375 \times 10^2$	1	$6.25 \times 10^{-2}$	$2.835 \times 10^{-5}$	$2.790 \times 10^{-5}$	$3.125 \times 10^{-5}$
$4.536 \times 10^{-1}$	$7.000 \times 10^3$	$1.6 \times 10$	1	$4.536 \times 10^{-4}$	$4.464 \times 10^{-4}$	$5 \times 10^{-4}$
$1.000 \times 10^3$	$1.543 \times 10^7$	$3.5274 \times 10^4$	$2.205 \times 10^3$	1	$9.842 \times 10^{-1}$	1.102
$1.016 \times 10^3$	$1.568 \times 10^7$	$3.5840 \times 10^4$	$2.240 \times 10^3$	1.016	1	1.12
$9.072 \times 10^2$	$1.4 \times 10^7$	$3.2000 \times 10^4$	$2.000 \times 10^3$	$9.072 \times 10^{-1}$	$8.929 \times 10^{-1}$	1

## Force

N	kgf	lbf	pdl
1	$1.020 \times 10^{-1}$	$2.248 \times 10^{-1}$	7.233
9.807	1	2.205	$7.093 \times 10$
4.448	$4.536 \times 10^{-1}$	1	$3.217 \times 10$
$1.383 \times 10^{-1}$	$1.410 \times 10^{-2}$	$3.108 \times 10^{-2}$	1

## Pressure

MPa	kgf/cm <sup>2</sup>	lbf/in <sup>2</sup> (PSI)	atm	mmHg	inHg	mmH <sub>2</sub> O	ftH <sub>2</sub> O
1	$1.020 \times 10$	$1.450 \times 10^2$	9.869	$7.501 \times 10^3$	$2.953 \times 10^2$	$1.01972 \times 10^5$	$3.346 \times 10^2$
$9.807 \times 10^{-2}$	1	$1.422 \times 10$	$9.678 \times 10^{-1}$	$7.356 \times 10^2$	$2.896 \times 10$	$1.0000 \times 10^4$	$3.281 \times 10$
$6.895 \times 10^{-3}$	$7.031 \times 10^{-2}$	1	$6.805 \times 10^{-2}$	$5.172 \times 10$	2.036	$7.031 \times 10^2$	2.307
$1.013 \times 10^{-1}$	1.033	$1.470 \times 10$	1	$7.60 \times 10^2$	$2.992 \times 10$	$1.0332 \times 10^4$	$3.390 \times 10$
$1.333 \times 10^{-4}$	$1.360 \times 10^{-3}$	$1.934 \times 10^{-2}$	$1.316 \times 10^{-3}$	1	$3.937 \times 10^{-2}$	$1.360 \times 10$	$4.460 \times 10^{-2}$
$3.386 \times 10^{-3}$	$3.453 \times 10^{-2}$	$4.912 \times 10^{-1}$	$3.342 \times 10^{-2}$	$2.54 \times 10$	1	$3.453 \times 10^2$	1.133
$9.806 \times 10^{-6}$	$1 \times 10^{-4}$	$1.422 \times 10^{-3}$	$9.678 \times 10^{-5}$	$7.356 \times 10^{-2}$	$2.896 \times 10^{-3}$	1	$3.281 \times 10^{-3}$
$2.2989 \times 10^{-2}$	$3.048 \times 10^{-2}$	$4.335 \times 10^{-1}$	$2.950 \times 10^{-2}$	$2.242 \times 10$	$8.827 \times 10^{-1}$	$3.048 \times 10^2$	1

# Safety Guide

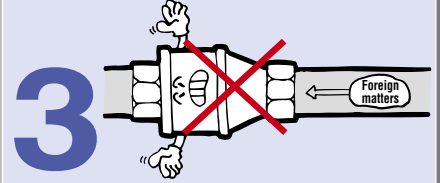
- Do not connect / disconnect under dynamic pressure or static residual pressure.



- Do not strike the tip of an automatic shut-off valve with a hammer or the like. This may cause leakage or malfunction. Consult us for alternative way of releasing the residual pressure inside.



- The entry of foreign matters in the fluid to be used may cause a breakdown. Fluid must be cleaned through filters before reach to Cuplas.



- Selecting the wrong type of seal material may cause a leak. In making your selection, check the compatibility of the seal material with the type of fluid and temperature.



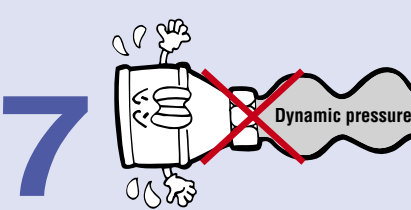
- Remember that dirt, scratches or other damage on the sealing surface may cause a leak.
- If there is a risk of dirt sticking to the plug sealing while the CUPLA is disconnected, use a specified dustproof cap.



- When installing the Coupla, do not apply an excessive tightening force. This may cause damage. Tighten it with the appropriate torque.



- Do not pressurize the socket or plug while disconnected.



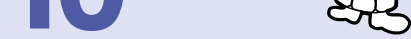
- Do not use the Coupla with a tool or machine exposed to excessive vibrations or impact. It would be dangerous.



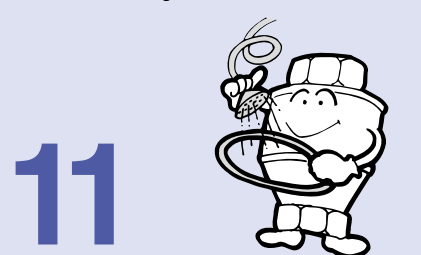
- Do not subject the CUPLA to excessive bending, tension or revolution. It would be dangerous.



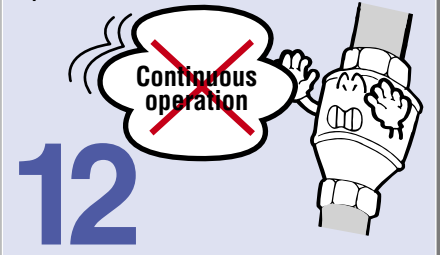
- The CUPLA is usually greased to reduce the load imposed when the plug is inserted. But the SEMICON CUPLA is grease-free to prevent grease from entering into the fluid system. To reduce sliding resistance (insertion load) and protect an O-ring, apply the fluid to be used or pure water to the O-ring or plug (the sliding part of the O-ring) before use.



- In cleaning the CUPLA, do so in a manner that will not affect the seal material. (Before cleaning, consult us.)



- Do not use continuously at the lowest or highest working temperature. In this case please consult us.



## Performance Standards and Contractual Control Limit

Please understand that the performance chart and outside dimensions indicated in this catalogue do not include the tolerances in mass production, and that they indicate the average as a guide for selecting models and for technical service for users.

## Beware of imitations

Recently on the market, there have appeared similar products that invite misidentification or confusion with Nitto Kohki Cuplas, or such products that claim to have compatible mating parts.

Connection with a coupling of another brand that seems connectable to a Nitto Kohki Coupla may cause

- 1) imperfect connection or disconnection
- 2) reduced airtightness
- 3) impaired pressure resistance or durability
- 4) declined flow rate, and result in unexpected accidents.

Nitto Kohki cannot accept responsibility for any accident that may result by mixed use with the coupling of another brand. Nitto Kohki Couplars are produced with their own unique tolerances and precision under strict quality control, and are not interchangeable with other couplings that are not under such tolerance. Therefore, connection to other brand of coupling may end up with abrupt breakdown or personal injury. Please be sure to check for our marks below, which are always inscribed on Nitto Kohki Coupla products, when you order and purchase.



# Safety Guide

The following precautions must be taken when using Cuplas. Please contact Nitto Kohki or the outlet/supplier where you purchased the product from with regard to repair procedures or clarification on the specification or applications of the products.

## Precautions Relating to the Use of All Cuplas

- Be sure to read the “Instruction Sheet” that comes with the product, and “Caution” on the package before use.

### Cuplas for Low Pressure (Air)

#### ⚠ Caution

- Use Cuplas only for the purpose of quick connective couplings.
- The fluid media used must be compatible with the body and seal materials of Cupla.
- Do not connect with other brands' quick connective couplings.
- Do not use Cuplas continuously under any pressure exceeding the rated working pressure.
- Use only within the range of rated temperature. Otherwise this may damage the seal material inside and cause leakage.
- Do not apply any artificial impact, bend, or tension other than necessary in connection and disconnection. This may cause leakage or damage.
- Do not use in a place where dust or metal dust may be around. This may cause malfunction or leakage.
- Careless paint on Cuplas may cause malfunction or leakage.
- Do not disassemble.
- Disconnect Cupla plug and socket while holding the plug in one hand and the socket in the other.
- After connection, try to pull plug and socket apart to check secure connection.

### Cautions on Handling Hose

#### ⚠ Caution

- Make sure there is no twisted or bent part on hoses before use.
- Do not give any scratch on hoses with stones or concrete around, or deformation for a long time. This may cause critical damage on hoses.
- Do not leave the hose with extreme kink at the connection to Cupla. This may cause leakage or damage.
- Hoses cannot be used for hoisting up and down any goods with load on Cuplas.
- Do not put hoses near fire, which may lead to softening or deformation of hoses.
- Keep hoses in the shaded, dried and well-ventilated place.
- Do not bend a urethane hose at less than the minimum-bending radius of 30mm.
- Disconnect Cupla plug and socket while holding the plug in one hand and the socket in the other.
- After connection, try to pull plug and socket apart to check secure connection.

### Cupla for oxygen / Fuel gas

#### ⚠ Warning

- Fluid must be supplied from socket to plug.
- Use a liquid or paste type thread sealant when assembling taper pipe thread joints in Cupla.
- Do not tighten up screws in excess of the rated maximum tightening torque. This may cause damage.
- The fluid media used must be compatible with the body and seal materials of Cupla.
- Do not connect with other brands' quick connective couplings.
- Do not use Cuplas continuously under any pressure exceeding the rated working pressure.
- Use only within the range of rated temperature. Otherwise this may damage the seal material inside and cause leakage.
- Do not apply any artificial impact, bend, or tension other than necessary in connection and disconnection. This may cause leakage or damage.
- Do not use in a place where dust or metal dust may be around. This may cause malfunction or leakage.
- Careless paint on Cuplas may cause malfunction or leakage.
- Do not use in a place where gas is likely to remain around.
- Do not connect / disconnect Cuplas near a flame.
- Replace any Cupla with a new one after a backfire has occurred on it.
- Oil must not be present when connecting to a hose. This may cause spontaneous combustion.
- Cut off and throw away the hose at least 3cm from the end before it is reused.

#### ⚠ Caution

- Use Cuplas only for the purpose of quick connective couplings.
- Hose barb of Cuplas must be inserted right to the root and secured tight with a hose clamp.
- Store indoors away from water or moisture.
- Do not use a hose with cracks. This may cause leakage or disconnection.
- Always check for leakage on Cuplas before use. Never use one with leaks, and replace it with a new one.
- Make sure the valve on the torch is shut before connecting a Cupla.

### Mold Cupla / Flow Meter

#### ⚠ Caution

- Use Cuplas only for the purpose of quick connective couplings.
- Do not use Cuplas continuously under any pressure exceeding the rated working pressure.
- Use only within the range of rated temperature. Otherwise this may damage the seal material inside and cause leakage.
- Do not apply any artificial impact, bend, or tension other than necessary in connection and disconnection. This may cause leakage or damage.
- Do not use in a place where dust or metal dust may be around. This may cause malfunction or leakage.
- Careless paint on Cuplas may cause malfunction or leakage.
- Do not tighten up screws in excess of the rated maximum tightening torque. This may cause damage.
- Do not use a hose with cracks. This may cause leakage or disconnection.
- Direct hookup to a vibration or impact device may result in reduced lifetime.
- Fluid must be cleaned through filters before reach to Cuplas.
- Do not disassemble.
- Disconnect Cupla plug and socket while holding the plug in one hand and the socket in the other.
- After connection, try to pull plug and socket apart to check secure connection.

### For Low Pressure (Water - Liquid) / For Medium Pressure

#### ⚠ Warning

- The fluid media used must be compatible with the body and seal materials of Cupla.
- Do not use Cuplas continuously under any pressure exceeding the rated working pressure.
- Use only within the range of rated temperature. Otherwise this may damage the seal material inside and cause leakage.
- Do not pressurize the socket or plug with fluid while disconnected.
- Do not disassemble.

#### ⚠ Caution

- Use a liquid or paste type thread sealant when assembling taper pipe thread joints in Cupla.
- Do not tighten up the screw on Cupla exceeding the rated maximum tightening torque. This may cause damage on thread.
- Use Cuplas only for the purpose of quick connective couplings.
- Do not connect with other brands' quick connective couplings. (Except Lever Lock Cupla)
- Do not apply any artificial impact, bend, or tension other than necessary in connection and disconnection. This may cause leakage or damage.
- Do not use in a place where dust or metal dust may be around. This may cause malfunction or leakage.
- Careless paint on Cuplas may cause malfunction or leakage.
- A shut-off valve must be installed between pressure source and the Cupla.
- Do not use as a swivel joint.
- Direct hookup to a vibration or impact device may result in reduced lifetime.
- Fluid must be cleaned through filters before reach to Cuplas.
- O-rings in Cuplas must remain lubricated at all times.
- Do not strike the tip of an automatic shut-off valve with a hammer or the like. This may cause leakage or malfunction. Consult us for alternative way of releasing the residual pressure inside.
- Refer to the pages of Seal Material Selection Table and Body Material Selection Table at the end of this catalog to consult suitable seal and body materials for the fluid you use.

### For High Pressure

#### ⚠ Warning

- The fluid media used must be compatible with the body and seal materials of Cupla.
- Do not use Cuplas continuously under any pressure exceeding the rated working pressure.
- Use only within the range of rated temperature. Otherwise this may damage the seal material inside and cause leakage.
- Do not connect/disconnect under dynamic pressure or static residual pressure. (Excluding connection of HSP-PV type)
- Do not pressurize the socket or plug with fluid while disconnected.
- Do not disassemble.

#### ⚠ Caution

- Use a liquid or paste type thread sealant when assembling taper pipe thread joints in Cupla.
- Do not tighten up the screw on Cupla exceeding the rated maximum tightening torque. This may cause damage on thread.
- Use Cuplas only for the purpose of quick connective couplings.
- Do not connect with other brands' quick connective couplings. (Except Lever Lock Cupla)
- Do not apply any artificial impact, bend, or tension other than necessary in connection and disconnection. This may cause leakage or damage.
- Do not use in a place where dust or metal dust may be around. This may cause malfunction or leakage.
- Careless paint on Cuplas may cause malfunction or leakage.
- A shut-off valve must be installed between pressure source and the Cupla.
- Do not use as a swivel joint.
- Direct hookup to a vibration or impact device may result in reduced lifetime.
- Do not use with water-glycol type operating oil, which will dissolve zinc plating.
- Fluid must be cleaned through filters before reach to Cuplas.
- O-rings in Cuplas must remain lubricated at all times.
- Design and keep the fluid flow speed through Cuplas below 8 m/s for hydraulic use.
- Do not strike the tip of an automatic shut-off valve with a hammer or the like. This may cause leakage or malfunction. Consult us for alternative way of releasing the residual pressure inside.
- Refer to the pages of Seal Material Selection Table and Body Material Selection Table at the end of this catalog to consult suitable seal and body materials for the fluid you use.

### Cupla for Inert Gas

#### ⚠ Warning

- Do not use Cuplas continuously under any pressure exceeding the rated working pressure.
- Use only within the range of rated temperature. Otherwise this may damage the seal material inside and cause leakage.
- Do not apply any artificial impact, bend, or tension other than necessary in connection and disconnection. This may cause leakage or damage.
- Do not connect/disconnect under dynamic pressure or static residual pressure.
- Do not disassemble.

#### ⚠ Caution

- Use a liquid or paste type thread sealant when assembling taper pipe thread joints in Cupla.
- Do not apply any artificial impact, bend, or tension other than necessary in connection and disconnection. This may cause leakage or damage.
- The fluid media used must be compatible with the body and seal materials of Cupla.
- Use Cuplas only for the purpose of quick connective couplings.
- Do not connect with other brands' quick connective couplings. (Except Lever Lock Cupla)
- Do not use in a place where dust or metal dust may be around. This may cause malfunction or leakage.
- Careless paint on Cuplas may cause malfunction or leakage.
- A shut-off valve must be installed between pressure source and the Cupla.
- Do not use as a swivel joint.
- Direct hookup to a vibration or impact device may result in reduced lifetime.



## Precautions Relating to the Use of All Cuplas

- Be sure to read the “Instruction Sheet” that comes with the product, and “Caution” on the package before use.

### Multi Cupla Series

#### Overall Multi Cuplas

##### ⚠ Warning

- Do not use couplings continuously under any pressure exceeding the rated working pressure.
- Do not use at temperatures outside the rated working temperature range. Otherwise you may damage the seal packing inside and cause leakage.
- Do not disassemble.

##### ⚠ Caution

- Do not tighten up the screw on Cupla exceeding the rated maximum tightening torque. This may cause damage to the Cupla.
- Do not apply any artificial impact, bend, or tension other than necessary in connection and disconnection. This may cause leakage or damage.
- Do not use in a place where metal debris or sands may be around. This may cause malfunction or leakage.
- Do not use for the purposes other than quick connective coupling between fluid pipelines.
- Direct hookup to a vibration or impact device may result in reduced lifetime of the Cupla.
- Fluid must be cleaned through filters before reaching the Cuplas.
- Do not strike the tip of an automatic shut-off valve with a hammer or the like. This may cause leakage or malfunction.
- Design and keep the fluid flow speed through Cuplas below 8 m/s for hydraulic use.
- A shut-off valve must be installed between pressure source and the Cupla.
- Do not connect with other brands' quick connective couplings.
- Inspect Cuplas periodically for wear. If any wear or defective area is apparent, discontinue use until repaired or replaced.

#### MAM Type

##### ⚠ Warning

- Do not drop Multi Cuplas. This may cause deformation of the plate.

##### ⚠ Caution

- Check to see that the lever is in the “open” position, and connect socket and plug securely.
- The lever should not be turned by force. This may cause lever breakage.
- The number of hoses and the positions of the hoses to be connected to the Cupla should be arranged symmetrically from the lock part so as to distribute and control the reaction evenly.
- Apply seal packing liquid/tape on male taper threads to ensure no leak.
- Packing seats in Cuplas must remain lubricated at all times.

#### MAM-A Type / MAM-B Type

##### ⚠ Warning

- Do not connect or disconnect the Cuplas under a dynamic or residual pressure of 0.6MPa or more. This could lead to Cupla damage.
- Do not drop Multi Cuplas. This may cause deformation of the plate.

##### ⚠ Caution

- Check to see that the lever is in the “connect” position, and connect socket and plug securely.
- The lever should not be turned by force. This may cause lever breakage.
- When replacing a Cupla from a plate, carefully remove the retaining ring C type by using a snap ring plier. Use caution not to over expand the retaining ring C type. It is recommended, however, that a new retaining ring C type should be used when a Cupla is replaced.
- The number of Cuplas and the positions of the Cuplas to be connected to the plate should be arranged symmetrically from the lock part so as to distribute and control the reaction evenly.
- Packing seals in Cuplas must remain lubricated at all times.

#### MAS Type / MAT Type

##### ⚠ Warning

- Do not connect / disconnect under dynamic pressure.
- The lateral sides of hexagon shaped body parts on socket and plug should match each other when the connection is complete.
- Never use socket & plug set that has an axial eccentricity of more than 0.6mm diameter range. This may cause leakage or breakage.

##### ⚠ Caution

- Connection between the same MAT types is virtually not possible because there is no allowance for eccentricity.
- O-rings in Cuplas must remain lubricated at all times.

#### MALC-SP Type

##### ⚠ Danger

- Do not pressurize the socket or plug with fluid of 2MPa or more. This may cause the valve pop out.

##### ⚠ Warning

- Never use socket & plug set that has an axial eccentricity of more than 2mm diameter range. This may cause leakage or breakage.
- Obliquity (misalignment) of socket and plug must be within 0.5 degrees during connection or disconnection; otherwise this may cause leakage or breakage.

##### ⚠ Caution

- O-rings in Cuplas must remain lubricated at all times.

#### MALC-HSP Type

##### ⚠ Danger

- Do not pressurize the socket or plug with fluid of 8MPa or more. This may cause the valve pop out.

##### ⚠ Warning

- Never use socket & plug set that has an axial eccentricity of more than 2mm diameter range. This may cause leakage or breakage.
- Obliquity (misalignment) of socket and plug must be within 0.5 degrees during connection or disconnection; otherwise this may cause leakage or breakage.

##### ⚠ Caution

- O-rings in Cuplas must remain lubricated at all times.

### Semicon Cupla Series

##### ⚠ Caution

- Prior to initial use, the seal material should be tested to confirm the material suitability for the fluid.
- Use a liquid or paste type thread sealant when assembling taper pipe thread joints in Cupla.
- Do not tighten up the screw on Cupla exceeding the rated maximum tightening torque. This may cause damage on thread.
- Apply the fluid used or pure water on the O-ring or plug (cylindrical part where the O-ring slides over) to reduce sliding friction (insertion load) and protect the O-ring from wear & tear.
- Small amount of fluid will spill out at disconnection. In order to avoid any foreseeable danger, purge out the fluid inside the Cupla with compressed air before disconnection.
- Do not use as a swivel joint.
- Use Cuplas only for the purpose of quick connective couplings.
- Do not apply any artificial impact, bend, or tension other than necessary in connection and disconnection. This may cause leakage or damage.
- Do not pressurize the socket or plug with fluid while left disconnected. This may cause possible valve blow out.
- Be sure to mount a proper dust cap while the Cuplas are left disconnected.
- Do not disassemble.

### Paint Cupla

##### ⚠ Warning

- Do not use Cuplas continuously under any pressure exceeding the rated working pressure.
- Use only within the range of rated temperature. Otherwise this may damage the seal material inside and cause leakage.
- The fluid media used must be compatible with the body and seal materials of Cupla.
- Check carefully if your special paint or solvent is suitable for this Cupla before use.
- Make sure to ground to the earth using such a hose containing a ground wire. Insufficient grounding may lead to fire or dangerous explosion caused by possible sparks of static electricity.
- All the time during operation, wear appropriate clothes and protective equipment such as safety glasses, face guard and gloves. Otherwise it will be potentially hazardous when paint or solvent splashes on to operators.
- Do not disassemble.

##### ⚠ Caution

- This Cupla is designed for paints diluted by solvents. Do not use this Cupla for other than this specific application.
- Do not tighten up the screw on Cupla exceeding the rated maximum tightening torque. This may cause damage on thread.
- Do not apply any artificial impact, bend, or tension other than necessary in connection and disconnection. This may cause leakage or damage.
- Do not use in a place where dust or metal dust may be around. This may cause malfunction or leakage.
- Do not use as a swivel joint.
- Fluid must be cleaned through filters before reach to Cuplas.
- A shut-off valve must be installed between pressure source and the Cupla.
- Do not try to connect other makers' plug to our socket. This will cause leakage from the couplings or damage on the Cuplas.
- Do not connect with other brands' quick connective couplings.
- Be careful with the fluid that will spill out from the plug when disconnected.
- Clean up the Cuplas after every use. Otherwise paint will dry out on and inside Cuplas and may cause their malfunction, insufficient color mix, or incomplete grounding.
- Check up on Cuplas periodically. If any disorder is shown, stop using the Cuplas until properly repaired or replaced with new ones.
- Fluid must be supplied from socket to plug.

### Semi-Standard Cupla Series

##### ⚠ Caution

- Use Cuplas only for the purpose of quick connective couplings.
- The fluid media used must be compatible with the body and seal materials of Cupla.
- Do not connect with other brands' quick connective couplings.
- Do not use Cuplas continuously under any pressure exceeding the rated working pressure.
- Use only within the range of rated temperature. Otherwise this may damage the seal material inside and cause leakage.
- Do not tighten up the screw on Cupla exceeding the rated maximum tightening torque. This may cause damage on thread.
- Do not apply any artificial impact, bend, or tension other than necessary in connection and disconnection. This may cause leakage or damage.
- Direct hookup to a vibration or impact device may result in reduced lifetime.
- Do not use in a place where dust or metal dust may be around. This may cause malfunction or leakage.
- Careless paint on Cuplas may cause malfunction or leakage.
- Do not disassemble.

# Nitto Kohki's CUPLA



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★ Specifications and designs are subject to change at any time without notice.



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Printed in Japan 09FH10-①