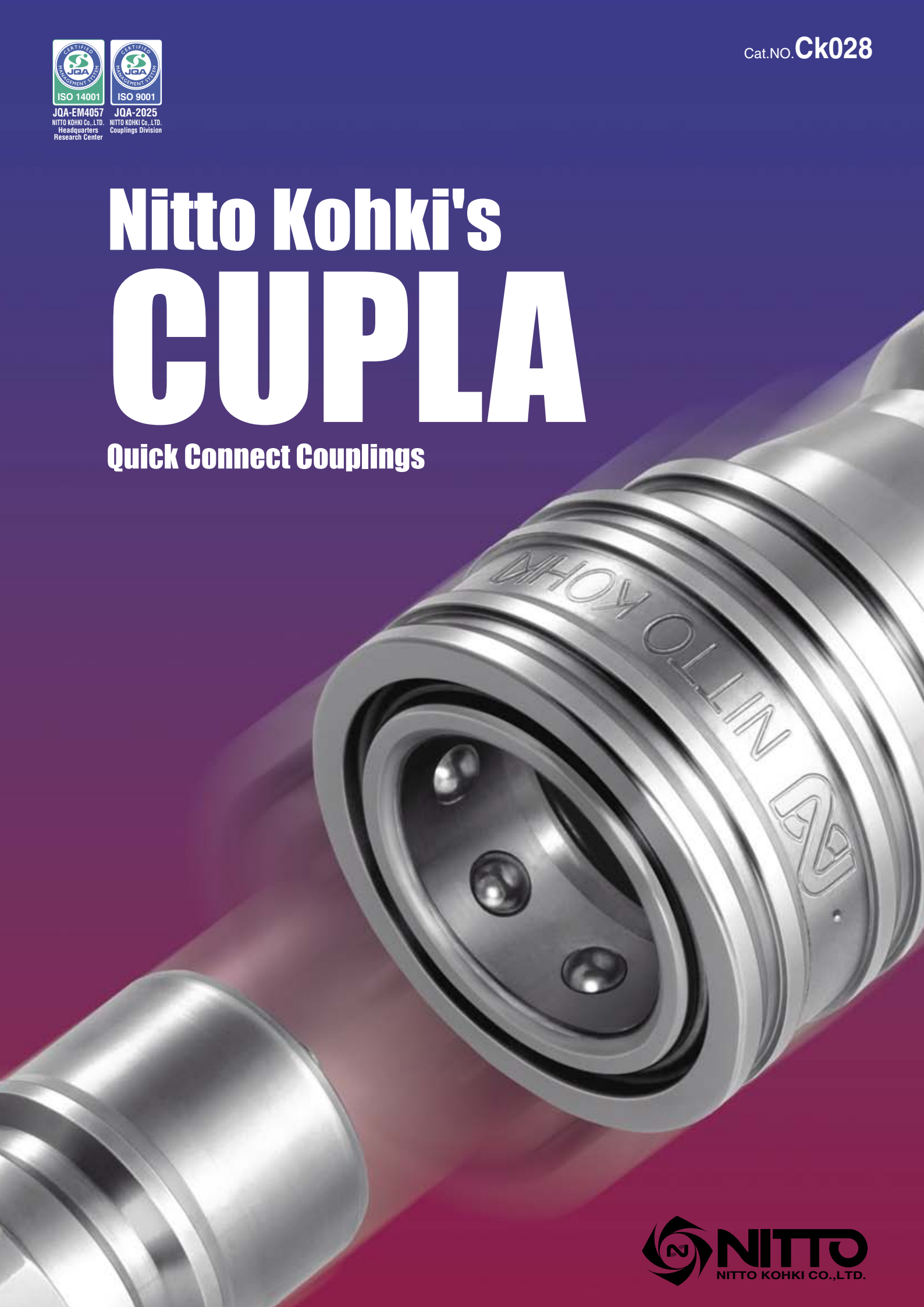
ISO 14001
JQA-EM4057
NITTO KOHKI Co.,LTD.
Headquarters
Research Center

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

Cat.NO.Ck028

Nitto Kohki's
CUPLA

Quick Connect Couplings



NITTO
NITTO KOHKI CO.,LTD.

Contents

Standard Cupla Series

Semi-Standard Cupla Series

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 3,000 different Cupla series that contain more than 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, such as fishing rod joints or compact disks.*

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 Air							
Name		Hi Cupla	Hi Cupla Two Way Type	Anti-Vibration Plug Hose	Anti-Vibration Plug VA Type	Hi Cupla 200	Full-Blow Cupla	Nut Cupla	Nut Cupla 200
Photo									
Body material • Working pressure (MPa)	Brass	1.0							
	Stainless steel	1.5							
	Steel	1.5	1.5			1.5		1.5	1.5
	Plastic								
	Others			1.5	1.5		1.5		
Body surface treatment		Chrome-plated (steel only)	Chrome-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 (with NBR seal)		-20˚C~+80˚C	-20˚C~+80˚C	—	-5˚C~+60˚C	-5˚C~+60˚C	-5˚C~+60˚C	-5˚C~+60˚C	-5˚C~+60˚C
Seal material		NBR, FKM	NBR, FKM	—	—	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								
Detailed information page		*17*	*19*	*20*	*20*	*21*	*23*	*25*	*25*

Zinc chrome plating, which contains hexavalent chromium compounds and was used for Cupla bodies and other parts, has changed to nickel plating according to the green procurement program.

For Air									
Rotary Nut Cupla	Oil Cupla	Duster Cupla	Super Duster Cupla	Lock Cupla 200	Purge Line Cupla	Purge Hi Cupla	Purge Hi Cupla PVR	Rotary Line Cupla	Line Cupla 200T/L/S
									
					1.0	1.0			
1.5				1.0					
	1.5	1.0	1.0				1.5	1.5	1.5
Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	—	Chrome-plated	Chrome-plated
		○		○		○			
		○		○		○			
		○		○		○	○		
						○	○		
							○		
○	○	○	○	○	○			○	○
-5˚C~+60˚C	-5˚C~+60˚C	-5˚C~+60˚C	-5˚C~+60˚C	-5˚C~+60˚C	-5˚C~+60˚C	-5˚C~+60˚C	-5˚C~+60˚C	-5˚C~+60˚C	-5˚C~+60˚C
NBR	NBR	NBR	NBR	NBR	NBR	NBR	NBR	NBR	NBR
○	○	○						○	
			○	○	○	○	○		○
○	○	○	○	○	○	○	○	○	○
27	*28*	*29*	*30*	*31*	*32*	*33*	*35*	*37*	*39*

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 Air							
Name		Rotary Full-Blow Line Cupla	Hi Cupla Ace	Rotary Plug	Twist Plug	Purge Plug	NK Cupla Hose	NK Cupla Coil Hose	Micro Cupla
Photo									
Body material • Working pressure (MPa)	Brass								1.0
	Stainless steel								1.0
	Steel			1.0, 1.5	1.0	1.0			
	Plastic		1.0, 1.5						
	Others	1.5					1.0	0.7	1.0
Body surface treatment		—	—	Nickel-plated	Nickel-plated	Chrome-plated	Chrome-plated (plug only)	Chrome-plated (plug only)	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 (with NBR seal)		-5˚C~+60˚C	-5˚C~+60˚C	-5˚C~+60˚C	-5˚C~+60˚C	-5˚C~+60˚C	-5˚C~+60˚C	-5˚C~+60˚C	-20˚C~+80˚C
Seal material		NBR	NBR	NBR	NBR	NBR	NBR	NBR	NBR, FKM
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		*41*	*43*	*45*	*46*	*47*	*48*	*48*	*49*

Zinc chrome plating, which contains hexavalent chromium compounds and was used for Cupla bodies and other parts, has changed to nickel plating according to the green procurement program.

For Air									
Multi Cupla MAM Type	Small Cupla	Super Cupla	Plastic Cupla BC Type	Plastic Cupla BCC Type	Cube Cupla				
									
0.7	0.7								
			0.07	0.07	1.0				
	0.7	1.0							
Chrome-plated	Chrome-plated	Chrome-plated (steel only)	–	–	–				
○	○	○			○				
	○	○	○						
			○	○					
	○	○			○				
0°C~+60°C	-5°C~+60°C	-20°C~+80°C	0°C~+50°C	0°C~+50°C	-5°C~+60°C				
NBR	NBR	NBR, FKM	NBR	NBR	NBR				
	○	○	○	○	○				
○	○	○		○	○				
			○		○				
52	*53*	*55*	*57*	*58*	*59*				

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 Oxygen / Fuel Gas		For Inert Gas, Vacuum		For Gases and Liquids			
Name		Mini Cupla	Mini Cupla Super	SP-V Cupla	PCV Pipe Cupla	SP Cupla Type A	SP Cupla	HCF Cupla	TSP Cupla
Photo									
Body material • Working pressure (MPa)	Brass	0.7	0.7	5.0, 3.0	4.5	5.0,3.0,2.0,1.5	5.0,3.0,2.0,1.5		5.0,3.0,2.0,1.5
	Stainless steel			7.5, 4.5		7.5,4.5,3.0,2.0	7.5,4.5,3.0,2.0		7.5,4.5,3.0,2.0
	Steel		0.7			7.5,4.5,3.0,2.0	7.5,4.5,3.0,2.0	1.5	7.5,4.5,3.0,2.0
	Plastic								
	Others								
Body surface treatment		—	Chrome-plated	—	—	Nickel-plated (steel only)	Nickel-plated (steel only)	Special	Nickel-plated (steel only)
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~+80˚C (CR)	-20˚C~+80˚C (CR)	-20˚C~+80˚C (NBR)	-20˚C~+80˚C (NBR)	+10˚C~+280˚C (PTFE)	-20˚C~+80˚C (NBR)
Seal material		NBR	NBR	CR, FKM, HNBR	CR, FKM, HNBR	NBR, FKM, P, EPDM	NBR, FKM, P, EPDM	PTFE	NBR, FKM, P, EPDM
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*	*65*	*67*	*69*	*71*	*73*	*75*

Zinc chrome plating, which contains hexavalent chromium compounds and was used for Cupla bodies and other parts, has changed to nickel plating according to the green procurement program.

For Gases and Liquids	For Hydraulics								
Lever Lock Cupla	HSP Cupla	Super HSP Cupla	Hyper HSP Cupla	210 Cupla	S210 Cupla	280 Cupla	350 Cupla	Flat Face Cupla F35	450B Cupla
									
					20.6				
1.8, 1.6, 1.1	20.6,18.0,14.0	20.6	20.6	20.6		31.5, 27.5	34.5	35	44.1
0.5, 0.2									
1.8,1.1,0.9,0.7									
—	Nickel-plated (Special steel)	Nickel-plated (Special steel)	Nickel-plated (Special steel)	Nickel-plated (Special steel)	—	Zinc Plating (Special steel)	Nickel-plated (Special steel)	Nickel-plated (Special steel)	Nickel-plated (Special steel)
	○	○	○	○	○	○	○		
	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	
○	○	○	○	○	○	○	○	○	
○	○						○		
○	○						○		
○	○						○		
○									
○									
○									
-20˚C~+80˚C (NBR)	-20˚C~+80˚C (NBR)	-20˚C~+80˚C (NBR)	-5˚C~+80˚C (NBR)	-20˚C~+80˚C (NBR)	-20˚C~+180˚C (FKM)	-5˚C~+80˚C (NBR)	-20˚C~+180˚C (FKM)	-5˚C~+180˚C (FKM)	-20˚C~+80˚C (NBR)
NBR, FKM, SI, EPDM	NBR, FKM	NBR	NBR	NBR, FKM	FKM, NBR	NBR	FKM, NBR	FKM, NBR	NBR, FKM
○	○	○	○	○	○	○			○
							○	○	
	○	○	○	○	○	○			○
							○	○	
○									
77	*81*	*83*	*85*	*87*	*89*	*91*	*93*	*95*	*97*

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 Hydraulics	For Cooling Water and Heating Oil	For Cooling Water	For Paint	For High Purity Chemicals			
Name		700R Cupla	Mold Cupla	Flow Meter	Paint Cupla	Semicon Cupla SP Type	Semicon Cupla SCS Type	Semicon Cupla SCY Type	Semicon Cupla SCF Type
Photo									
Body material • Working pressure (MPa)	Brass		1.0						
	Stainless steel				1.0	0.2	0.2	0.2	
	Steel	68.6							
	Plastic								0.2
	Others			0.5	1.0				
Body surface treatment		Nickel-plated (Special steel)	—	—	—	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~+80˚C (NBR)	−20˚C~+80˚C (NBR)	+10˚C~+60˚C (NBR)	0˚C~+50˚C (PFA)	0˚C~+50˚C (FKM)	0˚C~+50˚C (P)	0˚C~+50˚C (P)	+5˚C~+50˚C (FKM)
Seal material		NBR, FKM	NBR, FKM	NBR	PFA	FKM,EPDM, P,KL	P, EPDM, FKM (O-ring for socket)	P (Packing seal for socket)	FEP-coated FKM
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		*98*	*99*	*101*	*102*	*103*	*104*	*105*	*106*

Zinc chrome plating, which contains hexavalent chromium compounds and was used for Cupla bodies and other parts, has changed to nickel plating according to the green procurement program.

For High Purity Chemicals	For Dialysis Fluid	For Air and Hydraulics							
Semicon Cupla SCT Type	Dialyzer Cupla	Multi Cupla MAS/MAT	Multi Cupla MALS/MALT						
									
	1.5	7.0							
			14.0						
0.2									
	0.06								
—	—	Autocatalitic Nickel-Phosphorus Coating	Autocatalitic Nickel-Phosphorus Coating						
○		○	○						
○	○	○	○						
○		○	○						
○		○	○						
○		○							
	○								
+5˚C~+50˚C (FKM)	-40˚C~+150˚C (SI)	-20˚C~+180˚C (FKM)	-20˚C~+180˚C (FKM)						
FEP-coated FKM	SI, FKM	FKM	FKM						
○	○								
○		○							
			○						
	○								
107	*108*	*109*	*110*						

Semi-standard Cupla Series

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

Zinc chrome plating, which contains hexavalent chromium compounds and was used for Cupla bodies and other parts, has changed to nickel plating according to the green procurement program.

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.

For Vacuum (Page 114)

Screw Cupla PCS Type
114 Page

For vacuum and pressure testing
Please consult with us for larger sizes.

Working pressure : 3.0MPa {31kgf/cm²}
Body material : steel (some parts are made of stainless steel)
Application : 7/16"~7/8"
Seal material : CR, NBR, FKM

For Water (Page 117)

TSP-HP Cupla (for High Pressure)
117 Page

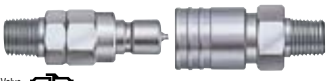
High pressure and general purpose type

Working pressure : 9.0MPa {91.8kgf/cm²}
Body material : Stainless steel
Application : 1/4"~1/2"
Seal material : NBR, etc.

For Gases and Liquids (Page 119)

Compact Cupla
119 Page

For small pneumatic control devices



Working pressure : 0.7MPa {7kgf/cm²}
Body material : Stainless steel (some parts are made of aluminum and brass)
Application : 1/8"
Seal material : NBR

For Inert Gases (Page 115~117)

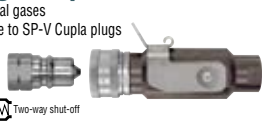
Charge Cupla CS Type
115 Page

For industrial gases
Connectable to SP-V Cupla plugs

Working pressure : 3.0MPa {31kgf/cm²}
Body material : Stainless steel (some parts are made of aluminum and brass)
Application : 1/4", 3/8"
Seal material : CR, FKM

Charge Cupla CNR Type
115 Page

For industrial gases
Connectable to SP-V Cupla plugs



Working pressure : 4.5MPa {46kgf/cm²}
Body material : Stainless steel (some parts are made of aluminum and brass)
Application : 3/8", 1/2"
Seal material : CR, HNBR

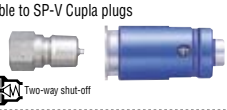
Auto Cupla AC Type
116 Page

For industrial gases
Connectable to SP-V Cupla plugs

Working pressure : 3.0MPa {31kgf/cm²}
Body material : Stainless steel (some parts are made of aluminum and brass)
Application : 1/4", 3/8"
Seal material : CR, FKM, NBR

Auto Cupla ACV Type
116 Page

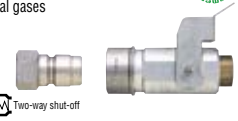
For industrial gases
Connectable to SP-V Cupla plugs



Working pressure : 3.0MPa {31kgf/cm²}
Body material : Stainless steel (some parts are made of aluminum and brass)
Application : 1/4", 3/8"
Seal material : CR, FKM, NBR

Airless Cupla CNA Type
117 Page

For industrial gases

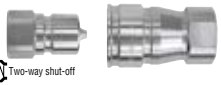


Working pressure : 3.0MPa {31kgf/cm²}
Body material : Stainless steel
Application : 3/8"
Seal material : FKM, EPDM

For piping to control temperatures (Page 118~119)

High Flow Cupla
118 Page

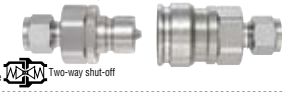
For piping to control temperatures
Applicable fluid: Water, Heat transfer fluids



Working pressure : 1.0MPa {10kgf/cm²}
Body material : Stainless steel, brass
Application : 1/4"~1/2"
Seal material : EPDM, FKM

High Flow Cupla BI Type
118 Page

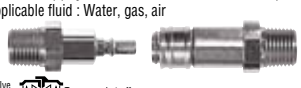
High Flow Cupla with ferrule flange mount
Applicable fluid: Water, Heat transfer fluids



Working pressure : 1.0MPa {10kgf/cm²}
Body material : Stainless steel
Application : 1/4"~1/2"
Seal material : EPDM, FKM

MYU Cupla
119 Page

For small bore piping (max.10mm outer diameter) to control temperatures
Applicable fluid : Water, gas, air



Working pressure : 1.0MPa {10kgf/cm²}
Body material : Stainless steel, brass (nickel-plated)
Application : Please let us know the required sizes and end configurations.
Seal material : NBR, EPDM, FKM

Little Cupla
119 Page

For small bore piping (max.14mm outer diameter) to control temperatures
Applicable fluid : Water, gas, air

Working pressure : 1.0MPa {10kgf/cm²}
Body material : Stainless steel, brass (nickel-plated)
Application : Please let us know the required sizes and end configurations.
Seal material : NBR, EPDM, FKM

Compact Cupla
119 Page

For small bore piping (max.16.5mm outer diameter) to control temperatures
Applicable fluid : Water, gas, air

Working pressure : 1.0MPa {10kgf/cm²}
Body material : Stainless steel, brass (nickel-plated)
Application : Please let us know the required sizes and end configurations.
Seal material : NBR, EPDM, FKM

Cupla Safety Mechanism (Page 120)

Cupla with Single Lock
120 Page

Disconnection fail-safe mechanism

Cupla with Safety Lock
120 Page

Disconnection fail-safe mechanism

Cupla Accessories

Various Cupla accessories for safer and more comfortable use.

Accessories (Page 121~123)

Sleeve Cover
121 Page

Plastic cover for Hi Cupla Series

Dust Cap
121 Page

Plastic cap for Hi Cupla Series

Protection Cover
121 Page

Plastic Cover for Nut Cupla and Full-Blow Cupla Nut Type

Drain Cock / Pressure Gauge
121 Page

Accessories for Air Lines of Hi Cupla Series

Dip Mold Cap
122 Page

Dust caps for SP Cupla, TSP Cupla, and Hudraulic Cupla

Safety Cap
122 Page

Metal caps for Hi Cupla Series, SP Cupla, TSP Cupla and Hydraulic Cupla
•Semi-standard

Sleeve Stopper
122 Page

Sleeve Stopper for SP Cupla Type A

Accessories for O-ring maintenance
123 Page

Jigs & grease for replacement of O-rings in SP Cupla, TSP Cupla and HSP Cupla

Residual Pressure Release Jig
123 Page

Residual Pressure Release Jig for SP Cupla and Hydarulic Cuplas

Purge Adapter
123 Page

Metal Purge Adapter for Hydraulic lines
•Semi-standard

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.

Zinc chrome plating, which contains hexavalent chromium compounds and was used for Cupla bodies and other parts, has changed to nickel plating according to the green procurement program.

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)

PCB Cupla
For expanded pipes

Valve structure: Straight through

Working pressure : To be defined after negotiation.
Body material : Brass (some of the parts are of stainless steel)
Pipe sizes : To be complied with your requirements.
Seal material : CR, FKM, NBR

PCBW Cupla
For bulged pipes and spool pipes

Valve structure: Straight through

Working pressure : To be defined after negotiation.
Body material : Brass (some of the parts are of stainless steel)
Pipe sizes : To be complied with your requirements.
Seal material : CR, FKM, NBR

PCP Cupla
For bulged pipes and spool pipes

Valve structure: Straight through

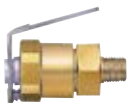
Working pressure : To be defined after negotiation.
Body material : POM (polyacetal), some of the parts are of stainless steel
Pipe sizes : To be complied with your requirements.
Seal material : CR, FKM, NBR

PCBL Cupla
For straight pipes

Valve structure: Straight through

Working pressure : To be defined after negotiation.
Body material : Stainless steel (some of the parts are of brass)
Pipe sizes : To be complied with your requirements.
Seal material : CR, FKM, NBR

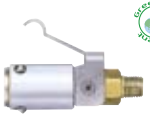
PCL Cupla
For straight pipes



Valve structure: Straight through

Working pressure : To be defined after negotiation.
Body material : Brass (some of the parts are of steel)
Pipe sizes : To be complied with your requirements.
Seal material : CR, FKM, NBR

PCW Cupla
For expanded pipes



Valve structure: Straight through

Working pressure : To be defined after negotiation.
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

For Inert Gas and Vacuum

PCA Cupla
Pipes for high pressure line

Valve structure: Straight through

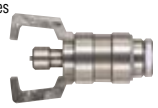
Working pressure : To be defined after negotiation.
Body material : Brass (some of the parts are of stainless steel and steel)
Pipe sizes : To be complied with your requirements.
Seal material : CR, FKM, NBR

PCIO Cupla
For pipes that have inner locking system

Valve structure: Straight through

Working pressure : To be defined after negotiation.
Body material : Stainless steel (some of the parts are of brass)
Pipe sizes : To be complied with your requirements.
Seal material : CR, FKM, NBR

PCD Cupla
For pipes of special shapes



Valve structure: Straight through

Working pressure : To be defined after negotiation.
Body material : Stainless steel (some of the parts are of aluminum)
Pipe sizes : To be complied with your requirements.
Seal material : CR, FKM, NBR

PCS Cupla
For pipes of special shapes

Valve structure: Straight through

Working pressure : To be defined after negotiation.
Body material : Stainless steel (some of the parts are of brass)
Pipe sizes : To be complied with your requirements.
Seal material : CR, FKM, NBR

Auto Cupla
For copper pipes

Valve structure: Straight through

Working pressure : To be defined after negotiation.
Body material : Stainless steel (some of the parts are of brass)
Pipe sizes : To be complied with your requirements.
Seal material : CR, FKM, NBR

For Pneumatics and Hydraulics

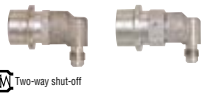
Screw Cupla NCM Type
For connecting pneumatic/hydraulic lines

Valve structure: Straight through

Working pressure : 14.0MPa {142kgf/cm²}
Body material : Steel (chrome-plated)
Application : 1/8"~1"
Seal material : NBR

For High Purity Chemicals

Semicon Cupla SML Type
For semiconductor manufacturing equipment



Valve structure: Two-way shut-off

Working pressure : 0.2MPa {2kgf/cm²}
Body material : Stainless steel
Application : 1/8", 1/4"
Seal material : FKM, EPDM, others

Semicon Cupla SCF Straight Type
For semiconductor manufacturing equipment
•see page 106

Valve structure: Two-way shut-off

Working pressure : 0.2MPa {2kgf/cm²}
Body material : Fluorine contained resin
Application : 3/8", 1/2"
Seal material : FEP-coated FKM, Fluoro-resin

For Water

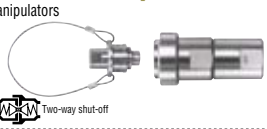
Airless Cupla
For physical and chemical devices

Valve structure: Two-way shut-off

Working pressure : 3.0MPa {31kgf/cm²}
Body material : Stainless steel
Application : 1/4"~1"
Seal material : FKM, EPDM

For Manipulators

New Clear Cupla MP Type
For manipulators

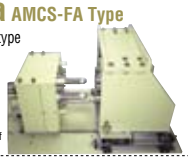


Valve structure: Two-way shut-off

Working pressure : 5.0MPa {51kgf/cm²}
Body material : Stainless steel
Application : 1/4"~1"
Seal material : FKM

Automatic Multi Cupla

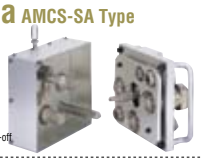
Multi Cupla AMCS-FA Type
Full automatic operation type



Valve structure: Two-way shut-off

Working pressure
Body material
Application
Seal material
} To be decided after consultation.

Multi Cupla AMCS-SA Type
Semi-automatic type



Valve structure: Two-way shut-off

Working pressure
Body material
Application
Seal material
} To be decided after consultation.

For Water Cleaner

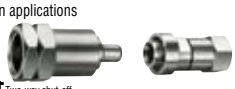
Cupla for Water Cleaner
For water cleaner

Valve structure: One-way shut-off

Working pressure : 0.5MPa {5kgf/cm²}
Body material : Plastic
Application : ø9 x ø15
Seal material : EPDM

Safety Equipment

Automatic Disconnection Cupla
For fail safe system and automatic connection/disconnection applications



Valve structure: Two-way shut-off

Working pressure
Body material
Application
Seal material
} To be decided after consultation.

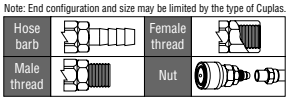
Select an appropriate Cupla for the job

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

Fluid and the temperature	**Select a Cupla with body and seal materials that suit the fluid and its temperature.**	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.
Fluid Pressure	**Select a Cupla suitable for the actual max. fluid pressure.**	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^2) and 68.6MPa (700kgf/cm^2).
Automatic Shut-off Valve	**Select a Cupla with a valve structure that suits the piping application.**	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.
Operating Environment	**Select a Cupla with design and materials that suit each operating environment.**	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.
Size and type of end configurations	**Finally, and critically specify the size and type of end configurations.**	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.

Note: End configuration and size may be limited by the type of Cuplas.

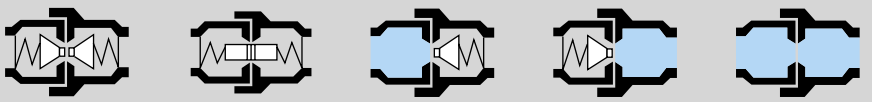


If you cannot find a suitable Cupla, please enter the above details in the “Cupla Inquiry Form” at the end of this catalog and send it to our distributor in your country or directly to Nitto Kohki by fax or post.

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



Two-way shut-off | Two-way shut-off (Non-Spill) | One-way shut-off | One-way shut-off | Straight through

Working pressure

1.0MPa {10kgf/cm^2}

Applicable fluid

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

*2

End configuration

Symbol	H	M	F
Meaning	Hose barb	Male thread	Female thread

Plug or Socket

Symbol	P	S
Meaning	Plug	Socket

*1

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, SP 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

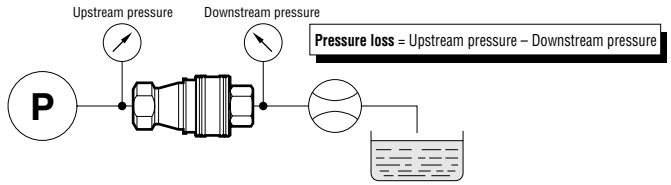
This indicates the nominal size of the pipe thread connection or of the hose to be used.

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.

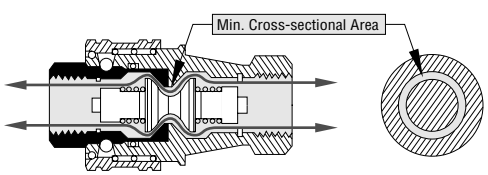
Pressure Loss

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 (IIR), Kalrez (KL) or rubber for food, depending on your application.

• Properties of rubbers used for O-rings

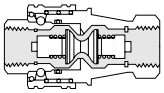
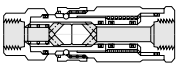
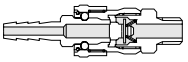
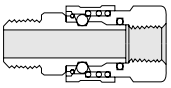
Seal material		Working Temperature Range	Features
Common name	Nitto symbol		
Nitrile rubber	NBR (SG)	−20°C ~ +80°C	Standard seal with excellent oil and wear resistance profile. High nitrile rubber is particularly oil resistant. Low nitrile one has excellent low temperature resistance but less oil resistance.
Hydrogenated nitrile rubber	HNBR (H708)	−20°C ~ +120°C	For freezer oil resistant and hydrochlorofluorocarbon (HFC134a) resistant applications.
Fluoro rubber	FKM (X-100)	−20°C ~ +180°C	Excellent heat resistance, as well as oil and chemical resistance is good for wide range of applications.
Chloroprene rubber	CR (X-306)	−20°C ~ +80°C	Excellent resistance to weather variations, also little affected by ultraviolet and/or ozone.
	CR (C308)	−20°C ~ +80°C	In addition to conventional durability features, suitable for hydrochlorofluorocarbon (HFC134a) resistant applications.
Ethylene-propylene rubber	EPDM (EPT)	−40°C ~ +150°C	Excellent resistance to steam and hot water, also excellent resistance to weather variations and ozone.
Perfluoroelastomer	P	0°C ~ +50°C	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 cannot be used continuously at the minimum or maximum working temperatures. Please check with us if you need Cuplas in such extreme applications.

Valve structure

Two-way shut-off		Automatic shut-off valves are mounted in both plug and socket. The couple prevents spill out of fluid from the lines on disconnection. 
Two-way shut-off (Airless)		"Two-way shut-off" with additional "Airless" design allows extremely little admixture of air on connection and prevents fluid spill out on disconnection. 
One-way shut-off		This design prevents fluid outflow only from the socket side on disconnection. Also available are plugs with an automatic shut-off valve. 
Straight through		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

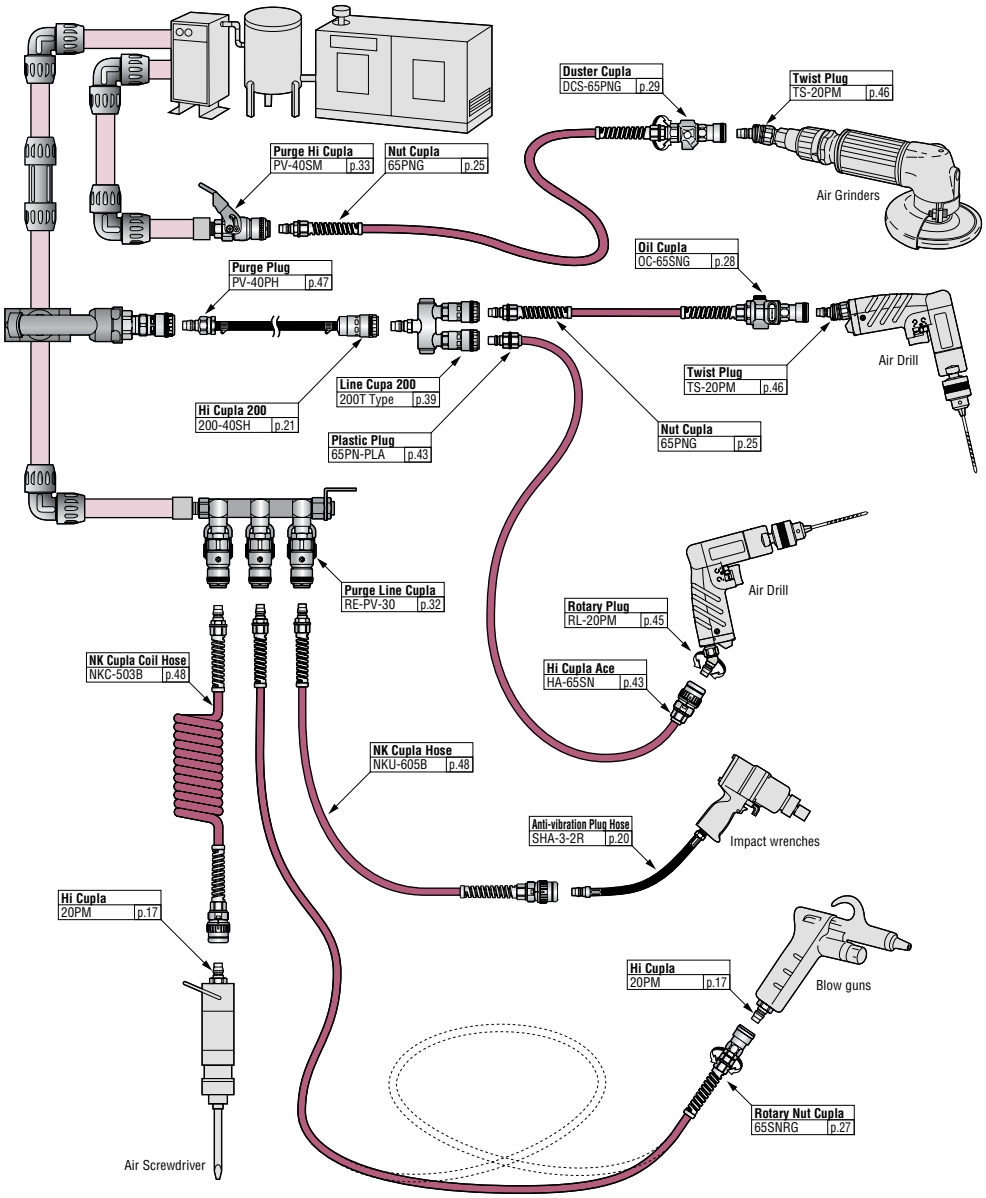
Durability test under diversified environments

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.



For Air

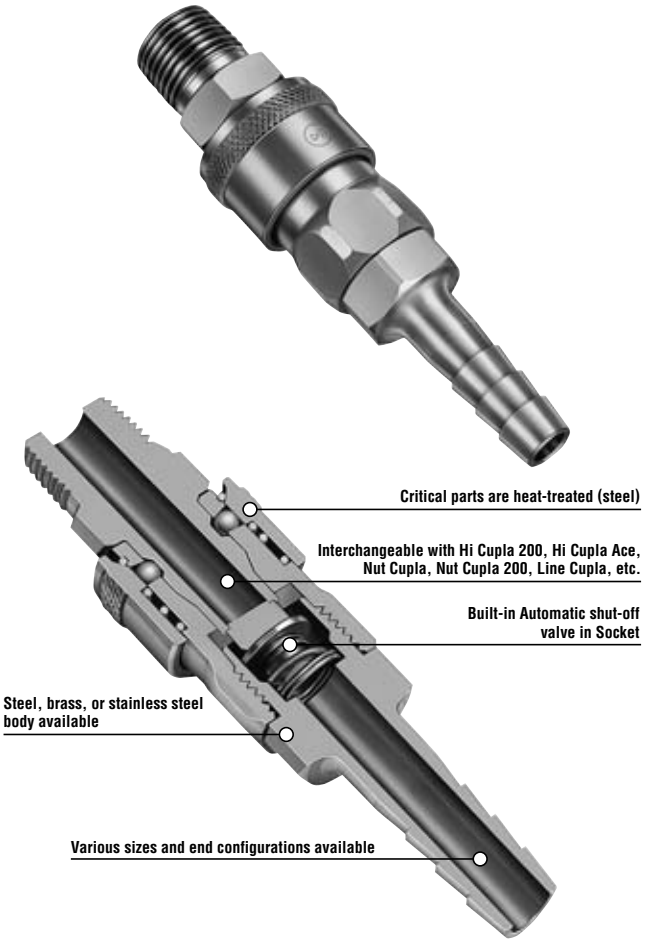
Hi Cupla

Universal purpose couplings for air lines

Working pressure
1.0~1.5
1.0~1.5MPa {10~15kgf/cm²}

Valve structure
One-way shut-off

Applicable fluids (steel applies to air only)
Air
Water



Specifications

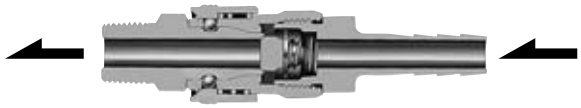
Body material	Steel (Chrome-plated)		Brass		Stainless steel
Size	1/8" (10 type) • 1/4" (20 type) • 3/8" (30 type) 1/2" (40 type, 400 type) • 3/4" (600 type) • 1"(800 type)				
Working pressure MPa {kgf/cm²}	1.5 {15}		1.0 {10}		1.5 {15}
Pressure resistance MPa {kgf/cm²}	2.0 {20}		1.5 {15}		2.0 {20}
Seal 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	Available on request	

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	—	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

❶ 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.
❷ Sockets and plugs for Models 400 (1/2"), 600 (3/4") and 800 (1") can be connected with each other. ❶ and ❷ can not be connected across each group.
❸ Interchangeable with all other Hi Cupla Series products.

Min. Cross-Sectional Area (mm²)

■17, 20, 30, 40 type

Socket \ Plug	17PH	20PH	20PM·PF	30PH	30PM·PF	40PH	40PM·PF
17SH	16	16	16	16	16	16	16
20SH	16	20	20	20	20	20	20
20SM·SF	16	20	33	33	33	33	33
30SH	16	20	33	33	33	33	33
30SM·SF	16	20	33	33	33	33	33
40SH	16	20	33	33	33	33	33
40SM·SF	16	20	33	33	33	33	33

■400, 600, 800 type

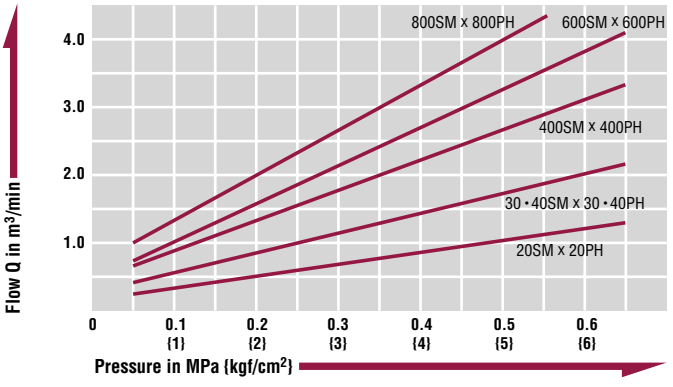
Socket \ Plug	400PH	400PM·PF	600PH	600PM·PF	800PH	800PM·PF
400SH	64	64	64	64	64	64
400SM·SF	64	94	94	94	94	94
600SH	64	94	94	94	94	94
600SM·SF	64	94	94	94	94	94
800SH	64	94	94	94	94	94
800SM·SF	64	94	94	94	94	94

Suitability for Vacuum

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

Pressure - Flow Characteristics

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



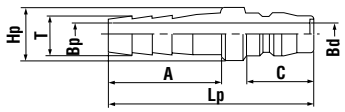
From factory air line to pneumatic tool connection, available in various body materials, sizes and connection types. Excellent durability.

- 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.

Models and Dimensions

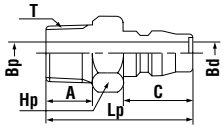
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



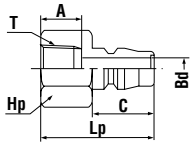
Model	Application (Hose)	Body material•Mass (g)			Dimensions (mm)						
		Steel	Brass	Stainless steel	Lp	øHp	A	C	øT	øBp	øBd
17PH	1/4"	24	–	–	54	16	27	20	7.2	4.5	7.5
20PH	1/4"	28	30	26	57	16	30	20	9	5	7.5
30PH	3/8"	31	34	27	61	16	34	20	11.3	7.5	7.5
40PH	1/2"	53	58	47	63	20	36	20	15	7.5	7.5
400PH	1/2"	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

Plug PM type (Male thread)



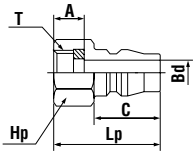
Model	Application	Body material•Mass (g)			Dimensions (mm)						
		Steel	Brass	Stainless steel	Lp	Hp(WAF)	A	C	T	øBp	øBd
10PM	Rc 1/8	22	24	–	37	Hex.14	10	20	R 1/8	4	7.5
20PM	Rc 1/4	25	28	27	41	Hex.14	13	20	R 1/4	7.5	7.5
30PM	Rc 3/8	43	48	40	42	Hex.19 *3	14	20	R 3/8	7.5	7.5
40PM	Rc 1/2	59	66	62	46	Hex.22	16	20	R 1/2	12	7.5
400PM	Rc 1/2	69	77	70	50	Hex.22	16	23	R 1/2	13	13
600PM	Rc 3/4	116	126	115	55	Hex.32	18	23	R 3/4	19	13
800PM	Rc 1	152	152	198	63	Hex.35	22	23	R 1	22	13

Plug PF type (Female thread)



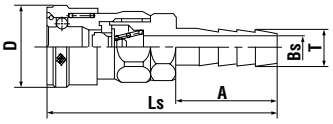
Model	Application	Body material•Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	Lp	Hp(WAF)	A	C	T	øBd
20PF	R 1/4	28	30	30	36	Hex.17	13	20	Rc 1/4	7.5
30PF	R 3/8	39	41	41	37	Hex.21	14	20	Rc 3/8	7.5
40PF	R 1/2	70	77	69	38	Hex.29	15	20	Rc 1/2	7.5
400PF	R 1/2	82	89	81	41	Hex.29	15	23	Rc 1/2	13
600PF	R 3/4	116	126	118	45	Hex.35	17	23	Rc 3/4	13
800PF	R 1	190	202	192	54	Hex.41	22	23	Rc 1	13

Plug PFF type (Parallel female thread)



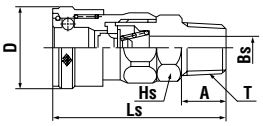
Model	Application	Body material•Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	Lp	Hp(WAF)	A	C	T	øBd
20PFF	G 1/4	23	–	–	32	Hex.17	9	20	G 1/4	7.5

Socket SH type (Hose barb)



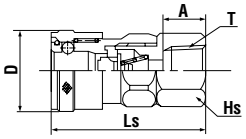
Model	Application (Hose)	Body material•Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	Ls	øD	A	T	øBs
17SH	1/4"	99	–	–	69.5	26.5	27	7.2	4.5
20SH	1/4"	103	107	100	72.5	26.5 *1	30	9	5
30SH	3/8"	106	111	101	76.5	26.5 *1	34	11.3	7.5
40SH	1/2"	118	124	118	78.5	26.5 *1	36	15	9
400SH	1/2"	220	240	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

Socket SM type (Male thread)



Model	Application	Body material•Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	Ls	øD	Hs(WAF)	A	T	øBs
10SM	Rc 1/8	98	–	–	52.5	26.5 *1	Hex.19	10	R 1/8	5
20SM	Rc 1/4	101	104	96	55.5	26.5 *1	Hex.19	13	R 1/4	7
30SM	Rc 3/8	108	119	105	56.5	26.5 *1	Hex.19	14	R 3/8	8
40SM	Rc 1/2	131	136	120	59.5	26.5 *1	Hex.23 *2	16	R 1/2	9
400SM	Rc 1/2	213	232	207	63	35	Hex.29	16	R 1/2	13
600SM	Rc 3/4	260	283	241	67	35	Hex.32	19	R 3/4	16
800SM	Rc 1	288	317	303	72	35	Hex.36	22	R 1	16

Socket SF type (Female thread)

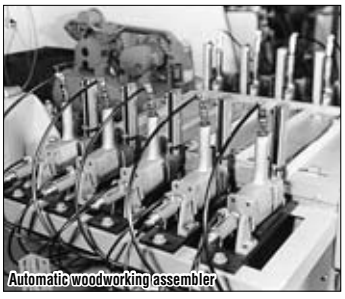


Model	Application	Body material•Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	Ls	øD	Hs(WAF)	A	T
20SF	R 1/4	95	103	98	49.5	26.5 *1	Hex.19	13	Rc 1/4
30SF	R 3/8	103	105	99	50.5	26.5 *1	Hex.21	14	Rc 3/8
40SF	R 1/2	139	149	138	52.5	26.5 *1	Hex.29	15	Rc 1/2
400SF	R 1/2	216	235	216	57	35	Hex.29	15	Rc 1/2
600SF	R 3/4	260	283	258	61	35	Hex.35	17	Rc 3/4
800SF	R 1	324	353	317	68	35	Hex.41	22	Rc 1

• 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 = WAF 22 for brass and stainless steel models.
*3 : Hp = WAF 17 for brass and stainless steel models.

Application example


Pneumatic tools


Automatic woodworking assembler

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 Air

Hi Cupla

Two Way Type

For bi-directional compressed air flow

Working pressure	Valve structure	Applicable fluid
1.5		
1.5 MPa {15 kgf/cm²}	One-way shut-off	Air

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 from 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.

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	Available on request

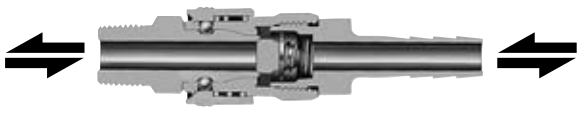
Max. Tightening Torque

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

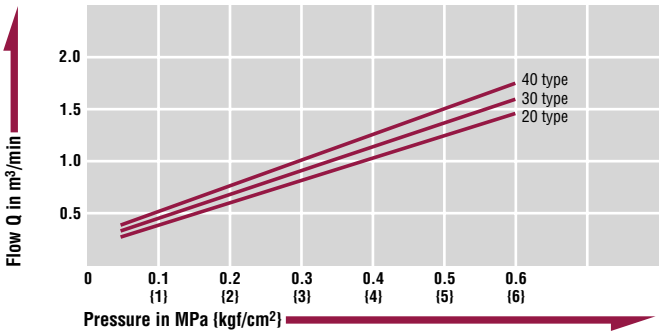
Can be connected with plugs of Hi Cupla Models 20, 30 and 40.
Interchangeable with each corresponding Hi Cupla Series models.

Suitability for Vacuum

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

Pressure - Flow Characteristics

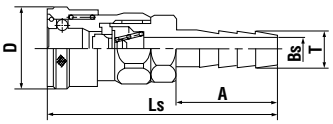
[Test conditions] •Fluid : Air •Temperature : Room temperature



Models and Dimensions

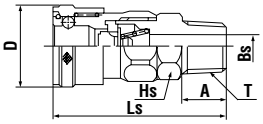
WAF : WAF stands for width across flats.

Socket SH type (Hose barb)



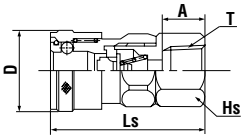
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			Ls	øD	A	øT	øBs
TW20SH	1/4"	98	72.5	26.5	30	9	5
TW30SH	3/8"	102	76.5	26.5	34	11.3	7.5
TW40SH	1/2"	117	78.5	26.5	36	15	9

Socket SM type (Male thread)



Model	Application	Mass (g)	Dimensions (mm)					
			Ls	øD	Hs(WAF)	A	T	øBs
TW20SM	Rc 1/4	95	55.5	26.5	Hex.19	13	R 1/4	7
TW30SM	Rc 3/8	109	56.5	26.5	Hex.19	14	R 3/8	8
TW40SM	Rc 1/2	116	59.5	26.5	Hex.23	16	R 1/2	9

Socket SF type (Female thread)



Model	Application	Mass (g)	Dimensions (mm)				
			Ls	øD	Hs(WAF)	A	T
TW20SF	R 1/4	95	49.5	26.5	Hex.19	13	Rc 1/4
TW30SF	R 3/8	96	50.5	26.5	Hex.21	14	Rc 3/8
TW40SF	R 1/2	137	52.5	26.5	Hex.29	15	Rc 1/2

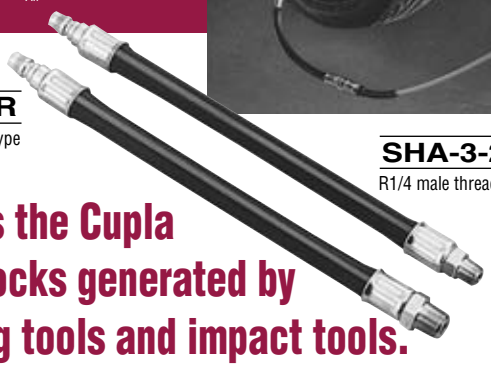
For Air

Anti-vibration Plug Hose

Plug hose for vibrating and percussive air tools

Working pressure: 1.5 MPa {15 kgf/cm²}

Applicable fluid: Air



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

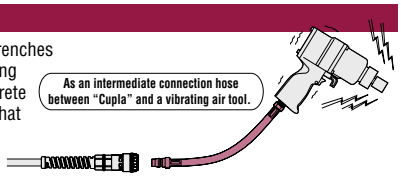
Applicable fluid	Air	
Model	SHA-3-2R	SHA-3-3R
Size	R 1/4"	R 3/8"
Inlet (Plug)	Hi Cupla (30PH)	
Working pressure MPa {kgf/cm²}	1.5 {15}	
Pressure resistance MPa {kgf/cm²}	2.0 {20}	
Air Hose	Rubber hose for air	
Overall Length	310 mm	
Min. Bend Radius	135 mm	

Interchangeability

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

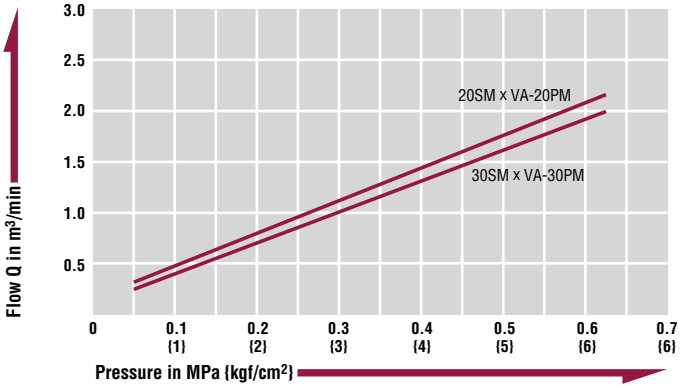
Application

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 Air

Anti-vibration Plug

VA Type

Plug for vibrating and percussive air tools

Working pressure: 1.5 MPa {15 kgf/cm²}

Applicable fluid: Air

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 of 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/cm²}	1.5 {15}
Pressure resistance MPa {kgf/cm²}	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}

Interchangeability

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

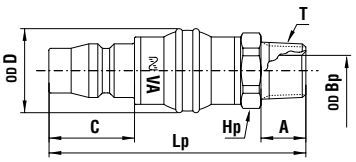
Suitability for Vacuum

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

Models and Dimensions

WAF : WAF stands for width across flats.

Plug PM type (Male thread)



Model	Application	Mass (g)	Dimensions (mm)						
			Lp	Hp(WAF)	A	C	T	øBp	øD
VA-20PM	Rc 1/4	37	63	Hex.17	11	21	R 1/4	7.5	20.6
VA-30PM	Rc 3/8	42	64	Hex.17	12	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 Air

Hi Cupla 200

Push-to-connect type for air lines

Working pressure: 1.5 — 1.5 MPa {15 kgf/cm²}

Valve structure: One-way shut-off

Applicable fluid: Air

▼with Tube Fitter

Simple and secure push-to-connect type! Big flow rate! Tube edge 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 previous model).
- Tube edge 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.

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 : ø6 ±0.1 • ø8 ±0.15 • ø10 ±0.15 Nylon : ø6 $^{+0.05}_{-0.08}$ • ø8 $^{+0.05}_{-0.1}$ • ø10 $^{+0.05}_{-0.1}$ Teflon : ø6 ±0.07 • ø8 ±0.07 • ø10 ±0.07			
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)	−5°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.
The seal material of Micro Cupla with Tube Fitter is NBR only.

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 (mm²)

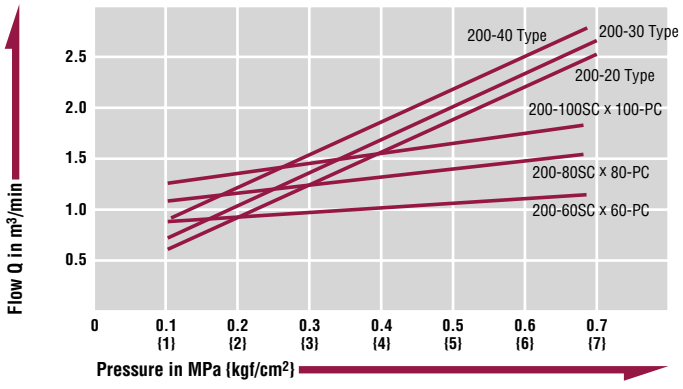
Socket \ Plug	17PH	20PH	30PH	40PH	20PM	30PM	40PM	20PF	30PF	40PF
200-17SH	16	16	16	16	16	16	16	16	16	16
200-20SH	16	20	20	20	20	20	20	20	20	20
200-30SH	16	20	41	41	41	41	41	41	41	41
200-40SH	16	20	41	41	41	41	41	41	41	41
200-20SM	16	20	41	41	41	41	41	41	41	41
200-30SM	16	20	41	41	41	41	41	41	41	41
200-40SM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

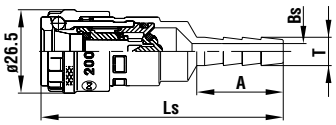
[Test conditions] •Fluid : Air •Temperature : Room temperature



Models and Dimensions

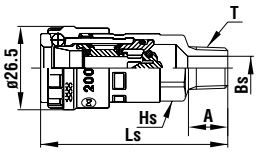
WAF : WAF stands for width across flats.

Socket SH type (Hose barb)



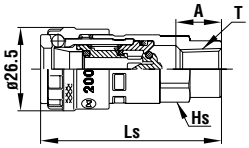
Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			Ls	A	øT	øBs
200-17SH	1/4"	86	77	27	7.2	4.5
200-20SH	1/4"	90	77	27.5	9	5
200-30SH	3/8"	92	79	32	11.3	7.5
200-40SH	1/2"	104	79.5	32	15	10

Socket SM type (Male thread)



Model	Application	Mass (g)	Dimensions (mm)				
			Ls	Hs(WAF)	A	T	øBs
200-20SM	Rc 1/4	89	60	Hex.19	13	R 1/4	7.5
200-30SM	Rc 3/8	91	60.5	Hex.19	13.5	R 3/8	10
200-40SM	Rc 1/2	102	56	Hex.24	16	R 1/2	13

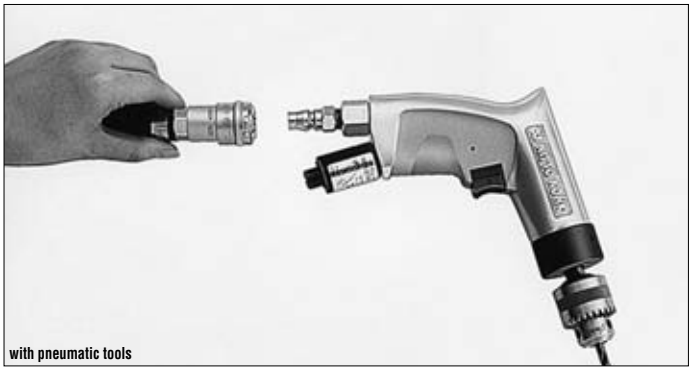
Socket SF type (Female thread)



Models	Application	Mass (g)	Dimensions (mm)			
			Ls	Hs(WAF)	A	T
200-20SF	R 1/4	94	57.5	Hex.19	14.5	Rc 1/4
200-30SF	R 3/8	103	55.5	Hex.22	13	Rc 3/8
200-40SF	R 1/2	138	57.5	Hex.29	16	Rc 1/2

Application example

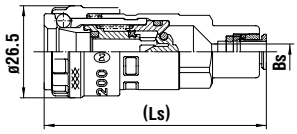
Air piping



with pneumatic tools

Models and Dimensions (with Tube Fitter)

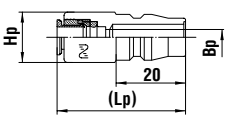
Socket SC type (with Tube Fitter)



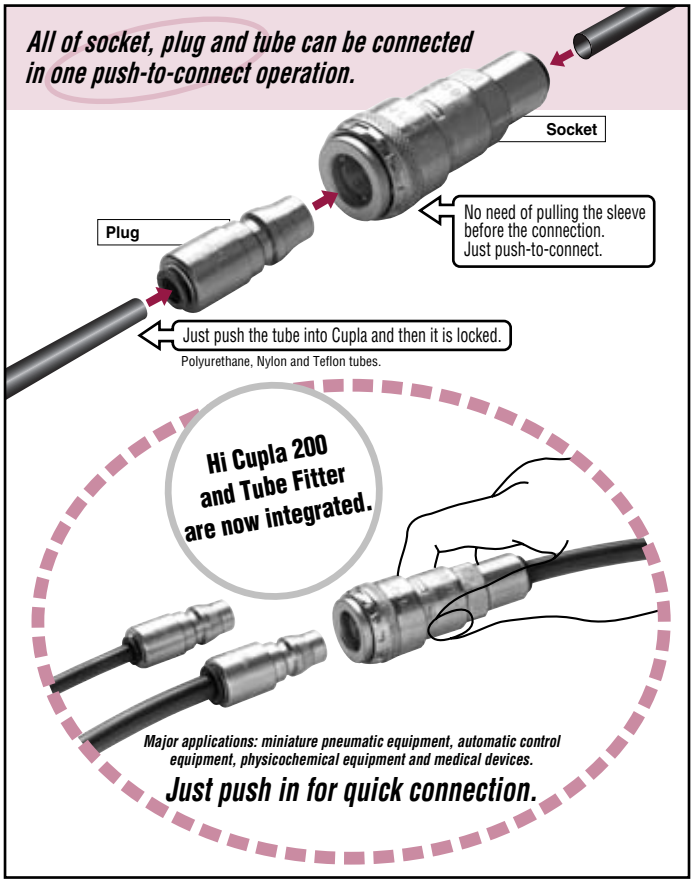
Model	Application	Mass (g)	Dimensions (mm)	
			Ls	øBs
200-60SC	For 6mm OD tube	100	64	5
200-80SC	For 8mm OD tube	105	67.5	6.5
200-100SC	For 10mm OD tube	123	70.5	8.5

• 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

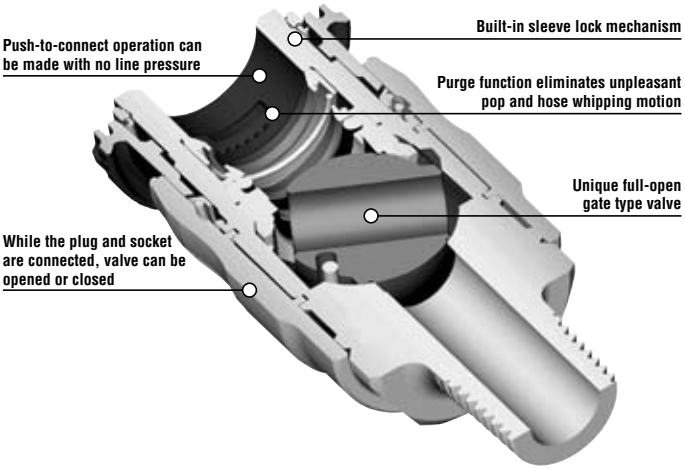


For Air

Full-Blow Cupla

Low pressure loss & high flow rate

Working pressure: 1.5 — 1.5 MPa {15 kgf/cm²}
Valve structure: One-way shut-off
Applicable fluid: Air



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 the original position, the purge mechanism releases the residual pressure inside the plug eliminating unpleasant pop and hose whipping motion.
- Built-in sleeve lock mechanism prevents unexpected 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/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)	−5°C~+60°C	Standard material

Max. Tightening Torque N•m {kgf•cm}

Size	1/4"	3/8"	1/2"	spring nut
Torque	14 {143}	22 {224}	66 {612}	9~11 {92~112}

Flow Direction

Fluid must run from socket to plug.

Interchangeability

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

Min. Cross-Sectional Area (mm²)

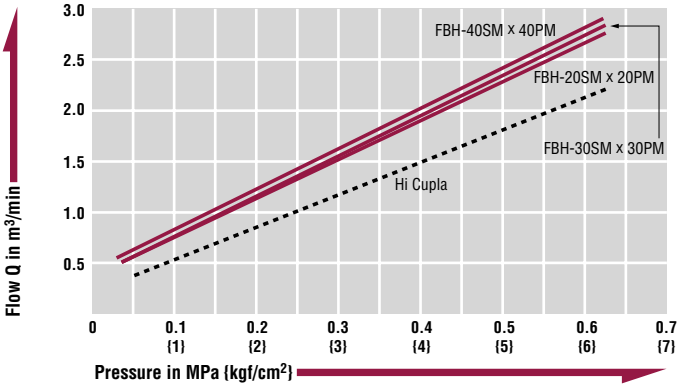
Model	17PH	20PH	20PM/PF	30PH	30PM/PF	40PH	40PM/PF
FBH-20SH	16	20	23.8	23.8	23.8	23.8	23.8
FBH-30SH	16	20	44.2	44.2	44.2	44.2	44.2
FBH-40SH	16	20	44.2	44.2	44.2	44.2	44.2
FBH-20SM	16	20	44.2	44.2	44.2	44.2	44.2
FBH-30SM	16	20	44.2	44.2	44.2	44.2	44.2
FBH-40SM	16	20	44.2	44.2	44.2	44.2	44.2
FBH-20SF	16	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.

Pressure - Flow Rated Characteristics (Comparison with Hi Cupla)

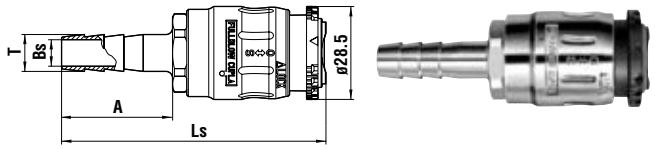
[Test conditions] •Fluid : Air •Temperature : Room temperature



Models and Dimensions

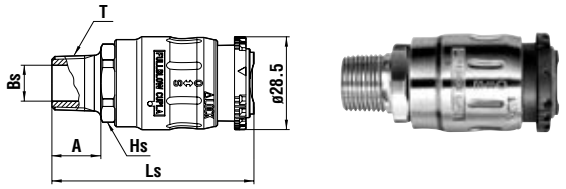
WAF : WAF stands for width across flats.

Socket SH type (Hose barb)



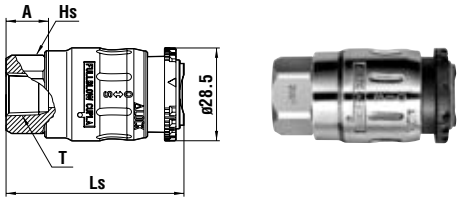
Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			Ls	A	øT	øBs
FBH-20SH	1/4"	70	77	30	9	5.5
FBH-30SH	3/8"	74	81	34	11.3	8
FBH-40SH	1/2"	85	83	36	15	10

Socket SM type (Male thread)



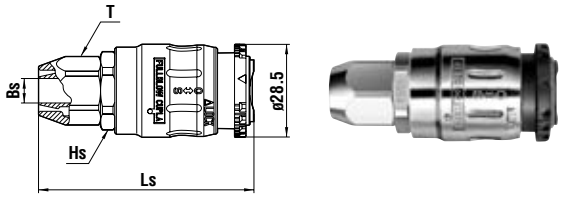
Model	Application	Mass (g)	Dimensions (mm)				
			Ls	Hs(WAF)	A	T	øBs
FBH-20SM	Rc 1/4	71	62	Hex.22	15	R 1/4	8
FBH-30SM	Rc 3/8	75	62	Hex.22	15	R 3/8	11
FBH-40SM	Rc 1/2	86	66	Hex.22	19	R 1/2	15

Socket SF type (Female thread)



Model	Application	Mass (g)	Dimensions (mm)			
			Ls	Hs(WAF)	A	T
FBH-20SF	R 1/4	77	54.5	Hex.22	13	Rc 1/4
FBH-30SF	R 3/8	69	54.5	Hex.22	13	Rc 3/8
FBH-40SF	R 1/2	90	61	Hex.26	17	Rc 1/2

Socket SN type (For urethane hose with spring nut connection)

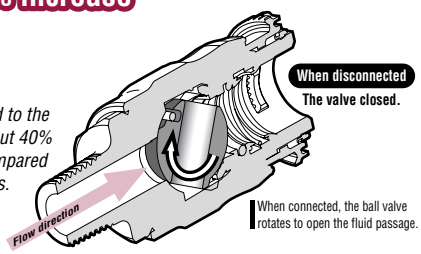


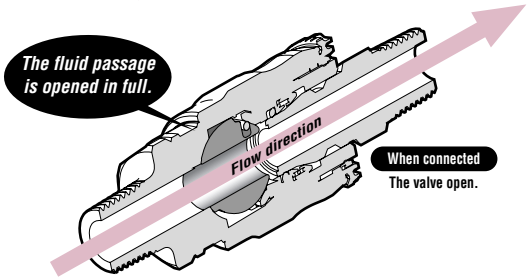
Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			Ls	Hs(WAF)	T(WAF)	øBs
FBH-65SN	ø6.5 mm x ø10 mm	64	64	Hex.22	Hex.17	5.5
FBH-80SN	ø8 mm x ø12 mm	67	66	Hex.22	Hex.19	7.5
FBH-85SN	ø8.5 mm x ø12.5 mm	68	66	Hex.22	Hex.19	7.5
FBH-110SN	ø11 mm x ø16 mm	86	71	Hex.26	Hex.24	10

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.



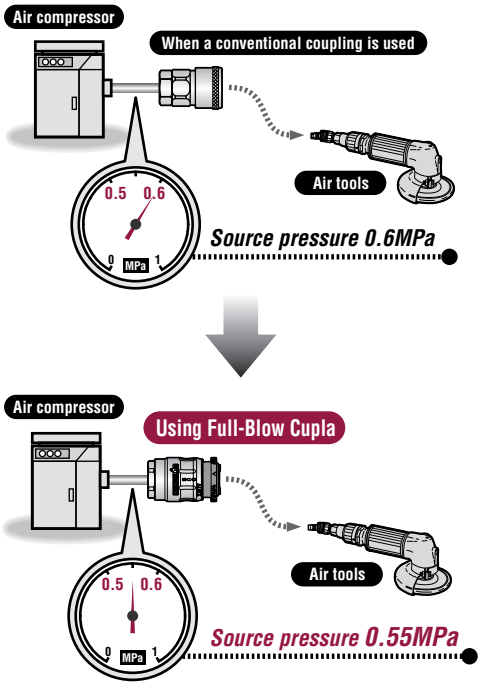


Energy saving effect

If conventional Cuplas are replaced by Full-Blow Cuplas, pressure loss in the air lines can be reduced. Thanks to this, the source pressure at the outlet port of the compressor can be saved.

Note: Energy saving effect depends on the conditions of air piping and the compressor.

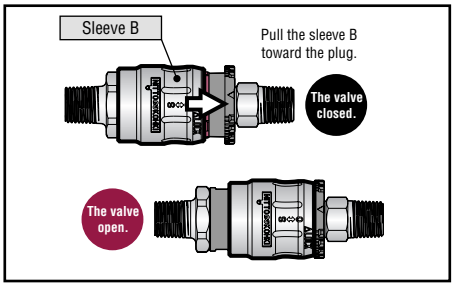
For instance



How it works

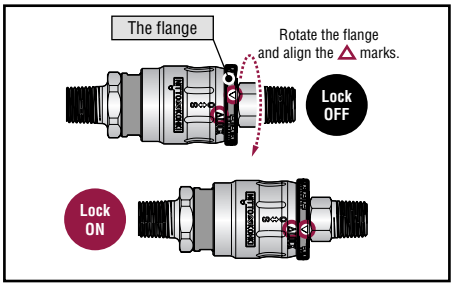
1. Open the valve

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.



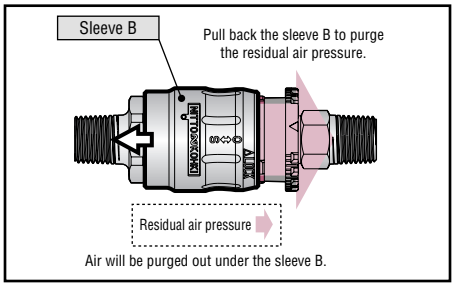
2. Lock the sleeve

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 the 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 Air

Nut Cupla
Nut Cupla 200

For connection to urethane hose

Working pressure: 1.5 MPa {15 kgf/cm²}

Valve structure: One-way shut-off

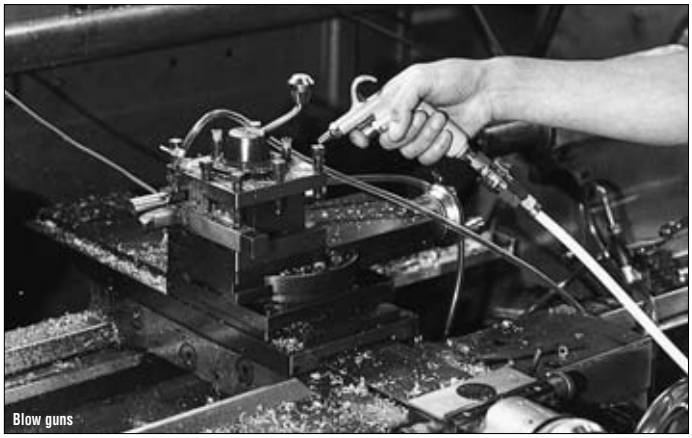
Applicable fluid: Air

Nut Cupla *Nut Cupla 200* *Nut Cupla 200 with Hose Guard Nut*

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.
- Will not catch or snag on anything unlike conventional hose clamps with screw whilst moving around the work area.
- 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.

Application example



Blow guns

Specifications

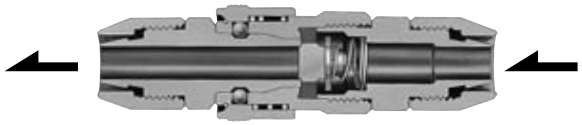
Body material	Steel (Chrome-plated)			
Size	For ø5 mm x ø8 mm • ø8 mm x ø12 mm hose For ø6 mm x ø9 mm • ø8.5 mm x ø12.5 mm hose For ø6.5 mm x ø10 mm • ø11 mm x ø16 mm hose			
Working pressure MPa {kgf/cm²}	1.5 {15}			
Pressure resistance MPa {kgf/cm²}	2.0 {20}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−5°C~+60°C	Standard material

Tightening Torque Range N•m {kgf•cm}

Model	SN • PN Type	65SNG • PNG Type	85SNG • PNG 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 (mm²)

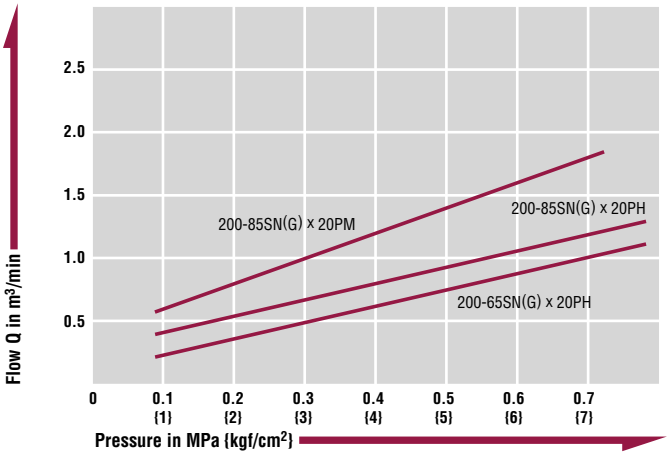
Socket \ Plug	20PH	30PH	40PH	20PM	30PM	40PM	20PF	30PF	40PF
200-50SN	16	16	16	16	16	16	16	16	16
200-60SN	20	22	22	22	22	22	22	22	22
200-65SN	20	22	22	22	22	22	22	22	22
200-80SN	20	41	41	41	41	41	41	41	41
200-85SN	20	40	41	41	41	41	41	41	41
200-110SN	20	40	41	41	41	41	41	41	41
200-50SNG	16	16	16	16	16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

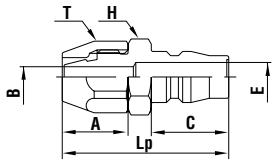
[Test conditions] •Fluid : Air •Temperature : Room temperature



Models and Dimensions

WAF : WAF stands for width across flats.

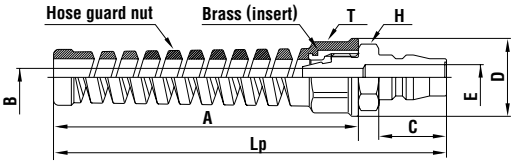
Plug PN type (For urethane hose connection)



(Old model)

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

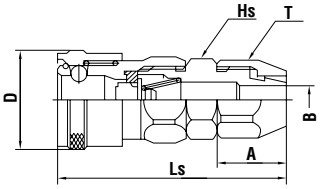
Plug PNG type (For urethane hose with hose guard nut connection)



Model	Application (Hose)	Mass (g)	Dimensions (mm)							
			Lp	C	A	øD	øB	øE	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.

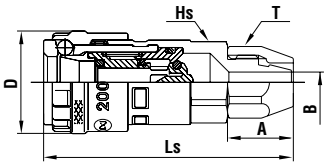
Socket SN type (For urethane hose connection)



(Old model)

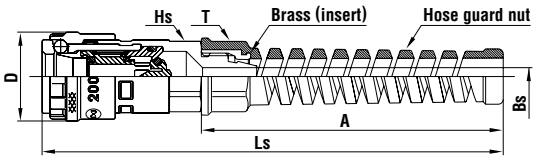
Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			Ls	A	øD	øB	Hs(WAF)	T(WAF)
50SN (10SAH)	ø5 mm x ø8 mm	117	60	17	26.5	4.5	Hex.19	Hex.17
60SN (20SAH)	ø6 mm x ø9 mm	115	59.5	17	26.5	5.3	Hex.19	Hex.17
65SN	ø6.5 mm x ø10 mm	115	59.5	17	26.5	5.3	Hex.19	Hex.17
80SN (30SAH)	ø8 mm x ø12 mm	120	61.5	19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

Socket SN type (For urethane hose connection)



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

For Air

Rotary Nut Cupla

Coupling with swivel function for mounting on urethane hose

Working pressure	Valve structure	Applicable fluid
1.5		
1.5 MPa {15 kgf/cm²}	One-way shut-off	Air

Swivel mechanism prevents hose twist!

- Ball bearing swivel mechanism prevents hose twist and relieves tension on operator's hands.
- To mount on hose, simply slide it over the nipple and tighten the nut.
- Hose guard nut to prevent hose kink as the standard feature (SNRG Model).
- Will not catch or snag on anything unlike conventional hose clamp with screw whilst moving around the work area.

Specifications

Body material	Steel (Chrome-plated)			
Size	For ø6.5 mm x ø10mm • ø8.5mm x ø12.5mm polyurethane hose			
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)	-5℃~+60℃	Standard material

Tightening Torque Range

N•m {kgf•cm}

Model	65 • 85SNR Type	65SNRG Type	85SNRG Type
Torque	9~11 {92~112}	5~6 {51~61}	7~8 {71~82}

Flow Direction

Fluid must run from socket to plug.

Interchangeability

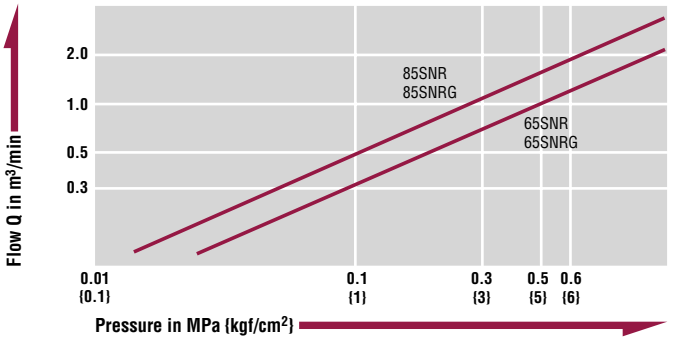
Can be connected with plugs of Hi Cupla Models 20, 30 and 40.
Interchangeable with each corresponding Hi Cupla Series models.

Suitability for Vacuum

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

Pressure - Flow Characteristics

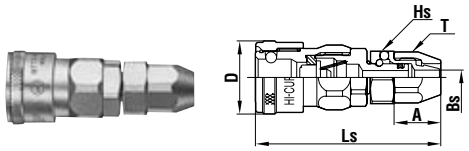
[Test conditions] •Fluid : Air •Temperature : Room temperature



Models and Dimensions

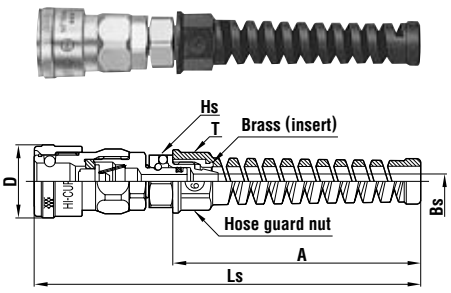
WAF : WAF stands for width across flats.

Socket SNR type (For hose connection)



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

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



Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			Ls	A	øD	øBs	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

For Air

Oil Cupla

Air line coupling with lubricator function

Working pressure	Valve structure	Applicable fluid
1.5		
1.5 MPa {15 kgf/cm²}	One-way shut-off	Air

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.
- To mount on hose, simply slide it over the nipple and tighten the hose guard nut.
- Hose guard nut to prevent hose kinking is standard.

Specifications

Body material	Steel (chrome-plated) with diecast aluminum oiler tank			
Size	For ø6.5 mm x ø10mm • ø8.5mm x ø12.5mm polyurethane hose			
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)	-5°C~+60°C	Standard material

Tightening Torque Range

N•m {kgf•cm}

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

Flow Direction

Fluid must run from socket to plug.

Interchangeability

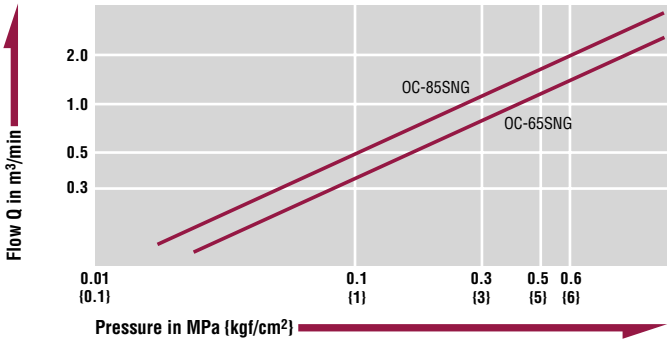
Can be connected with plugs of Hi Cupla Models 20, 30 and 40.
Interchangeable with each corresponding Hi Cupla Series models.

Suitability for Vacuum

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

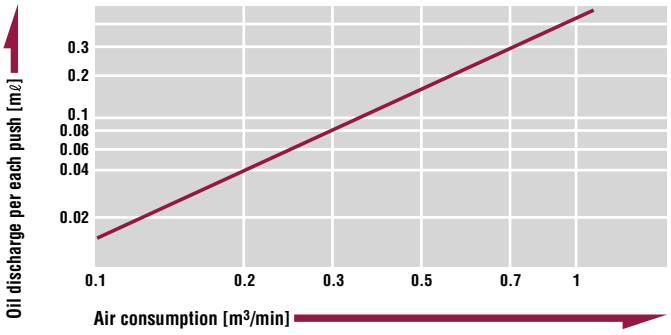
Pressure - Flow Characteristics

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



Oil Ejection Characteristics

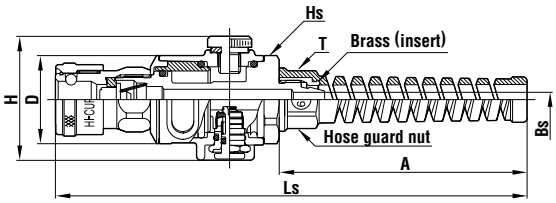
[Test conditions] •Initial pressure : 0.6MPa {6kgf/cm²} •Fluid : Full tank (5.1mℓ)



Models and Dimensions

WAF : WAF stands for width across flats.

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



Model	Application (Hose)	Mass (g)	Dimensions (mm)						
			Ls	A	H	øD	øBs	Hs(WAF)	T(WAF)
OC-65SNG	ø6.5 mm x ø10 mm	250	172	90	45	32	5.3	Hex.29	Hex.19
OC-85SNG	ø8.5 mm x ø12.5 mm	260	172	90	45	32	7.5	Hex.29	Hex.22

For Air

Duster Cupla

Air line coupling with air blower function

Working pressure: 1.0 — 1.0 MPa {10 kgf/cm²}

Valve structure: One-way shut-off

Applicable fluid: Air

Photo shows simulated air flow.

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 .

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/cm²}	1.0 {10}			
Pressure resistance MPa {kgf/cm²}	1.5 {15}			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-5°C~+60°C	Standard material

Tightening Torque Range

N•m {kgf•cm}

Model	65PNG Type	85PNG Type
Torque	5~6 {51~61}	7~8 {71~82}

Flow Direction

Fluid must run from socket to plug.

Interchangeability

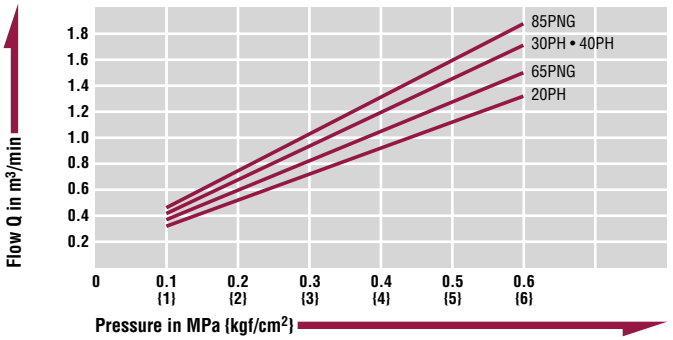
Can be connected with plugs of Hi Cupla Models 20, 30 and 40.
Interchangeable with each corresponding Hi Cupla Series models.

Suitability for Vacuum

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

Pressure - Flow Characteristics

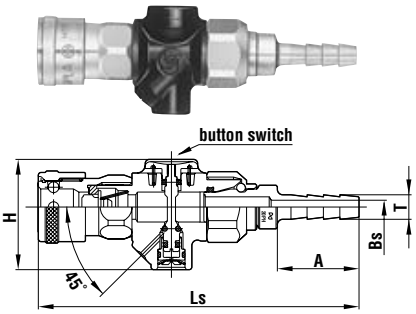
[Test conditions] •Fluid : Air •Temperature : Room temperature



Models and Dimensions

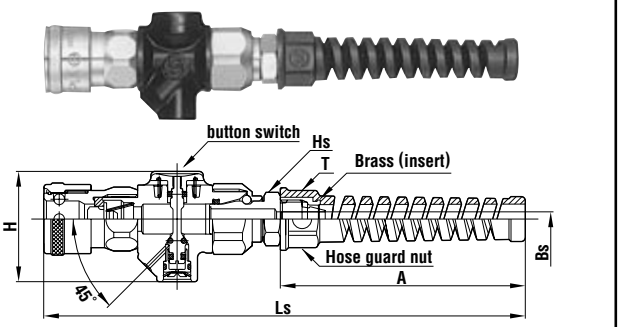
WAF : WAF stands for width across flats.

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

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 Air

Super Duster Cupla

Air line coupling with air blow function

Working pressure	Valve structure	Applicable fluid
1.0 MPa {10 kgf/cm²}	One-way shut-off	Air

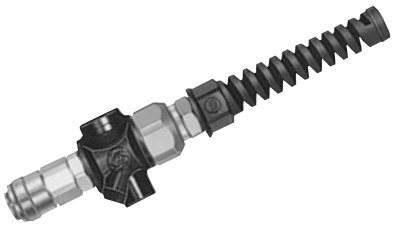


Photo shows simulated air flow.

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

- Super Cupla comes with compact air blow function.
- Not only standard quick connects/disconnects function between pneumatic tools and air lines, but also has air blow feature that improves job efficiency to remove dust and swarf with tool still connected.
- Cut out much of the tedious part of your work; such as changing to or picking up an air gun.
- Ball bearing swivel mechanism prevents hose twist and relieves tension on operator's hands.
- Large light-touch switch button adopted for easy operation, even when wearing gloves.
- Also simple is routine water drain from air line before starting daily work.

Specifications

Body material	Body : Aluminum, Cupla : Steel			
Size	For ø6.5 mm x ø10mm polyurethane hose			
Working pressure MPa {kgf/cm²}	1.0 {10}			
Pressure resistance MPa {kgf/cm²}	1.5 {15}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-5°C~+60°C	Standard material

Tightening Torque Range N•m {kgf•cm}

5~6 {51~61}

Flow Direction

Fluid must run from socket to plug.

Interchangeability

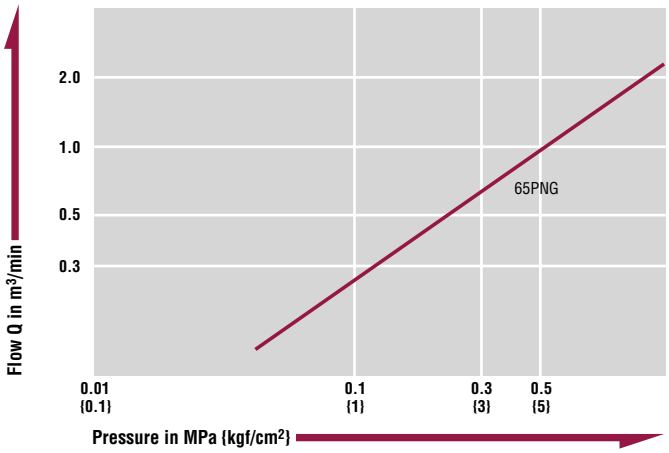
Can be connected to Super Cupla plugs.

Suitability for Vacuum

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

Pressure - Flow Characteristics

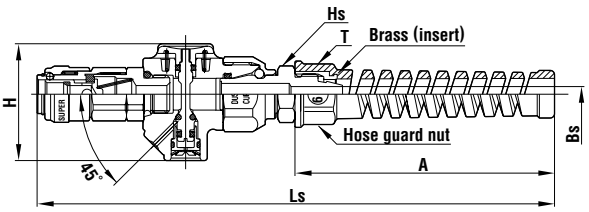
[Test conditions] •Fluid : Air •Temperature : Room temperature



Models and Dimensions

WAF : WAF stands for width across flats.

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)
SDS-65PNG	ø6.5 mm x ø10 mm	158	179.4	90	40.5	5.3	Hex.17	Hex.19

For Air

Lock Cupla 200

Air line coupling with sleeve safety lock feature

Working pressure: 1.0 MPa {10 kgf/cm²}
Valve structure: One-way shut-off
Applicable fluid: 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

Applicable fluid	Application
Air	Pneumatic tools, Pneumatic devices, Various air piping

Specifications

Body material	Steel (Chrome-plated)			
Size	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			
Working pressure MPa {kgf/cm²}	1.0 {10}			
Pressure resistance MPa {kgf/cm²}	1.5 {15}			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-5°C~+60°C	Standard material

Max. Tightening Torque, Tightening Torque Range N•m {kgf•cm}

Type of connection	Thread			Hose guard nut	
Applicable size	1/4"	3/8"	1/2"	ø6.5 mm x ø10mm	ø8.5 mm x ø12.5mm
Torque	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 of Hi Cupla Models 20, 30 and 40.
Interchangeable with each corresponding Hi Cupla Series models.

Suitability for Vacuum

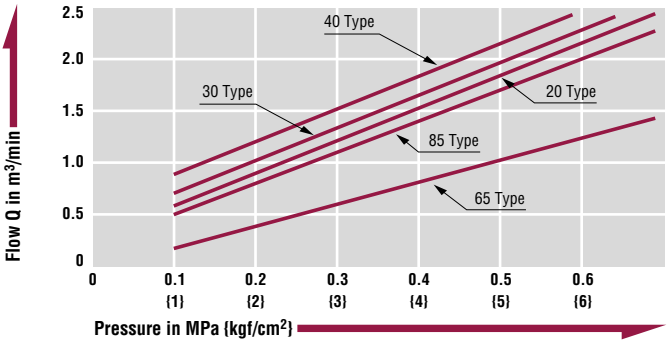
Not suitable for vacuum application in either connected or disconnected condition.

Min. Cross-sectional Area (mm²)

Plug / Lock Cupla 200	20PH	30PH	40PH	20PM	30PM	40PM	20PF	30PF	40PF
L200-20SH	20	20	20	20	20	20	20	20	20
L200-30SH	20	41	41	41	41	41	41	41	41
L200-40SH	20	41	41	41	41	41	41	41	41
L200-20SM	20	41	41	41	41	41	41	41	41
L200-30SM	20	41	41	41	41	41	41	41	41
L200-40SM	20	41	41	41	41	41	41	41	41
L200-20SF	20	41	41	41	41	41	41	41	41
L200-30SF	20	41	41	41	41	41	41	41	41
L200-40SF	20	41	41	41	41	41	41	41	41
L200-65SNRG	20	20	20	20	20	20	20	20	20
L200-85SNRG	38	38	38	38	38	38	38	38	38

Pressure - Flow Characteristics

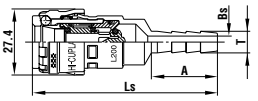
[Test conditions] •Fluid : Air •Temperature : Room temperature



Models and Dimensions

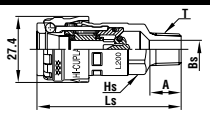
WAF : WAF stands for width across flats.

Socket SH type (Hose barb)



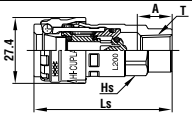
Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			Ls	A	øT	øBs
L200-20SH	1/4"	90	77	27.5	9	5
L200-30SH	3/8"	92	79	32	11.3	7.5
L200-40SH	1/2"	104	79.5	32	15	10

Socket SM type (Male thread)



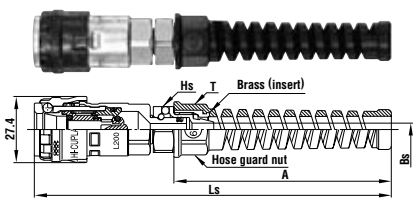
Model	Application	Mass (g)	Dimensions (mm)				
			Ls	Hs(WAF)	A	T	øBs
L200-20SM	Rc 1/4	89	60	Hex.19	13	R 1/4	7.5
L200-30SM	Rc 3/8	91	60.5	Hex.19	13.5	R 3/8	10
L200-40SM	Rc 1/2	102	56	Hex.24	16	R 1/2	13

Socket SF type (Female thread)



Model	Application	Mass (g)	Dimensions (mm)			
			Ls	Hs(WAF)	A	T
L200-20SF	R 1/4	94	57.5	Hex.19	14.5	Rc 1/4
L200-30SF	R 3/8	103	55.5	Hex.22	13	Rc 3/8
L200-40SF	R 1/2	138	57.5	Hex.29	16	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

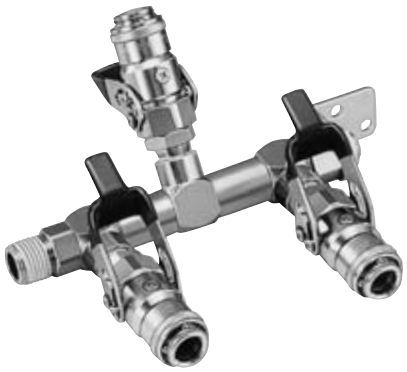
Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.

For Air

Purge Line Cupla

Simple air line coupling manifold with residue pressure release function

Working pressure	Valve structure	Applicable fluid
1.0		
1.0 MPa {10 kgf/cm²}	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 noise of discharge air and no kick back 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.)

Specifications

Body material	Brass (Chrome-plated)			
Size	Inlet	R 1/2		
	Outlet	3/8" socket (PV-30SM)		
Working pressure MPa {kgf/cm²}	1.0 {10}			
Pressure resistance MPa {kgf/cm²}	1.5 {15}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−5°C~+60°C	Standard material

Max. Tightening Torque

N•m {kgf•cm}

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 " on the right.

Interchangeability

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

Min. Cross-Sectional Area

(mm²)

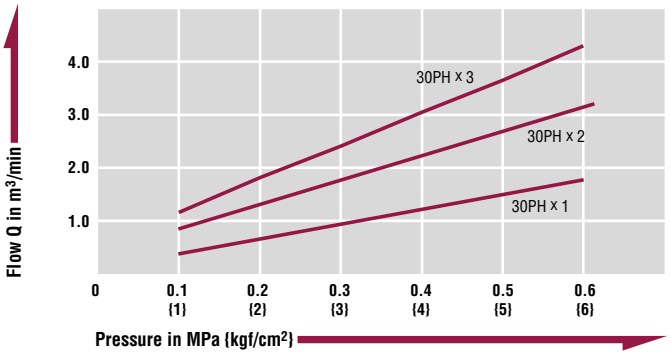
41

Suitability for Vacuum

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

Pressure - Flow Characteristics

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



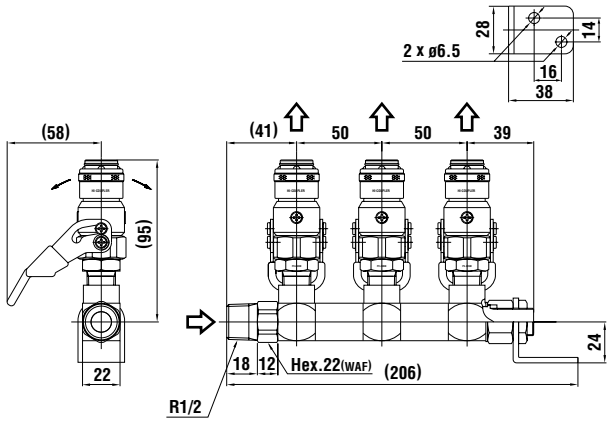
Models and Dimensions

WAF : WAF stands for width across flats.

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

Mass : 1,090g

• Fluid must run in the direction of the arrow.



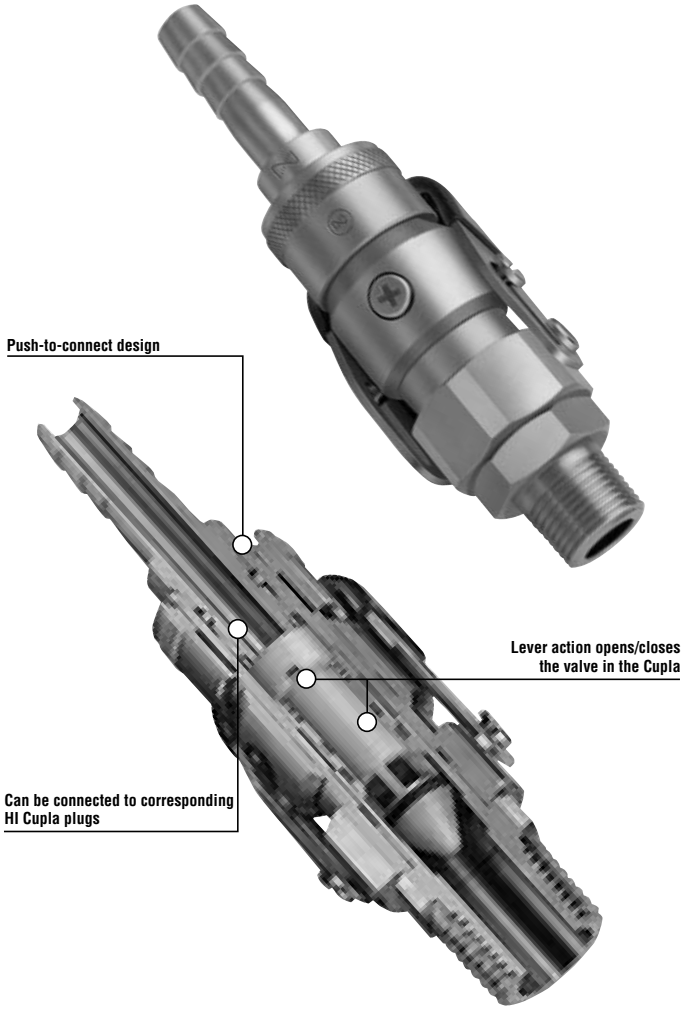
Dimensions (mm)

For Air

Purge Hi Cupla

Air line coupling with residual pressure release function

Working pressure: 1.0 MPa {10 kgf/cm²}
Valve structure: One-way shut-off
Applicable fluid: Air



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/cm²}	1.0 {10}			
Pressure resistance MPa {kgf/cm²}	1.5 {15}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-5°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

Fluid must run from socket to plug.

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 (mm²)

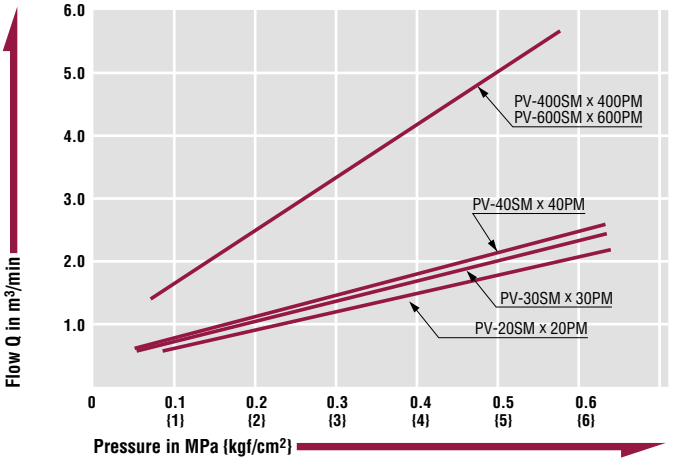
Model	PV-20SM	PV-30SM	PV-40SM	PV-400SM	PV-600SM
Min. Cross-sectional Area	38	41	41	94	94

Suitability for Vacuum

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

Pressure - Flow Characteristics

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



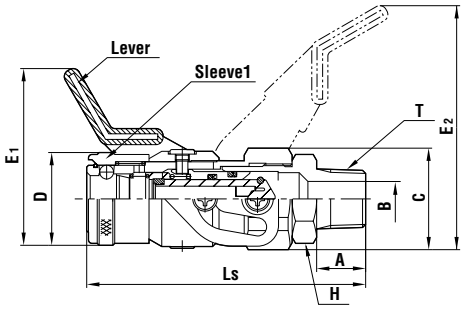
Push-to-connect operation even with existing internal pressure! Eliminates unpleasant noise and kick back on disconnection.

- 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 in the plug without unpleasant noise and kick.
- Safe design prevents lever-operated valve from opening when plug is not connected.

Models and Dimensions

WAF : WAF stands for width across flats.

Socket

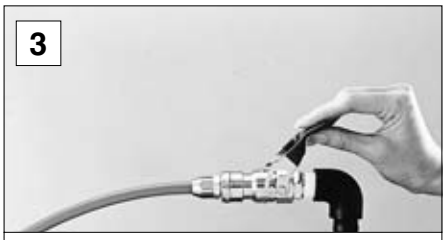


Model	Application	Mass (g)	Dimensions (mm)								
			Ls	øD	E_1	E_2	H(WAF)	øC	A	T	øB
PV-20SM	Rc 1/4	225	79	26.5	50.5	70	Hex.22	29	13	R 1/4	7
PV-30SM	Rc 3/8	229	80	26.5	50.5	70	Hex.22	29	14	R 3/8	10
PV-40SM	Rc 1/2	235	82	26.5	50.5	70	Hex.22	29	16	R 1/2	14
PV-400SM	Rc 1/2	411	94	35	61.5	82	Hex.30	37.5	16	R 1/2	13
PV-600SM	Rc 3/4	424	97	35	61.5	82	Hex.30	37.5	19	R 3/4	18

How to operate

Push-to-connect operation. (In this stage the valve of the socket is not open.)

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.)



When the lever is pulled up, residual air in the plug is purged without unpleasant noise and kick back on disconnection. In this stage, the socket valve is still closed.

Application example

For Air

Purge Hi Cupla

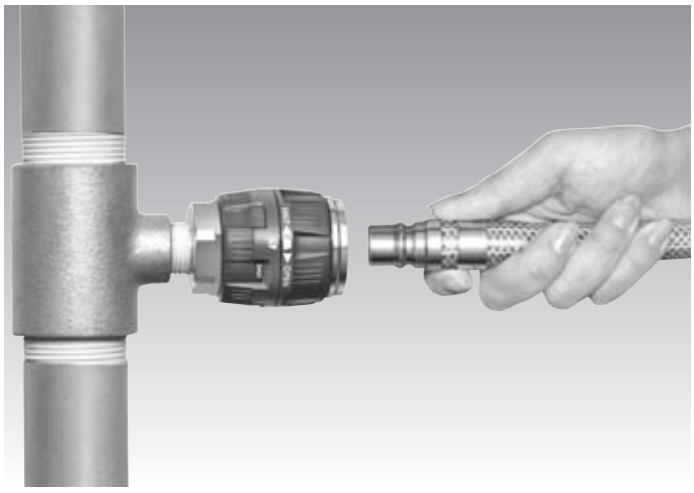
PVR Type

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

Working pressure: 1.5 — 1.5 MPa {15 kgf/cm²}

Valve structure: One-way shut-off

Applicable fluid: Air



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/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 / Hydrogenated nitrile rubber	NBR (SG)	-5°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 of Hi Cupla Models 400, 600 and 800.

Min. Cross-Sectional Area (mm²)

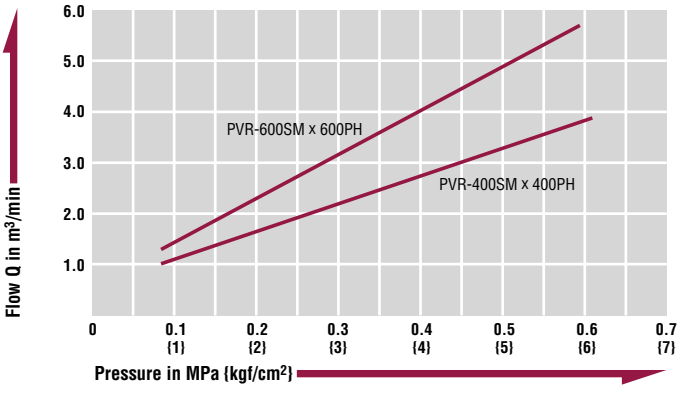
Model	400PH	400PM/PF	600PH	600PM/PF	800PH	800PM/PF
PVR-400SH	64	71	71	71	71	71
PVR-400SM/SF	64	116	116	116	116	116
PVR-600SH	64	116	116	116	116	116
PVR-600SM/SF	64	116	116	116	116	116
PVR-800SH	64	116	116	116	116	116
PVR-800SM/SF	64	116	116	116	116	116

Suitability for Vacuum

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

Pressure - Flow Rated Characteristics

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



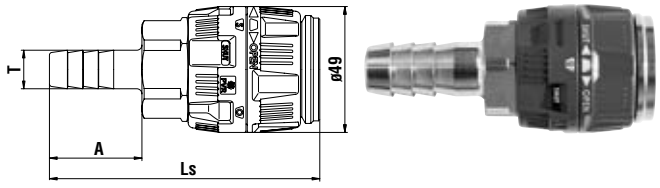
Connection can be made smoothly regardless of the existing pressure inside the socket.

- Push-to-connect operation. Easy one-hand operation.
- The sleeve lock function prevents unexpected disconnection.
- Upon completion of sleeve locking the valve will open to supply air.
- When the sleeve is turned back to the original position, the valve is closed and purges residual air in the plug without unpleasant popping noise and hose whip 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 of Hi Cupla Models 400, 600 and 800.

Models and Dimensions

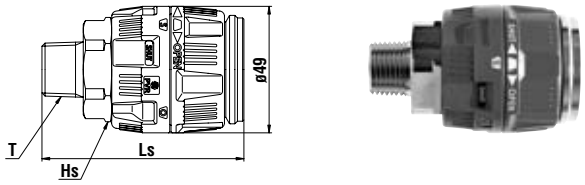
WAF : WAF stands for width across flats.

Socket SH type (Hose barb)



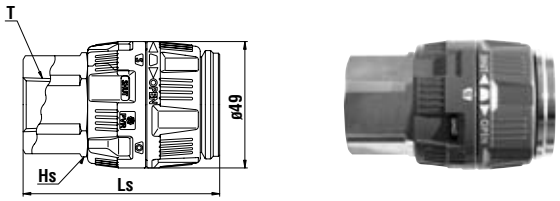
Model	Application (Hose)	Mass (g)	Dimensions (mm)		
			Ls	A	øT
PVR-400SH	1/2"	380	105	36	15
PVR-600SH	3/4"	361	109	45	21
PVR-800SH	1"	440	118	55	27

Socket SM type (Male thread)



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

Socket SF type (Female thread)

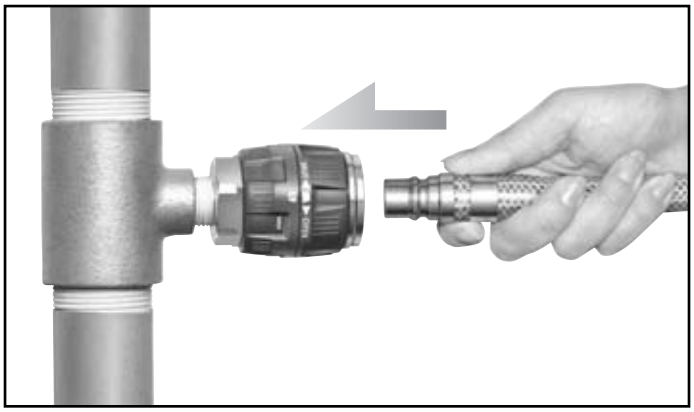


Model	Application	Mass (g)	Dimensions (mm)		
			Ls	Hs(WAF)	T
PVR-400SF	R 1/2	394	76	Hex.35	Rc 1/2
PVR-600SF	R 3/4	370	77	Hex.35	Rc 3/4
PVR-800SF	R 1	440	82	Hex.41	Rc 1

Function of Purge Hi Cupla PVR Type

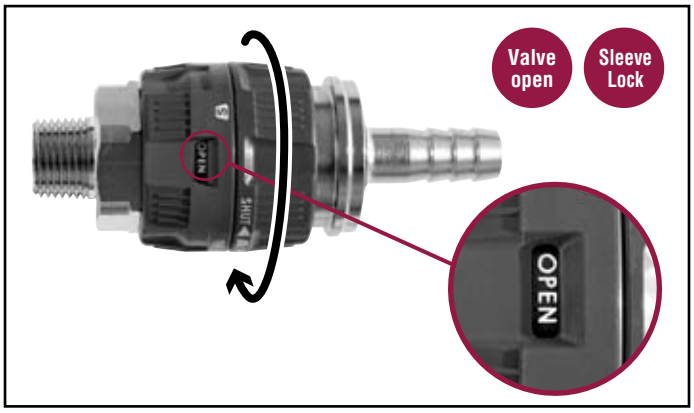
1. Connection

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 plug.



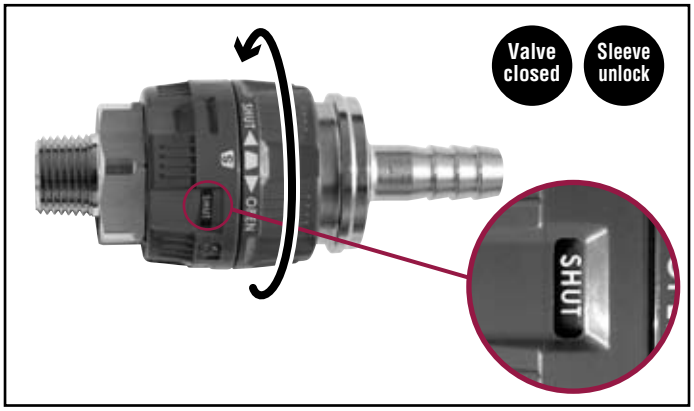
2. Open the valve and lock the sleeve.

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



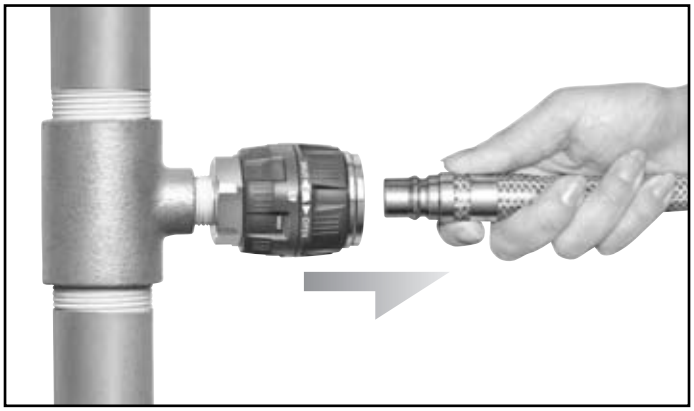
3. Valve close / Sleeve unlock

Turning the operation ring back to the 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 unpleasant noise and kick back 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.

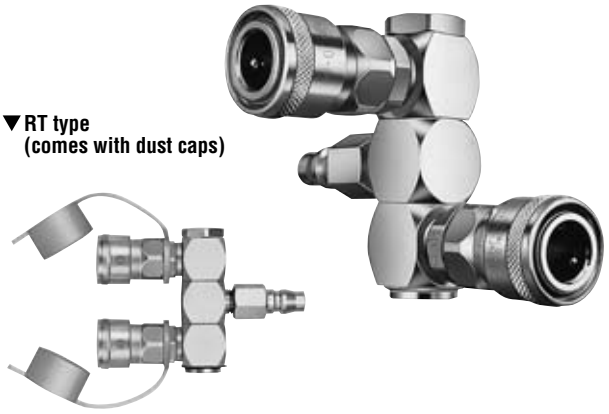
For Air

Rotary Line Cupla

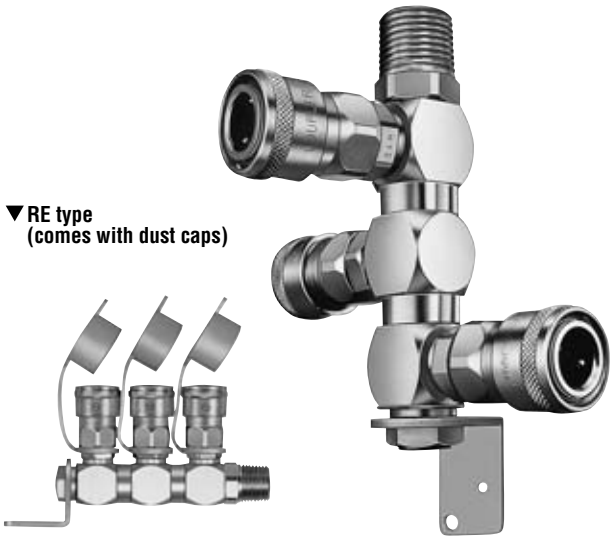
Simple design air line couplings on free turn manifold

Working pressure: 1.5 — 1.5 MPa {15 kgf/cm²}
Valve structure: One-way shut-off
Applicable fluid: Air

▼RT type
(comes with dust caps)



▼RE type
(comes with dust caps)



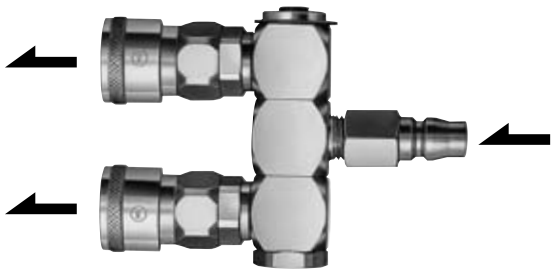
Specifications

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/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)	-5℃~+60℃	Standard material

Fluid Flow Direction

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



Interchangeability

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

Min. Cross-Sectional Area (mm²)

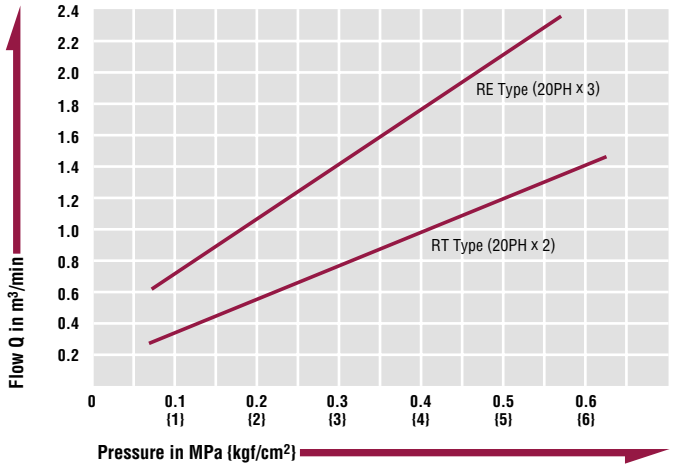
32

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)



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

- Give you multiple outlets 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.

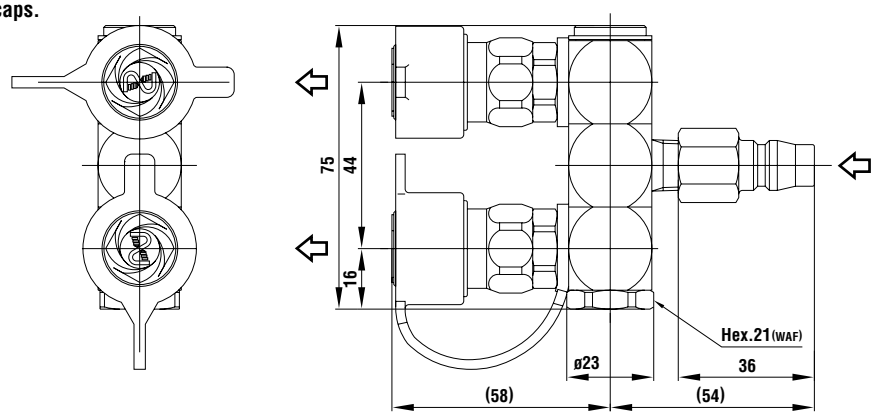
Models and Dimensions

WAF : WAF stands for width across flats.

Socket RT type (For two outlets)

Mass : 460g

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

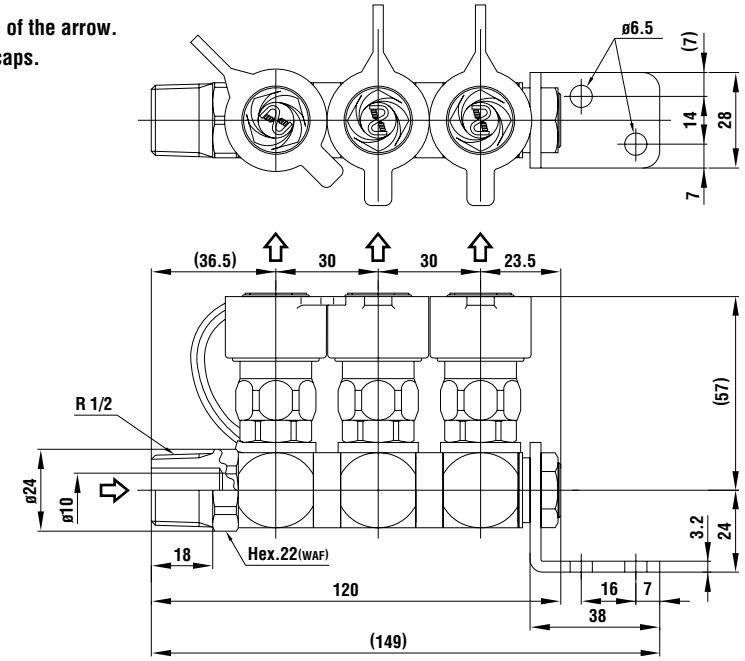


Dimensions (mm)

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 Air

Line Cupla

200T Type, 200L Type, 200S Type

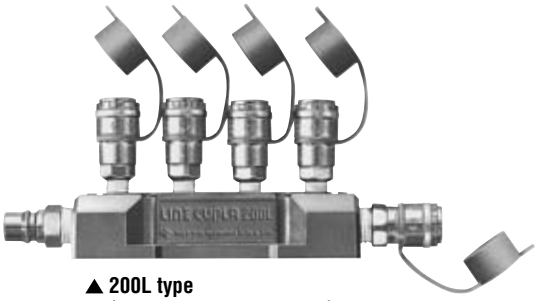
Simple design air line coupling on manifold

Working pressure: 1.5 — 1.5 MPa {15 kgf/cm²}

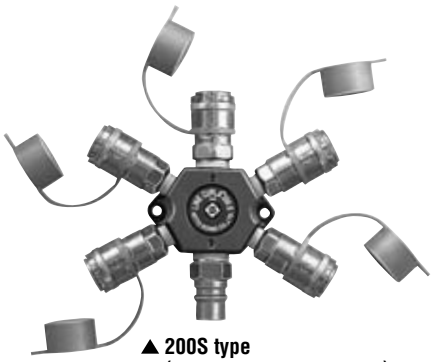
Valve structure: One-way shut-off

Applicable fluid: Air

▲ 200T type



▲ 200L type
(comes with extra 400SH)



▲ 200S type
(comes with extra 400SH)

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

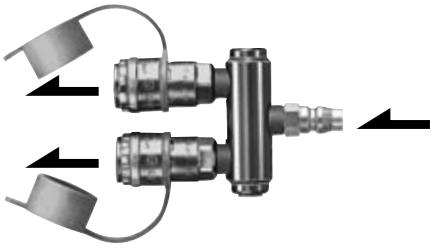
- Just push in the plug to socket for simple and secure connection!
- Gives you multiple outlets from single air supply source.
- Choose from the 2-outlet type (Model 200T), the 5-outlet straight type (Model 200L) and the 5-outlet star type (Model 200S) to suit your application.

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/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)	−5°C~+60°C	Standard material

Flow Direction

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



Interchangeability

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

Min. Cross-Sectional Area (mm²)

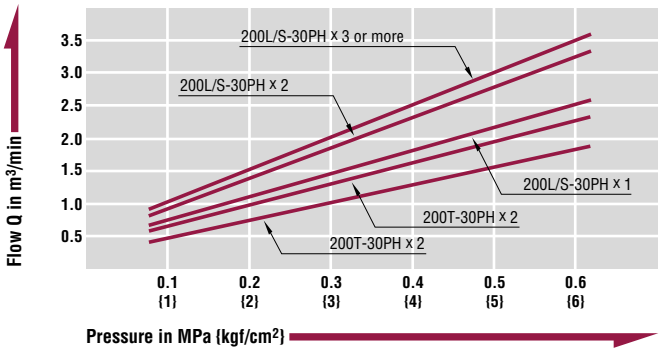
19

Suitability for Vacuum

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

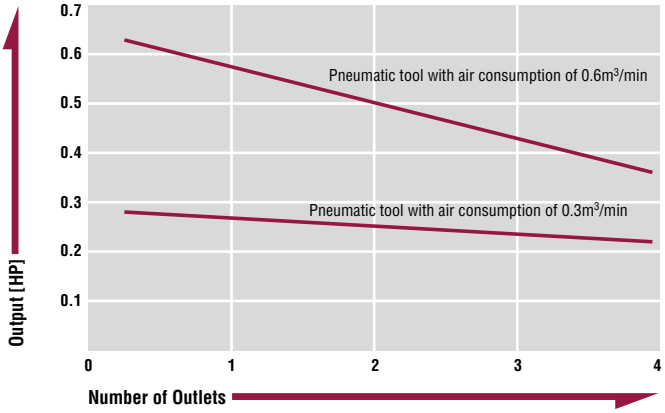
Pressure - Flow Characteristics

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



Number of Outlets in use – Power Output (HP) Diagram (200L/200S types)

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



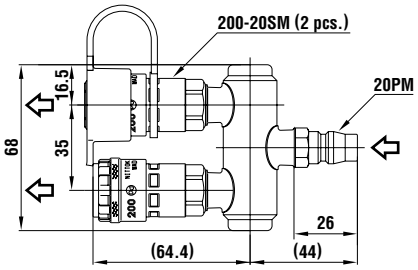
Models and Dimensions

WAF : WAF stands for width across flats.

Socket 200T type (For two outlets)

Mass : 272g

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

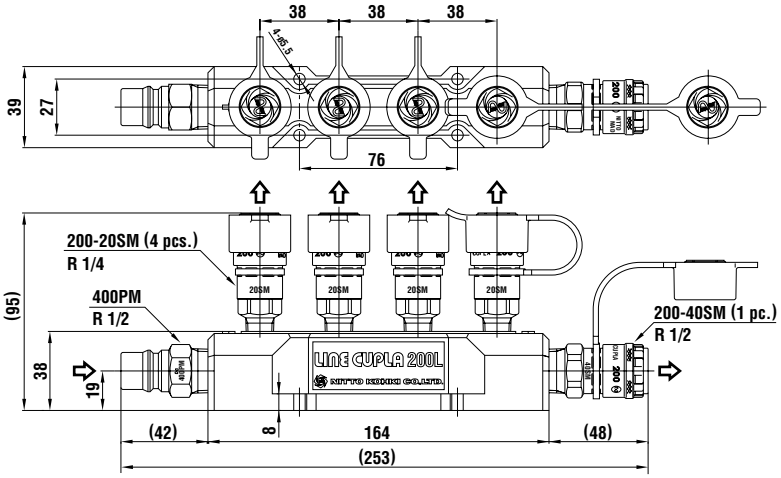


Dimensions (mm)

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**

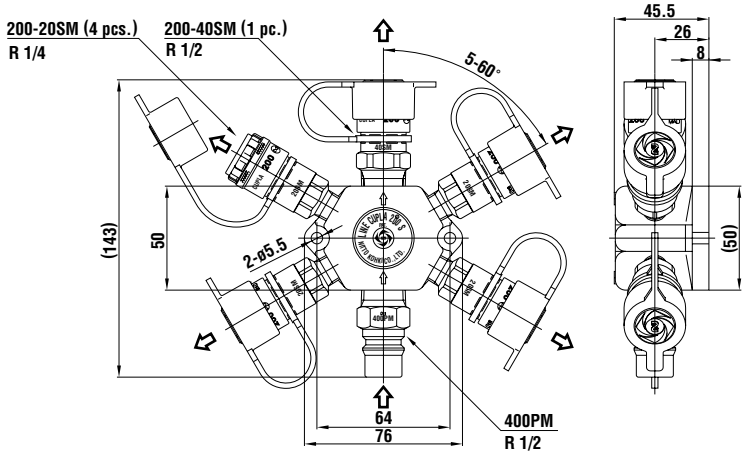


Dimensions (mm)

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**

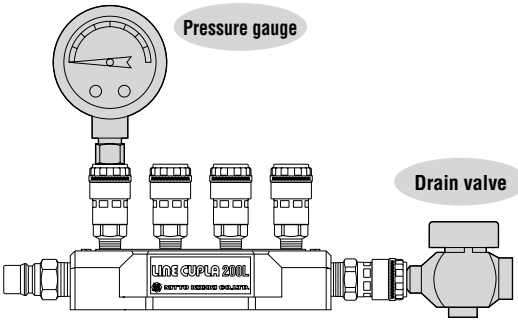


Dimensions (mm)

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.

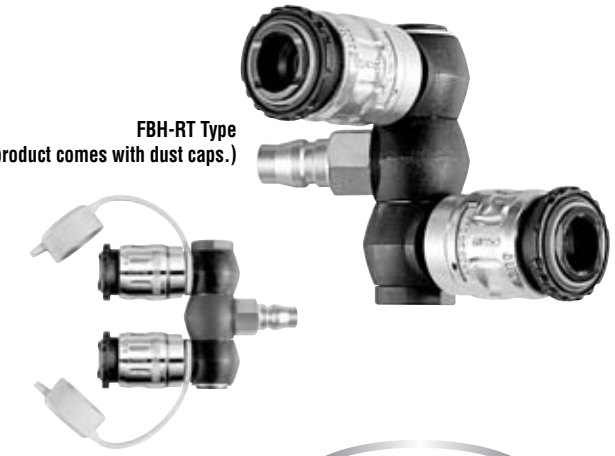
For Air

Rotary Full-Blow Line Cupla

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

Working pressure: 1.5 — 1.5 MPa {15 kgf/cm²}
Valve structure: One-way shut-off
Applicable fluid: Air

FBH-RT Type
(The product comes with dust caps.)



FBH-RE Type
(The product comes with dust caps.)

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

- Offers you multiple outlets 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 the original position, the purge mechanism releases the residual pressure inside the plug eliminating unpleasant pop and hose whipping motion.
- Built-in sleeve lock mechanism prevents unexpected disconnection of Cuplas, assuring safe operation.
- The valve can be opened and closed while the socket and plug is connected.

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/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)	−5°C~+60°C	Standard material	

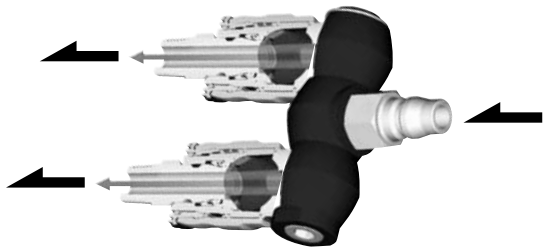
• The product comes with dust caps.

Max. Tightening Torque (FBH-RE Type) N•m {kgf•cm}

30 {306}

Flow Direction

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



Interchangeability

Can be connected with plugs of 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 (mm²)

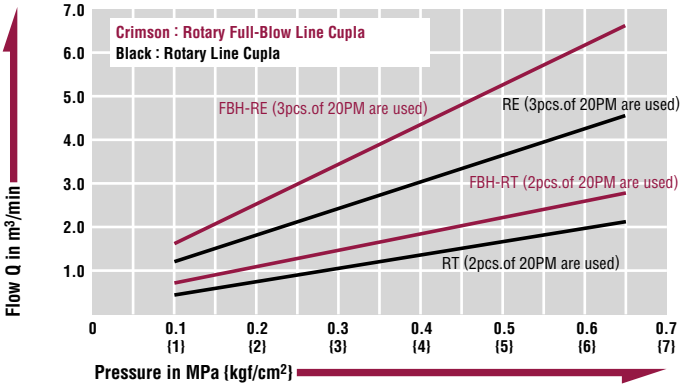
44.2

Suitability for Vacuum

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

Pressure - Flow Rated Characteristics (Comparison with Rotary Line Cupla)

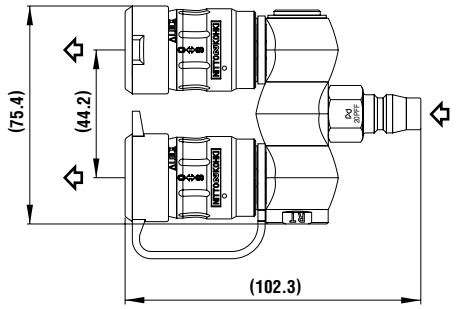
[Test conditions] •Fluid : Air •Temperature : Room temperature •Plug : 20PM



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.

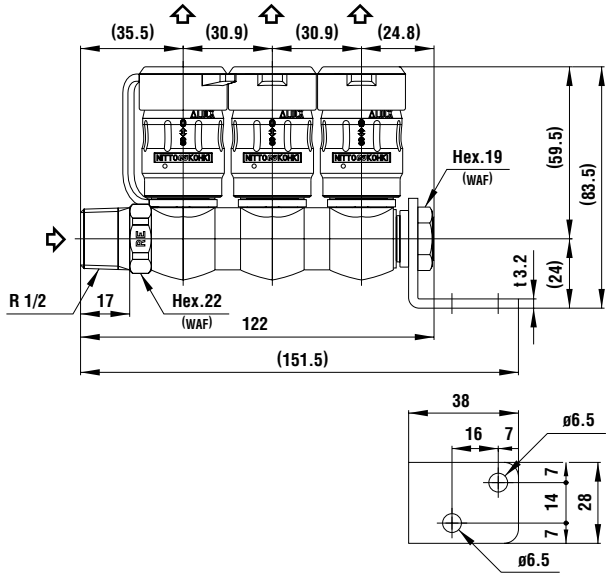


• The product comes with dust caps.

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.



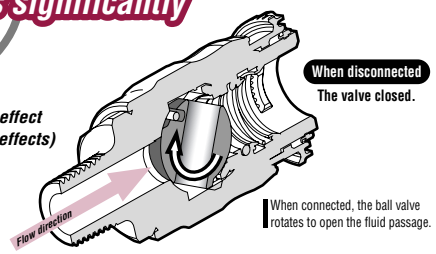
• The product comes with dust caps.

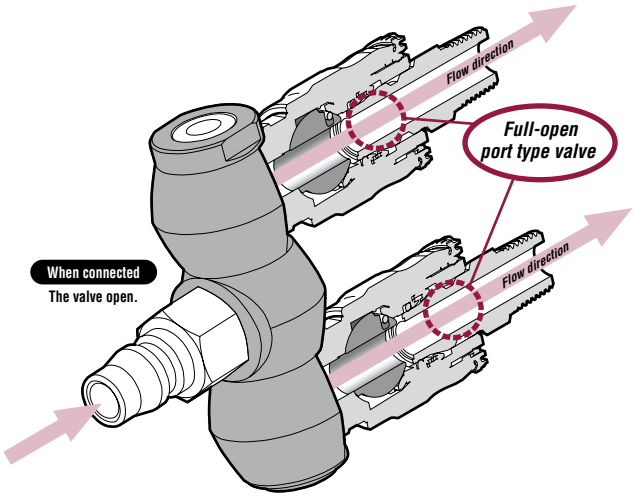
Dimensions (mm)

Features of Rotary Full-Blow Line Cupla

Flow rate is significantly increased.

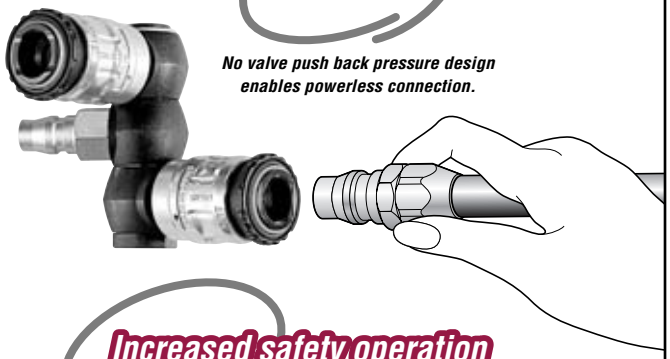
Significant energy saving effect (Source pressure reduction effects)





Far easier operation

No valve push back pressure design enables powerless connection.



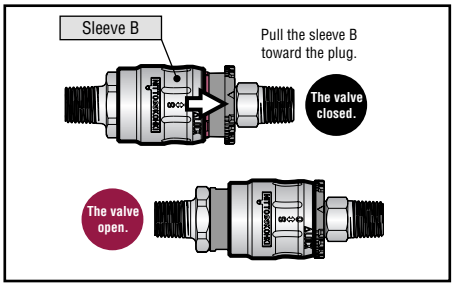
Increased safety operation

Purge function eliminates unpleasant pop and hose whipping motion.

How it works

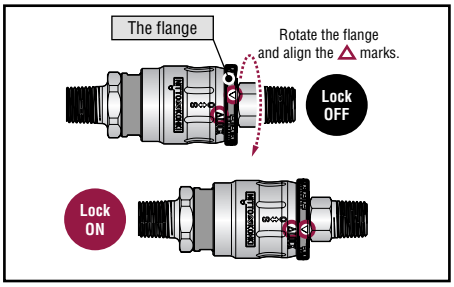
1. Open the valve

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.



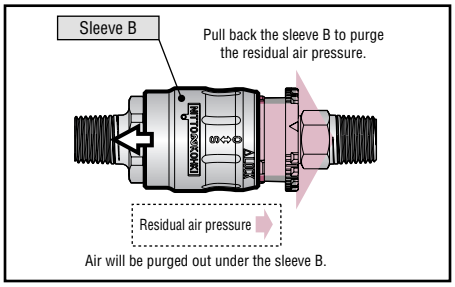
2. Lock the sleeve

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 the 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.

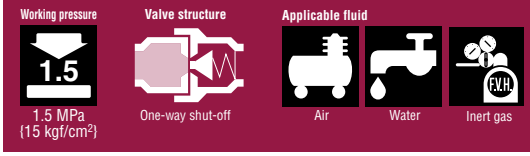


Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.

For Air

Hi Cupla Ace

Lightweight plastic coupling with automatic safety lock for air line applications



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 detachment.
- 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, water, and inert gases.
- Plastic body will cause minimum risk of damage even when in contact with tools or equipment.
- 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/cm²}	1.5 {15} / 1.0 {10} for Model HA-T			
Pressure resistance MPa {kgf/cm²}	2.0 {20} / 1.5 {15} for Model HA-T			
Seal material Working temperature range	**Seal material**	**Mark**	**Working temperature range**	**Remarks**
	Nitrile rubber	NBR (SG)	−5°C~+60°C	Standard material

• Plastic Plug : Working pressure 1.0MPa {10kgf/cm²}, Pressure resistance 1.5MPa {15kgf/cm²}

Tightening Torque Range N•m {kgf•cm}

Size	20/30SM	50/60/65SN	80/85SN
Torque	2.5~3 {26~29}	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

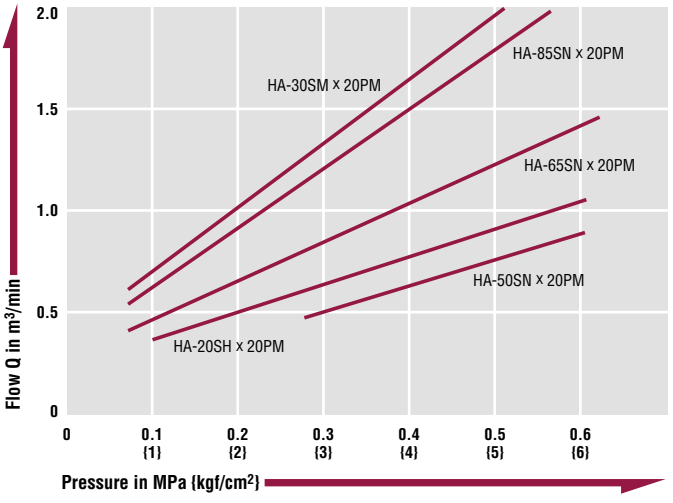
Can be connected with Hi Cupla Models 20, 30 and 40.
Interchangeable with each corresponding Hi Cupla Series models.

Suitability for Vacuum

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

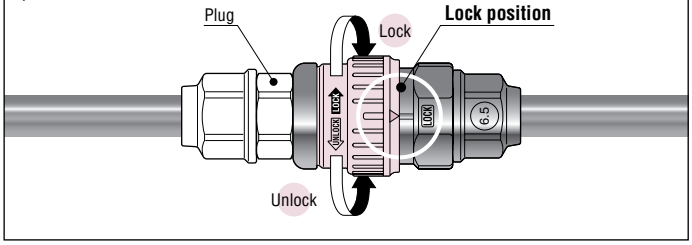
Pressure - Flow Characteristics

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



Automatic sleeve lock function

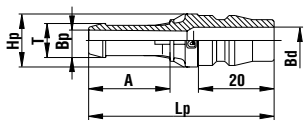
Hi Cupla Ace can be connected even if the locking sleeve is in the "lock" position, but when connected it cannot be disconnected without turning the sleeve to unlock position.



Models and Dimensions

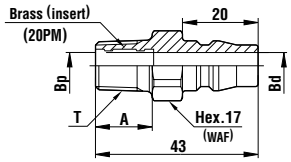
WAF : WAF stands for width across flats.

Plug PH type (Plastic plug / Hose barb)



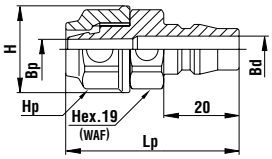
Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			Lp	øHp	A	øT	øBp	øBd
20PH-PLA	1/4"	3	49	14	21.5	9	5.5	7
30PH-PLA	3/8"	4	52	16	23.5	11.5	7	7

Plug PM type (Plastic plug / Male thread)



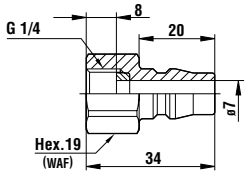
Model	Application	Mass (g)	Dimensions (mm)			
			A	T	øBp	øBd
20PM-PLA	Rc 1/4	8	15	R 1/4	7	7.4
30PM-PLA	Rc 3/8	6	15	R 3/8	10	7.4

Plug PN type (Plastic plug / For urethane hose with spring nut 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 xø10 mm	9	(46)	23	Hex.19	5.3	7
80PN-PLA	ø8 mm x ø12 mm	12	(48.5)	26	Hex.22	6.5	6.5
85PN-PLA	ø8.5 mm x ø12.5 mm	12	(48.5)	26	Hex.22	7	7

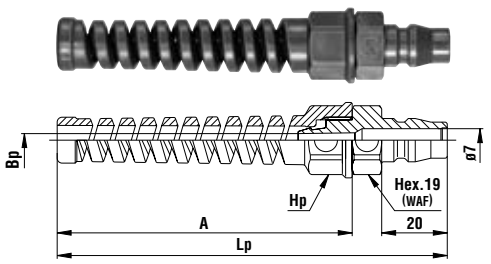
Plug PFF type (Plastic plug / Female thread / Parallel thread)



Dimensions (mm)

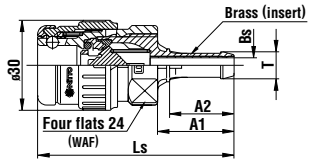
Model	Application	Mass (g)
20PFF-PLA	G 1/4	6

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



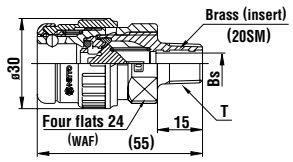
Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			Lp	Hp(WAF)	A	øBp
50PNG-PLA	ø5 mm x ø8 mm	14	119	Hex.19	90	4
65PNG-PLA	ø6.5 mm x ø10 mm	15	119	Hex.19	90	5.3
85PNG-PLA	ø8.5 mm x ø12.5 mm	17	119	Hex.22	90	7

Socket SH type (Hi Cupla Ace / Hose barb)



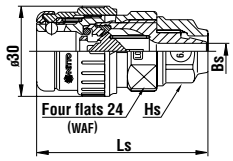
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			Ls	A1	A2	øT	øBs
HA-20SH	1/4"	26	(65.5)	25.5	21.5	9	5
HA-30SH	3/8"	28	(68)	28	23.5	11.5	7

Socket PM type (Hi Cupla Ace / Male thread)



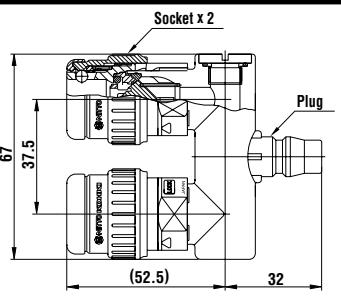
Model	Application	Mass (g)	Dimensions (mm)	
			T	øBs
HA-20SM	Rc 1/4	27	R 1/4	7
HA-30SM	Rc 3/8	26	R 3/8	8

Socket SN type (Hi Cupla Ace / For urethane hose with spring nut 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

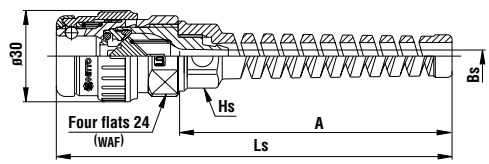
Socket T type (Hi Cupla Ace / For two branch lines)



Dimensions (mm)

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 Air

Rotary Plug

For pneumatic tools and devices

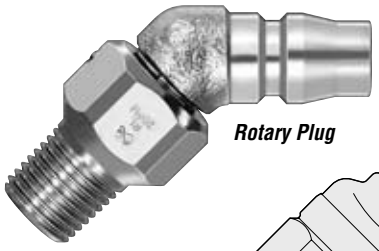
Working pressure: 1.5 MPa {15 kgf/cm²}

Valveless

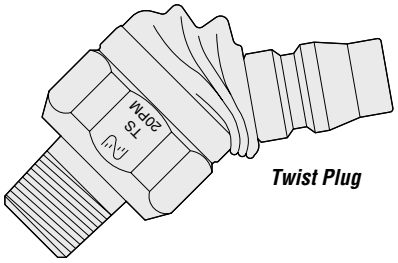
Applicable fluid: Air, Inert gas

Pneumatic tools

■ Comparison by appearance



Rotary Plug



Twist Plug

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.

Specifications

Body material	Steel (Nickel-plated)			
Size	1/4" • 3/8"			
Working pressure MPa {kgf/cm²}	1.5 {15} / 1.0 {10} (only RL-02PM • PFF type)			
Pressure resistance MPa {kgf/cm²}	2.0 {20} / 1.5 {15} (only RL-02PM • PFF type)			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−5°C~+60°C	Standard material

Max. Tightening Torque N•m {kgf•cm}

Size	R 1/4	R 3/8
Torque	15 {153}	25 {255}

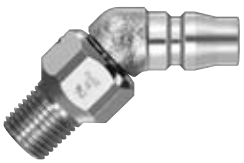
Interchangeability

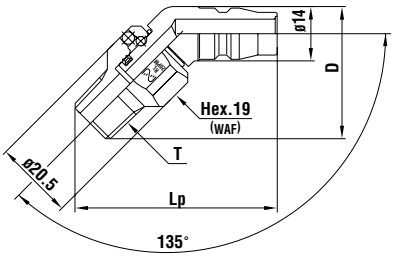
- Model RL-20PM • RL-30PM • RL-20PFF: Can be connected with sockets of Hi Cupla Models 20, 30 and 40 and interchangeable with each corresponding Hi Cupla Series models.
- Model RL-02PM • RL-02PFF: Can be connected with sockets of Super Cupla.

Models and Dimensions

WAF : WAF stands for width across flats.

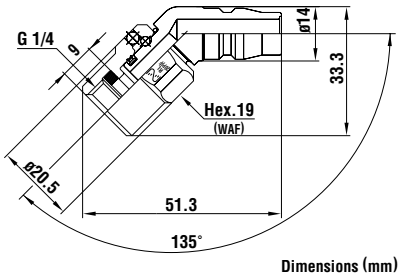
Plug PM type (Male thread)





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

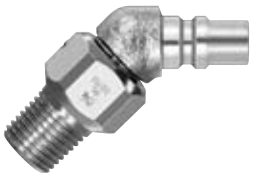
Plug Model RL-20PFF type (Female thread)

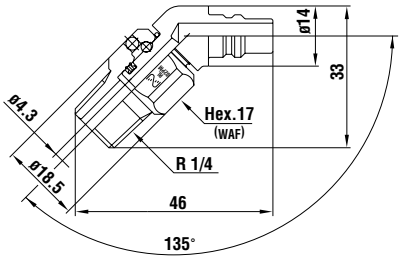


- Application : G 1/4
- Mass : 57g

Dimensions (mm)

Plug Model RL-02PM type (Male thread)

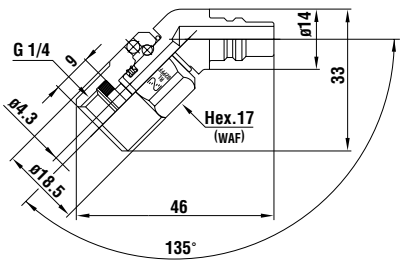




- Application : Rc 1/4
- Mass : 50g

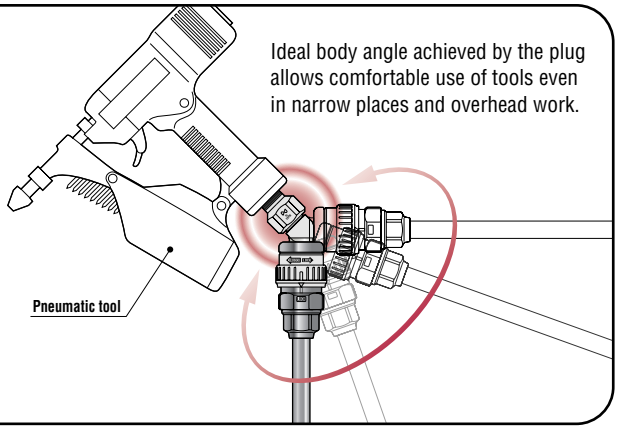
Dimensions (mm)

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 Air

Twist Plug

For pneumatic tools and devices

Working pressure: 1.0 MPa {10 kgf/cm²}

Valveless

Applicable fluid: Air, Inert gas

Pneumatic tools

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.

Specifications

Body material	Steel (Nickel-plated)			
Size	1/8" • 1/4" • 3/8"			
Working pressure MPa {kgf/cm²}	1.0 {10}			
Pressure resistance MPa {kgf/cm²}	1.5 {15}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-5˚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}

Interchangeability

Can be connected with plugs of 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

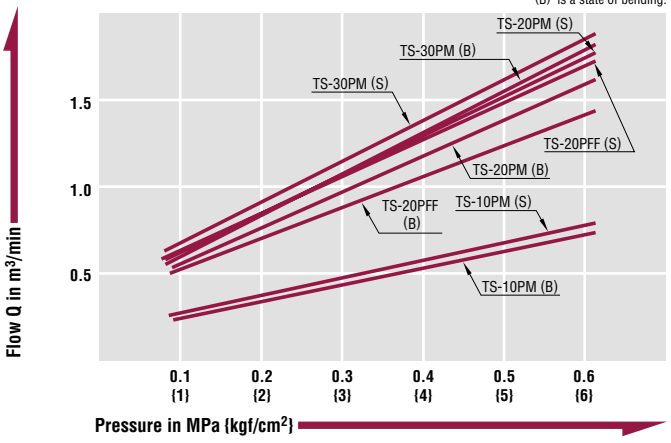
(mm²)

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

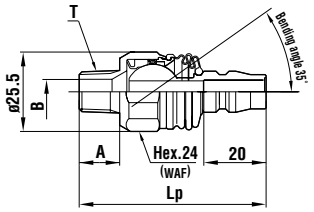
(S) is a state of straight.
(B) is a state of bending.



Models and Dimensions

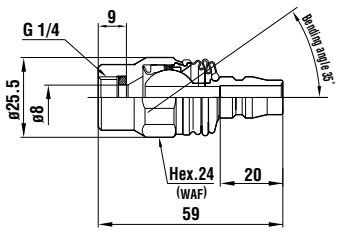
WAF : WAF stands for width across flats.

Plug PM type (Male thread)



Model	Application	Mass (g)	Dimensions (mm)			
			Lp	A	øB	T
TS-10PM	Rc 1/8	59	57.5	10	4	R 1/8
TS-20PM	Rc 1/4	59	60	13	8	R 1/4
TS-30PM	Rc 3/8	65	60	13	10	R 3/8

Plug Model TS-20PFF type (Female thread)



- Application : G 1/4
- Mass : 77g

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 Air

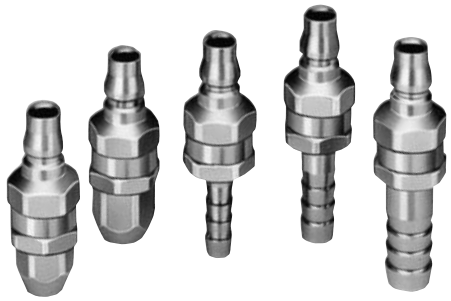
Purge Plug

For air lines with purge mechanism

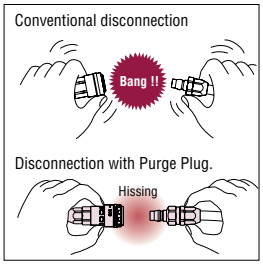
Working pressure: 1.0 MPa {10 kgf/cm²}

Valve structure: Purge valve

Applicable fluid: Air, Inert gas



Eliminates unpleasant pop and hose whipping motion when Cupla is disconnected.



- When the Cupla is disconnected, the pressure left in the hose is released gradually, eliminating unpleasant noise and hose whip back.
- 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/cm²}	1.0 {10}			
Pressure resistance MPa {kgf/cm²}	1.5 {15}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-5°C~+60°C	Standard material

Tightening Torque Range N•m {kgf•cm}

9~11 {92~112}

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 (mm²)

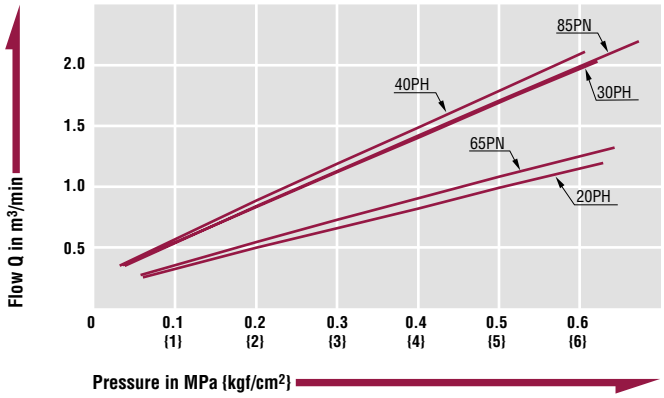
Model	PV-20PH	PV-30PH	PV-40PH	PV-65PN	PV-85PN
Min. Cross-sectional Area	19.6	44.1	50.4	22.0	44.1

Suitability for Vacuum

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

Pressure - Flow Characteristics

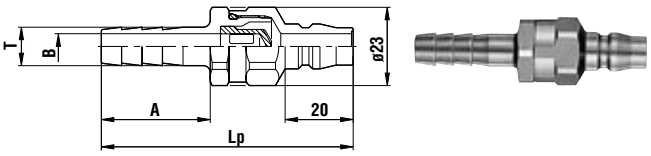
[Test conditions] •Fluid : Air •Temperature : Room temperature



Models and Dimensions

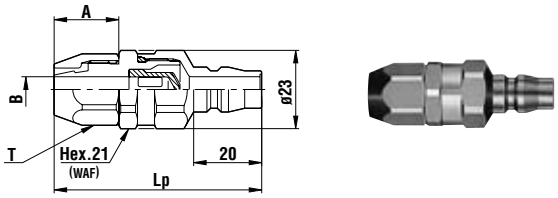
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			Lp	A	øB	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 with spring nut connection)



Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			Lp	A	øB	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 Air

NK Cupla Hose
NK Cupla Coil Hose

Couplings with polyurethane hose for air lines

Working pressure
0.7 MPa {7 kgf/cm²}
1.0 MPa {10 kgf/cm²}

Valve structure
One-way shut-off

Applicable fluid
Air
Inert gas

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

- The Hi Cupla Ace is mounted on pliable polyurethane hose featuring excellent durability and wear resistance with hose guard nut to prevent possible kinking.
- Pressure rating of these plastic sockets are comparable to steel.
- A built-in "automatic lock mechanism" to lock the sleeve when connected, thus prevents accidental detachment.
- Just push plug into socket for simple connection.
- Plastic body will cause minimum risk of damage even in contact with tools or equipment.
- Fluid may flow in either direction from plug or from socket side when coupled.
- Polyurethane hoses minimize stiffening in cold environment, and the surface does not become sticky even when covered with oil.
- Spiral polyurethane coil hoses processed from straight tube have self-recoiling feature.
- Various hose lengths are available.

Specifications

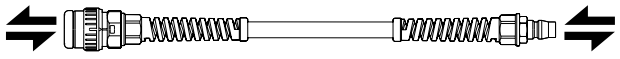
Body material	Socket : Engineering plastics (PBT, POM) Plug : Steel (Chrome-plated)			
Size	ø5 mm x ø8 mm • ø6.5 mm x ø10 mm • ø8.5 mm x ø12.5 mm			
Working pressure MPa {kgf/cm²}	NK Cupla Hose : 1.0 {10}	NK Cupla Coil Hose : 0.7 {7}		
Pressure resistance MPa {kgf/cm²}	NK Cupla Hose : 1.5 {15}	NK Cupla Coil Hose : 1.0 {10}		
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-5°C~+60°C	Standard material

Tightening Torque Range N•m {kgf•cm}

Size	ø5 mm x ø8 mm	ø6.5 mm x ø10 mm	ø8.5 mm x ø12.5 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.

Model / Hose length

Plug / Socket NK Cupla Hose

Model	Hose Size	Hose length	Socket	Plug
			Hi Cupla Ace	Nut Cupla
NKU-605B	ø6.5mm x ø10mm	5 m	HA-65SNG	65PNG
NKU-610B	ø6.5mm x ø10mm	10 m	HA-65SNG	65PNG
NKU-620B	ø6.5mm x ø10mm	20 m	HA-65SNG	65PNG
NKU-810B	ø8.5mm x ø12.5mm	10 m	HA-85SNG	85PNG
NKU-820B	ø8.5mm x ø12.5mm	20 m	HA-85SNG	85PNG

Plug / Socket NK Cupla Coil Hose

Model	Hose Size	Max. extensible length	Socket	Plug
			Hi Cupla Ace	Nut Cupla
NKC-503B	ø5mm x ø8mm	2 m	HA-50SNG	50PNG
NKC-505B	ø5mm x ø8mm	4 m	HA-50SNG	50PNG
NKC-603B	ø6.5mm x ø10mm	2 m	HA-65SNG	65PNG
NKC-605B	ø6.5mm x ø10mm	4 m	HA-65SNG	65PNG

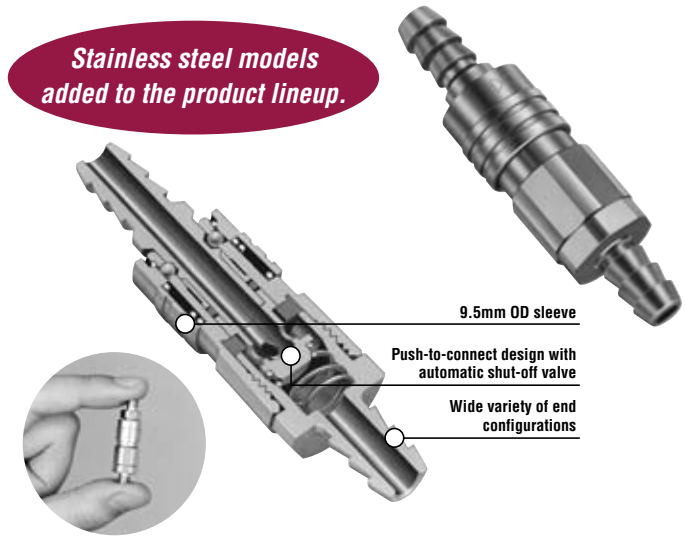
For Air

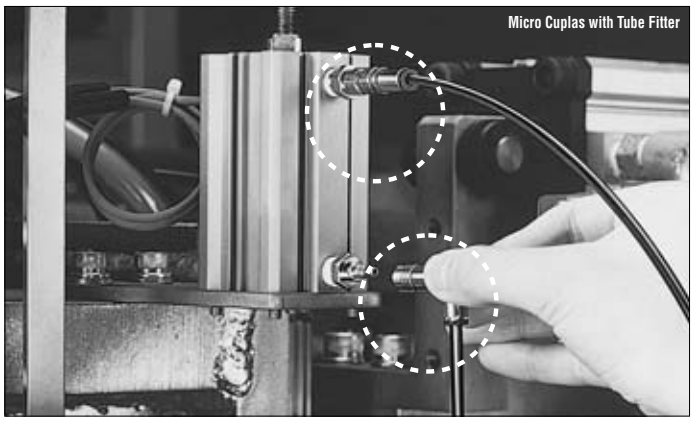
Micro Cupla

For piping in pneumatic control devices

Working pressure: 1.0 MPa {10 kgf/cm²}
Valve structure: One-way shut-off
Applicable fluids: Air; Water (Tube Fitter type is unsuitable for water.)

Stainless steel models added to the product lineup.





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.
- By pushing the flange, the tube can be released from the Tube Fitter.
- Compact design for piping in narrow spaces.
- Chrome-plated brass and stainless steel bodies are available for excellent corrosion resistance.
- Regardless of the end configurations, all Micro Cupla sockets and plugs can be connected to each other.
- 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.

Specifications

Body material	Cupla : Brass (Chrome-plated) • Stainless steel (SUS 304) Tube Fitter Type : Brass (Chrome-plated)			
Size	1/8" (minimum internal diameter 2.5mm)			
Tube size (for Tube Fitter end configurations)	Polyurethane : ø4 ±0.1 • ø6 ±0.1 Nylon : ø4 $^{+0.05}_{-0.08}$ • ø6 $^{+0.05}_{-0.08}$ Teflon : ø4 ±0.05 • ø6 ±0.07			
Working pressure MPa {kgf/cm²}	1.0 {10}			
Pressure resistance MPa {kgf/cm²}	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)

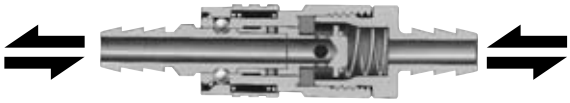
• Above specifications apply only to Cuplas. Working pressure, pressure resistance and working temperature range may vary depending on tube materials you use with and temperature conditions you use under. Micro Cupla with Tube Fitter has NBR packing material only.

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 (mm²)

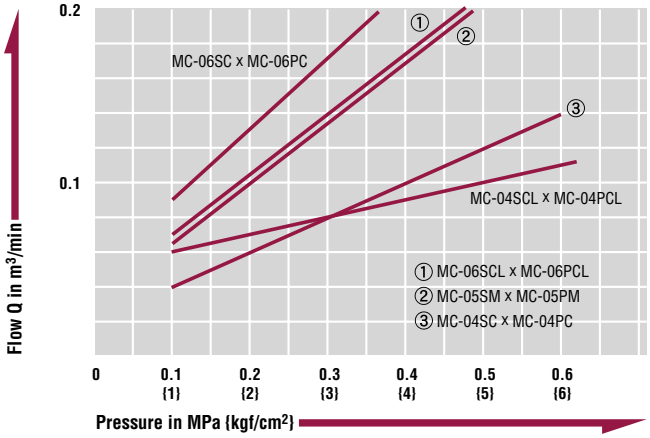
Model	MC-04SP	MC-05SP	MC-10SP	Tube Fitter Type for 4mm OD tube	Tube Fitter Type for 6mm OD tube
Min. Cross-Sectional Area	4.9	4.9	4.9	4.9	4.9

Suitability for Vacuum 53.0kPa {400mmHg}

Socket only	Plug only	When connected
—	—	Operational

Pressure - Flow Characteristics

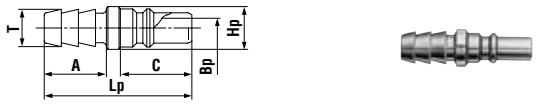
[Test conditions] •Fluid : Air •Temperature : Room temperature
•Tube size : ø4mm x ø2mm, ø6mm x ø4mm (Micro Cupla with Tube Fitter)



Models and Dimensions

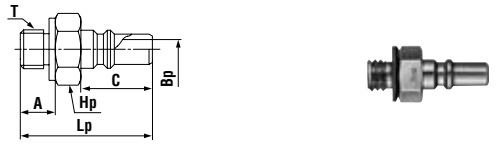
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



Model	Application (Tube)	Body material•Mass (g)		Dimensions (mm)					
		Brass	Stainless steel	Lp	C	A	øHp	øT	øBp
MC-03PH	3mm ID	1.2	–	19	9.2	8	5.5	3.5	1.2
MC-04PH	4mm ID	1.4	1.3	19	9.2	8	5.5	4.8	2.5

Plug PM type (Male thread)

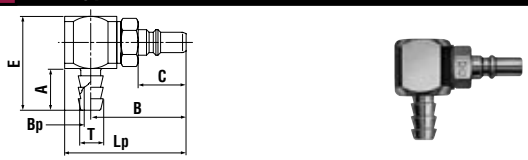


Model	Application	Body material•Mass (g)		Dimensions (mm)					
		Brass	Stainless steel	Lp	C	A	Hp(WAF)	T	øBp
MC-05PM	M5 x 0.8	1.9	2.2	17	9.2	4.5	Hex.8	M5×0.8	2.5

Plug PM type (Male thread)

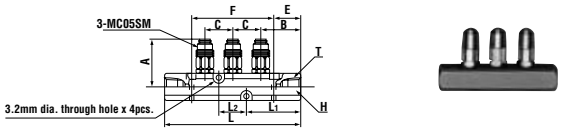
Model	Application	Body material•Mass (g)		Dimensions (mm)					
		Brass	Stainless steel	Lp	C	A	Hp(WAF)	T	øBp
MC-10PM	Rc1/8	9	8.1	26	9.2	9	Hex.11	R1/8	2.5

Plug PHL type (Hose barb with elbow)



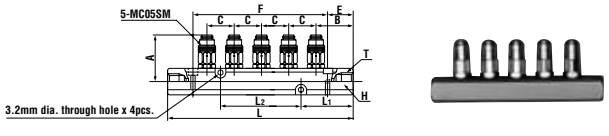
Model	Application (Tube)	Body material•Mass (g)		Dimensions (mm)						
		Brass	Stainless steel	Lp	C	A	B	E	øT	øBp
MC-04PHL	4mm ID	9.4	9	23.3	9.2	8	18.3	18	4.8	2.5

Socket Micro Line Cupla for three branch ports



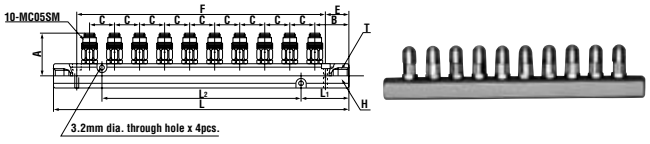
Model	Application	Mass (g)	Dimensions (mm)									
			L	L1	L2	A	B	C	E	F	T	H(WAF)
MC-03	3 ports	65	78	31	16	28.8	23	16	15	48	2-Rc1/8	Box 16

Socket Micro Line Cupla with 5 branch ports



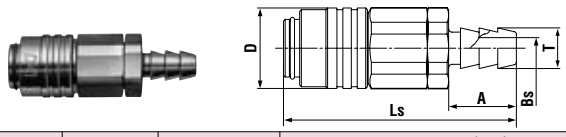
Model	Application	Mass (g)	Dimensions (mm)									
			L	L1	L2	A	B	C	E	F	T	H(WAF)
MC-05	5 ports	101	110	31	48	28.8	23	16	15	80	2-Rc1/8	Box 16

Socket Micro Line Cupla with 10 branch ports



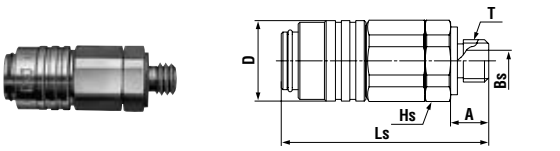
Model	Application	Mass (g)	Dimensions (mm)									
			L	L1	L2	A	B	C	E	F	T	H(WAF)
MC-10	10 ports	187	190	31	128	28.8	23	16	15	160	2-Rc1/8	Box 16

Socket SH type (Hose barb)



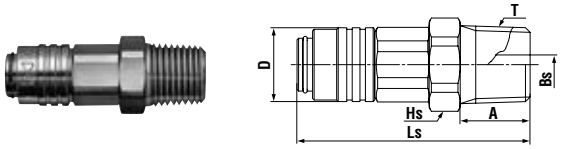
Model	Application (Tube)	Body material•Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	Ls	øD	A	øT	øBs
MC-03SH	3mm ID	7	–	27.5	9.5	8	3.5	1.2
MC-04SH	4mm ID	7.3	6.7	27.5	9.5	8	4.8	2.5

Socket SM type (Male thread)



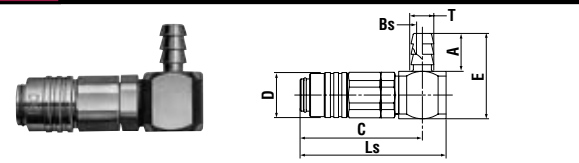
Model	Application	Body material•Mass (g)		Dimensions (mm)					
		Brass	Stainless steel	Ls	øD	A	T	Hs(WAF)	øBs
MC-05SM	M5 x 0.8	7.4	6.8	24.5	9.5	4.5	M5×0.8	Hex.9	2.5

Socket SM type (Male thread)



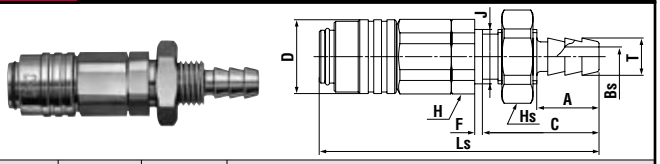
Model	Application	Body material•Mass (g)		Dimensions (mm)					
		Brass	Stainless steel	Ls	øD	A	T	Hs(WAF)	øBs
MC-10SM	Rc1/8	13.1	12.1	30	9.5	9	R1/8	Hex.11	2.5

Socket SHL type (Hose barb with elbow)



Model	Application (Tube)	Body material•Mass (g)		Dimensions (mm)						
		Brass	Stainless steel	Ls	C	E	A	øD	øT	øBs
MC-04SHL	4mm ID	14.8	13.6	30.8	25.8	18	8	9.5	4.8	2.5

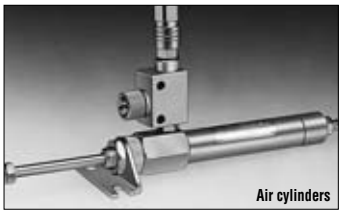
Socket SHB type (for panel mounting)

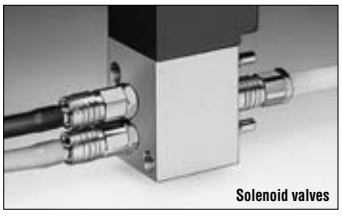


Model	Application	Body material•Mass (g)		Dimensions (mm)								
		Brass	Stainless steel	Ls	C	A	øD	øT	øBs	Hs(WAF)	F	øJ	H(WAF)
MC-04SHB	for panel mounting	11.5	10.6	36	15	8	9.5	4.8	2.5	Hex.11	1	7	Hex.9

*Available body material for Model MC03PH, MC-03SH and Micro Line Cuplas is brass only. Stainless steel body is unavailable for these models.

Application example



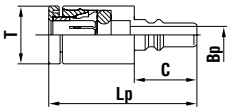


Before use, please be sure to read “Safety Guide” described at the end of this book and “Instruction Sheet” that comes with the products.

Models and Dimensions

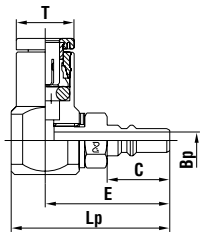
WAF : WAF stands for width across flats.

Plug PC type (Straight type with Tube Fitter)



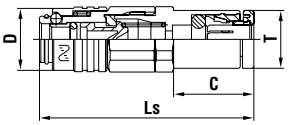
Model	Application (Tube)	Mass (g)	Dimensions (mm)			
			Lp	C	øT	øBp
MC-04PC	4mm OD	3	(21.7)	9.2	8.6	2.5
MC-06PC	6mm OD	5	(25)	9.2	10.5	2.5

Plug PCL type (Straight type with Tube Fitter)



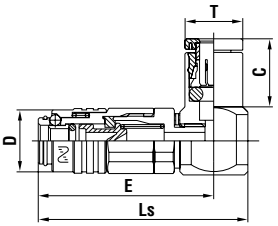
Model	Application (Tube)	Mass (g)	Dimensions (mm)				
			Lp	C	E	øT	øBp
MC-04PCL	4mm OD	10	(23.3)	9.2	(18.3)	8.6	2.5
MC-06PCL	6mm OD	13.5	(24.3)	9.2	(18.8)	10.6	2.5

Socket SC type (Straight type with Tube Fitter)



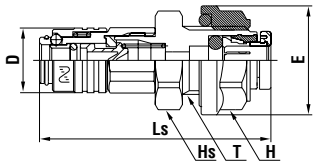
Model	Application (Tube)	Mass (g)	Dimensions (mm)			
			Ls	øD	C	øT
MC-04SC	4mm OD	9	(31.5)	9.5	(11.8)	8.6
MC-06SC	6mm OD	11.5	(33.5)	9.5	(12.5)	10.6

Socket SCL type (Straight type with 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)	8.6
MC-06SCL	6mm OD	19	(31.8)	(26.3)	9.5	(12)	10.6

Socket SCB type (Straight type with Tube Fitter)



Model	Application (Tube)	Mass (g)	Dimensions (mm)					
			Ls	øD	øE	Hs(WAF)	H(WAF)	øT
MC-04SCB	4mm OD	15	(34)	9.5	16	Hex.13	Hex.13	M10X1
MC-06SCB	6mm OD	18.5	(36)	9.5	18	Hex.15	Hex.15	M12X1

For Air

Multi Cupla

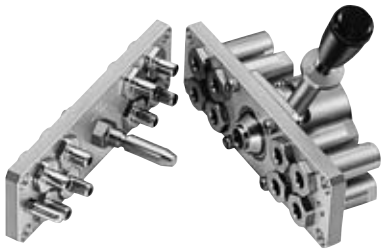
MAM Type

Multiple air port system

Working pressure: 0.7 MPa {7 kgf/cm²}

Valve structure: One-way shut-off

Applicable fluid: Air



Piping to work clamping device on welding robot

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.
- Lever stopper prevents a socket plate from sudden disconnection.
- Valve on socket side only.

Specifications

Body material	Brass (Chrome-plated)			
Size	1/8"			
Working pressure MPa (kgf/cm²)	0.7 {7}			
Pressure resistance MPa (kgf/cm²)	1.0 {10}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	0°C~+60°C	Standard material

Min. Cross-Sectional Area (mm²)

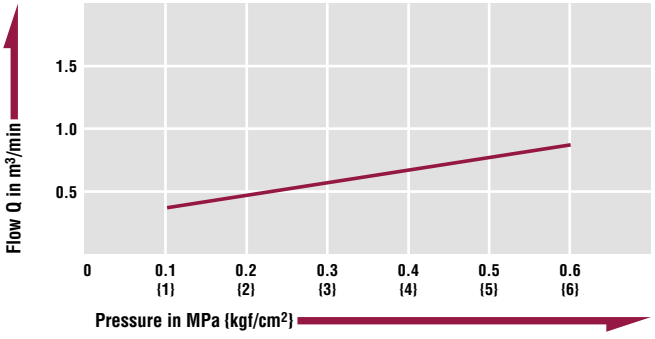
Per set	15.9

Suitability for Vacuum

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

Pressure - Flow Rated Characteristics Per set

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



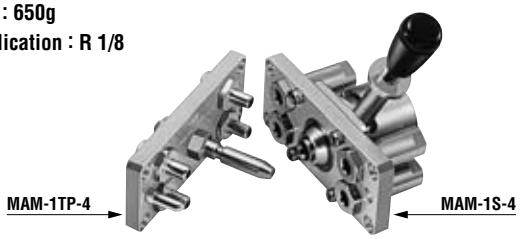
Models and Dimensions

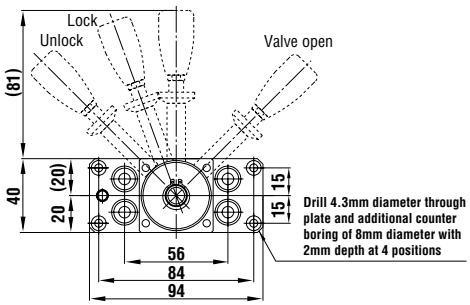
WAF : WAF stands for width across flats.

Plug / Socket Model MAM-1SP-4 (4 ports type)

Mass : 650g

• Application : R 1/8



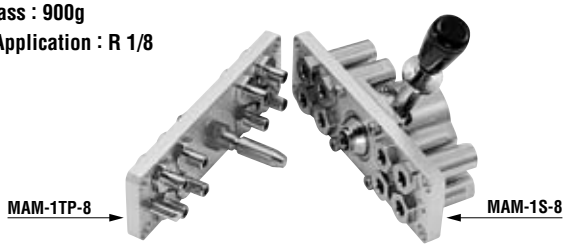


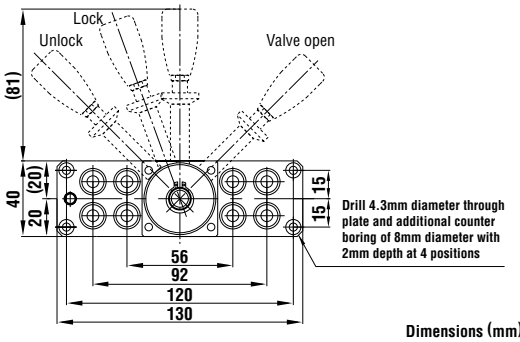
Dimensions (mm)

Plug / Socket Model MAM-1SP-8 (8 ports type)

Mass : 900g

• Application : R 1/8



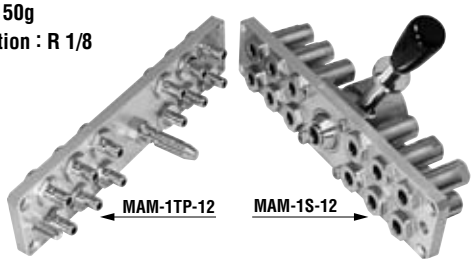


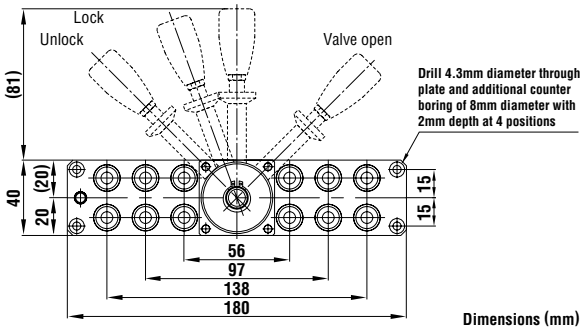
Dimensions (mm)

Plug / Socket Model MAM-1SP-12 (12 ports type)

Mass : 1150g

• Application : R 1/8





Dimensions (mm)

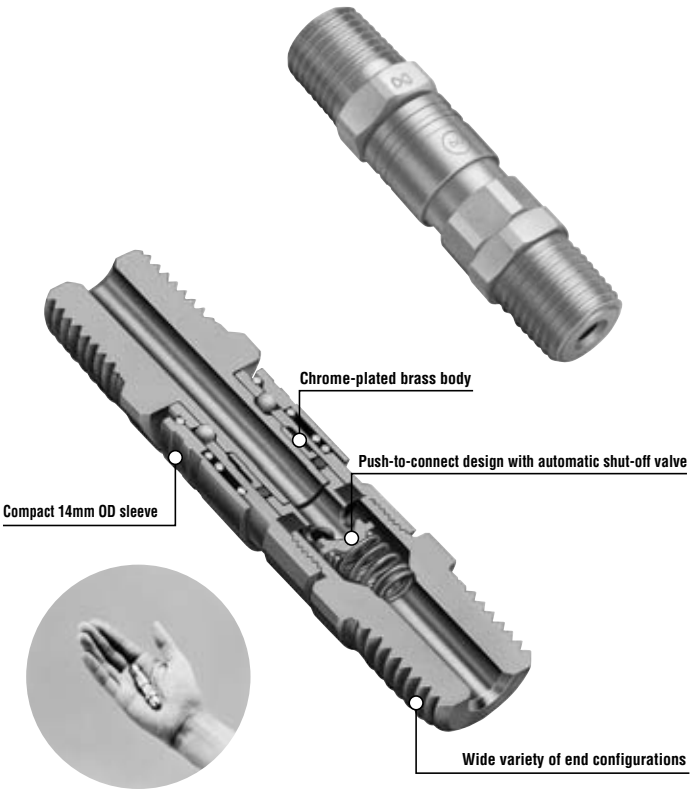
• For this range of Cuplas, each component socket or plug alone can be supplied.

For Air

Small Cupla

Lightweight and compact for use on air lines and scientific equipment

Working pressure: 0.7 MPa {7 kgf/cm²}
Valve structure: One-way shut-off
Applicable fluids: 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

Body material	Cupla : Brass (Chrome-plated) Tube Fitter Type: Brass (Nickel-plated)			
Size	1/8" • 1/4"			
Tube size (for Tube Fitter end configurations)	Polyurethane : ø6 ± 0.1 • ø8 ± 0.15 Nylon : ø6 $^{+0.05}_{-0.08}$ • ø8 $^{+0.05}_{-0.1}$ Teflon : ø6 ± 0.07 • ø8 ± 0.07			
Working pressure MPa {kgf/cm²}	0.7 {7}			
Pressure resistance MPa {kgf/cm²}	1.1 {11}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-5°C~+60°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. Micro Cupla with Tube Fitter has NBR packing material only.

Max. Tightening Torque N•m {kgf•cm}

Size	1/8"	1/4"	Nut type
Torque	7 {71}	9 {92}	5 {51}

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 (mm²)

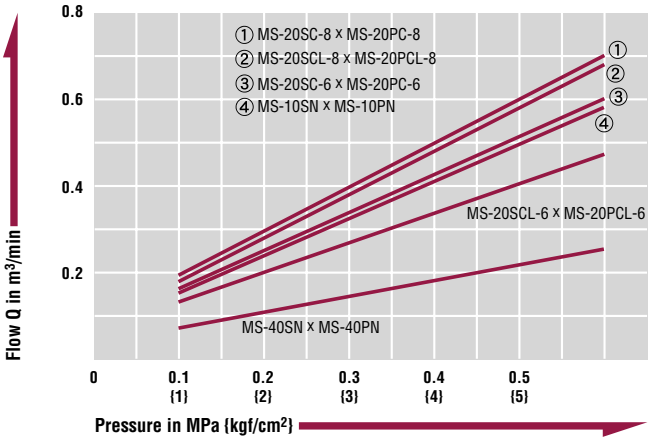
Model	MS-10SP	MS-20SP	MS-40SPN	MS-45SPN	Tube Fitter Type for 6mm OD tube	Tube Fitter Type for 8mm OD tube
Min. Cross-Sectional Area	12.5	12.5	4.9	7	12.5	12.5

Suitability for Vacuum 53.0kPa {400mmHg}

Socket only	Plug only	When connected
—	—	Operational

Pressure - Flow Characteristics

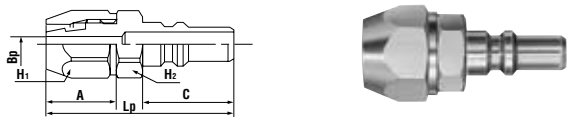
[Test conditions] •Fluid : Air •Temperature : Room temperature
•Tube size : ø6mm x ø4mm, ø8mm x ø6mm (Small Cupla with Tube Fitter)



Models and Dimensions

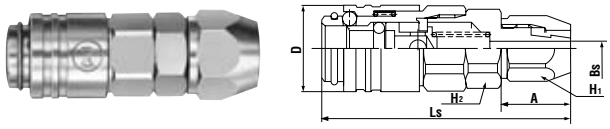
WAF : WAF stands for width across flats.

Plug PN type (Hose barb)



Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			Lp	C	A	H1(WAF)	H2(WAF)	øBp
MS-40PN	ø4mm x ø6mm Nylon hose	10.5	31	15.2	11.5	Hex.10	Hex.10	2.5
MS-45PN	ø4.5mm x ø6mm Nylon hose ø4mm x ø6mm Polyurethane hose	11	31	15.2	11.5	Hex.10	Hex.10	3

Socket SN type (Hose barb)

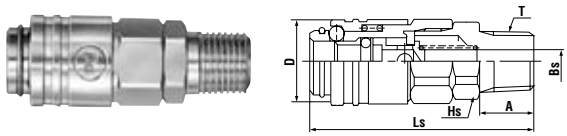


Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			Ls	A	H1(WAF)	H2(WAF)	øD	øBs
MS-40SN	ø4mm x ø6mm Nylon hose	26.5	40.8	11.5	Hex.10	Hex.12	14	2.5
MS-45SN	ø4.5mm x ø6mm Nylon hose ø4mm x ø6mm Polyurethane hose	27.0	40.8	11.5	Hex.10	Hex.12	14	3

Plug PM type (Male thread)

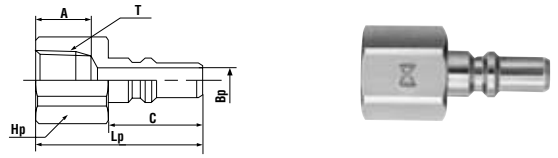
Model	Application	Mass (g)	Dimensions (mm)					
			Lp	C	A	Hp(WAF)	T	øBp
MS-10PM	Rc 1/8	9	28.5	15.2	9	Hex.11	R 1/8	4
MS-20PM	Rc 1/4	19.5	32.5	15.2	13	Hex.14	R 1/4	4

Socket SM type (Male thread)



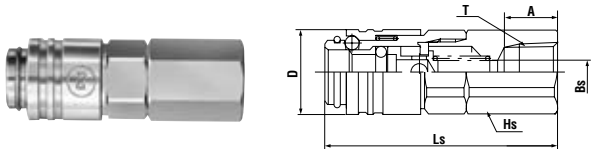
Model	Application	Mass (g)	Dimensions (mm)					
			Ls	A	Hs(WAF)	T	øD	øBs
MS-10SM	Rc 1/8	24	36.8	9	Hex.12	R 1/8	14	4
MS-20SM	Rc 1/4	34	40.8	13	Hex.14	R 1/4	14	4

Plug PF type (Female thread)



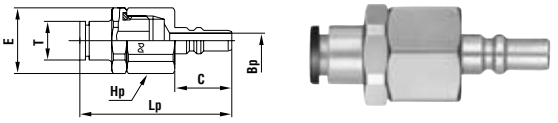
Model	Application	Mass (g)	Dimensions (mm)					
			Lp	C	A	Hp(WAF)	T	øBp
MS-10PF	R 1/8	11	27	15.2	9	Hex.13	Rc 1/8	4

Socket SF type (Female thread)



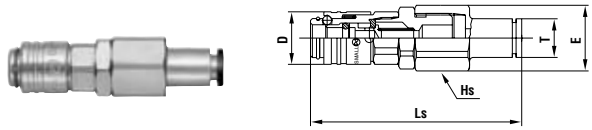
Model	Application	Mass (g)	Dimensions (mm)					
			Ls	A	Hs(WAF)	T	øD	øBs
MS-10SF	R 1/8	29.5	38.8	9	Hex.13	Rc 1/8	14	4

Plug PC type (Straight type with Tube Fitter)



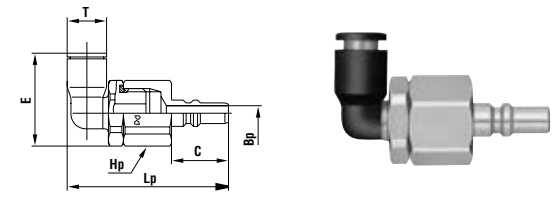
Model	Application (Tube)	Mass (g)	Dimensions (mm)					
			Lp	C	E	Hp(WAF)	øT	øBp
MS-20PC-6	6mm OD	26.5	(40.5)	15.2	17.5	Hex.16	10.3	4
MS-20PC-8	8mm OD	31	(47.2)	15.2	17.5	Hex.16	13.5	4

Socket SC type (Straight type with Tube Fitter)



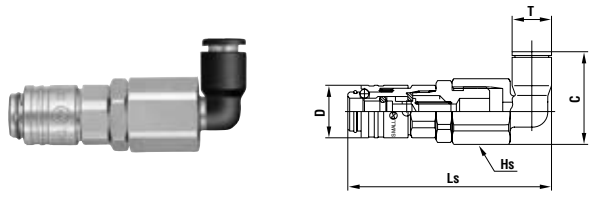
Model	Application (Tube)	Mass (g)	Dimensions (mm)				
			Ls	øD	E	Hs(WAF)	øT
MS-20SC-6	6mm OD	46	(56.3)	14	17.5	Hex.16	10.3
MS-20SC-8	8mm OD	50.5	(60.8)	14	17.5	Hex.16	13.5

Plug PCL type (Straight type with Tube Fitter)



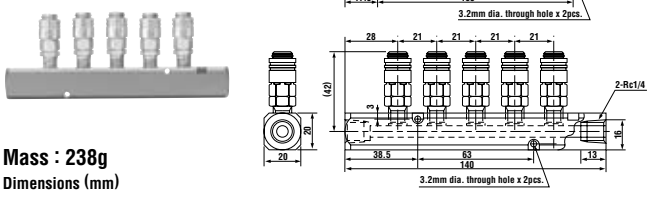
Model	Application (Tube)	Mass (g)	Dimensions (mm)					
			Lp	C	E	Hp(WAF)	øT	øBp
MS-20PCL-6	6mm OD	27.5	(43)	15.2	(24.8)	Hex.16	10.3	4
MS-20PCL-8	8mm OD	32	(46.3)	15.2	(31.8)	Hex.16	13.5	4

Socket SCL type (Straight type with 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	10.3
MS-20SCL-8	8mm OD	49.5	(58.5)	14	(31.4)	Hex.16	13.5

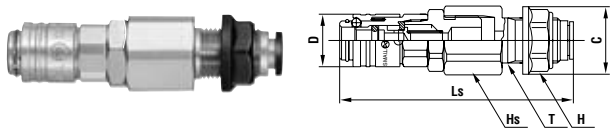
Socket MS-5 type (Small Cupal with 5 branch ports)



Mass : 238g

Dimensions (mm)

Socket SCB type (Straight type with Tube Fitter)



Model	Application (Tube)	Mass (g)	Dimensions (mm)					
			Ls	øD	øC	Hs(WAF)	H(WAF)	øT
MS-20SCB-6	6mm OD	57.5	(62.3)	14	18	Hex.17	Hex.15	M12x1
MS-20SCB-8	8mm OD	58.5	(62.8)	14	21	Hex.17	Hex.18	M15x1

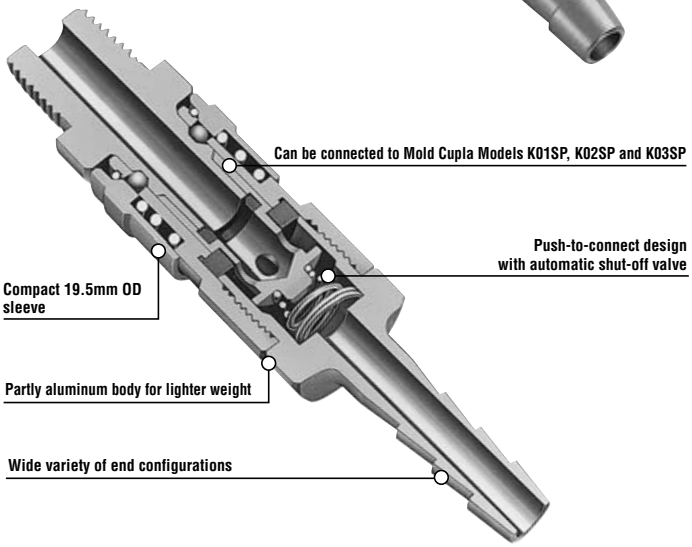
Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.

For Air

Super Cupla

Light, compact for air piping connections

Working pressure: 1.0 MPa {10 kgf/cm²}
Valve structure: One-way shut-off
Applicable fluids: Air



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 : ø6 ± 0.1 • ø8 ± 0.15 Nylon : ø6 $^{+0.05}_{-0.08}$ • ø8 $^{+0.05}_{-0.1}$ Teflon : ø6 ± 0.07 • ø8 ± 0.07			
Working pressure MPa {kgf/cm²}	1.0 {10}			
Pressure resistance MPa {kgf/cm²}	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)

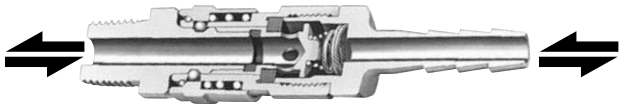
• Above specifications apply only to Cuplas. Working pressure, pressure resistance and working temperature range may vary depending on tube materials you use with and temperature conditions you use under. Micro Cupla with Tube Fitter has NBR packing material only.

Max. Tightening Torque N•m {kgf•cm}

Size	1/8"	1/4"
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 end configurations.
*Can be connected with Mold Cuplas.
*When conversion socket+plug Model 02S20P is used, Super Cupla plugs can be connected with sockets of Hi Cupla Models 20, 30 and 40.

Min. Cross-Sectional Area (mm²)

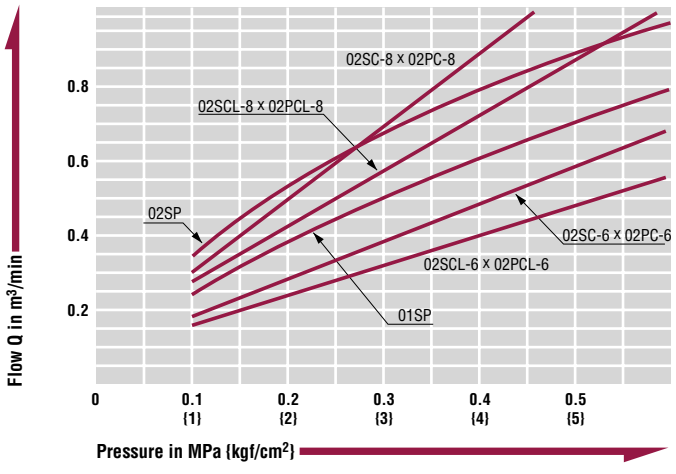
Model	01SP	02SP	Tube Fitter Type for 6mm OD tube	Tube Fitter Type for 8mm OD tube
Min. Cross-Sectional Area	19	19	12.5	19

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 : ø6mm x ø4mm, ø8mm x ø6mm ((Super Cupla with Tube Fitter)



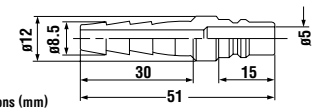
The lightweight design makes the Cupla best suited to power tools! Push-to-connect for easy operation.

- 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 02S20P can be connected with sockets of Hi Cupla Models 20, 30 and 40.
- Also available with quick connect / disconnect Tube Fitter type.

Models and Dimensions

WAF : WAF stands for width across flats.

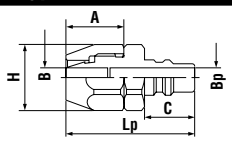
Plug 02PH type (Hose barb)



Dimensions (mm)

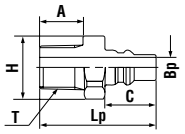
Model	Application (Hose)	Mass (g)
02PH	1/4"	16

Plug PN type (For connection to urethane hose)



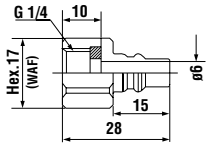
Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			Lp	C	A	H(WAF)	øBp	øB
01PN	ø5mm x ø8mm	27.6	38.5	15	17	Hex.17	6	3.8
02PN	ø6.5mm x ø10mm	27.6	38.5	15	17	Hex.17	6	5.3

Plug PM type (Male thread)



Model	Application	Mass (g)	Dimensions (mm)					
			Lp	C	A	H(WAF)	T	øBp
01PM	Rc 1/8	12	31	15	10	Hex.12	R 1/8	5
02PM	Rc 1/4	22.7	34	15	13	Hex.17	R 1/4	6

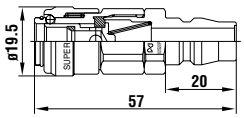
Plug 02PFF type (Parallel female thread)



Dimensions (mm)

Model	Application	Mass (g)
02PFF	G 1/4	17.7

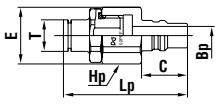
Plug/Socket Model 02S20P (Conversion model to connect Hi Cupla socket and Super Cupla plug)



Dimensions (mm)

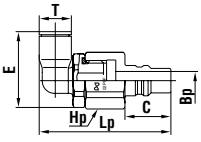
Model	Application	Mass (g)
02S20P	Hi Cupla (Socket)	58

Plug PC type (Straight type with Tube Fitter)



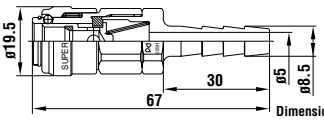
Model	Application (Tube)	Mass (g)	Dimensions (mm)					
			Lp	C	E	Hp(WAF)	øT	øBp
02PC-6	6mm OD	28.5	(40.5)	15	18.5	Hex.17	10.3	6
02PC-8	8mm OD	33	(47.5)	15	18.5	Hex.17	13.5	6

Plug PCL type (Straight type with Tube Fitter)



Model	Application (Tube)	Mass (g)	Dimensions (mm)					
			Lp	C	E	Hp(WAF)	øT	øBp
02PCL-6	6mm OD	29.5	(43)	15	(25.3)	Hex.17	10.3	6
02PCL-8	8mm OD	34.5	(46.5)	15	(32.3)	Hex.17	13.5	6

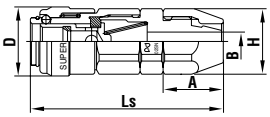
Socket 02SH type (Hose barb)



Dimensions (mm)

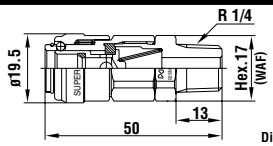
Model	Application (Hose)	Mass (g)
02SH	1/4"	56

Socket SN type (For connection to urethane hose)



Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			Ls	A	øD	H(WAF)	øB
01SN	ø5mm x ø8mm	35	54.5	17	19.5	Hex.17	3.8
02SN	ø6.5mm x ø10mm	35	54.5	17	19.5	Hex.17	5.3

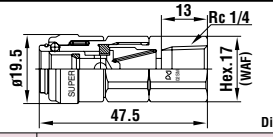
Socket SM type (Male thread)



Dimensions (mm)

Model	Application	Mass (g)
02SM	Rc 1/4	57

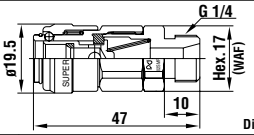
Socket 02SF type (Female thread)



Dimensions (mm)

Model	Application	Mass (g)
02SF	R 1/4	26

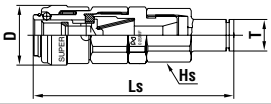
Socket 02SMF type (Parallel female thread)



Dimensions (mm)

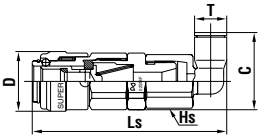
Model	Application	Mass (g)
02SMF	G 1/4	27

Socket SC type (Straight type with Tube Fitter)



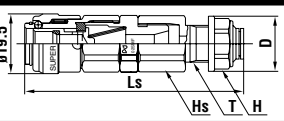
Model	Application (Tube)	Mass (g)	Dimensions (mm)			
			Ls	øD	Hs(WAF)	øT
02SC-6	6mm OD	46	(65.5)	19.5	Hex.16	10.3
02SC-8	8mm OD	50.5	(70)	19.5	Hex.16	13.5

Socket SCL type (Straight type with Tube Fitter)



Model	Application (Tube)	Mass (g)	Dimensions (mm)				
			Ls	øD	Hs(WAF)	C	øT
02SCL-6	6mm OD	47.5	(63.5)	19.5	Hex.16	(25.7)	10.3
02SCL-8	8mm OD	49.5	(67.7)	19.5	Hex.16	(32.8)	13.5

Socket SCB type (Straight type with Tube Fitter)



Model	Application (Tube)	Mass (g)	Dimensions (mm)				
			Ls	øD	Hs(WAF)	H(WAF)	øT
02SCB-6	6mm OD	45.5	(71.5)	18	Hex.17	Hex.15	M12x1
02SCB-8	8mm OD	46.5	(72)	21	Hex.17	Hex.18	M15x1

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 Air

Plastic Cupla

BC Type Valveless

For low pressure air piping

Working pressure: 0.07 — 0.07 MPa {0.7 kgf/cm²}

Valve structure: Two-way shut-off (Non-Spill)

Applicable fluid: Air

Bubble bath

Specifications

Body material	Plastic (plug and socket)			
Size	1/4" • 3/8"			
Working pressure MPa {kgf/cm²}	0.07 {0.7}			
Pressure resistance MPa {kgf/cm²}	0.1 {1.0}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	0°C~+50°C	Standard material

Min. Cross-Sectional Area (mm²)

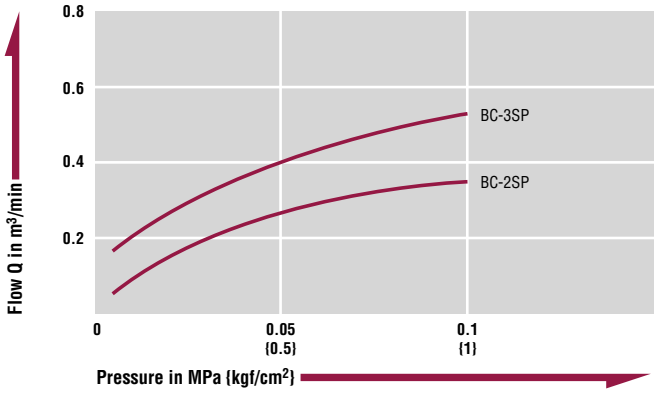
Model	BC-2SP	BC-3SP
Min. Cross-Sectional Area	12.5	28.3

Suitability for Vacuum

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

Pressure - Flow Characteristics

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

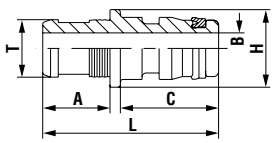


Compact plastic Cupla for use at low pressures. Just push in the plug for quick connection.

- 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.

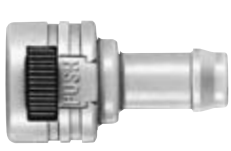
Models and Dimensions

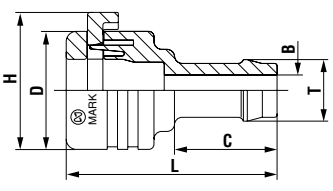
Plug PH type (Hose barb)



Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			L	C	A	øB	øT	øH
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	C	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

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 Air

Plastic Cupla

BCC Type with flow control

For low pressure air piping

Working pressure: 0.07 MPa {0.7 kgf/cm²}

Valve structure: One-way shut-off

Applicable fluid: Air

Specifications

Body material	Plastic (plug and socket)			
Size	3/8"			
Working pressure MPa (kgf/cm²)	0.07 {0.7}			
Pressure resistance MPa (kgf/cm²)	0.1 {1.0}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	0°C~+50°C	Standard material

Min. Cross-Sectional Area (mm²)

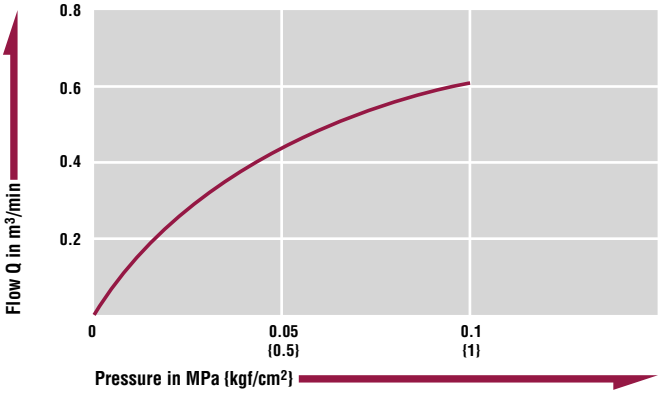
Model	BCV-3PH	BCC-3SH
Min. Cross-Sectional Area	14	14

Suitability for Vacuum

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

Pressure - Flow Characteristics

[Test conditions] •Fluid : Air •Temperature : Room temperature •Flow rate adjustment : fully open

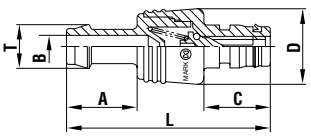


Plastic Cupla with flow controller, good for use at low pressures. Just push in the plug for quick connection.

- 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.

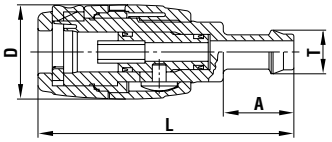
Models and Dimensions

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)



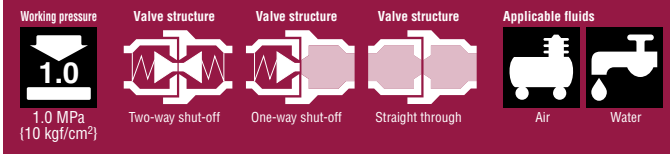
Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			L	øD	A	øT
BCC-3SH	3/8"	25	73	26	20	12

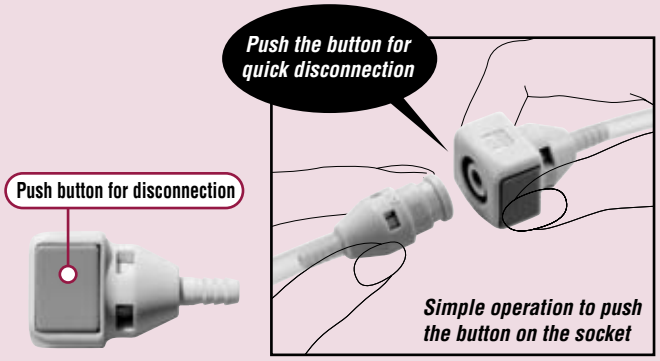
Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.

For Air

Cube Cupla

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





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/cm²}	1.0 {10}			
Pressure resistance MPa {kgf/cm²}	1.5 {15}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-5°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 of 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 (mm²)

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

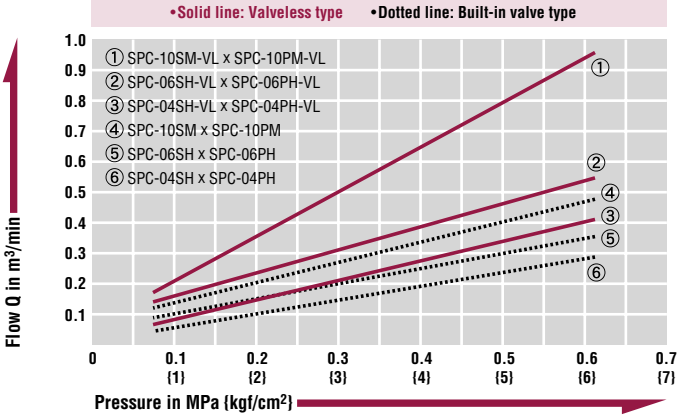
Suitability for Vacuum 53.0kPa {400mmHg}

Socket only	Plug only	When connected
—	—	Operational

Pressure - Flow Characteristics

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

•Solid line: Valveless type •Dotted line: Built-in valve type



Connection capability

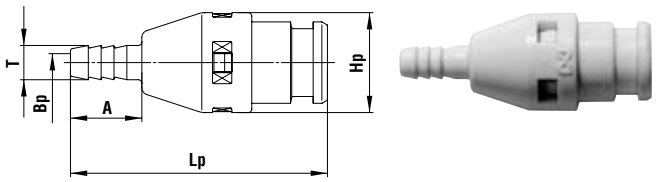
Select the combination of models suitable to your applications

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

Models and Dimensions

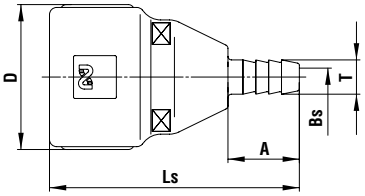
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



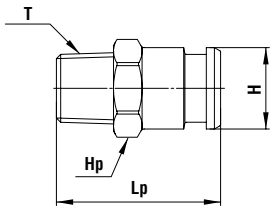
Model	Application (Tube)	Built-in valve	Mass (g)	Dimensions (mm)				
				Lp	A	øHp	øT	øBp
SPC-04PH	4mm ID	○	3.1	36	10	14	4.8	2.5
SPC-04PH-VL	4mm ID	—	2.6	36	10	14	4.8	2.5
SPC-06PH	6mm ID	○	3.4	40	15	14	7	3.6
SPC-06PH-VL	6mm ID	—	2.9	40	15	14	7	3.6

Socket SH type (Hose barb)



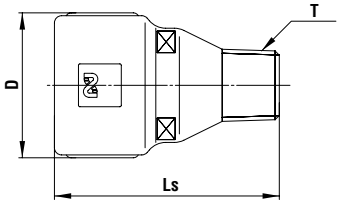
Model	Application (Tube)	Built-in valve	Mass (g)	Dimensions (mm)				
				Ls	A	D	øT	øBs
SPC-04SH	4mm ID	○	6.5	35	10	20.3	4.8	2.5
SPC-04SH-VL	4mm ID	—	6.1	35	10	20.3	4.8	2.5
SPC-06SH	6mm ID	○	7.0	40	15	20.3	7	3.6
SPC-06SH-VL	6mm ID	—	6.6	40	15	20.3	7	3.6

Plug PM type (Male thread)



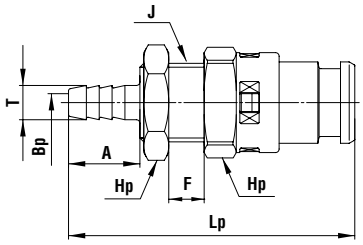
Model	Application	Built-in valve	Mass (g)	Dimensions (mm)			
				Lp	øH	Hp(WAF)	T
SPC-10PM	Rc 1/8	○	2.0	23	11.4	Hex.12	R 1/8
SPC-10PM-VL	Rc 1/8	—	1.5	23	11.4	Hex.12	R 1/8

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

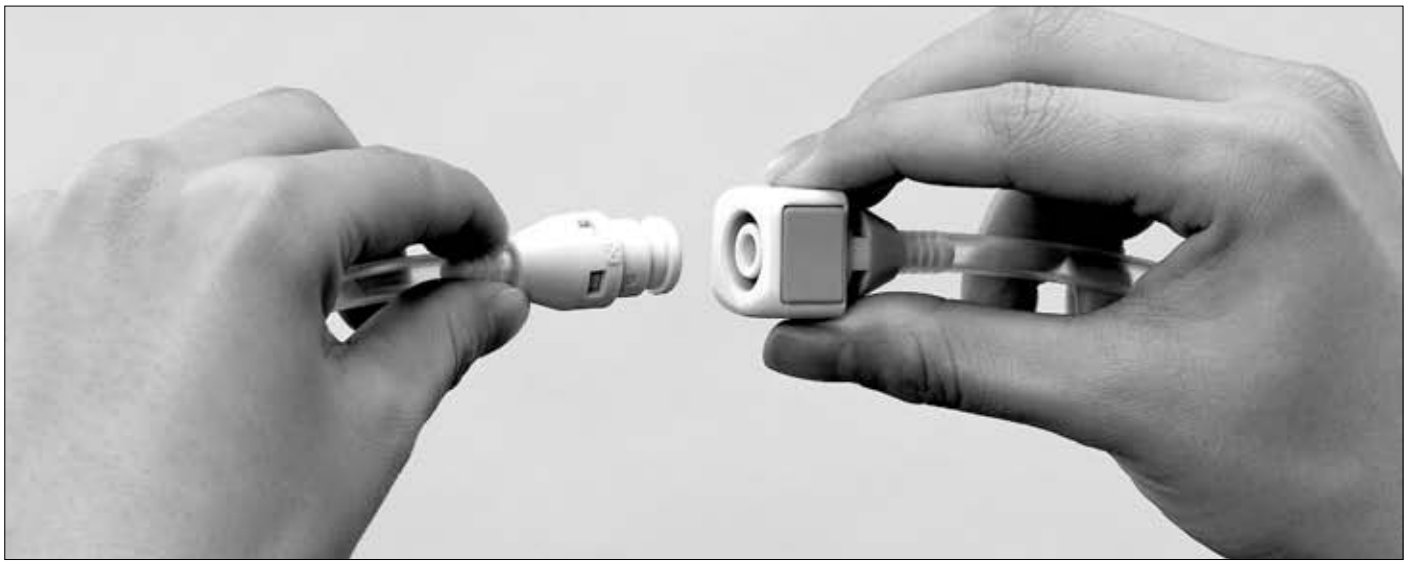
Plug PHB type (For panel mount)



J : The diameter of the mount hole is 11.1mm with tolerance of +0.3/-0 mm.
F : Thickness of panel must be 5mm or below.

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

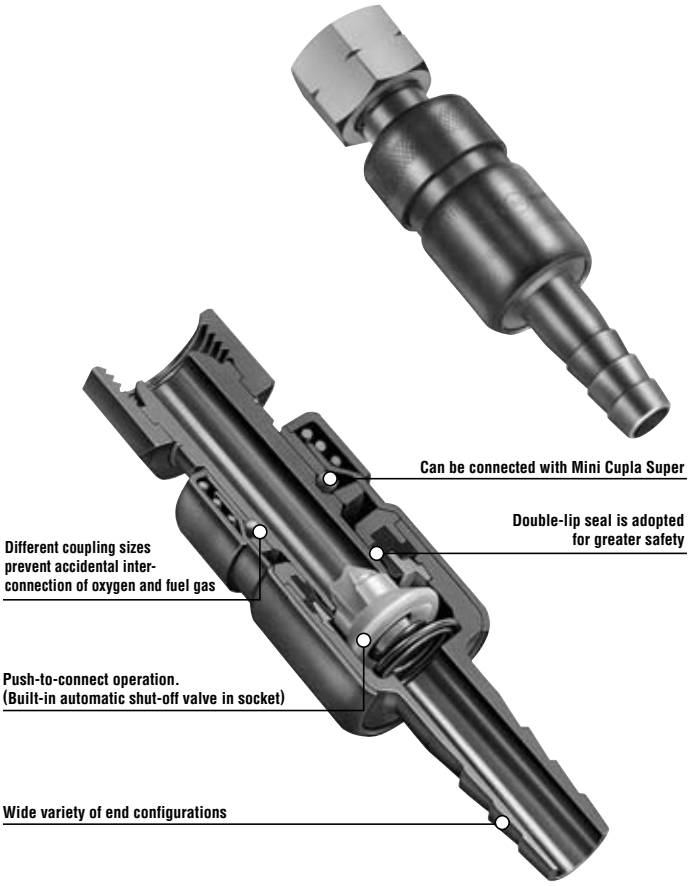


For Oxygen / Fuel Gas

Mini Cupla

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

Working pressure	Valve structure	Applicable fluids
0.7		Ox. A
0.7 MPa {7 kgf/cm²}	One-way shut-off	Oxygen, Fuel Gas



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

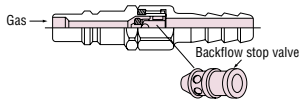
- From cylinders to torch, all piping connections associated with oxyacetylene equipment are now in push-to-connection configurations.
- Double-lip seal prevents minor leak during connection. Oxygen and fuel gas couplings have different sizes to prevent accidental inter-connection.
- Pressure loss is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

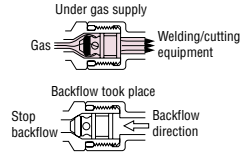
Structure and principle of backflow prevention

Plug with backflow stop valves

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





To operate at approx. 0.1MPa {1kgf/cm²}

Specifications

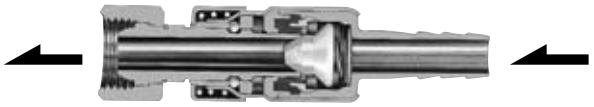
Body material	Brass			
Size	1/4" • 5/16" • 3/8"			
Working pressure MPa {kgf/cm²}	0.7 {7}			
Pressure resistance MPa {kgf/cm²}	1.0 {10}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-20°C~+80°C	Standard material

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 by themselves and fuel gas plugs and sockets are interchangeable by themselves.

*Also interchangeable with Mini Cupla Super counterparts.

Min. Cross-Sectional Area (mm²)

Model	22SP • 25SP	33SP • 35SP
Min. Cross-Sectional Area	20	44

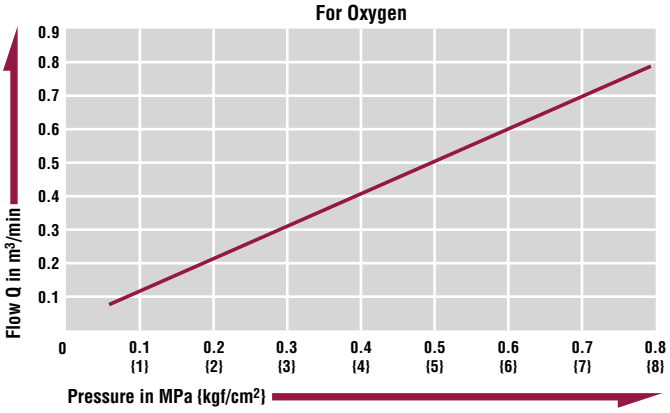
Suitability for Vacuum

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

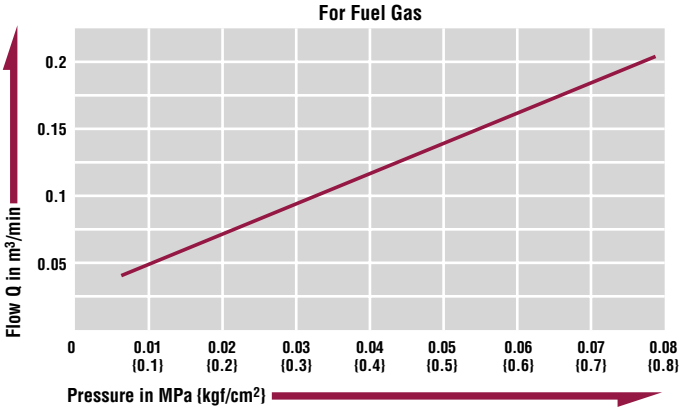
Pressure - Flow Characteristics

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

For Oxygen



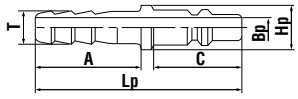
For Fuel Gas



Models and Dimensions

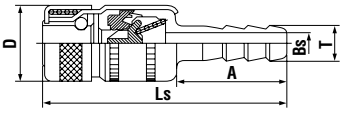
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



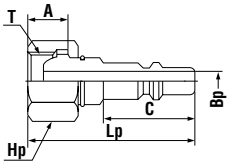
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				Lp	C	A	øHp	øT	øBp
For Oxygen	22PH	1/4"	16	55	23.5	28	11	7.8	5
	25PH	5/16"	19					9	
For Fuel Gas	33PH	3/8"	22	57	25.5	28	14	10.5	7.5
	35PH	5/16"	20					9	6

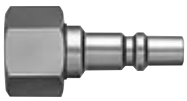
Socket SH type (Hose barb)



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

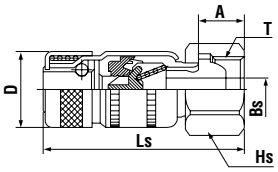
Plug PF type (Female thread for torch connection)





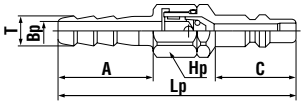
Usage	Model	Application	Mass (g)	Dimensions (mm)					
				Lp	C	A	Hp(WAF)	T	øBp
For Oxygen	22PF	For oxygen torch side	31	43	23.5	11	Hex.19	M16x1.5	5
	25PF		26	43.5		10	Hex.17	W12.5	
For Fuel Gas	33PF	Fox fuel gas torch side	36	44.5	25.5	11	Hex.19	M16x1.5 left-hand thread	7.5

Socket SF type (Female thread for cylinder connection)



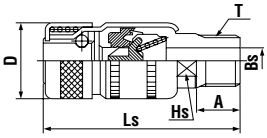
Usage	Model	Application	Mass (g)	Dimensions (mm)						
				Ls	øD	A	T	øBs	Hs(WAF)	
For Oxygen	22SF	For oxygen gauge side	80	52	19.8	11	M16x 1.5	5	Hex.19	
For Fuel Gas	33SF	For fuel gas gauge sid	96	54	22.6	11	M16x1.5 left-hand thread	5	Hex.19	

Plug PHB type (Hose barb with backflow stop valve)



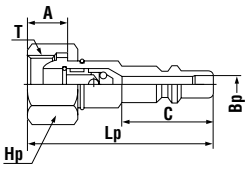
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				Lp	C	A	Hp(WAF)	øT	øBp
For Oxygen	22PHB	1/4"	31	69.6	23.5	28	Hex.14	7.8	5
	25PHB	5/16"	34					9	
For Fuel Gas	33PHB	3/8"	41	70.6	25.5	28	Hex.14	10.5	7
	35PHB	5/16"	39					9	5

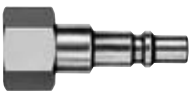
Socket SM type (Male thread)



Usage	Model	Application	Mass (g)	Dimensions (mm)					
				Ls	øD	A	Hs(WAF)	T	øBs
For Oxygen	22SM	Rc 1/4	51	52	19.8	11	Two flats 12 x ø14	R 1/4	7.5
For Fuel Gas	33SM	Rc 3/8	77	54	22.6	11	Two flats 14 x ø17	R 3/8	10

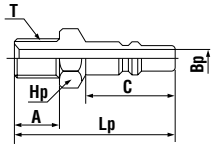
Plug PFB type (Female thread with backflow stop valve)





Usage	Model	Application	Mass (g)	Dimensions (mm)					
				Lp	C	A	Hp(WAF)	T	øBp
For Oxygen	22PFB	For oxygen torch side	36	48.5	23.5	11	Hex.19	M16x 1.5	5
For Fuel Gas	33PFB	Fox fuel gas torch side	41	48.5	25.5	10.5	Hex.19	M16x1.5 left-hand thread	7.5

Plug PMT type (Male thread)

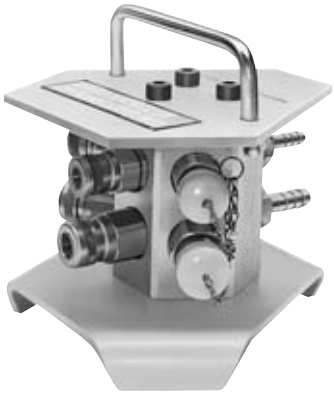


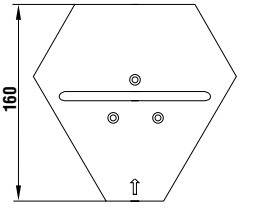
Usage	Model	Application	Mass (g)	Dimensions (mm)					
				Lp	C	A	Hp(WAF)	T	øBp
For Oxygen	21PMT	Rc 1/8	22	43.5	24	11	Hex.14	R 1/8	5
	22PMT	Rc 1/4	27	45	24	14	Hex.14	R 1/4	5

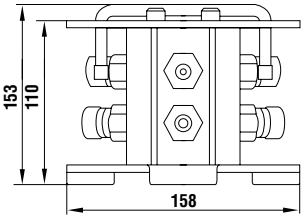
Socket Line Cupla Mini LM-32 (for three port branch piping)

Mass : 4,300g

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







Dimensions (mm)

Line Cupla Mini contains:	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.

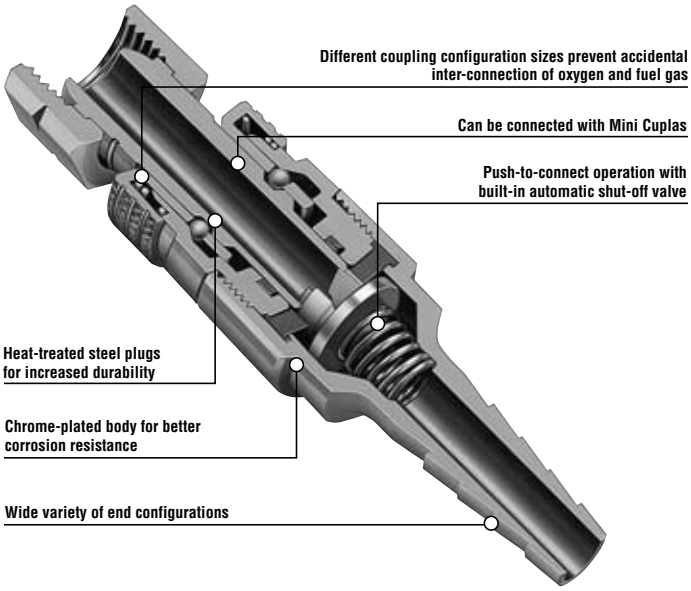
Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.

For Oxygen / Fuel Gas

Mini Cupla Super

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

Working pressure	Valve structure	Applicable fluids
0.7		Ox. A
0.7 MPa {7 kgf/cm²}	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 now in push-to-connect configurations.
- Chrome-plated body for better corrosion resistance.
- Heat-treated plugs for better durability.
- Oxygen and fuel gas couplings 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. Interchangeable with Mini Cupla.

Specifications

Body material	Socket : Brass (chrome-plated) Plug : Steel (chrome-plated)			
Size	1/4" • 5/16" • 3/8"			
Working pressure MPa {kgf/cm²}	0.7 {7}			
Pressure resistance MPa {kgf/cm²}	1.0 {10}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	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 (mm²)

Model	S22SP	S33SP
Min. Cross-Sectional Area	16	28

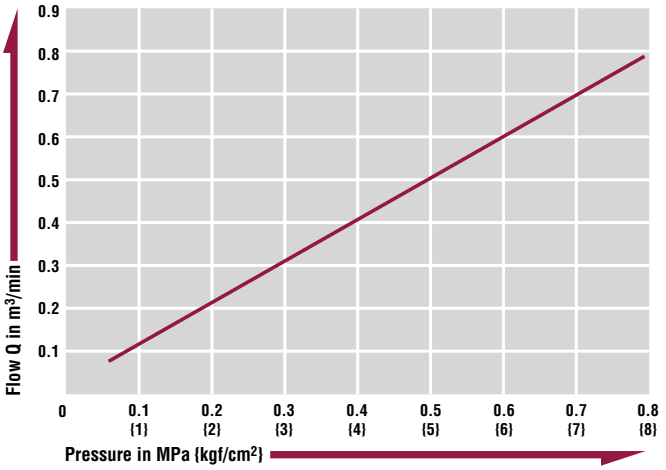
Suitability for Vacuum

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

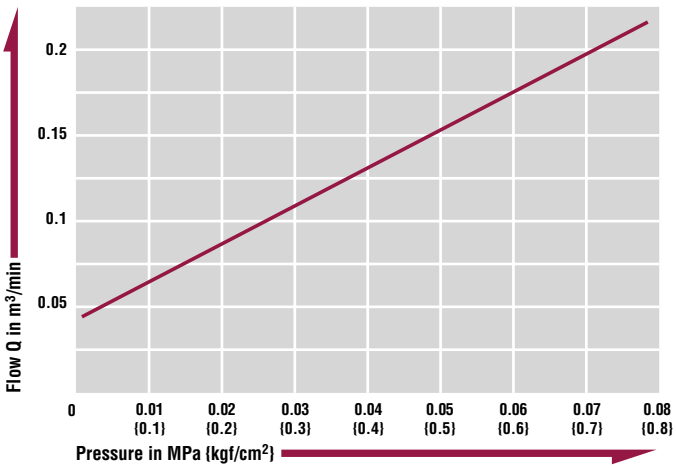
Pressure - Flow Characteristics

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

For Oxygen



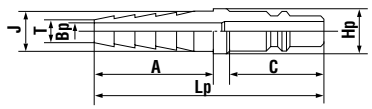
For Fuel Gas



Models and Dimensions

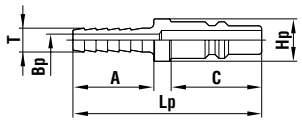
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



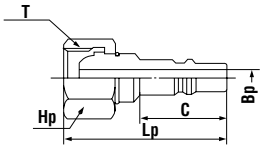
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)						
				Lp	C	A	øHp	øT	øJ	øBp
For Oxygen	S22PH	1/4" • 5/16"	17	58	23.5	30	11	6.7	9.5	4.5
For Fuel Gas	S33PH	5/16" • 3/8"	22	59.5	25.5	30	14	7.5	11	6
For Fuel Gas	S32PH*	1/4" • 5/16"	20	59.5	25.5	30	14	6.2	9	4.5

Plug PH type (Hose barb of smaller diameters)



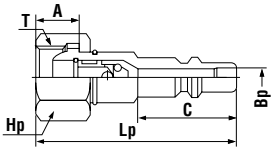
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				Lp	C	A	øHp	øBp	øT
For Oxygen	S225PH	5mm ID	12	49	23.5	21	11	3.1	6.2
For Fuel Gas	S335PH	5mm ID	15	50.5	25.5	21	14	3.1	6.2

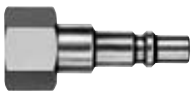
Plug PF type (Female thread for torch connection)



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	Fox fuel gas torch side	32	44.5	25.5	Hex.19	M16x1.5 left-hand thread	7.5

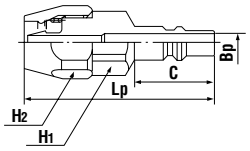
Plug PFB type (Female thread with backflow stop valve)





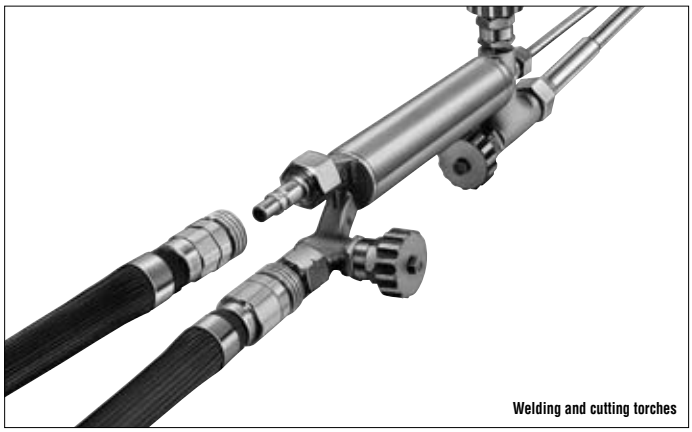
Usage	Model	Application	Mass (g)	Dimensions (mm)					
				Lp	C	A	øHp	øT	øBp
For Oxygen	S23PFB-2*	For oxygen torch side	48	51	23.5	13	Hex.21	BS 3/8	4.5
For Fuel Gas	S33PFB-2*	Fox fuel gas torch side	52	50.5	25.5	21	Hex.21	BS 3/8 left-hand thread	4.5

Plug PN type (Nut type for small diameter hose)



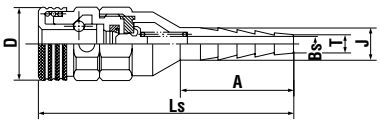
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)				
				Lp	C	H1(WAF)	H2(WAF)	øBp
For Oxygen	S22PN	5mm ID	54	53.5	23.5	Hex.17	Hex.19	5
For Fuel Gas	S33PN	5mm ID	57	54.5	25.5	Hex.17	Hex.19	7.5

Application example



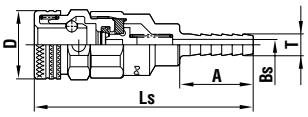
Welding and cutting torches

Socket SH type (Hose barb)

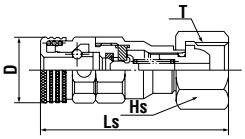
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				Ls	øD	A	øT	øJ	øBs
For Oxygen	S22SH	1/4" • 5/16"	50	64.5	19.5	30	6.7	9.5	4.5
For Fuel Gas	S33SH	5/16" • 3/8"	73	68.5	22	30	7.5	11	6
For Fuel Gas	S32SH*	1/4" • 5/16"	74	72.5	22	30	6.2	9	4.5

Socket SH type (Hose barb of smaller diameters)

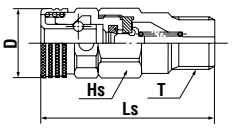
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)				
				Ls	øD	A	øBs	øT
For Oxygen	S225SH	5mm ID	54	62.5	19.5	21	3.1	6.2
For Fuel Gas	S335SH	5mm ID	65	63	22	21	3.1	6.2

Socket SF type (Female thread for cylinder connection)

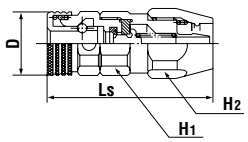
Usage	Model	Application	Mass (g)	Dimensions (mm)			
				Ls	øD	T	Hs(WAF)
For Oxygen	S22SF	For oxygen gauge side	74	52.5	19.5	M16x1.5	Hex.19
For Fuel Gas	S33SF	For fuel gas gauge side	97	58	22	M16x1.5 left-hand thread	Hex.19
For Oxygen	S23SF*	For oxygen gauge side	82	54.5	19.5	BS 3/8	Hex.21
For Fuel Gas	S33SF*	For fuel gas gauge side	88	59.5	22	BS 3/8 left-hand thread	Hex.21

Socket SM type (Male thread)

Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)			
				Ls	øD	Hs(WAF)	T
For Oxygen	S22SM	Rc 1/4	58	48.5	19.5	Hex.18	R 1/4
For Fuel Gas	S33SM	Rc 3/8	85	52.5	22	Hex.21	R 3/8

Socket SN type (Nut type for small diameter hose)

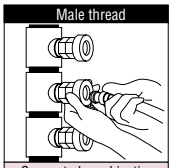
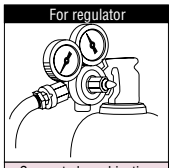
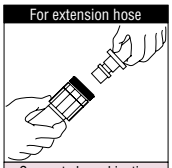
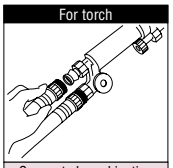



Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)			
				Ls	øD	H1(WAF)	H2(WAF)
For Oxygen	S22SN	5mm ID	74	52	19.5	Hex.17	Hex.19
For Fuel Gas	S33SN	5mm ID	91	57.5	22	Hex.21	Hex.19

*Made-to-order item.

• 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	Suggested combination	Suggested combination	Suggested combination
SM x PH	SF x PH	SH x PH	SH x PF

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, Vacuum

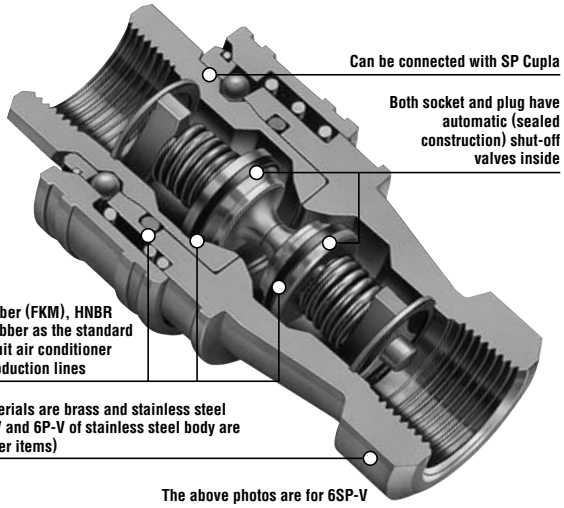
SP-V Cupla

For vacuum

Working pressure: 3.0~7.5 — 3.0~7.5MPa {31~76kgf/cm²}

Valve structure: Two-way shut-off

Applicable fluids: Inert gas, vacuum (F.V.H.) / gas / Air / Water



Can be connected with SP Cupla

Both socket and plug have automatic (sealed construction) shut-off valves inside

Adopted Fluoro-rubber (FKM), HNBR and Chloroprene rubber as the standard seal materials to suit air conditioner and refrigerator production lines

Standard body materials are brass and stainless steel (Note: Models 4P-V and 6P-V of stainless steel body are made-to order items)

The above photos are for 6SP-V

Automatic shut-off valves in both socket and plug for vacuum applications. Each can withstand a vacuum of as high as 1.3 x 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 x 10^{-1} Pa {1 x 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, Charge Cupla CS type and Charge Cupla CN type.

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/cm²}	5.0 {51}	3.0 {31}	7.5 {76}	4.5 {46}
Pressure resistance MPa {kgf/cm²}	7.5 {76}	4.5 {46}	10.0 {102}	6.5 {66}

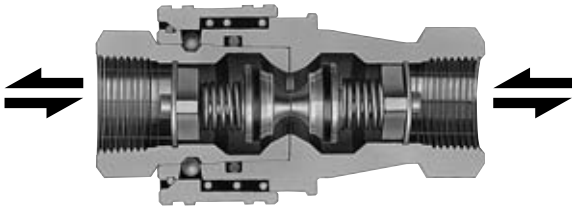
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Chloroprene rubber	CR (C308)	-20°C~+80°C	Standard material
	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Standard material
	Hydrogenated nitrile rubber	HNBR (H708)	-20°C~+120°C	Standard material

Max. Tightening Torque N•m {kgf•cm}

Size		1/4"	3/8"	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 (mm²)

Model	2SP-V	3SP-V	4SP-V	6SP-V
Min. Cross-Sectional Area	17	48	71	110

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

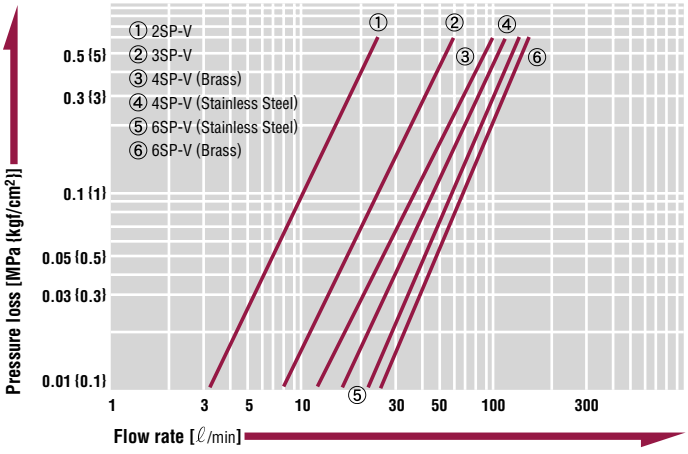
Socket only	Plug only	When connected
Operational	Operational	Operational

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

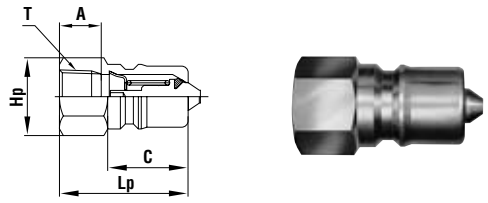
[Test conditions] •Fluid : water •Temperature: 25°C ±5°C



Models and Dimensions

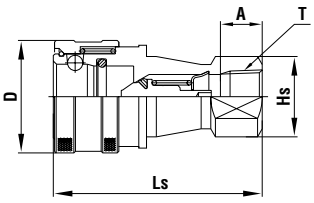
WAF : WAF stands for width across flats.

Plug Female thread



Model	Application	Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	Lp	Hp(WAF)	C	A	T
2P-V	R 1/4	39	34	36	Hex.17	22	13	Rc 1/4
3P-V	R 3/8	67	59	40	Hex.21	25	13	Rc 3/8
4P-V	R 1/2	123	118	44	Hex.29	28	15	Rc 1/2
6P-V	R 3/4	211	202	52	Hex.35	36	17	Rc 3/4

Socket Female thread



Model	Application	Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	Ls	øD	Hs(WAF)	A	T
2S-V	R 1/4	136	127	58	28	Two flats 19 x ø22	13	Rc 1/4
3S-V	R 3/8	217	197	65	35	Two flats 21 x ø25	13	Rc 3/8
4S-V	R 1/2	421	393	72	45	Two flats 29 x ø35	15	Rc 1/2
6S-V	R 3/4	709	658	88	55	Two flats 35 x ø41	17	Rc 3/4

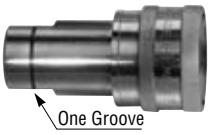
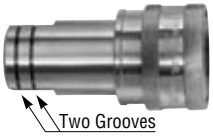
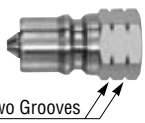
Seal materials for HFC134a (hydrochlorofluorocarbon)

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 HFG134a, HFC407C, HFC410A andHFC404A) 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 R134a.
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

Outdoor unit of air conditioner

For Inert Gas, Vacuum

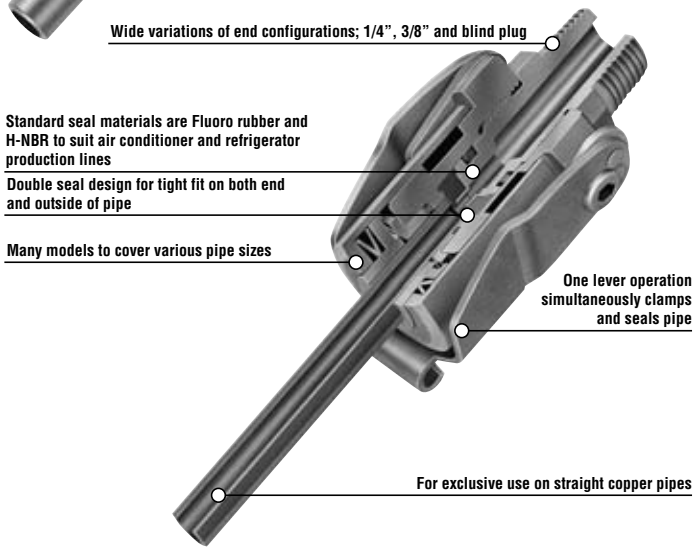
PCV Pipe Cupla

For connection to copper pipes

Working pressure: 4.5 MPa {46 kgf/cm²}

Valveless

Applicable fluids: Inert gas, vacuum; Air; gas



Clamps directly on straight copper pipes!
Double seal construction withstands a vacuum of up to 1.3 x 10^{-1} Pa.

- Clamps direct on to a straight copper pipe eliminating unnecessary welding or flaring.
- Withstands a vacuum of up to 1.3 x 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.

Specifications

Model	PCV400	PCV470	PCV500	PCV600	PCV630	PCV800	PCV950	PCV1000	PCV1270	PCV1590
Copper pipe O.D.	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/cm²}	4.5 {46}									
Pressure resistance MPa {kgf/cm²}	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~+80°C	Standard material

Max. Tightening Torque N•m {kgf•cm}

Size	1/4"	3/8"
Torque	9 {92}	12 {123}

Flow Direction

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

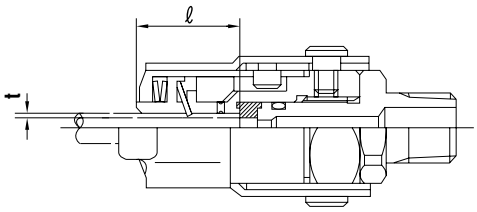
Min. Cross-Sectional Area (mm²)

Model	PCV400	PCV470	PCV500	PCV600	PCV630	PCV800	PCV950	PCV1000	PCV1270	PCV1590
Min. Cross-Sectional Area	3.8	3.8	3.8	9.1	9.1	16.6	16.6	16.6	73.9	78.5

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

Only when connected to a pipe
Operational

Insert length of pipe into coupling and essential thickness of pipe wall (mm)

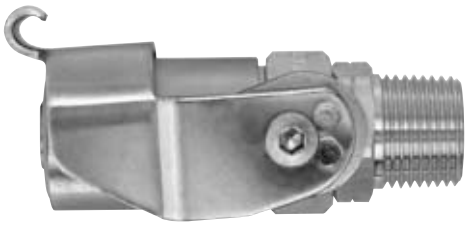


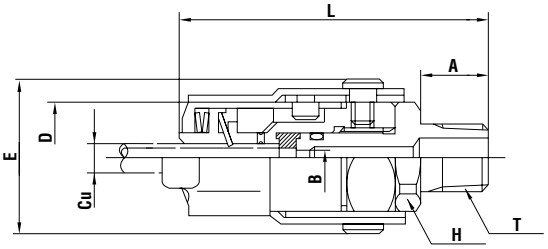
Items with asterisk (*) are made-to-order products.

Model	Insert length of pipe into coupling (mm)	Essential thickness of pipe wall (mm)
PCV400*	19	Minimum 0.8
PCV470		
PCV500*		
PCV600		
PCV630		
PCV800	20.5	
PCV950		
PCV1000*	30	Minimum 1.0
PCV1270		
PCV1590		

Models and Dimensions

WAF : WAF stands for width across flats.

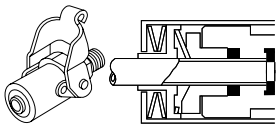
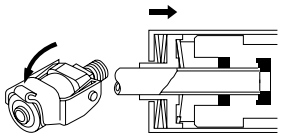




Model	Pipe OD	Model	Size	Mass (g)	Dimensions (mm)					
					L	A	H(WAF)	øB	øD	E
PCV400*	ø4.0	**PCV400-2**	R 1/4	155	(59)	12	Hex.17	2.2	22.2	(32.5)
		PCV400-3	R 3/8	155	(60)	13	Hex.19			
PCV470	ø4.76 (3/16")	**PCV470-2**	R 1/4	155	(60)	12	Hex.17	2.2	22.2	(32.5)
		PCV470-3	R 3/8	160	(61)	13	Hex.19			
		PCV470-0	Blind plug	160	(47)	–	Hex.14	–		
PCV500*	ø5.0	**PCV500-2**	R 1/4	155	(59)	12	Hex.17	2.2	22.2	(32.5)
		PCV500-3	R 3/8	155	(60)	13	Hex.19			
PCV600	ø6.0	**PCV600-2**	R 1/4	150	(60)	12	Hex.17	3.4	22.2	(32.5)
		PCV600-3	R 3/8	155	(61)	13	Hex.19			
		PCV600-0	Blind plug	155	(47)	–	Hex.14	–		
PCV630	ø6.35 (1/4")	**PCV630-2**	R 1/4	145	(60)	12	Hex.17	3.4	22.2	(32.5)
		PCV630-3	R 3/8	150	(61)	13	Hex.19			
		PCV630-0	Blind plug	150	(49)	–	Hex.14	–		
PCV800	ø8.0 (5/16")	**PCV800-2**	R 1/4	175	(62)	12	Hex.17	4.6	24.8	(35.5)
		PCV800-3	R 3/8	180	(63)	13	Hex.19			
		PCV800-0	Blind plug	185	(50)	–	Hex.17	–		
PCV950	ø9.52 (3/8")	**PCV950-2**	R 1/4	175	(62)	12	Hex.17	4.6	24.8	(35.5)
		PCV950-3	R 3/8	180	(63)	13	Hex.19			
		PCV950-0	Blind plug	180	(50)	–	Hex.17	–		
PCV1000*	ø10.0	**PCV1000-2**	R 1/4	155	(62)	12	Hex.17	4.6	24.8	(35.5)
		PCV1000-3	R 3/8	155	(63)	13	Hex.19			
PCV1270	ø12.7 (1/2")	**PCV1270-3**	R 3/8	465	(81)	13	Hex.24	9.7	34.8	(45.0)
		PCV1270-0	Blind plug	475	(68)	–		–		
PCV1590	ø15.88 (5/8")	**PCV1590-3**	R 3/8	435	(81)	13	Hex.24	10.0	34.8	(45.0)
		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

Before clamping	Clamped
	

When the lever is pushed down, the sleeve moves in the direction of the arrow, and at the same time actuates the Chucks to grip the copper pipe firmly and provide a tight seal.

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.

For Gases and Liquids

SP Cupla Type A

For medium pressure general applications

Working pressure

1.5~7.5

1.5~7.5MPa {15~76kgf/cm²}

Valve structure

Two-way shut-off

Applicable fluids

Water | Hydraulic oil | Steam | chemicals | Air | Gas

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

NEW

Large flow type SP Cupla is now released!

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/cm²}	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/cm²}	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	
	Perfluoroelastomer	P	0°C~+50°C	Available on request
	Ethylene-propylene rubber	EPDM (EPT)	-40°C~+150°C	

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}	150 {1530}	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

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 (mm²)

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 10⁻¹Pa {1 x 10⁻³mmHg}

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

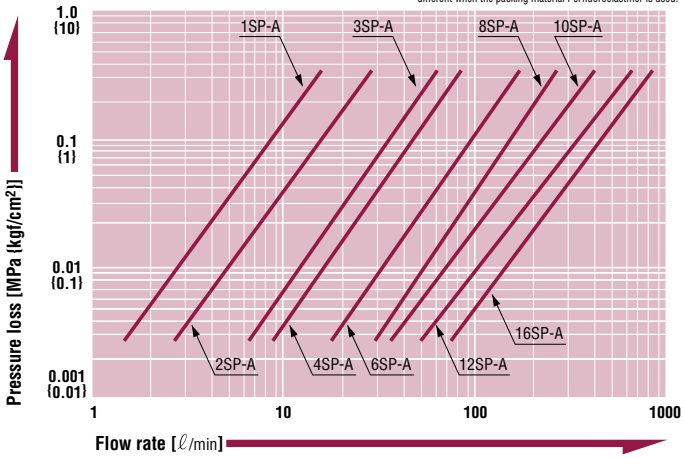
Volume of spillage per disconnection (mℓ)

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

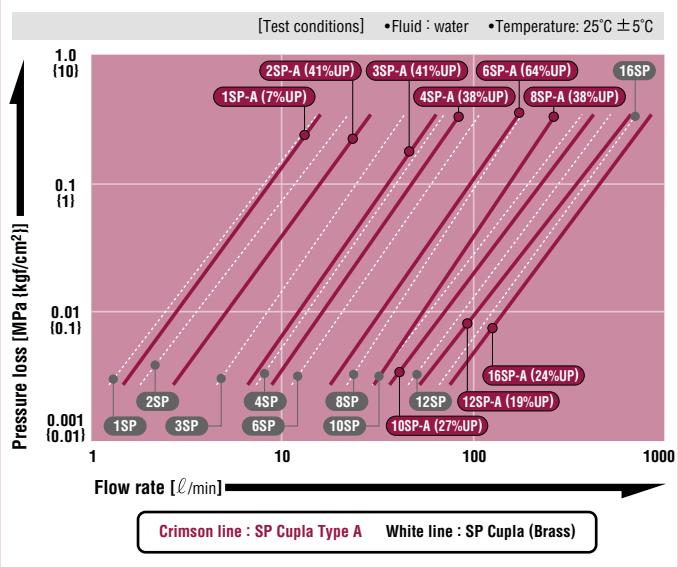
[Test conditions] •Fluid : water •Temperature: 25°C ±5°C

Note that the flow rate-pressure loss characteristics are slightly different when the packing material Perfluoroelastmer is used.



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.

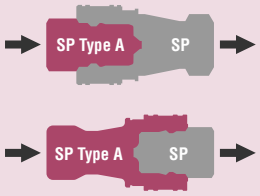
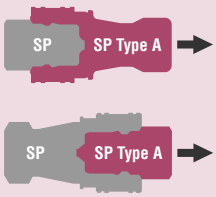
Interchangeability

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.

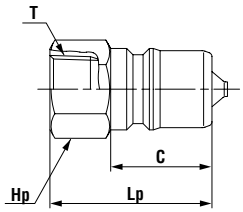
Products complied to RoHS requirements

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

Models and Dimensions

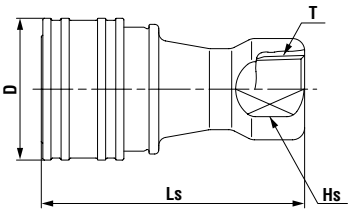
WAF : WAF stands for width across flats.

Plug Female thread



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	Two flats 77 x ø84	Rc 2

Socket Female thread



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	Two flats 14	Rc 1/8
2S-A	R 1/4	119	128	130	58	28	Two flats 19	Rc 1/4
3S-A	R 3/8	187	202	193	65	35	Two flats 21	Rc 3/8
4S-A	R 1/2	368	397	391	72	45	Two flats 29	Rc 1/2
6S-A	R 3/4	639	686	645	88	55	Two flats 35	Rc 3/4
8S-A	R 1	951	1024	962	102	65	Two flats 41	Rc 1
10S-A	R 1 1/4	1430	1520	1440	115	77	Two flats 54	Rc 1 1/4
12S-A	R 1 1/2	2130	2270	2150	124	88	Two flats 63	Rc 1 1/2
16S-A	R 2	3280	3510	3310	132	108	Two flats 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: Two flats 54 x ø59 *3 Stainless steel: Two flats 63 x ø67

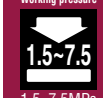
Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.

For Gases and Liquids

SP Cupla

For medium pressure general applications

Working pressure



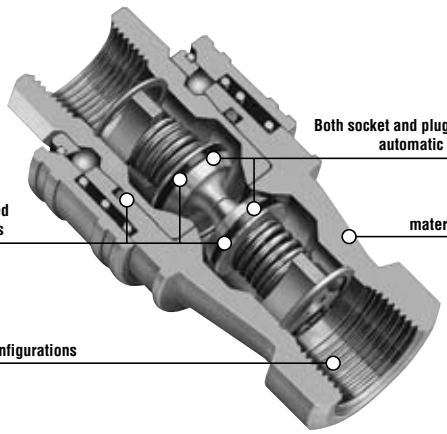
1.5~7.5MPa
{15~76kgf/cm²}

Valve structure

Two-way shut-off

Applicable fluids

Water | Hydraulic oil | Steam | chemicals | Air | gas



Socket and plug both have automatic shut-off valve for medium pressure applications! Available with various body and seal materials, or sizes.

- Both socket and plug have automatic shut-off valve inside so that the fluid in the line will not flow out on disconnection.
- Various semi-standard seal materials are available to suit a variety of fluids.
- Various semi-standard body materials and sizes are available to suit a wide range of medium pressure applications.

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

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/cm²}	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/cm²}	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	
	Perfluoroelastomer	P	0°C~+50°C	Available on request
	Ethylene-propylene rubber	EPDM (EPT)	−40°C~+150°C	

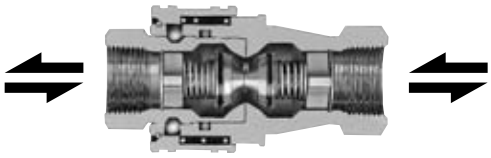
• Standard stainless steel SUS304 and SUS316 are available as semi-standard body materials.

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}	150 {1530}	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

Different sizes are not interchangeable.
* Interchangeable with SP-V Cuplas but take heed of flow rates.

Min. Cross-Sectional Area (mm²)

Model	1SP	2SP	3SP	4SP	6SP	8SP	10SP	12SP	16SP
Min. Cross-Sectional Area	13	17	48	73	94	212	395	553	803

Suitability for Vacuum 1.3 x 10⁻¹Pa {1 x 10⁻³mmHg}

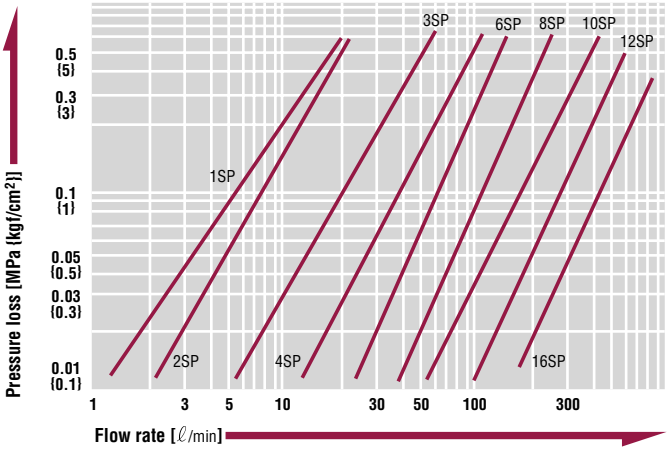
Socket only	Plug only	When connected
—	—	Operational

Admixture of air on connection (mℓ)

Model	1SP	2SP	3SP	4SP	6SP	8SP	10SP	12SP	16SP
Volume of spillage	0.52	1.02	2.4	3.2	10.5	17	29	45	84

Flow Rate – Pressure Loss Characteristics

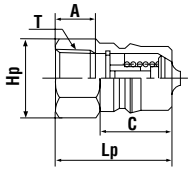
[Test conditions] •Fluid : Hydraulic oil •Temperature : 30°C ±5°C
•Fluid viscosity : 32 x 10⁻⁶m²/s •Density : 0.87 x 10³kg/m³



Models and Dimensions

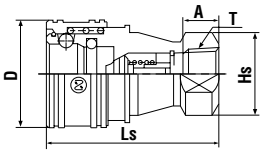
WAF : WAF stands for width across flats.

Plug Female thread



Model	Application	Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	Lp	C	A	Hp(WAF)	T
1P	R 1/8	19 *1	21	19	29	19	11	Hex.14	Rc 1/8
2P	R 1/4	35	38	35	36	22	13	Hex.17	Rc 1/4
3P	R 3/8	60	65	60	40	25	13	Hex.21	Rc 3/8
4P	R 1/2	123	134	124	44	28	15	Hex.29	Rc 1/2
6P	R 3/4	212	231	213	52	36	17	Hex.35	Rc 3/4
8P	R 1	350	381	332	62	40	20	Hex.41	Rc 1
10P	R1 1/4	590	610	590	70	45	24	Hex.54 *3	Rc1 1/4
12P	R1 1/2	820	880	840	75	49	24	Hex.63 *2	Rc1 1/2
16P	R 2	1430	1530	1450	80	52	27	Two flats 77x ø84	Rc 2

Socket Female thread



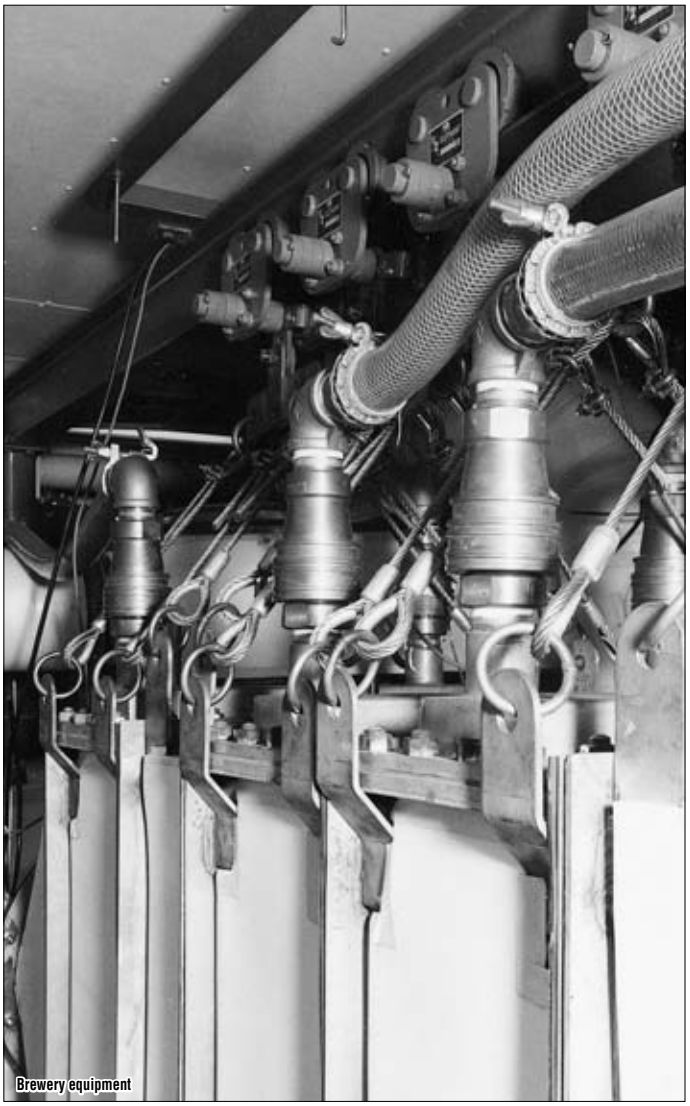
Model	Application	Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	Ls	øD	A	Hs(WAF)	T
1S	R 1/8	85 *1	93	86	48	24	11	Two flats 14 x ø18	Rc 1/8
2S	R 1/4	133	145	134	58	28	13	Two flats 19 x ø22	Rc 1/4
3S	R 3/8	208	227	209	65	35	13	Two flats 21 x ø25	Rc 3/8
4S	R 1/2	428	466	431	72	45	15	Two flats 29 x ø35	Rc 1/2
6S	R 3/4	710	773	714	88	55	17	Two flats 35 x ø41	Rc 3/4
8S	R 1	1000	1089	980	102	65	20	Two flats 41 x ø48	Rc 1
10S	R1 1/4	1570	1680	1580	115	77	24	Two flats 54 x ø59	Rc1 1/4
12S	R1 1/2	2320	2490	2350	124	88	24	Two flats 63 x ø69	Rc1 1/2
16S	R 2	3590	3860	3620	132	108	27	Two flats 77 x ø86	Rc 2

*1 : 1-S and 1-P steel are made-to-order items. *2 : Stainless steel: Hex.63 x 67mm dia. *3 : Stainless steel: Hex.54 x 59mm dia.

• Semi-standard stainless steels (SUS304, 316) have different appearances from the above drawings.

Application example

Ion nitriding coolant piping



Brewery equipment

For Heat Transfer Oil

HCF Cupla

Piping for heat transfer oil

Working pressure: 1.5 — 1.5MPa {15kgf/cm²}

Valve structure: Two-way shut-off

Applicable fluids: OIL — Heat medium oil

Designed for heat transfer oil lines in die casting equipment, best with those features such as heat-resistance of up to 280°C and "airless valve shut-off". Flat contact face design on both plug and socket prevents oil spillage.

- Both socket and plug have built-in automatic shut-off valves to minimize fluid spill out when disconnected.
- Push-to-connect type!
- Special PTFE seal prevents leakage even at high temperature.
- Special surface treatment prevents dried oil deposits on the surface.
- Optional accessories exclusively for HCF Cupla are available.

Specifications

Body material	Steel (with special surface treatment)		
Size	1/2" • 3/4"		
Working pressure MPa {kgf/cm²}	1.5 {15}		
Pressure resistance MPa {kgf/cm²}	2.0 {21}		
Seal material / Working temperature range	Seal material	Mark	Working temperature range
	Fluoro-resin	PTFE (TF)	+10°C~+280°C

Max. Tightening Torque N•m {kgf•cm}

Size	1/2"	3/4"
Torque	60 {612}	90 {918}

Flow Direction

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

Interchangeability

HCF-4SP and HCF-6SP are interchangeable.

Min. Cross-Sectional Area (mm²)

Model	HCF-4SP	HCF-6SP
Min. Cross-Sectional Area	61.7	61.7

Suitability for Vacuum

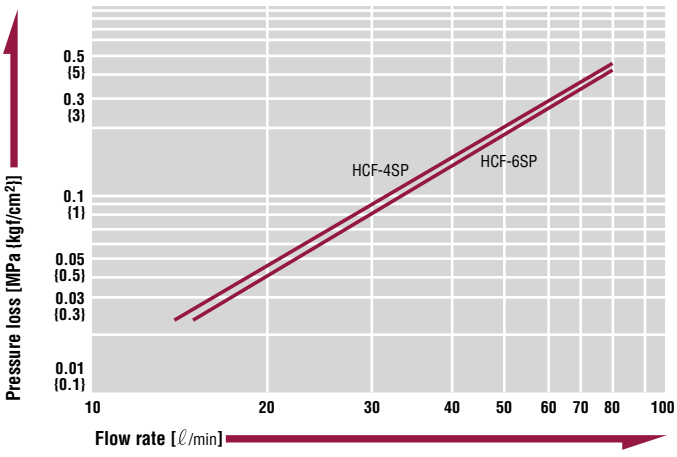
Not suitable for vacuum application in either connected or disconnected condition.

Admixture of air on connection (mℓ)

Model	HCF-4SP	HCF-6SP
Volume of spillage	0.15	0.15

Flow Rate – Pressure Loss Characteristics

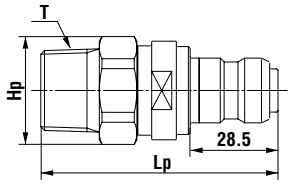
[Test conditions] •Fluid : Hydraulic oil •Temperature : 30°C ±5°C
•Fluid viscosity : 32 x 10^{-6}m²/s •Density : 0.87 x 10^{3}kg/m³



Models and Dimensions

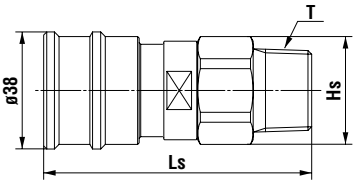
WAF : WAF stands for width across flats.

Plug PM type (Male thread)



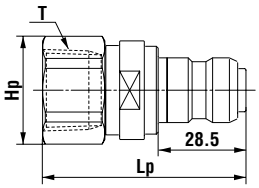
Model	Application	Mass (g)	Dimensions (mm)		
			Lp	Hp(WAF)	T
HCF-4PM	Rc 1/2	192	73	Hex.29 x ø32	R 1/2
HCF-6PM	Rc 3/4	201	77	Hex.32 x ø35	R 3/4

Socket SM type (Male thread)



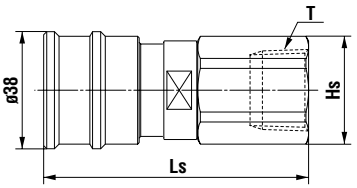
Model	Application	Mass (g)	Dimensions (mm)		
			Ls	Hs(WAF)	T
HCF-4SM	Rc 1/2	392	99	Two flats 29 x ø32	R 1/2
HCF-6SM	Rc 3/4	345	87	Hex.32 x ø35	R 3/4

Plug PF type (Female thread)



Model	Application	Mass (g)	Dimensions (mm)		
			Lp	Hp(WAF)	T
HCF-4PF	R 1/2	136	56	Hex.29 x ø32	Rc 1/2
HCF-6PF	R 3/4	165	66	Hex.32 x ø35	Rc 3/4

Socket SF type (Female thread)



Model	Application	Mass (g)	Dimensions (mm)		
			Ls	Hs(WAF)	T
HCF-4SF	R 1/2	373	86	Two flats 29 x ø32	Rc 1/2
HCF-6SF	R 3/4	366	86	Hex.32 x ø35	Rc 3/4

Optional accessories exclusively for HCF Cupla

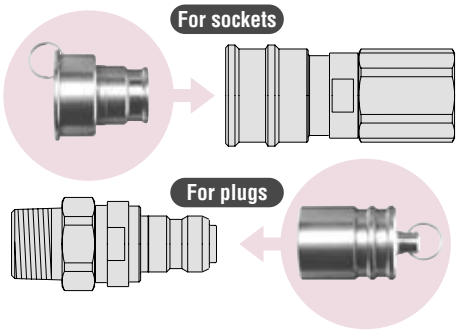
Metal jig for disconnection

The jig is used when it is hard to disconnect Socket and Plug.
The jig will help users to easily pull up the sleeve for disconnection, when it is difficult by hand, such as when Cuplas are hot, or placed in an extremely ristricted area, or when strong force is required for disconnection.

Use the disconnection jig as you pull up the sleeve.

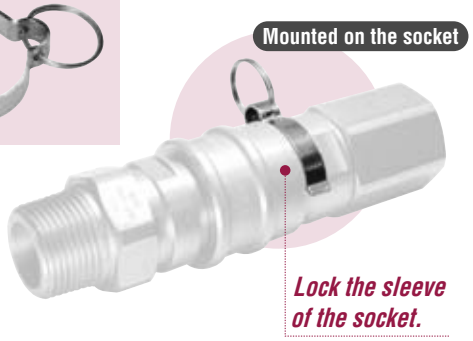
Protection cap

Metal caps equipped with dust-proof function are available for socket and plug.



Stainless Steel Sleeve Stopper

Mount the sleeve stopper after connection of socket and plug and then it locks the sleeve of the socket and prevents unexpected disconnection.

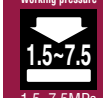


For Gases and Liquids

TSP Cupla

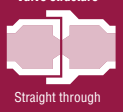
For medium pressure general applications

Working pressure



1.5~7.5MPa {15~76kgf/cm²}

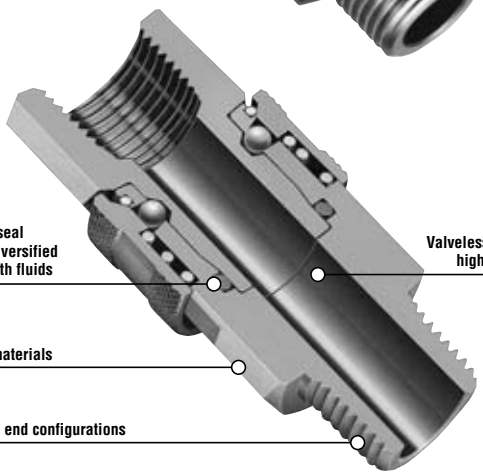
Valve structure



Straight through

Applicable fluids

Water | Hydraulic oil | Steam | chemicals | Air | gas



Wide range of seal materials for diversified applications with fluids

Valveless structure suits high viscosity fluids

Various body materials

Wide variety of end configurations

Valveless structure suits high viscosity fluids! Various body materials, sizes and end configurations.

- 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.

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/cm²}	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/cm²}	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	
	Perfluoroelastomer	P	0°C~+50°C	Available on request
	Ethylene-propylene rubber	EPDM (EPT)	−40°C~+150°C	

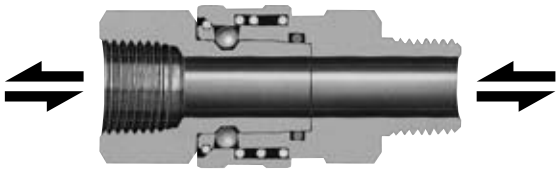
• Standard stainless steel SUS304 and SUS316 are available as semi-standard body materials.

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}	150 {1530}	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

Same size sockets and plugs are interchangeable regardless of end configurations.

Min. Cross-Sectional Area (mm²)

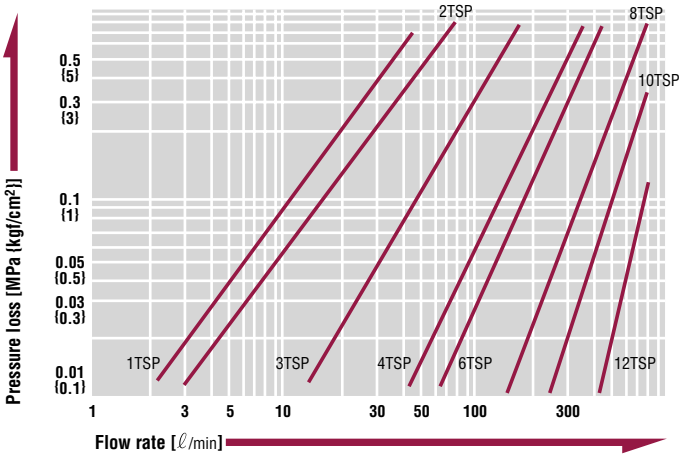
Model / End configurations	1TSP (1/8")	2TSP (1/4")	3TSP (3/8")	4TSP (1/2")	6TSP (3/4")	8TSP (1")	10TSP (1 1/4")	12TSP (1 1/2")	16TSP (2")
H type (Hose barb)	7 (ø 3)	19.6 (ø 5)	38 (ø 7)	78.5 (ø 10)	176 (ø 15)	283 (ø 19)	530 (ø 26)	804 (ø 32)	1256 (ø 40)
M type / F type (Male thread / Female thread)	15.9 (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)

Suitability for Vacuum 1.3 x 10⁻¹Pa {1 x 10⁻³mmHg}

Socket only	Plug only	When connected
—	—	Operational

Flow Rate – Pressure Loss Characteristics

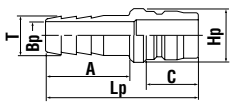
[Test conditions] •Fluid : Hydraulic oil •Temperature : 30°C ± 10°C
•Fluid viscosity : 32 x 10^{-6}m²/s •Density : 0.87 x 10^{3}kg/m³



Models and Dimensions

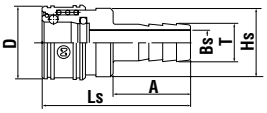
WAF : WAF stands for width across flats.

Plug TPH type (Hose barb)



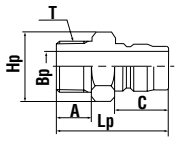
Model	Application (Hose)	Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	Lp	øHp	A	C	øT	øBp
1TPH	1/8"	12 *1	13	15	41	12	20	15.5	6.5	3
2TPH	1/4"	21	23	21	53	14	29	18	8	5
3TPH	3/8"	38	41	38	60	18	32	21	11	7
4TPH	1/2"	71	77	71	70	22	39	24	15	10
6TPH	3/4"	134	146	135	84	28	48	28	21	15
8TPH	1"	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

Socket TSH type (Hose barb)



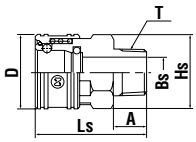
Model	Application (Hose)	Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	Ls	øD	øHs	A	øT	øBs
1TSH	1/8"	24 *1	26	24	40	17.5	16	20	6.5	3
2TSH	1/4"	63	69	64	55	24	22	29	8	5
3TSH	3/8"	95	104	96	62	28	25	32	11	7
4TSH	1/2"	176	192	177	74	35	32	39	15	10
6TSH	3/4"	348	379	350	90	45	40	48	21	15
8TSH	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

Plug TPM type (Male thread)



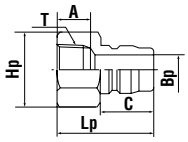
Model	Application	Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	Lp	Hp(WAF)	A	C	T	øBp
1TPM	Rc 1/8	16 *1	17	17	32	Hex.12	9	15.5	R 1/8	4.5
2TPM	Rc 1/4	30	33	30	38	Hex.17	13	18	R 1/4	6.5
3TPM	Rc 3/8	38	42	38	43	Hex.17	13	21	R 3/8	10
4TPM	Rc 1/2	81	88	81	52	Hex.22	17	24	R 1/2	13
6TPM	Rc 3/4	164	179	165	59	Hex.32	19	28	R 3/4	17
8TPM	Rc 1	273	297	274	73	Hex.41	22	36	R 1	25
10TPM	Rc1 1/4	520	560	530	83	Hex.50	23	39	R1 1/4	32
12TPM	Rc1 1/2	655	705	665	93	Hex.54 *2	26	45	R1 1/2	38
16TPM	Rc 2	1240	1345	1250	102	Two flats 75 x ø80	27	51	R 2	50

Socket TSM type (Male thread)



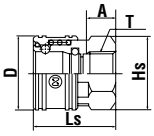
Model	Application	Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	Ls	øD	Hs(WAF)	A	T	øBs
1TSM	Rc 1/8	25 *1	27	26	30	17.5	Hex.14	9	R 1/8	4.5
2TSM	Rc 1/4	66	72	67	42	24	Hex.19	13	R 1/4	6.5
3TSM	Rc 3/8	99	108	100	46	28	Hex.23	13	R 3/8	10
4TSM	Rc 1/2	178	194	179	56	35	Hex.29	17	R 1/2	13
6TSM	Rc 3/4	343	374	346	65	45	Hex.38	19	R 3/4	18
8TSM	Rc 1	629	685	633	76	58	Hex.50	22	R 1	24
10TSM	Rc1 1/4	950	1025	955	86	69	Two flats 54 x ø64	25	R1 1/4	32
12TSM	Rc1 1/2	1160	1245	1180	95	75	Two flats 58 x ø70	25	R1 1/2	38
16TSM	Rc 2	1990	2110	2000	108	98	Two flats 77 x ø82	29	R 2	49

Plug TPF type (Female thread)



Model	Application	Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	Lp	Hp(WAF)	A	C	T	øBp
1TPF	R 1/8	14 *1	15	14	26	Hex.14	9	15.5	Rc 1/8	4.5
2TPF	R 1/4	28	31	29	34	Hex.17	13	18	Rc 1/4	6.5
3TPF	R 3/8	43	47	43	38	Hex.21	13	21	Rc 3/8	10
4TPF	R 1/2	103	113	104	45	Hex.29	17	24	Rc 1/2	13
6TPF	R 3/4	166	181	167	51	Hex.35	19	28	Rc 3/4	17
8TPF	R 1	321	350	323	60	Hex.41	22	36	Rc 1	26
10TPF	R1 1/4	567	615	573	64	Hex.54 *3	25	39	Rc1 1/4	32
12TPF	R1 1/2	703	763	630	75	Hex.58 *4	25	45	Rc1 1/2	38
16TPF	R 2	1226	1374	1190	83	Two flats 77 x ø82	29	51	Rc 2	50

Socket TSF type (Female thread)

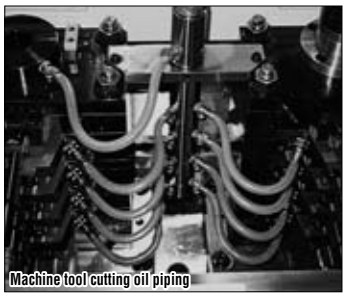


Model	Application	Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	Ls	øD	Hs(WAF)	A	T
1TSF	R 1/8	25 *1	27	25	27	17.5	Hex.14	9	Rc 1/8
2TSF	R 1/4	57	62	57	32	24	Hex.19	13	Rc 1/4
3TSF	R 3/8	83	90	83	35	28	Hex.23	13	Rc 3/8
4TSF	R 1/2	153	167	154	42	35	Hex.29	17	Rc 1/2
6TSF	R 3/4	288	314	289	48	45	Hex.38	19	Rc 3/4
8TSF	R 1	557	607	561	59	58	Hex.50	22	Rc 1
10TSF	R1 1/4	821	888	815	64	69	Two flats 54 x ø64	23	Rc1 1/4
12TSF	R1 1/2	1003	1064	980	71	75	Two flats 58 x ø70	23	Rc1 1/2
16TSF	R 2	1726	1865	1675	80	98	Two flats 77 x ø82	27	Rc 2

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

• Semi-standard stainless steels (SUS304, 316) have different appearances from the above drawings.

Application example


Machine tool cutting oil piping


Car wash

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 Gases and Liquids

Lever Lock Cupla

Metal body / Plastic body

For bulk flow, low pressure applications

Working pressure 1.8 — 1.8 MPa {18 kgf/cm²}

Working pressure 0.5 — 0.5 MPa {5 kgf/cm²}

Valve structure — Straight through

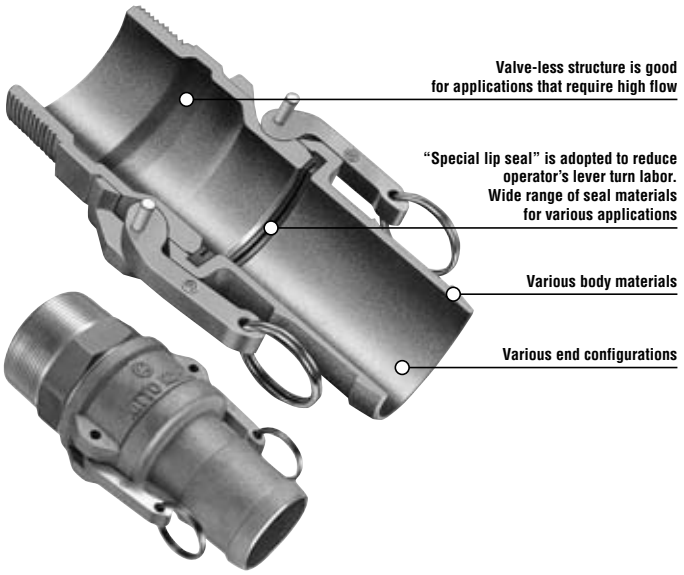
Designs and specifications are subject to change for improvement without notice

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

Water | Hydraulic oil | Steam | Air

Metal body *Plastic body*

(Aluminum alloy, Copper alloy, and Stainless)



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 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/cm²}	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/cm²}	2.7 {27}	1.7 {17}	1.4 {14}	1.1 {11}	2.7 {27}	2.4 {24}	1.7 {17}
Seal material/Working temperature range	Seal material : Nitrile rubber / Mark:NBR (SG) / Working temperature range : -20°C~+80°C						

Optional seal material Working temperature range	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 (itemWorking pressure : 0.2MPa {2kgf/cm²} / Pressure resistance : 0.3MPa {3kgf/cm²})

Specifications (Plastic body)

Body material (Material symbol)	Polypropylene (PP)	
Size	3/4" • 1" • 1 1/2"	2" • 3"
Working pressure* MPa {kgf/cm²}	0.5 {5}	0.2 {2}
Pressure resistance* MPa {kgf/cm²}	0.7 {7}	0.35 {3.5}
Seal material/Working temperature range	Seal material : Nitrile rubber / Mark:NBR (SG) / Working temperature range : +5°C~+50°C	

Optional seal material Working temperature range	Seal material	Mark	Working temperature range
	Silicone rubber	SI	+5°C~+50°C
	Fluoro rubber	FKM (X-100)	+5°C~+50°C
	Ethylene-propylene rubber	EPDM (EPT)	+5°C~+50°C

*Made-to-order (itemWorking pressure : 0.2MPa {2kgf/cm²} / Pressure resistance : 0.3MPa {3kgf/cm²})

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 Copper alloy	50 {510}	70 {714}	120 {1224}	140 {1428}	260 {2652}	350 {3570}	410 {4182}	470 {4794}
	Stainless alloy	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}

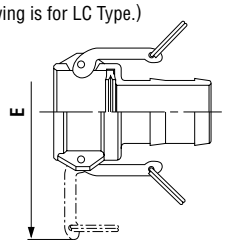
Socket only	Plug only	When connected
—	—	Operational

Suitability for Vacuum (Plastic body)

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

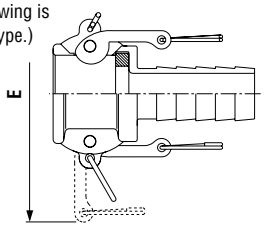
Dimensions with lever fully opened

Metal (This drawing is for LC Type.)



Size	Dimensions E (mm)
3/4"	122
1"	132
1 1/4"	183
1 1/2"	191
2"	201
2 1/2"	213
3"	250
4"	278

Plastic (This drawing is for LC Type.)

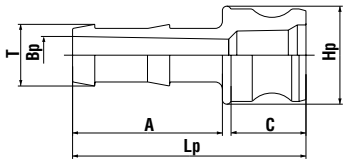


Size	Dimensions E (mm)
3/4"	111
1"	126
1 1/2"	185
2"	195
3"	249

Models and Dimensions

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

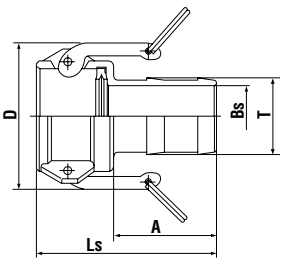
Plug LE type (Hose barb)



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
Copper alloy	LE-6TPH	3/4"	215	90.5	52.5	26	39	21.5	12.5
	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	79.4	70
	LE-32TPH	4"	3500	176	109	57	129	105	93
Stainless steel	LE-6TPH	3/4"	170	90	52	35.5	35	21	15
	LE-8TPH	1"	265	107	60	44	42	27	20
	LE-10TPH	1 1/4"	430	111	61	40	45	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	149	84	48	91	67	57
	LE-24TPH	3"	1755	162	99.5	56.5	102	78	68
	LE-32TPH	4"	2595	174	109	59	130	105	94

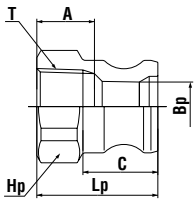
Socket LC type (Hose barb)

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
Copper alloy	LC-6TSH	3/4"	320	85	52	61.5	21.5	13
	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
Stainless steel	LC-6TSH	3/4"	230	86	52	55	21	15
	LC-8TSH	1"	340	99	60	63	27	20
	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

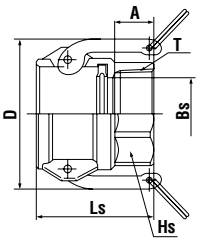
Plug LA type (Female thread)



material	Model	Size	Mass (g)	Dimensions (mm) Oct. stands for octagon. Dod.stands for dodecagon.					
				Lp	A	C	Hp(WAF)	øBp	T
Aluminum alloy	LA-6TPF	3/4"	45	42	20	26	Hex.36	17	Rc 3/4
	LA-8TPF	1"	65	52	24	34	Hex.41	22.5	Rc 1
	LA-10TPF	1 1/4"	110	59	28	40	Hex.50	27.5	Rc1 1/4
	LA-12TPF	1 1/2"	130	58	24	42	Hex.60	34.5	Rc1 1/2
	LA-16TPF	2"	170	63.5	28	48	Oct.70	44.5	Rc 2
	LA-20TPF	2 1/2"	320	85	32	50	Oct.85	55.5	Rc2 1/2
	LA-24TPF	3"	370	79	28	52.5	Dod.99	73.5	Rc 3
	LA-32TPF	4"	640	82	40	54	Dod.130	100	Rc 4
Copper alloy	LA-6TPF	3/4"	145	42	16	27	Oct.34	20	Rc 3/4
	LA-8TPF	1"	190	46	22	32	Oct.41	24	Rc 1
	LA-10TPF	1 1/4"	390	59	26	40	Hex.50	28	Rc1 1/4
	LA-12TPF	1 1/2"	420	58	24	42	Hex.60	36	Rc1 1/2
	LA-16TPF	2"	560	63.5	27	48	Oct.70	45	Rc 2
	LA-20TPF	2 1/2"	950	79	28	50	Dod.84	56	Rc2 1/2
	LA-24TPF	3"	1210	71	30	50	Dod.101	70	Rc 3
	LA-32TPF	4"	1620	79	37	53	Dod.127	101	Rc 4
Stainless steel	LA-6TPF	3/4"	120	39	19	27	Oct.33	19	Rc 3/4
	LA-8TPF	1"	170	47	21	33	Oct.41	24	Rc 1
	LA-10TPF	1 1/4"	270	53.5	23	41	Oct.50	28	Rc1 1/4
	LA-12TPF	1 1/2"	375	55	23	40	Oct.58	35.5	Rc1 1/2
	LA-16TPF	2"	505	62	25	47	Oct.69	45	Rc 2
	LA-20TPF	2 1/2"	825	77	28	49	Dod.83	56	Rc2 1/2
	LA-24TPF	3"	875	72	31.5	51	Dod.96	73	Rc 3
	LA-32TPF	4"	1470	79	36	53	Dod.124	100	Rc 4

Socket LD type (Female thread)

Model LD-6TSF has no rings.



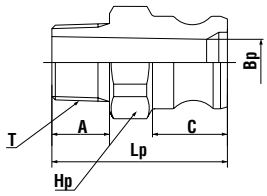
material	Model	Size	Mass (g)	Dimensions (mm) Oct. stands for octagon. Dod.stands for dodecagon.					
				Ls	A	D	Hs(WAF)	øBs	T
Aluminum alloy	LD-6TSF	3/4"	130	53	20	60.5	Hex.36	21	Rc 3/4
	LD-8TSF	1"	190	64.5	24	61	Hex.41	26	Rc 1
	LD-10TSF	1 1/4"	330	72.5	26	82	Hex.50	34	Rc1 1/4
	LD-12TSF	1 1/2"	360	70.5	24	90	Hex.60	39	Rc1 1/2
	LD-16TSF	2"	420	79.5	27	100	Oct.70	49	Rc 2
	LD-20TSF	2 1/2"	550	88.5	32	112	Oct.85	59	Rc2 1/2
	LD-24TSF	3"	800	89	32	140	Dod.99	75	Rc 3
	LD-32TSF	4"	1140	93	35	165	Dod.131	94	Rc 4
Copper alloy	LD-6TSF	3/4"	310	53	20	60.5	Hex.36	21	Rc 3/4
	LD-8TSF	1"	430	64.5	24	61	Hex.41	26	Rc 1
	LD-10TSF	1 1/4"	730	72.5	26	82	Hex.50	34	Rc1 1/4
	LD-12TSF	1 1/2"	770	70.5	24	90	Oct.60	39	Rc1 1/2
	LD-16TSF	2"	990	79.5	27	100	Oct.70	49	Rc 2
	LD-20TSF	2 1/2"	1290	81.5	28	113	Dod.84	61	Rc2 1/2
	LD-24TSF	3"	1560	88	31	139	Dod.98	76	Rc 3
	LD-32TSF	4"	3590	91	29.5	167	Dod.126	96	Rc 4
Stainless steel	LD-6TSF	3/4"	225	52	18	55	Oct.32	19	Rc 3/4
	LD-8TSF	1"	350	60	20	63	Oct.41	24	Rc 1
	LD-10TSF	1 1/4"	600	68	23	85	Oct.50	30	Rc1 1/4
	LD-12TSF	1 1/2"	715	72	24	87	Oct.58	37.5	Rc1 1/2
	LD-16TSF	2"	940	78.5	25	100	Oct.69	50	Rc 2
	LD-20TSF	2 1/2"	1050	82	29	113	Dod.83	61	Rc2 1/2
	LD-24TSF	3"	1605	88	31.5	139	Dod.96	75	Rc 3
	LD-32TSF	4"	2575	94	37	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.

Models and Dimensions

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

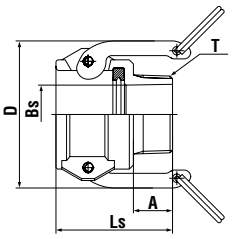
Plug LF type (Male thread)



material	Model	Size	Mass (g)	Dimensions (mm) Oct. stands for octagon. Dod.stands for dodecagon.					
				Lp	A	C	Hp(WAF)	øBp	T
Aluminum alloy	LF-6TPM	3/4"	70	61	20	26	Hex.36	16	R 3/4
	LF-8TPM	1"	90	73	24	34	Hex.41	22	R 1
	LF-10TPM	1 1/4"	140	81	26	40	Hex.50	28	R1 1/4
	LF-12TPM	1 1/2"	150	80.5	24	42	Oct.55	34.5	R1 1/2
	LF-16TPM	2"	220	89.5	27	48	Oct.65	44.5	R 2
	LF-20TPM	2 1/2"	370	101	32	50	Oct.80	56	R2 1/2
	LF-24TPM	3"	470	106	31	52	Dod.99	73	R 3
	LF-32TPM	4"	875	116	34	54	Dod.130	100	R 4
Copper alloy	LF-6TPM	3/4"	185	59	20	27	Hex.34	20	R 3/4
	LF-8TPM	1"	280	69	21.5	32	Hex.41	24	R 1
	LF-10TPM	1 1/4"	460	81	26	40	Hex.50	28	R1 1/4
	LF-12TPM	1 1/2"	500	81	24	42	Oct.55	36	R1 1/2
	LF-16TPM	2"	750	89.5	27	48	Oct.65	45	R 2
	LF-20TPM	2 1/2"	1290	98	28	50	Dod.83	56	R2 1/2
	LF-24TPM	3"	1480	103	30	50.8	Dod.96	73	R 3
	LF-32TPM	4"	3155	113	35	53	Dod.126	100	R 4
Stainless steel	LF-6TPM	3/4"	175	59	19	27	Oct.33	19	R 3/4
	LF-8TPM	1"	255	69	21	33	Oct.41	24	R 1
	LF-10TPM	1 1/4"	415	80	24	42	Oct.50	29.5	R1 1/4
	LF-12TPM	1 1/2"	575	80	24	40	Oct.58	36.5	R1 1/2
	LF-16TPM	2"	735	87	24	47	Oct.69	46	R 2
	LF-20TPM	2 1/2"	1020	99	28	49	Dod.83	56	R2 1/2
	LF-24TPM	3"	1415	103	30.5	51	Dod.96	73	R 3
	LF-32TPM	4"	2275	112	33	53	Dod.124	100	R 4

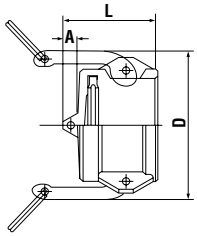
Socket LB type (Male thread)

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



material	Model	Size	Mass (g)	Dimensions (mm)				
				Ls	A	D	øBs	T
Aluminum alloy	LB-6TSM	3/4"	110	53	20	60.5	17	R 3/4
	LB-8TSM	1"	170	65	24	61	23.5	R 1
	LB-10TSM	1 1/4"	310	72	26	82	29.5	R1 1/4
	LB-12TSM	1 1/2"	340	71.5	24	90	36	R1 1/2
	LB-16TSM	2"	400	79.5	27	100	46	R 2
	LB-20TSM	2 1/2"	530	88.5	32	112	57.5	R2 1/2
	LB-24TSM	3"	715	90	31	139	76	R 3
	LB-32TSM	4"	920	92	33.5	165	99	R 4
Copper alloy (Made-to-order item)	LB-6TSM	3/4"	260	52	18	53	19.5	R 3/4
	LB-8TSM	1"	355	63	22	62	26	R 1
	LB-10TSM	1 1/4"	620	71	24	84	28	R1 1/4
	LB-12TSM	1 1/2"	700	71	25	91	36	R1 1/2
	LB-16TSM	2"	950	81	24	100	51	R 2
	LB-20TSM	2 1/2"	1250	86	32	113	63	R2 1/2
	LB-24TSM	3"	1780	92	33	139	78	R 3
	LB-32TSM	4"	2540	98	40	168	101	R 4
Stainless steel (Made-to-order item)	LB-6TSM	3/4"	210	52.5	19	55	20	R 3/4
	LB-8TSM	1"	300	63	23.5	63	25.5	R 1
	LB-10TSM	1 1/4"	520	70.5	24.5	85	34	R1 1/4
	LB-12TSM	1 1/2"	580	71.5	24	87	38	R1 1/2
	LB-16TSM	2"	780	78.5	24	101	50.5	R 2
	LB-20TSM	2 1/2"	980	84	31	113	66	R2 1/2
	LB-24TSM	3"	1490	92	32	139	78.5	R 3
	LB-32TSM	4"	2080	92	34.5	167	92	R 4

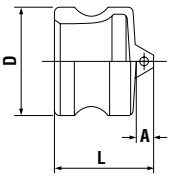
Plug L-PD type (Plug cap)



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	53
	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	55
	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)

* No ring hole.

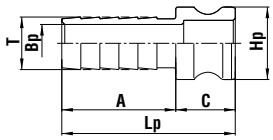


material	Model	Size	Mass (g)	Dimensions (mm)		
				L	A	øD
Aluminum alloy	L-6SD*	3/4"	35	32	8	32
	L-8SD*	1"	45	44	10	36.7
	L-10SD	1 1/4"	70	57	14	45.5
	L-12SD	1 1/2"	90	54	15	53.4
	L-16SD	2"	140	62	13	63
	L-20SD	2 1/2"	210	69	20	75.8
	L-24SD	3"	290	71	15	91.5
	L-32SD	4"	960	74	16	119.4
Copper alloy	L-6SD	3/4"	160	34	8	32.1
	L-8SD	1"	150	44	10	36.7
	L-10SD	1 1/4"	210	55	12	45.5
	L-12SD	1 1/2"	290	54	15	54
	L-16SD	2"	420	61	12	63
	L-20SD	2 1/2"	630	69	19	77
	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	32
	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

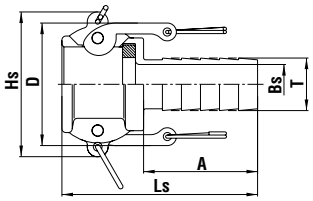
WAF : WAF stands for width across flats.

Plug LE type (Hose barb)



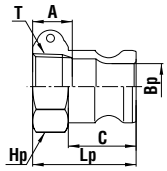
material	Model	Size	Mass (g)	Dimensions (mm)					
				Lp	A	C	øHp	øT	øBp
Plastic	LE-6TPH	3/4"	16	74.5	51.5	23	32	21	14.5
	LE-8TPH	1"	29	87.5	57.5	30	36.5	26.5	19
	LE-12TPH	1 1/2"	73	103	61	42	54	40	30
	LE-16TPH	2"	122	119	71	48	63	53	41
	LE-24TPH	3"	221	152.5	108	44.5	91	80	65

Socket LC type (Hose barb)



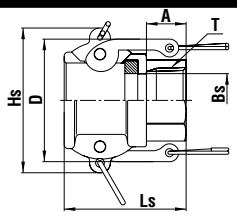
material	Model	Size	Mass (g)	Dimensions (mm)					
				Ls	A	D	Hs	øT	øBs
Plastic	LC-6TSH	3/4"	64	83.5	52	65.5	52	20	14
	LC-8TSH	1"	104	99	57.5	62	73	26.5	20
	LC-12TSH	1 1/2"	242	111	61	91	101	40	30
	LC-16TSH	2"	269	126	71	100	106	51	41
	LC-24TSH	3"	527	161	102	136	138	77.5	65

Plug LA type (Female thread)



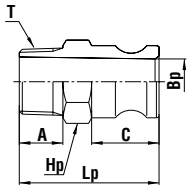
material	Model	Size	Mass (g)	Dimensions (mm)					
				Lp	A	C	Hp(WAF)	øBp	T
Plastic	LA-6TPF	3/4"	19	42	16	26	Hex.34	21	Rc 3/4
	LA-8TPF	1"	27	59	25	34	Hex.43	22	Rc 1
	LA-12TPF	1 1/2"	65	67	25	42	Ribbed 65	37	Rc1 1/2
	LA-16TPF	2"	90	72.5	25	48.5	Ribbed 74	44	Rc 2
	LA-24TPF	3"	211	90	33.5	52.5	Ribbed 108	72	Rc 3

Socket LD type (Female thread)



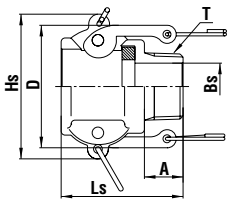
material	Model	Size	Mass (g)	Dimensions (mm)					
				Ls	A	D	Hs(WAF)	øBs	T
Plastic	LD-6TSF	3/4"	65	50	19	58	Hex.32	20	Rc 3/4
	LD-8TSF	1"	98	61.5	20	62	Hex.41	27	Rc 1
	LD-12TSF	1 1/2"	260	78	29.5	92	Ribbed 68	39	Rc1 1/2
	LD-16TSF	2"	285	84	29.5	101	Ribbed 80	50	Rc 2
	LD-24TSF	3"	444	88.5	33	138	Ribbed 109	75	Rc 3

Plug LF type (Male thread)



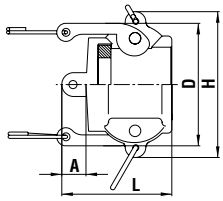
material	Model	Size	Mass (g)	Dimensions (mm)					
				Lp	A	C	Hp(WAF)	øBp	T
Plastic	LF-6TPM	3/4"	23	60	20	26	Hex.32	19	R 3/4
	LF-8TPM	1"	19	70.5	22	34	Hex.37	23	R 1
	LF-12TPM	1 1/2"	72	77	22	42	Ribbed 63	32	R1 1/2
	LF-16TPM	2"	105	84.5	24.5	48	Ribbed 74	45	R 2
	LF-24TPM	3"	210	102	32	51	Ribbed 100	72	R 3

Socket LB type (Male thread)



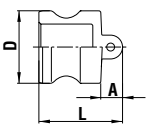
material	Model	Size	Mass (g)	Dimensions (mm)					
				Ls	A	D	Hs	øBs	T
Plastic	LB-6TSM	3/4"	58	51	19	65.5	52	19	R 3/4
	LB-8TSM	1"	88	61.5	19.5	62	61	23.5	R 1
	LB-12TSM	1 1/2"	227	75	25	91	101	37.5	R1 1/2
	LB-16TSM	2"	251	84	28.5	101	108	48.5	R 2
	LB-24TSM	3"	397	91	31.5	136	122	75	R 3

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

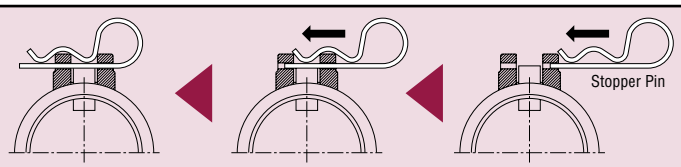
Socket L-SD type (Socket cap)



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).



Stopper Pin inserted.

Without stopper pin

For Hydraulics

HSP Cupla

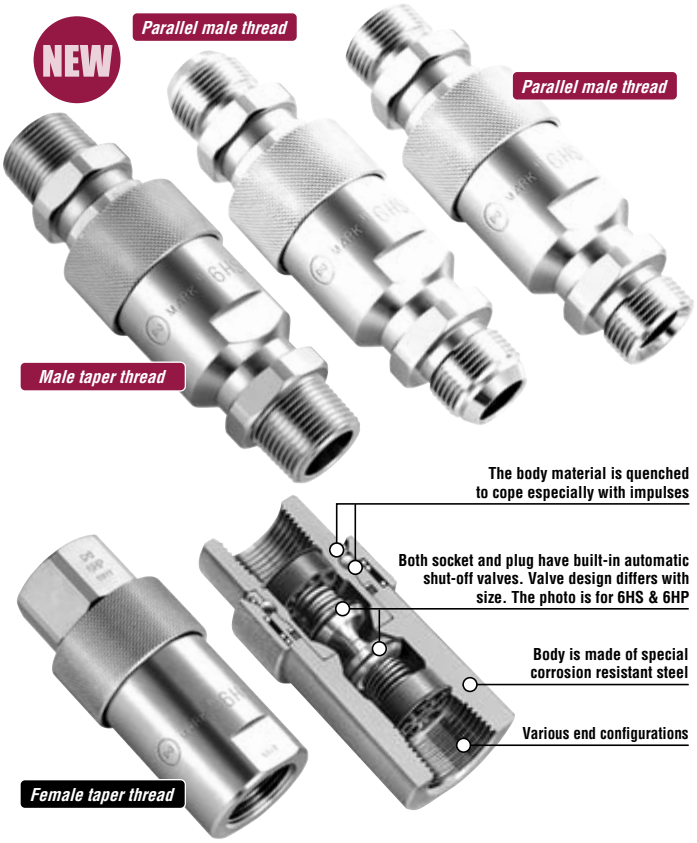
For hydraulic pressure from 14.0 to 20.6MPa {142~210kgfcm²}

Working pressure

20.6	18.0	14.0
20.6MPa {210kgf/cm²}	18.0MPa {183kgf/cm²}	14.0MPa {142kgf/cm²}

Valve structure: Two-way shut-off

Applicable fluids: 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 taper thread, parallel male thread with 30° flare, and parallel male thread with 30° cone-seat) are newly added. Male thread types are designed especially for direct connection to hydraulic power units effectively.
- Parallel male 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.)
- HSP-DC Cuplas are available for diecasting 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

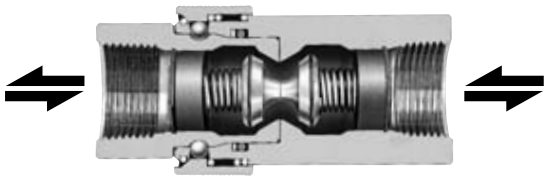
Body material	Special steel (Nickel-plated)			
Size	1/4" • 3/8" • 1/2" • 3/4" • 1"		1 1/4" • 1 1/2"	2"
Working pressure MPa {kgf/cm²}	20.6 {210}		18.0 {183}	14.0 {142}
Pressure resistance MPa {kgf/cm²}	31.0 {316}		26.5 {270}	20.6 {210}
Seal material Working temperature range	Seal material	Mark	Working 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"	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 (mm²)

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 10⁻¹Pa {1 x 10⁻³mmHg}

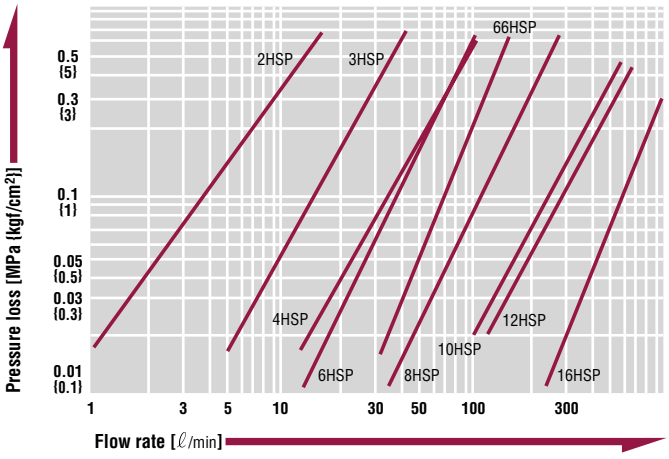
Socket only	Plug only	When connected
—	—	Operational

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 10⁻⁶m²/s •Density : 0.87 x 10³kg/m³

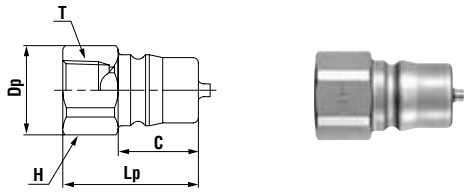


The flow volume of male thread type is increased by 5~10% compared with that of female thread type with conversion nipple.

Models and Dimensions

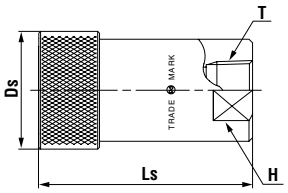
WAF : WAF stands for width across flats.

Plug HP type (Female 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	Two flats 35	Rc 3/4
8HP	R 1	361	61	47	36	Two flats 41	Rc 1
10HP	R1 1/4	886	80	64	58	Two flats 58	Rc1 1/4
12HP	R1 1/2	810	80	64	58	Two flats 58	Rc1 1/2
16HP	R 2	1513	115	100	83	Two flats 90	Rc 2

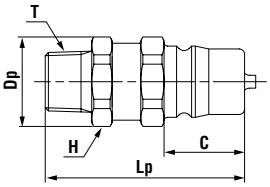
Socket HS type (Female thread)



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

Plug HP-R type (Male thread)

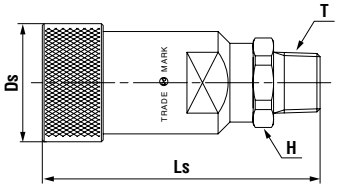
NEW



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 thread)

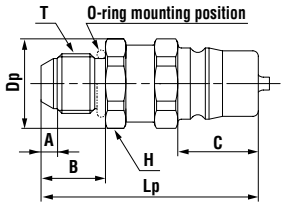
NEW



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 (Parallel male thread with 30° flare)

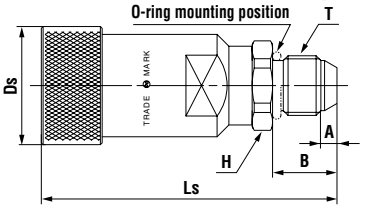
NEW



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 (Parallel male thread with 30° flare)

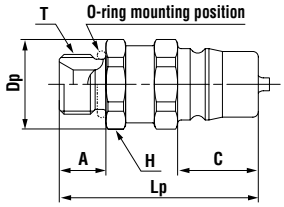
NEW



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 (Parallel male thread with 30° cone-seat)

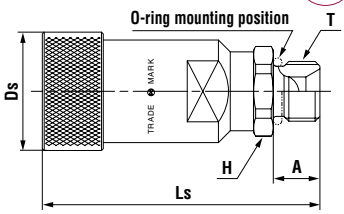
NEW



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 (Parallel male thread with 30° cone-seat)

NEW



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 parallel female 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 parallel female thread JIS B 8363 with 30° flare or the coupling with O-ring seal.

For Hydraulics

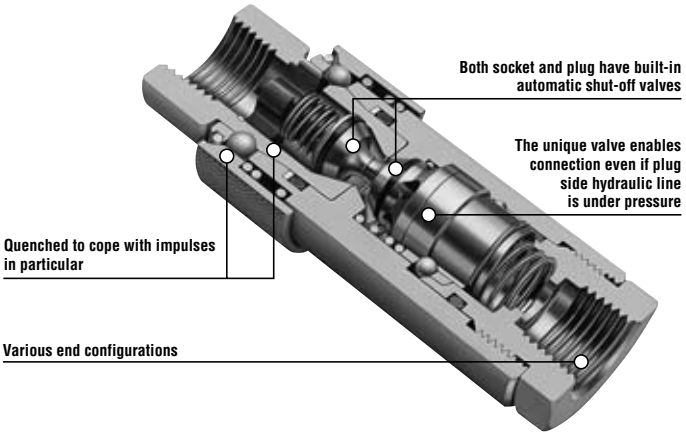
Super HSP Cupla

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

Working pressure: 20.6 — 20.6MPa {210kgf/cm²}

Valve structure: Two-way shut-off

Applicable fluids: Hydraulic oil



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 plug even with residual pressure on the plug side of the hydraulic line.
- Plugs of lot No. 11 or later from existing HSP Cuplas should be used.
- 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

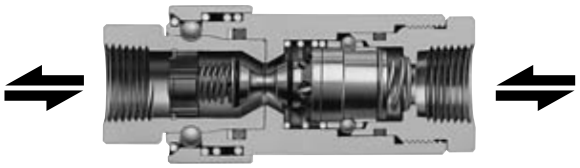
Body material	Special steel (Nickel-plated)			
Size	1/4" • 3/8" • 1/2" • 3/4" • 1"			
Working pressure MPa {kgf/cm²}	20.6 {210}			
Pressure resistance MPa {kgf/cm²}	31.0 {316}			
Residual pressure allowance in plug	7.0MPa {70kgf/cm²}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	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) (mm²)

Model	2HS-RPx2HP	3HS-RPx3HP	4HS-RPx4HP	6HS-RPx6HP	8HS-RPx8HP
Min. Cross-Sectional Area	17	30	77	77	203

Suitability for Vacuum 1.3Pa {1 x 10⁻²mmHg}

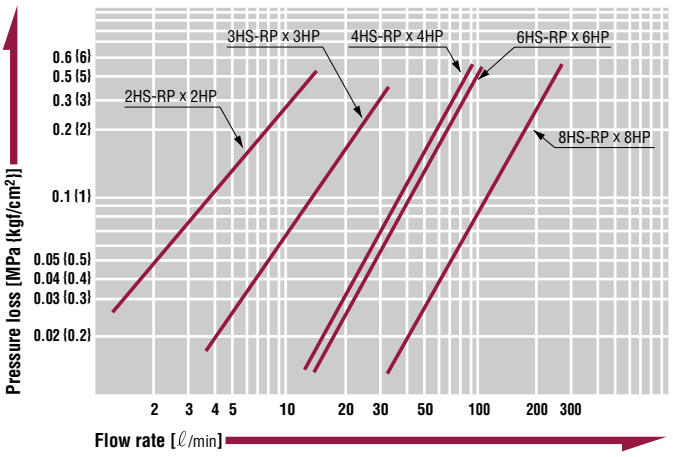
Socket only	Plug only	When connected
—	—	Operational

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 10⁻⁶m²/s •Density : 0.87 x 10³kg/m³

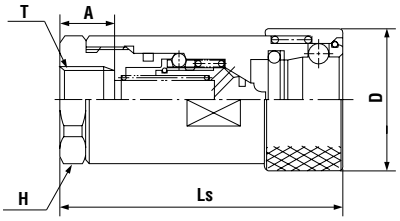


Note: Use in combination of Super HSP Cupla Socket and HSP Cupla Plug.

Models and Dimensions

WAF : WAF stands for width across flats.

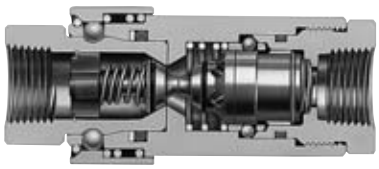
Socket HS type (Female thread)



Model	Application	Mass (g)	Dimensions (mm)				
			Ls	øD	Hs(WAF)	A	T
2HS-RP	R 1/4	160	57.5	27.5	Hex.21	13	Rc 1/4
3HS-RP	R 3/8	275	72.0	33	Hex.27	13	Rc 3/8
4HS-RP	R 1/2	570	88.5	43	Hex.35	16	Rc 1/2
6HS-RP	R 3/4	550	90.5	43	Hex.35	18	Rc 3/4
8HS-RP	R 1	1,230	114	58	Hex.46	20	Rc 1

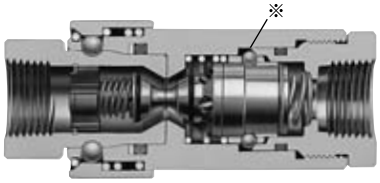
How to use Super HSP Cupla

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.

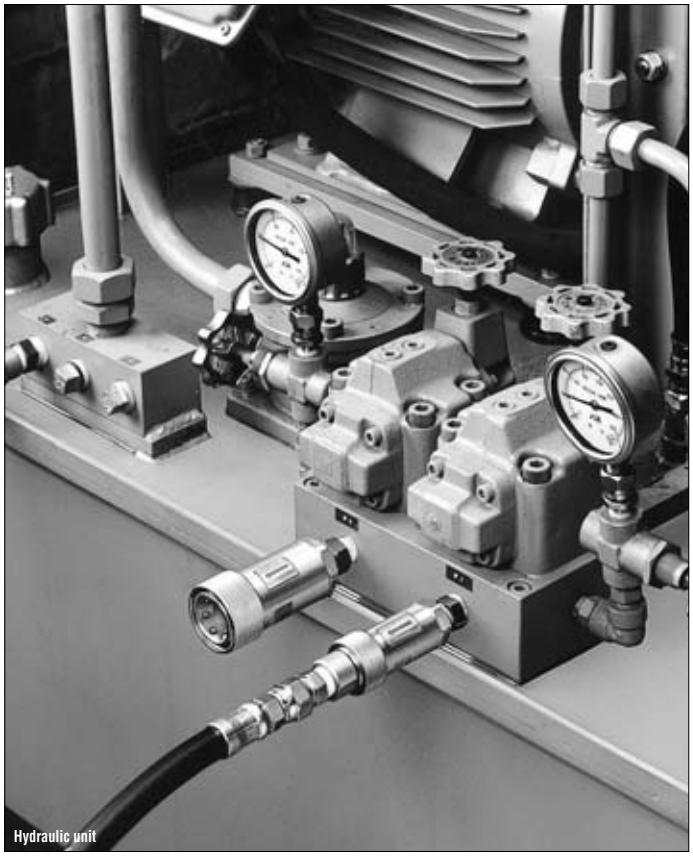
② Valve is opened with appropriate pressure (residual pressure plus 1.0MPa ({10kgf/cm²} or more) from the socket side and then locked.

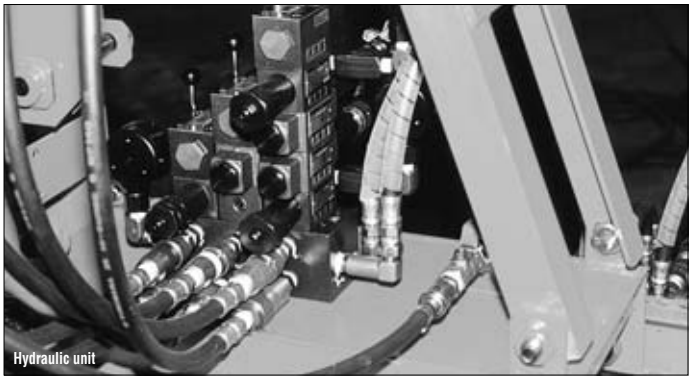


In condition ①, if fluid with pressure (residual pressure plus 1.0MPa) flows for 30 seconds or more, the plug valve is pushed in by socket valve under that pressure and open to flow the fluid. At this time the balls indicated by an asterisk on the sketch completely lock the socket valve. When the socket valve is locked completely, fluid may flow in either direction from plug 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

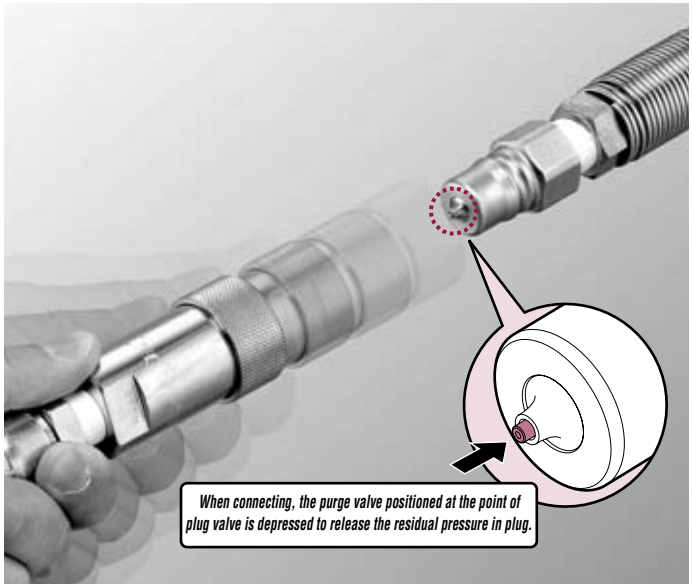
Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.

For Hydraulics

Hyper HSP Cupla

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

Working pressure: 20.6 — 20.6MPa {210kgf/cm²}
Valve structure: Two-way shut-off
Applicable fluids: OIL — 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/cm²}	20.6 {210}			
Pressure resistance MPa {kgf/cm²}	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

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 (mm²)

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 10⁻¹Pa {1 x 10⁻³mmHg}

Socket only	Plug only	When connected
—	—	Operational

Admixture of Air on Connection (mℓ)

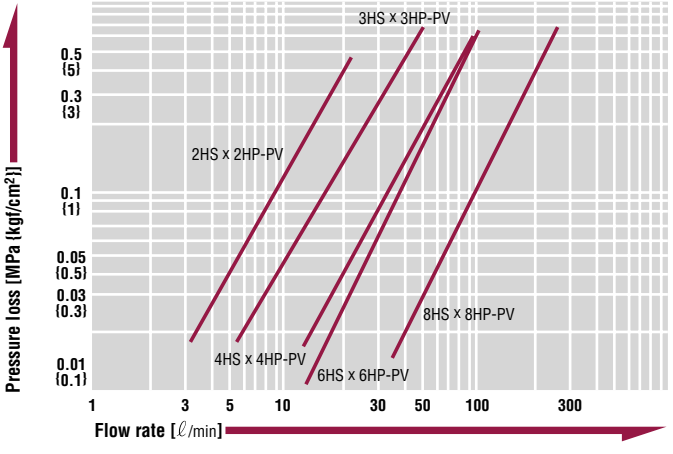
Model	2HP-PV/2HS-PV	3HP-PV/3HS-PV	4HP-PV/4HS-PV	6HP-PV/6HS-PV	8HP-PV/8HS-PV
Volume of air	0.64	1.84	3.47	3.47	12.40

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 10⁻⁶m²/s •Density : 0.87 x 10³kg/m³

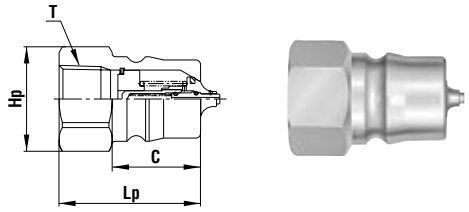


Note: Either socket or plug of Hyper HSP Cupla must be used on the line where the residual pressure remains. The counterpart of Hyper HSP must be either plug or socket of standard HSP Cupla.

Models and Dimensions

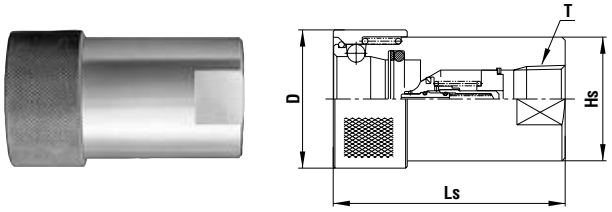
WAF : WAF stands for width across flats.

Plug HP type (Female thread)



Model	Application	Mass (g)	Dimensions (mm)			
			Lp	C	Hp(WAF)	T
2HP-PV	R 1/4	44	32	17.5	Hex.19 x ø20.5	Rc 1/4
3HP-PV	R 3/8	72	38	22.5	Hex.23 x ø25	Rc 3/8
4HP-PV	R 1/2	138	44	27.5	Hex.29 x ø32	Rc 1/2
6HP-PV	R 3/4	147	50	27.5	Hex.32 x ø35	Rc 3/4
8HP-PV	R 1	360	61	36	Two flats 41 x ø47	Rc 1

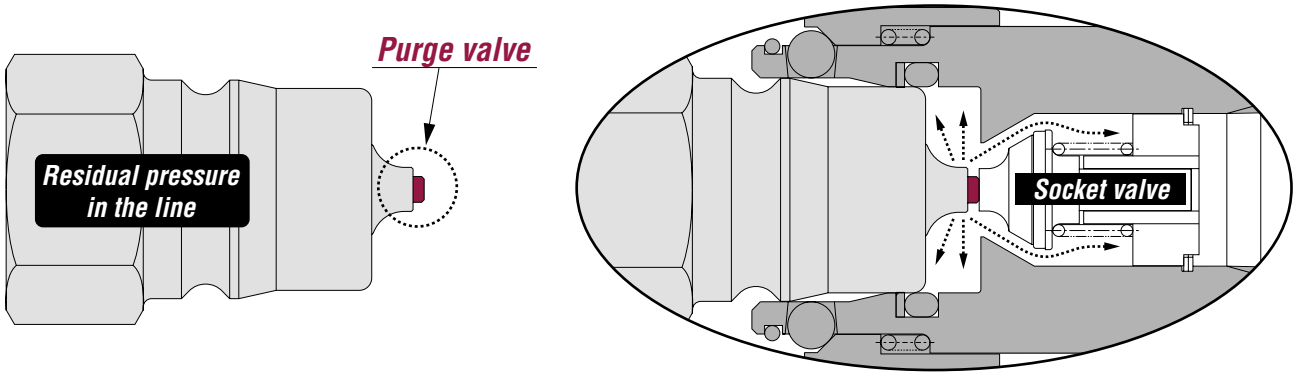
Socket HS type (Female thread)



Model	Application	Mass (g)	Dimensions (mm)			
			Ls	øD	Hs(WAF)	T
2HS-PV	R 1/4	136	49	27.5	Two flats 19 x ø23.9	Rc 1/4
3HS-PV	R 3/8	225	60	33	Two flats 23 x ø28.6	Rc 3/8
4HS-PV	R 1/2	485	72	43	Two flats 35 x ø38.5	Rc 1/2
6HS-PV	R 3/4	460	72	43	Two flats 35 x ø38.5	Rc 3/4
8HS-PV	R 1	1050	93	58	Two flats 46 x ø52.2	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.

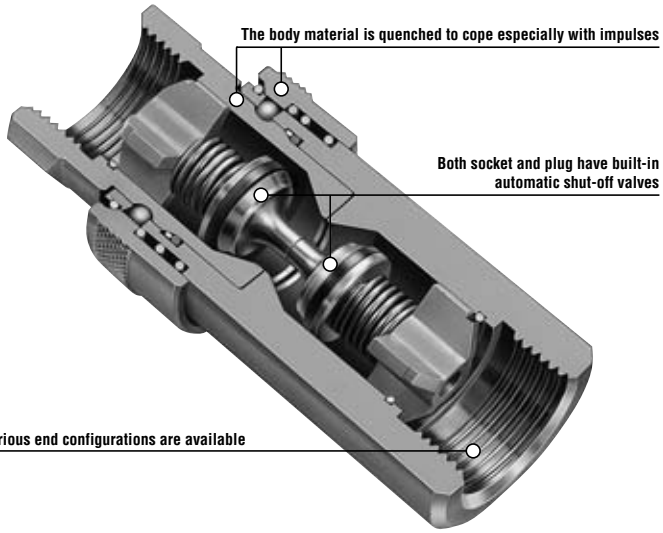
Hyper HSP Cupla can be connected under the residual pressure in the line,but cannot during pressurizing. It may lead to incomplete connection, durability deterioration or possible valve fly out.

For Hydraulics

210 Cupla

For hydraulic pressure up to 20.6MPa {210kgf/cm²}

Working pressure: 20.6 — 20.6MPa {210kgf/cm²}
Valve structure: Two-way shut-off
Applicable fluids: Hydraulic oil, Gas



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/cm²}.
- 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

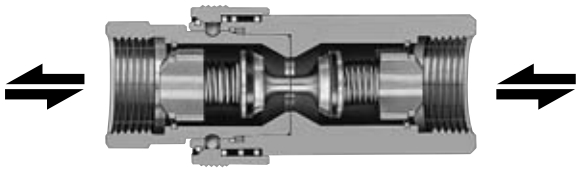
Body material	Special steel (Nickel-plated)			
Size	1/4" • 3/8" • 1/2" • 3/4" • 1"			
Working pressure MPa {kgf/cm²}	20.6 {210}			
Pressure resistance MPa {kgf/cm²}	31.0 {316}			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C~+80°C	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 (mm²)

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 10⁻²mmHg}

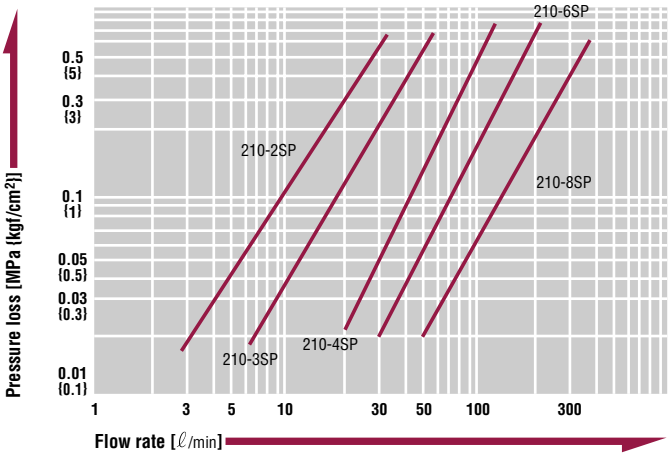
Socket only	Plug only	When connected
—	—	Operational

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

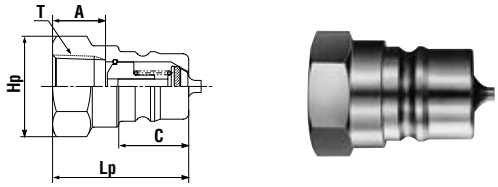
[Test conditions] •Fluid : Hydraulic oil •Temperature : 30°C ± 5°C
•Fluid viscosity : 32 x 10⁻⁶m²/s •Density : 0.87 x 10³kg/m³



Models and Dimensions

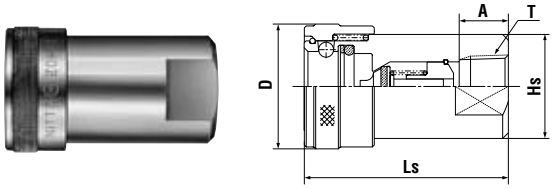
WAF : WAF stands for width across flats.

Plug Female thread



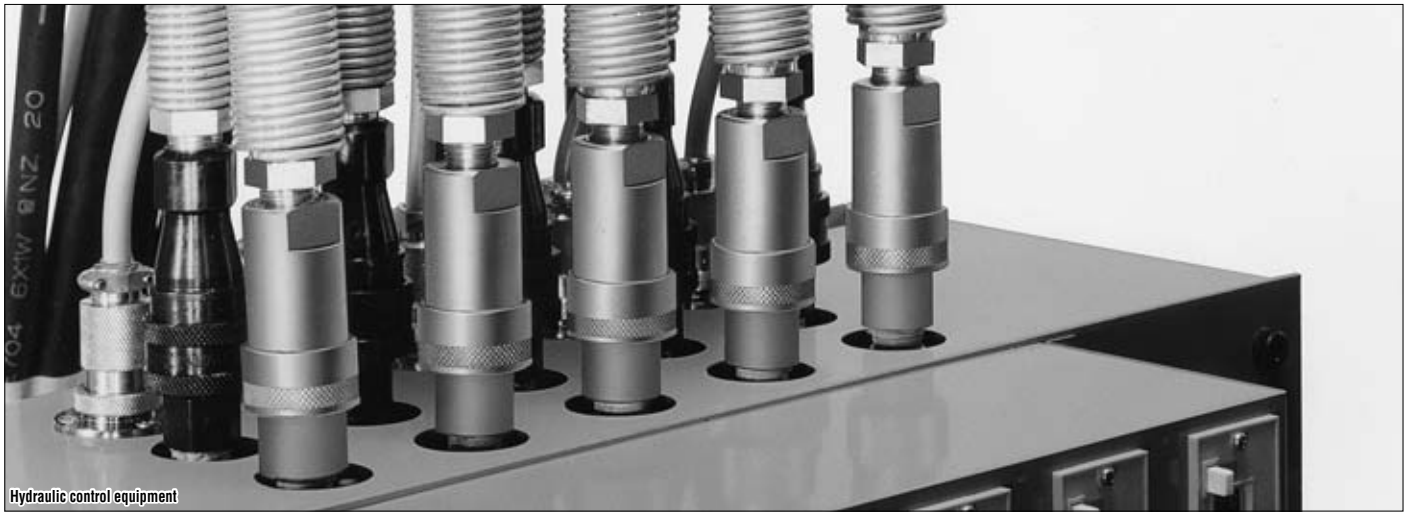
Model	Application	Mass (g)	Dimensions (mm)				
			Lp	C	Hp(WAF)	A	T
210-2P	R 1/4	39	33	18	Hex.19	13	Rc 1/4
210-3P	R 3/8	57	36	18.5	Hex.23	14	R c3/8
210-4P	R 1/2	90	42.5	24	Hex.27	15.5	Rc 1/2
210-6P	R 3/4	195	51	28	Hex.35	18	R c3/4
210-8P	R 1	293	61	35	Hex.41	19.5	Rc 1

Socket Female thread



Model	Application	Mass (g)	Dimensions (mm)				
			Ls	øD	Hs(WAF)	A	T
210-2S	R 1/4	158	50.5	30	Two flats 22 x ø25	13	Rc 1/4
210-3S	R 3/8	193	54	33	Two flats 23 x ø27.5	13	Rc 3/8
210-4S	R 1/2	330	65	39	Two flats 29 x ø34	15.5	Rc 1/2
210-6S	R 3/4	566	78.5	48	Two flats 35 x ø41.3	18	Rc 3/4
210-8S	R 1	861	95	55	Two flats 41 x ø47.8	19.5	Rc 1

Application example



Hydraulic control equipment

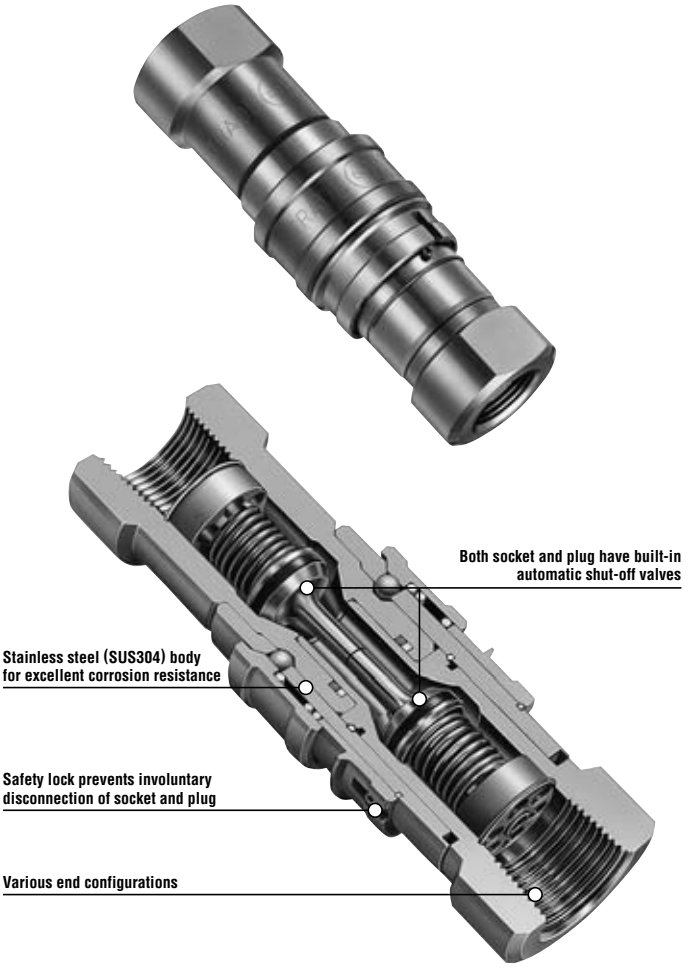
Construction machinery

For Hydraulics

S210 Cupla

Stainless steel Cupla for high pressure up to 20.6MPa {210kgfcm²}

Working pressure: 20.6 MPa {210kgf/cm²}
Valve structure: Two-way shut-off
Applicable fluids: Water, Hydraulic oil, Gas, Steam



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/cm²}, the same as steel's.
- Safety lock ensures tight and secured connection (preventing accidental involuntary disconnection) under vibration or impacts.
- Both socket and plug have built-in automatic shut-off valves that prevent fluid outflow on disconnection. Simple to handle.

Specifications

Body material	Stainless Steel (SUS304)			
Size	1/4" • 3/8" • 1/2" • 3/4" • 1"			
Working pressure MPa {kgf/cm²}	20.6 {210}			
Pressure resistance MPa {kgf/cm²}	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	Available on request

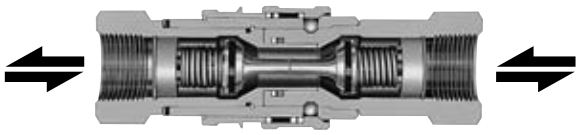
• The product comes with a dust cap.

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 (mm²)

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 10⁻²mmHg}

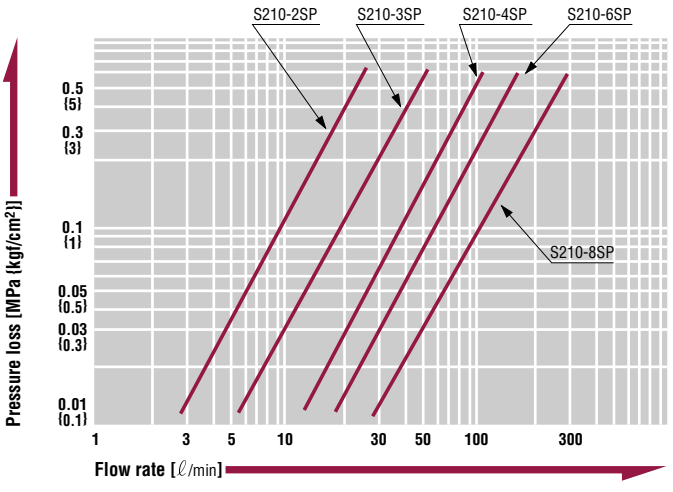
Socket only	Plug only	When connected
—	—	Operational

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

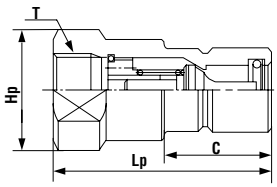
[Test conditions] •Fluid : Hydraulic oil •Temperature : 30°C ± 5°C
•Fluid viscosity : 32 x 10⁻⁶m²/s •Density : 0.87 x 10³kg/m³



Models and Dimensions

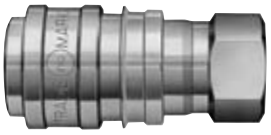
WAF : WAF stands for width across flats.

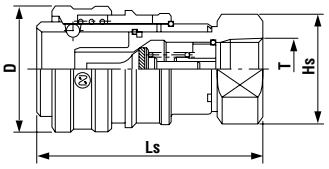
Plug Female thread



Model	Application	Mass (g)	Dimensions (mm)			
			Lp	C	Hp(WAF)	T
S210-2P	R 1/4	75	50.5	20	Two flats 19 x ø22	Rc 1/4
S210-3P	R 3/8	131	59	24	Two flats 24 x ø28	Rc 3/8
S210-4P	R 1/2	242	70.5	28	Two flats 30 x ø35	Rc 1/2
S210-6P	R 3/4	452	81.5	35.5	Two flats 38 x ø44	Rc 3/4
S210-8P	R 1	935	100	47.5	Two flats 50 x ø58	Rc 1

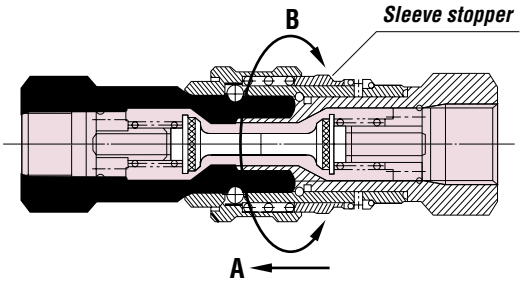
Socket Female thread





Model	Application	Mass (g)	Dimensions (mm)			
			Ls	øD	Hs(WAF)	T
S210-2S	R 1/4	130	59	27	Two flats 19 x ø22	Rc 1/4
S210-3S	R 3/8	220	68.5	32	Two flats 24 x ø28	Rc 3/8
S210-4S	R 1/2	395	81	39.7	Two flats 30 x ø35	Rc 1/2
S210-6S	R 3/4	680	97.5	48	Two flats 38 x ø44	Rc 3/4
S210-8S	R 1	1,365	118	62	Two flats 50 x ø58	Rc 1

Construction of and how to use Safety Lock (fail safe mechanism) to prevent involuntary disconnection



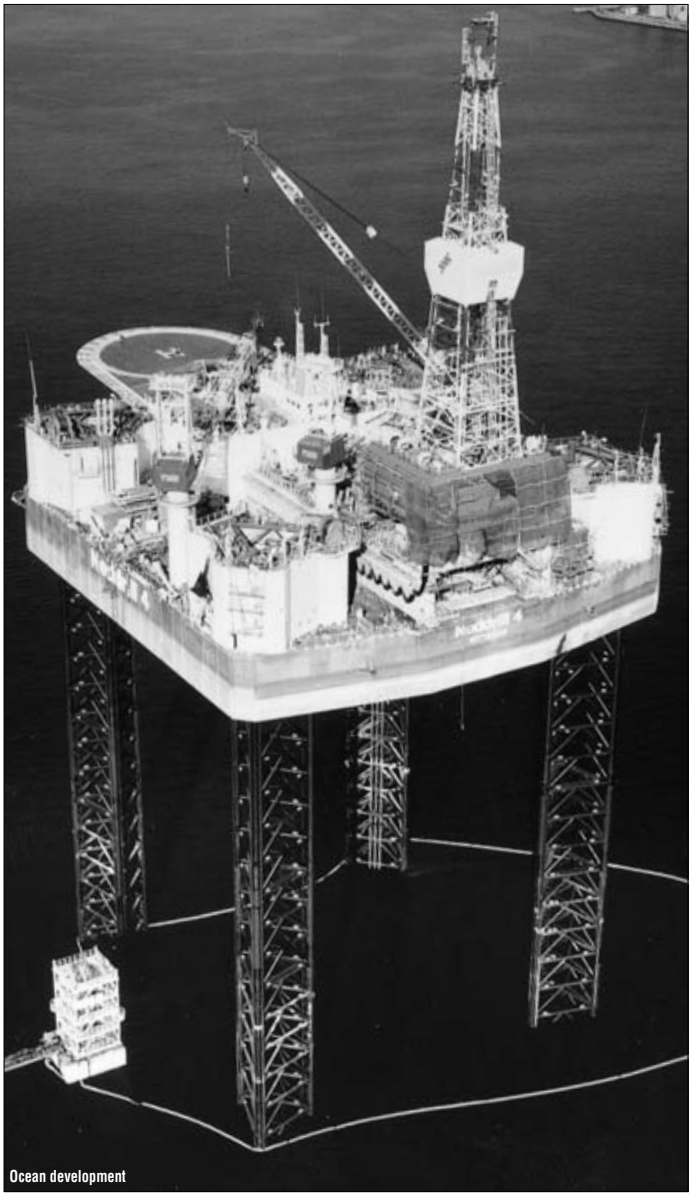
To lock the sleeve

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

For Hydraulics

280 Cupla

For hydraulic pressure up to 27.5~31.5MPa {281~321kgf/cm²}

Working pressure
31.5 — 31.5MPa {321kgf/cm²}
27.5 — 27.5MPa {281kgf/cm²}

Valve structure
Two-way shut-off

Applicable fluids
OIL — Hydraulic oil

Specifications

Body material	Special steel (Zinc plating, clear passivate finish: silver)			
Size	1/4" • 3/8"		1/2" • 3/4" • 1"	
Working pressure MPa {kgf/cm²}	31.5 {321}		27.5 {281}	
Pressure resistance MPa {kgf/cm²}	47.3 {482}		41.3 {421}	
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	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 (mm²)

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 x 10⁻²mmHg}

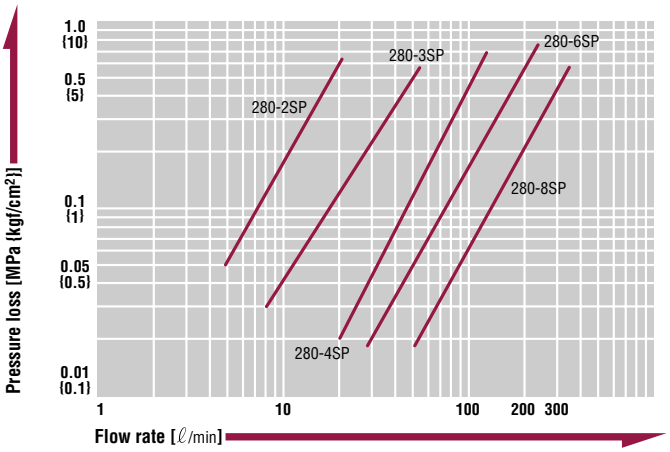
Socket only	Plug only	When connected
—	—	Operational

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 x 10⁻⁶m²/s •Density : 0.87 x 10³kg/m³



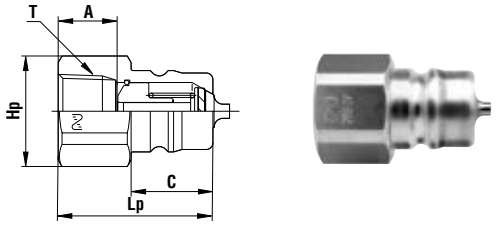
Generic Cupla copes with high pressure lines in hydraulic equipment! Low pressure loss is ideal for hydraulic equipment.

- In accordance with international standard ISO 7241-1A.
- General purpose hydraulic Cuplas with the working pressure up to 27.5~31.5MPa {281~321kgf/cm²}.
- 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. This also makes handling each independent part easier.
- Special steel body material is adopted for its excellent strength and additional quenching treatment is done to withstand hydro pressure impacts.
- Various end configurations.

Models and Dimensions

WAF : WAF stands for width across flats.

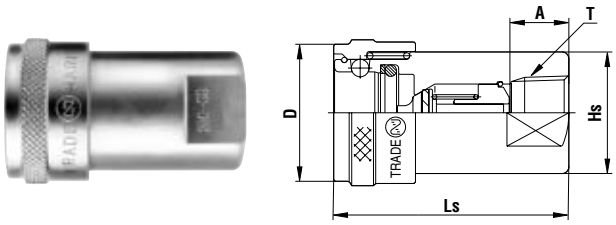
Plug Female thread



Model	Application	Mass (g)	Dimensions (mm)				
			Lp	C	Hp(WAF)	A	T
280-2P	R 1/4	35	31.5	15	Hex.19	13	Rc 1/4
280-3P	R 3/8	59	35	18.5	Hex.23	13	Rc 3/8
280-4P	R 1/2	115	44	24.5	Hex.29	17	Rc 1/2
280-6P	R 3/4	178	52.5	28	Hex.32	19	Rc 3/4
280-8P	R 1	331	63.5	35	Two flats 41 x ø44	22	Rc 1

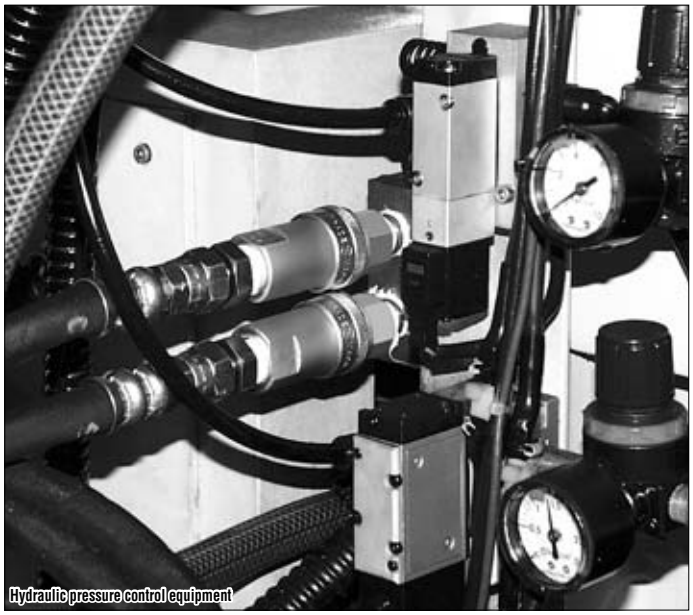
* Internal structural design of 280-6S and 280-8S is partly different from the above drawing.

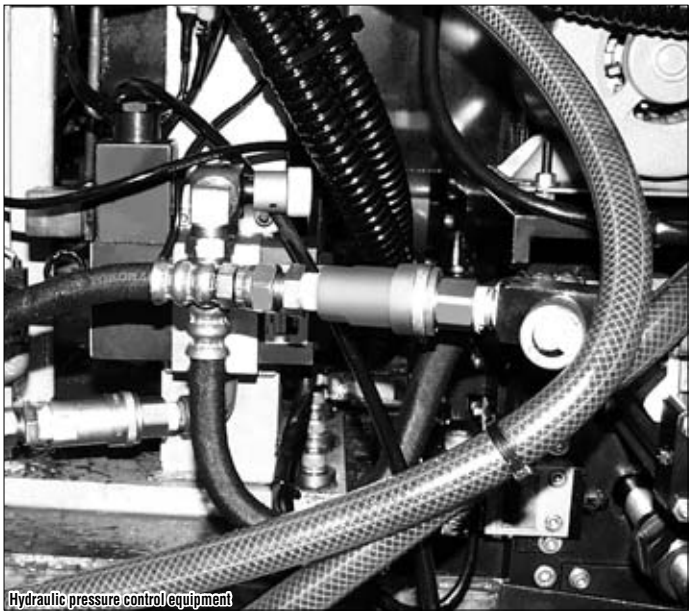
Socket Female thread



Model	Application	Mass (g)	Dimensions (mm)				
			Ls	øD	Hs(WAF)	A	T
280-2S	R 1/4	110	46	27	Two flats 19 x ø21.7	13	Rc 1/4
280-3S	R 3/8	185	53	33	Two flats 23 x ø27.5	13	Rc 3/8
280-4S	R 1/2	335	66.5	39	Two flats 29 x ø34	17	Rc 1/2
280-6S	R 3/4	571	81	48	Two flats 35 x ø41.3	19	Rc 3/4
280-8S	R 1	871	98	55	Two flats 41 x ø47.8	22	Rc 1

Application example


Hydraulic pressure control equipment


Hydraulic pressure control equipment

For Hydraulics

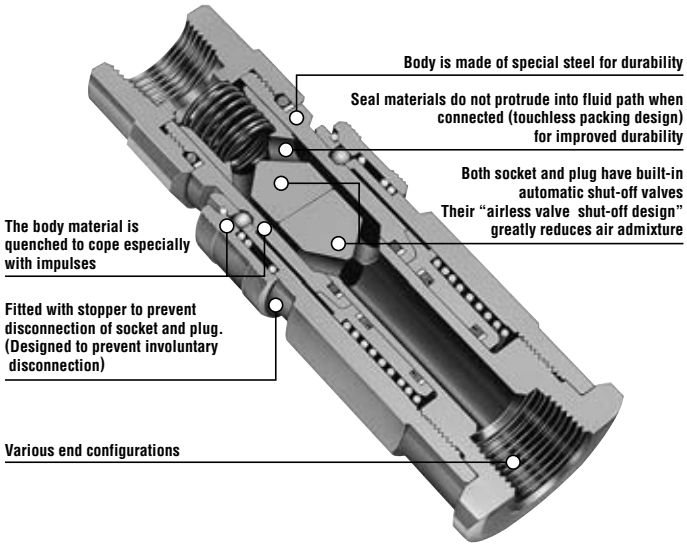
350 Cupla

For hydraulic pressures up to 34.5MPa {352kgf/cm²}

Working pressure
34.5
34.5MPa {352kgf/cm²}

Valve structure
Two-way shut-off (Non-Spill)

Applicable fluids
OIL
Hydraulic oil



Their "airless valve shut-off design" greatly reduces air admixture! Ideal for hydraulic lines with larger pressure fluctuations.

- Locking mechanism to prevent involuntary 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. This also makes handling each independent part easier.

Specifications

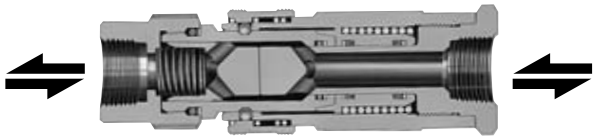
Body material	Special steel (Nickel-plated)			
Size	1/4" • 3/8" • 1/2" • 3/4" • 1" • 1 1/4" • 1 1/2" • 2"			
Working pressure MPa {kgf/cm²}	34.5 {352}			
Pressure resistance MPa {kgf/cm²}	51.5 {525}			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Fluoro rubber	FKM (X-100)	−20°C~+180°C	Standard material
	Nitrile rubber	NBR (SG)	−20°C~+80°C	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	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 (mm²)

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

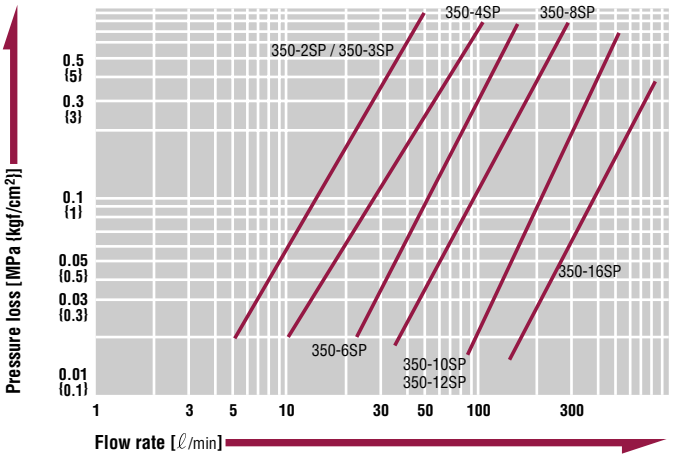
Not suitable for vacuum application in either connected or disconnected condition.

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

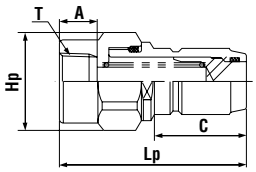
[Test conditions] •Fluid : Hydraulic oil •Temperature : 40°C ± 5°C
•Fluid viscosity : 32 x 10^{-6}m²/s •Density : 0.87 x 10^{3}kg/m³



Models and Dimensions

WAF : WAF stands for width across flats.

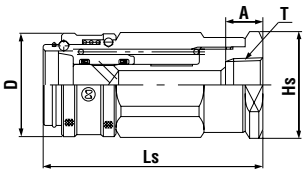
Plug Female thread



Model	Application	Mass (g)	Dimensions (mm)				
			Lp	C	Hp(WAF)	A	T
350-2P	R 1/4	170	72	36	Hex.27	13	Rc 1/4
350-3P	R 3/8	167	72	36	Hex.27	13	Rc 3/8
350-4P	R 1/2	245	85	40.5	Hex.27	16	Rc 1/2
350-6P	R 3/4	415	90	44.5	Hex.41	18	Rc 3/4
350-8P	R 1	1,035	119	57	Hex.50	22	Rc 1
350-10P	R1 1/4	2,700	144	75	Hex.70	25	Rc1 1/4
350-12P	R1 1/2	2,600	144	75	Hex.70	25	Rc1 1/2
350-16P*	R 2	7,500	198	88.5	Two flats 90 x ø105	29	Rc 2

* Available on request

Socket Female thread



Model	Application	Mass (g)	Dimensions (mm)				
			Ls	øD	Hs(WAF)	A	T
350-2S	R 1/4	360	82	34	Hex.30	13	Rc 1/4
350-3S	R 3/8	353	82	34	Hex.30	13	Rc 3/8
350-4S	R 1/2	465	93.5	41	Hex.36	16	Rc 1/2
350-6S	R 3/4	660	105.5	49	Two flats 46 x ø52	18	Rc 3/4
350-8S	R 1	1,740	129	63	Two flats 55 x ø62	22	Rc 1
350-10S	R1 1/4	5,600	180	89	Hex.80	24	Rc1 1/4
350-12S	R1 1/2	5,500	180	89	Hex.80	25	Rc1 1/2
350-16S*	R 2	14,500	239	117	Two flats 105 x ø115	29	Rc 2

* Available on request

Application example

Hydraulic unit

For Hydraulics

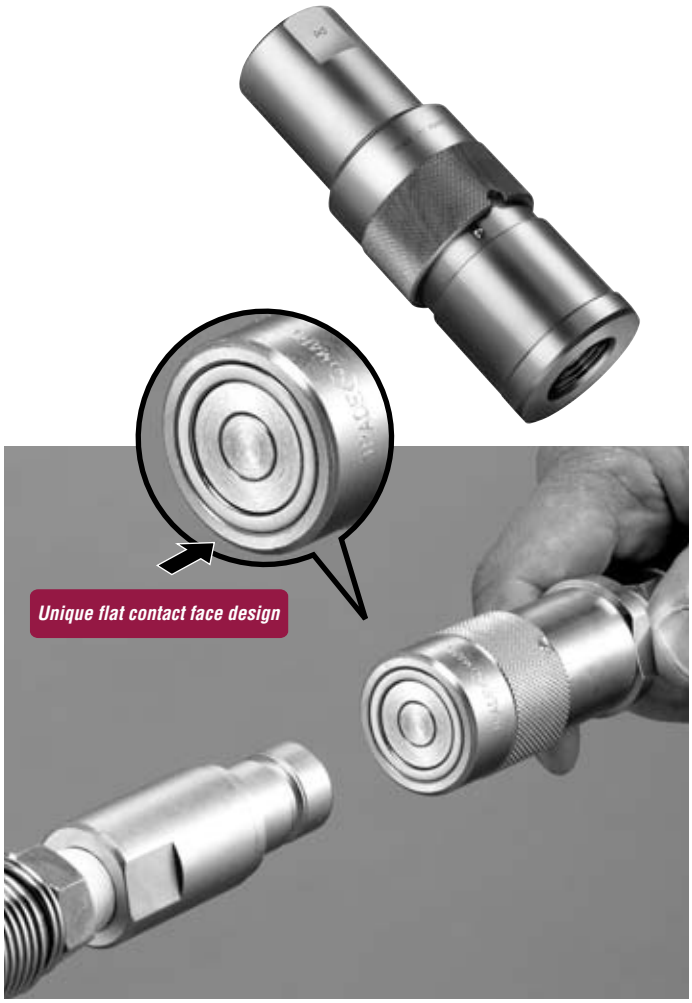
Flat Face Cupla F35

For hydraulic pressures up to 35.0MPa {357kgf/cm²} with flat contact face

Working pressure: 35.0 — 35.0MPa {357kgf/cm²}

Valve structure: Two-way shut-off (Non-Spill)

Applicable fluids: OIL — 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 on equipment 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/cm²}	35.0 {357}			
Pressure resistance MPa {kgf/cm²}	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	Available on request

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 (mm²)

Model	F35-3	F35-4	F35-6	F35-8
Min. Cross-Sectional Area	32.2	78.5	149.6	227.0

Suitability for Vacuum

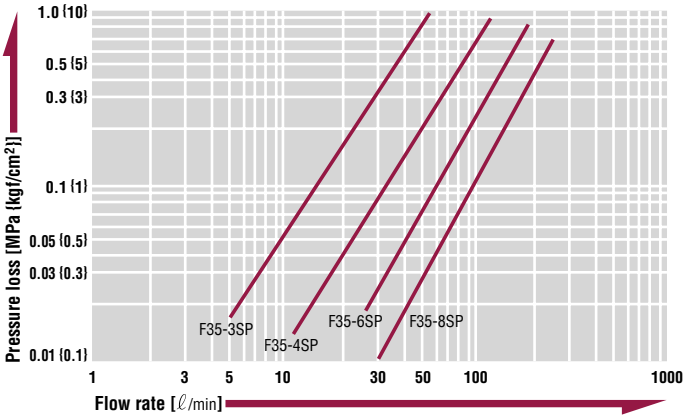
Not suitable for vacuum application in either connected or disconnected condition.

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

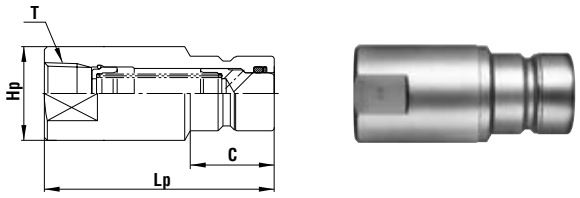
[Test conditions] •Fluid : Hydraulic oil •Temperature : 30°C ± 5°C
•Fluid viscosity : 32 x 10^{-6}m²/s •Density : 0.87 x 10^{3}kg/m³



Models and Dimensions

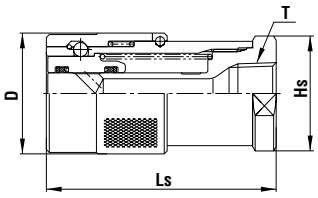
WAF : WAF stands for width across flats.

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	Two flats 24 x ø27	Rc 3/8
F35-4P	R 1/2	290	78	28.5	Two flats 27 x ø31.7	Rc 1/2
F35-6P	R 3/4	460	84.5	31	Two flats 36 x ø40	Rc 3/4
F35-8P	R 1	1000	108	39	Two flats 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	Two flats 30 x ø33	Rc 3/8
F35-4S	R 1/2	490	78	41	Two flats 36 x ø39	Rc 1/2
F35-6S	R 3/4	815	85	49	Two flats 46 x ø50	Rc 3/4
F35-8S	R 1	1520	104	63	Two flats 55 x ø62	Rc 1

Application example

Snow plow

For Hydraulics

450B Cupla

For hydraulic pressure up to 44.1MPa {450kgf/cm²}

Working pressure: 44.1 — 44.1MPa {450kgf/cm²}
Valve structure: Two-way shut-off
Applicable fluids: OIL — Hydraulic oil


Hydraulic unit

Metal-touch valve system with superior durability! Sleeve stopper mechanism gives carefree safety.

- Cupla for higher working pressure up to 44.1MPa {450kgf/cm²}.
- Mechanism to prevent involuntary 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.

Specifications

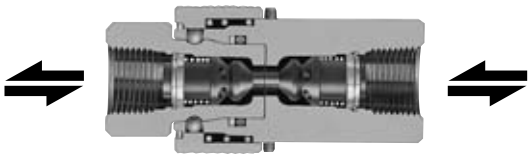
Body material	Special steel (Nickel-plated)			
Size	3/8" • 1/2"			
Working pressure MPa {kgf/cm²}	44.1 {450}			
Pressure resistance MPa {kgf/cm²}	68.6 {700}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C~+80°C	Standard material
	Fluoro rubber	FKM (X-100)	−20°C~+180°C	Available on request
Stand-alone leakage rate on either socket or plug	0.1mℓ/min at 0.3MPa {3kgf/cm²} * 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}

Flow Direction

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



Interchangeability

Different sizes are not connectable.

Min. Cross-Sectional Area (mm²)

Model	450B-3SP	450B-4SP
Min. Cross-Sectional Area	37	66

Suitability for Vacuum

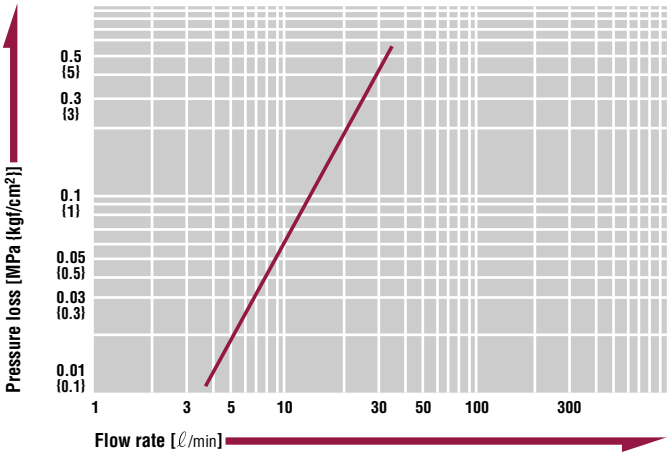
Can be used to for vacuum applications up to 1.3Pa {1x10⁻²mmHg} only when socket and plug are connected.

Admixture of Air on Connection (mℓ)

Model	450B-3SP	450B-4SP
Volume of air	1.43	3.44

Flow Rate – Pressure Loss Characteristics

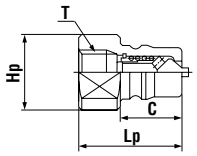
[Test conditions] •Fluid : Hydraulic oil •Temperature : 30°C ± 5°C
•Fluid viscosity : 32 x 10⁻⁶m²/s •Density : 0.87 x 10³kg/m³



Models and Dimensions

WAF : WAF stands for width across flats.

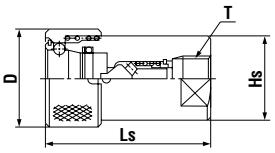
Plug Female thread



Model	Application	Mass (g)	Dimensions (mm)			
			Lp	C	Hp(WAF)	T
450B-3P	R 3/8	95	37.5	22.5	Two flats 24 x ø28	Rc 3/8
450B-4P*	R 1/2	–	50	35	Two flats 32 x ø35	Rc 1/2

* Made-to-order item

Socket Female thread



Model	Application	Mass (g)	Dimensions (mm)			
			Ls	øD	Hs(WAF)	T
450B-3S	R 3/8	285	59.5	36	Two flats 24 x ø30	Rc 3/8
450B-4S*	R 1/2	–	85	46	Two flats 36 x ø40	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 Hydraulics

700R Cupla

For hydraulic pressure up to 68.6MPa {700kgf/cm²}

Working pressure: 68.6 — 68.6MPa {700kgf/cm²}
Valve structure: Two-way shut-off
Applicable fluids: OIL — Hydraulic oil

High pressure Cupla for working pressures up to 68.6 MPa and pressure resistance of 98 MPa! Unique sleeve ring-lock system copes with vibration and impact when connected.

- Cupla for extremely high working pressures up to 68.6MPa {700kgf/cm²} and pressure resistance of 98MPa {1,000kgf/cm²}.
- 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.

Specifications

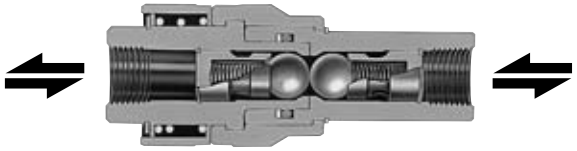
Body material	Special steel (Nickel-plated)			
Size	3/8" • 1/2"			
Working pressure MPa {kgf/cm²}	68.6 {700}			
Pressure resistance MPa {kgf/cm²}	98.0 {1000}			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-20°C~+80°C	Standard material
	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Available on request
Stand-alone leakage rate on either socket or plug	For 3/8", 0.05mℓ/min at 0.2MPa {2kgf/cm²} For 1/2", 0.05ℓ/min at 0.3MPa {3kgf/cm²} * 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}

Flow Direction

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



Interchangeability

Different sizes are not connectable.

Min. Cross-Sectional Area (mm²)

Model	700R-3SP	700R-4SP
Min. Cross-Sectional Area	34	55

Suitability for Vacuum

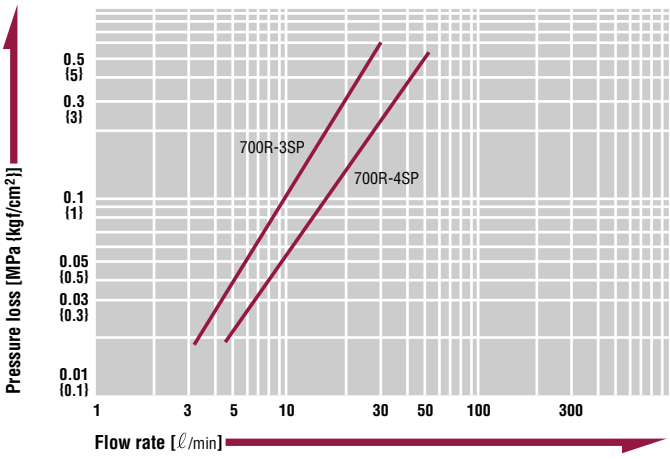
Can be used to for vacuum applications up to 1.3Pa {1x10⁻²mmHg} only when socket and plug are connected.

Admixture of Air on Connection (mℓ)

Model	700R-3SP	700R-4SP
Volume of air	1.0	2.2

Flow Rate – Pressure Loss Characteristics

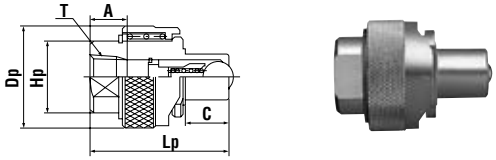
[Test conditions] •Fluid : Hydraulic oil •Temperature : 30°C ±5°C
•Fluid viscosity : 32 x 10^{-6}m²/s •Density : 0.87 x 10^{3}kg/m³



Models and Dimensions

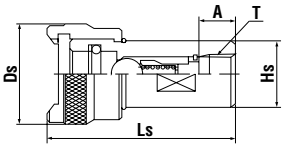
WAF : WAF stands for width across flats.

Plug Female thread



Model	Application	Mass (g)	Dimensions (mm)					
			Lp	C	øDp	Hp(WAF)	A	T
700R-3P	R 3/8	210	54	18	39.5	Two flats 24 x ø28	13	Rc 3/8
700R-4P	R 1/2	418	70	22	50	Two flats 27 x ø35	16	Rc 1/2

Socket Female thread



Model	Application	Mass (g)	Dimensions (mm)				
			Ls	øDs	Hs(WAF)	A	T
700R-3S	R 3/8	270	73	39.5	Two flats 22 x ø25	13	Rc 3/8
700R-4S	R 1/2	562	91	50	Two flats 27 x ø32	16	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 Cooling Water and Heat Transfer Oil

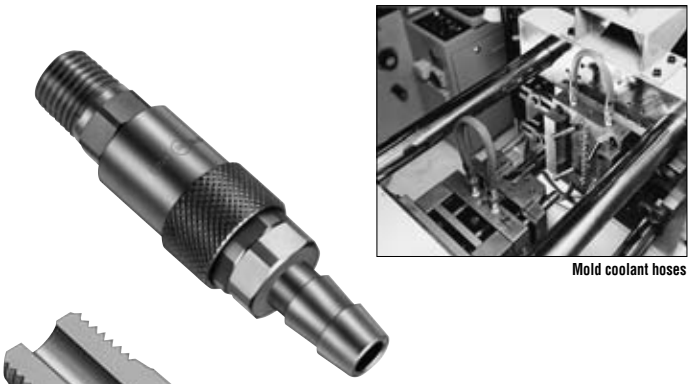
Mold Cupla

General purpose and mold coolant port coupling

Working pressure: 1.0 — 1.0MPa {10kgf/cm²}

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

Applicable fluids: 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.
- Enables quick mold coolant hose connection/disconnection.
- Newly introduced are K3 & K4 series with almost double flow rate compared with our standard K01 & K2 series contributing to productivity.
- Various sizes and configurations to suit a wide variety of mold applications.

Specifications

Body material	Brass			
Size	1/8" • 1/4" • 3/8" • 1/2"			
Working pressure MPa {kgf/cm²}	1.0 {10}			
Pressure resistance MPa {kgf/cm²}	1.5 {15}			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20℃~+80℃	Standard material
	Fluoro rubber	FKM (X-100)	−20℃~+180℃	Available on request

Max. Tightening Torque N•m {kgf•cm}

Size	1/8"	1/4"	3/8"	1/2"
Torque	5 {51}	9 {92}	11 {112}	80 {816}

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.
Large flow K3 & K4 series can neither be connected with other mold Cuplas series, nor with K3 series and K4 series each other.

Min. Cross-Sectional Area (mm²)

K01SP, K02SP, K03SP type

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

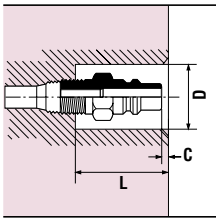
K3SP, K4SP type

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.

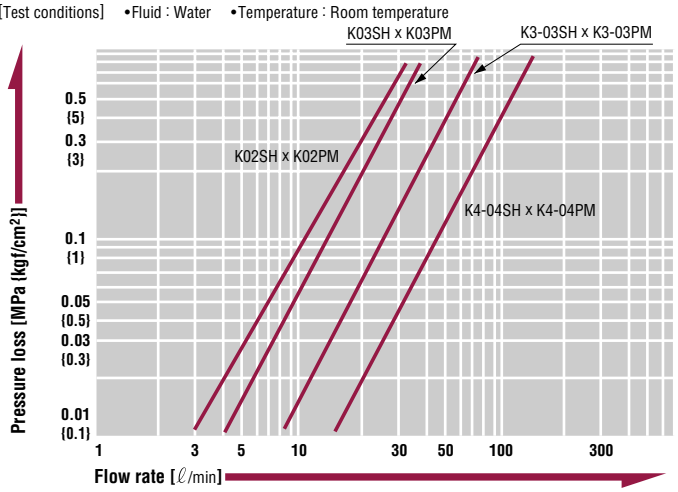
Plug Embedment Dimensions (mm)



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	
K3-02PM	24 or more	0~3	31	
K3-03PM	24 or more	0~3	31	
K4-04PM	32 or more	0~3	39	

Flow Rate – Pressure Loss Characteristics

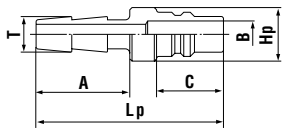
[Test conditions] •Fluid : Water •Temperature : Room temperature



Models and Dimensions

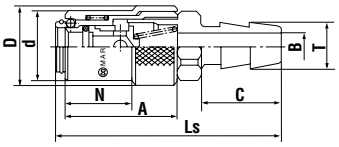
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



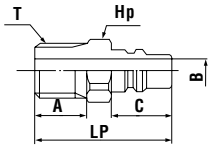
Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			Lp	A	C	øHp	øT	øB
K02PH	1/4"	17	42	21	15	12	8	6
K03PH	3/8"	19	42	21	15	15	12	6

Socket SH type (Hose barb)



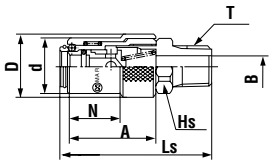
Model	Application (Hose)	Mass (g)	Dimensions (mm)							
			Ls	øD	ød	N	A	C	øT	øB
K02SH	1/4"	52	67	21	18.5	16.8	29	29	8	5
K03SH	3/8"	60	59	21	18.5	16.8	29	21	12	7

Plug PM type (Male thread)



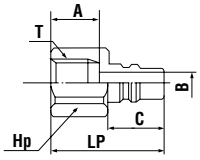
Model	Application	Mass (g)	Dimensions (mm)					
			Lp	Hp(WAF)	C	A	T	øB
K01PM	Rc 1/8	14	31	Hex.12	15	10	R 1/8	5.5
K02PM	Rc 1/4	20	34	Hex.14	15	13	R 1/4	6
K03PM	Rc 3/8	35	35	Hex.17	15	14	R 3/8	6

Socket SM type (Male thread)



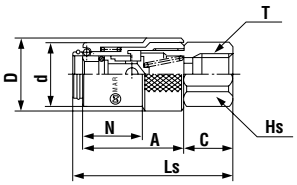
Model	Application	Mass (g)	Dimensions (mm)							
			Ls	øD	ød	N	A	Hs(WAF)	T	øB
K02SM	Rc 1/4	70	51	21	18.5	16.8	29	Hex.17	R 1/4	6
K03SM	Rc 3/8	82	52	21	18.5	16.8	29	Hex.19	R 3/8	6

Plug PF type (Female thread)



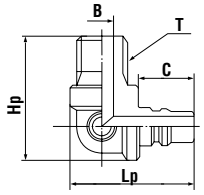
Model	Application	Mass (g)	Dimensions (mm)					
			Lp	Hp(WAF)	C	A	T	øB
K01PF	R 1/8	16	28	Hex.14	15	10	Rc 1/8	6
K02PF	R 1/4	22	30.5	Hex.17	15	13	Rc 1/4	6
K03PF	R 3/8	35	32	Hex.21	15	14	Rc 3/8	6

Socket SF type (Female thread)



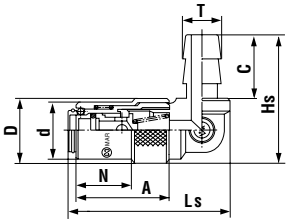
Model	Application	Mass (g)	Dimensions (mm)							
			Ls	øD	ød	N	A	C	T	Hs(WAF)
K02SF	R 1/4	57	46.5	21	18.5	16.8	29	14.5	Rc 1/4	Hex.17

Plug PML type (Male thread)



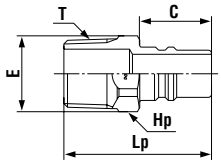
Model	Application	Mass (g)	Dimensions (mm)				
			Lp	C	Hp	T	øB
K01PML	Rc 1/8	43	33.5	15	30.5	R 1/8	5
K02PML	Rc 1/4	53	33.5	15	33.5	R 1/4	6
K03PML	Rc 3/8	71	33.5	15	33.5	R 3/8	6

Socket SHL type (Hose barb)



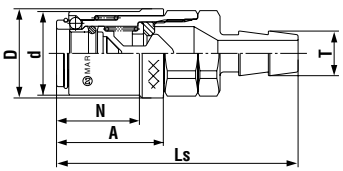
Model	Application (Hose)	Mass (g)	Dimensions (mm)							
			Ls	øD	ød	N	A	C	øT	Hs
K02SHL	1/4"	79	52	21	18.5	16.8	29	21	8	42.5
K03SHL	3/8"	87	52	21	18.5	16.8	29	21	12	42.5

Plug PM type (Male thread / Large Flow Type)



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

Socket SH type (Hose barb / Large Flow Type)



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

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 Cooling Water

Flow Meter

Flow meter with special valve for mold cooling line

Working pressure

0.5MPa {5kgf/cm²}

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.

Specifications

Body material	Body: Brass Graduated tube: Polycarbonate			
Size	Both ends Rc3/8 female thread			
Working pressure MPa {kgf/cm²}	0.5 {5}			
Pressure resistance MPa {kgf/cm²}	0.8 {8}			
Max.flow rate ℓ/min	18ℓ/min (0 to 18ℓ/min adjustable)			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	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}

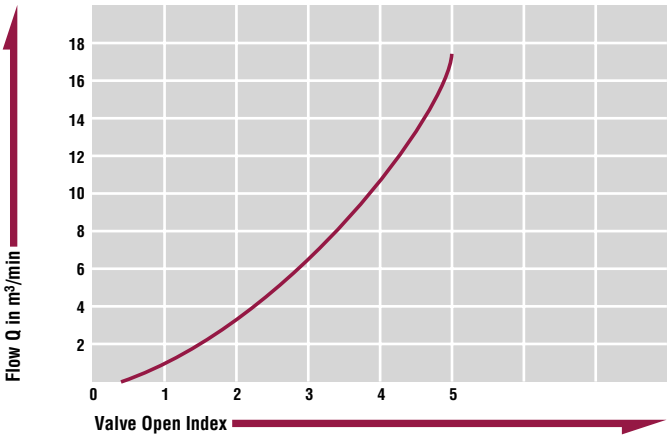
Size	3/8"
Torque	12 {122}

Flow Direction

Fluid must flow in the direction of the arrows.

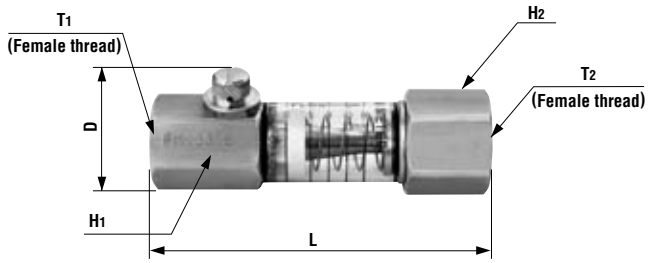
Pressure - Flow Characteristics

[Test conditions] •Fluid : Air •Temperature : Room temperature •Inlet pressure : 0.3MPa {3kgf/cm²}



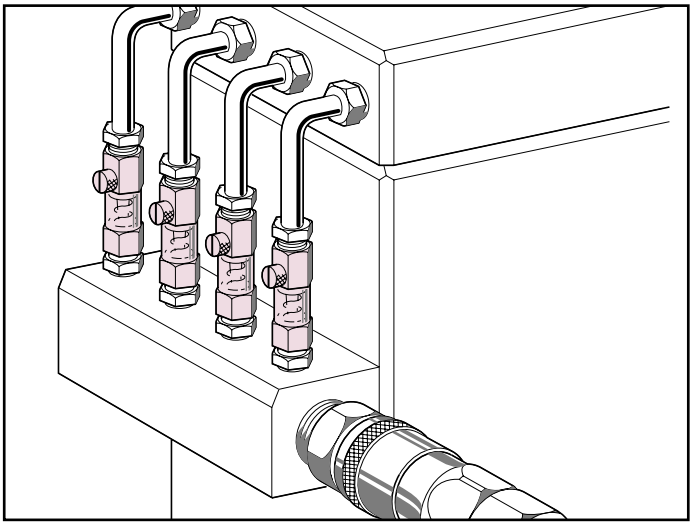
Models and Dimensions

WAF : WAF stands for width across flats.



Model	Mass (g)	Dimensions (mm)					
		L	D	H1(WAF)	H2(WAF)	T1	T2
FM-03A	158	80	33	Hex.23	Hex.23	Rc 3/8	Rc 3/8
FM-03B	190	89	33	Hex.23	Hex.26	Rc 3/8	Rc 3/8

Application example



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

For Paint

Paint Cupla

Piping for painting equipment

Working pressure: 1.0 MPa {10 kgf/cm²}
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 sytem 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.

Specifications

Body material	Socket: Aluminum Plug: Stainless Steel			
Size	3/8"			
Working pressure MPa {kgf/cm²}	1.0 {10}			
Pressure resistance MPa {kgf/cm²}	1.5 {15}			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Fluoro-resin	PFA	0°C~+50°C	Standard material

Tightening Torque Range N•m {kgf•cm}

Torque	15 {153}

Flow Direction

Fluid must run from socket to plug.

Interchangeability

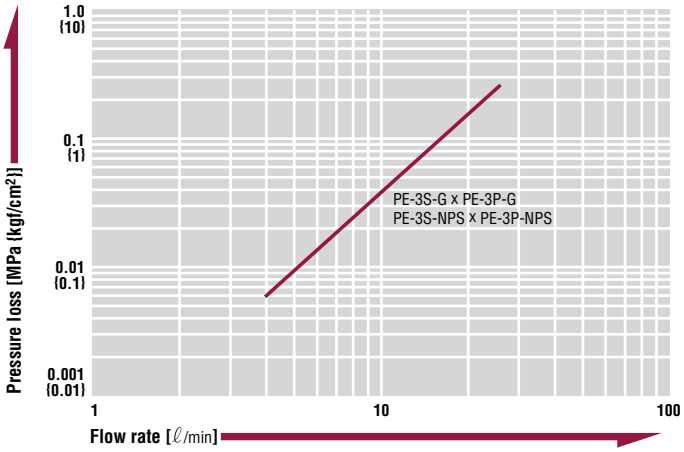
Only the same size of paint Cuplas can be connected each other.

Suitability for Vacuum

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

Flow Rate – Pressure Loss Characteristics

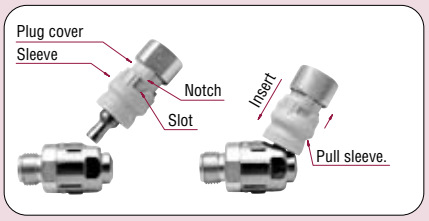
[Test conditions] •Fluid viscosity : 8 x 16⁻⁷m²/s (Equivalent to water) •Temperature : 30°C ±5°C



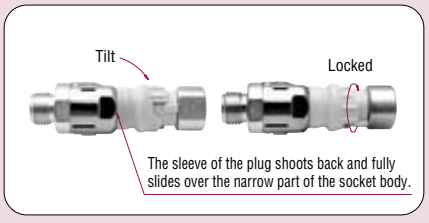
Connection & Disconnection

Connection

Align the notch 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.



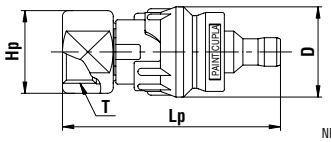
Disconnection

Disconnect in the reverse order of connection.

Models and Dimensions

WAF : WAF stands for width across flats.

Plug PE-3P type (Female thread)

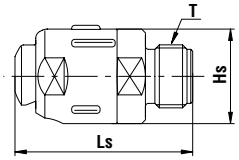


NPS end configuration has an identification groove on the Cupla.

Model	Application	Mass (g)	Dimensions (mm) Lp	øD	Hp(WAF)	T
PE-3P-G	G 3/8	31	58	24	Two flats 19 x ø22	G 3/8
PE-3P-NPS	3/8 NPS	31	58	24	Two flats 19 x ø22	3/8 NPS

Socket PE-3S type (Male thread)

NPS end configuration has an identification groove on the Cupla.



Model	Application	Mass (g)	Dimensions (mm) Ls	Hs(WAF)	T
PE-3S-G	G 3/8	48	47	Two flats 23 x ø25	G 3/8
PE-3S-NPS	3/8 NPS	48	47	Two flats 23 x ø25	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 High Purity Chemicals

Semicon Cupla

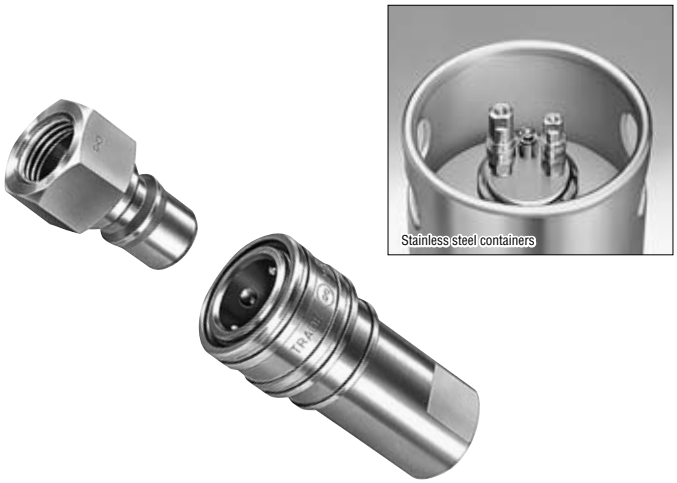
SP Type

For semiconductor manufacturing production installation

Working pressure: 0.2 MPa {2 kgf/cm²}

Valve structure: Two-way shut-off

Applicable fluids: High purity chemicals, Water, Gas, Air



Specifications

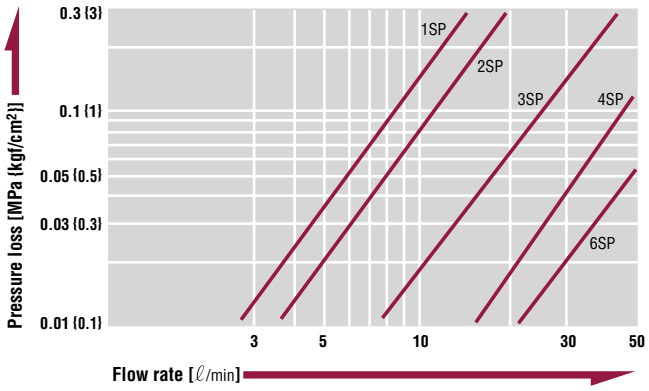
Body material	Electropolished stainless steel (SUS304, 316)			
Size	1/8" • 1/4" • 3/8" • 1/2" • 3/4" • 1"			
Working pressure MPa {kgf/cm²}	0.2 {2}			
Pressure resistance MPa {kgf/cm²}	0.3 {3}			
Seal material Working temperature range	**Seal material**	**Mark**	**Working temperature range**	**Remarks**
	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 (mm²)

Model	1SP	2SP	3SP	4SP	6SP	8SP
Min. Cross-Sectional Area	13	17	48	64	83	192

Flow Rate – Pressure Loss Characteristics

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



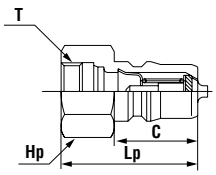
General purpose type with stainless steel body and rubber seal. Electro-polished body for enhanced corrosion resistance.

- 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.

Models and Dimensions

WAF : WAF stands for width across flats.

Plug Female thread

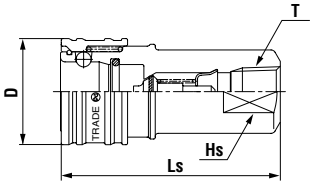


Model	Container capacity	Mass (g)	Dimensions (mm)			
			Lp	C	Hp(WAF)	T(Female thread)
1P-304	for 10ℓ~20ℓ	19	29	19	*Hex.14	Rc 1/8
1P-304-UNS	for 10ℓ~20ℓ	34	33	19	Hex.21	19/32-18UNS
1P-304-NPT	for 10ℓ~20ℓ	19	29	19	*Hex.14	NPT 1/8
2P-304	for 10ℓ~20ℓ	35	36	22	*Hex.17	Rc 1/4
2P-304-UNS	for 10ℓ~20ℓ	41	36	22	Hex.21	19/32-18UNS
2P-304-NPT	for 10ℓ~20ℓ	35	36	22	*Hex.17	NPT 1/4
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.)

Socket Female thread



Model	Container capacity	Mass (g)	Dimensions (mm)			
			Ls	øD	Hs(WAF)	T(Female thread)
1S-304	for 10ℓ~20ℓ	82	48	24	Two flats 14	Rc 1/8
1S-304-NPT	for 10ℓ~20ℓ	84	48	24	Two flats 14	NPT 1/8
2S-304	for 10ℓ~20ℓ	138	58	28	Two flats 19	Rc 1/4
2S-304-NPT	for 10ℓ~20ℓ	138	58	28	Two flats 19	NPT 1/4
3S-304	for 100ℓ~200ℓ	204	65	35	Two flats 21	Rc 3/8
4S-304	for 100ℓ~200ℓ	424	72	45	Two flats 29	Rc 1/2
6S-304	for 100ℓ~200ℓ	708	88	55	Two flats 35	Rc 3/4
8S-304	for 100ℓ~200ℓ	1081	102	65	Two flats 41	Rc 1

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

For High Purity Chemicals

Semicon Cupla

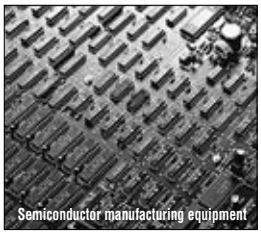
SCS Type

For semiconductor manufacturing equipment

Working pressure: 0.2 MPa {2 kgf/cm²}

Valve structure: Two-way shut-off

Applicable fluids: High purity chemicals, Water, Gas, Air



Adopted stainless steel body and fluorine contained resin valves.

- The body and spring material of stainless steel (SUS304), and valve of fluorine contained resin ensure excellent performance with various chemicals.
- Body (SUS304) is electropolished for enhanced corrosion resistance.
- 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/cm²}	0.2 {2}			
Pressure resistance MPa {kgf/cm²}	0.3 {3}			
Seal material (Socket o-ring) Working temperature range	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
	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")			

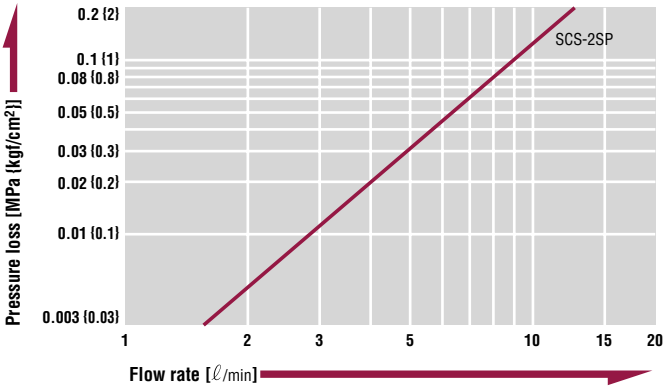
*Available on request.

Min. Cross-Sectional Area (mm²)

Model	SCS-1SP	SCS-2SP	SCS-3P	SCS-4P	SCS-6P	SCS-8P
Min. Cross-Sectional Area	15	23	28	71	110	162

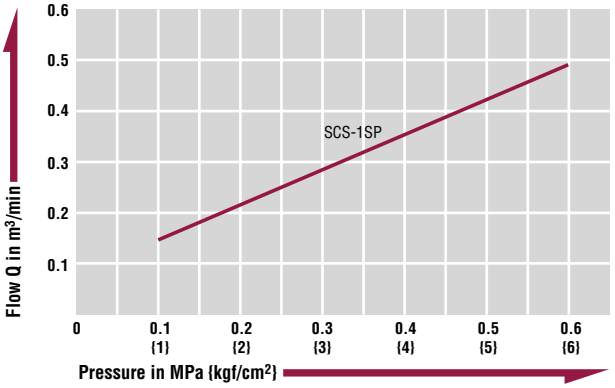
Flow Rate – Pressure Loss Characteristics

[Test conditions] •Fluid : water •Temperature : 10°C ±5°C



Pressure - Flow Characteristics

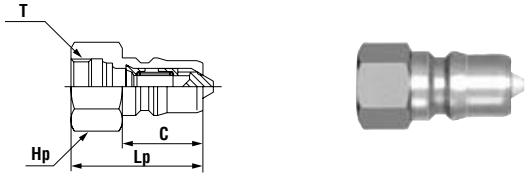
[Test conditions] •Fluid : Air •Temperature : 20°C ± 5°C



Models and Dimensions

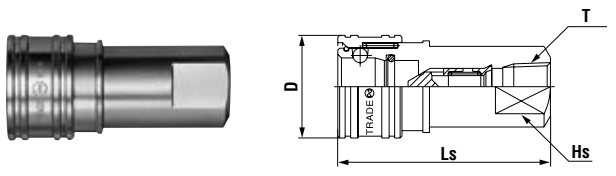
WAF : WAF stands for width across flats.

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-UNS	For 10ℓ~20ℓ	34	33	19	Hex.21	19/32-18UNS
SCS-1P-NPT	For 10ℓ~20ℓ	17	29	19	Hex.14	NPT 1/8
SCS-2P	For 10ℓ~20ℓ	32	34	22	Hex.17	Rc 1/4
SCS-2P-UNS	For 10ℓ~20ℓ	41	36	22	Hex.21	19/32-18UNS
SCS-2P-NPT	For 10ℓ~20ℓ	29	34	22	Hex.17	NPT 1/4
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	Two flats 14	NPT 1/8
SCS-2S-NPT	For 10ℓ~20ℓ	138	58	28	Two flats 19	NPT 1/4

Interchangeability check list (SCS Type • SCY Type)

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

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

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

For High Purity Chemicals

Semicon Cupla

SCY Type

For semiconductor manufacturing equipment

Working pressure

0.2 MPa {2 kgf/cm²}

Valve structure

Two-way shut-off

Applicable fluids

High purity chemicals | Water | Gas | Air

Specifications

Body material	Electropolished stainless steel (SUS304)			
Size	1/8" • 1/4" • 3/8" • 1/2" • 3/4" • 1"			
Working pressure MPa {kgf/cm²}	0.2 {2}			
Pressure resistance MPa {kgf/cm²}	0.3 {3}			
Seal material (Socket packing) Working temperature range	**Seal material**	**Mark**	**Working temperature range**	**Remarks**
	Perfluoroelastomer	P	0°C~+50°C	Standard material
Valve	Fluorine contained resin			

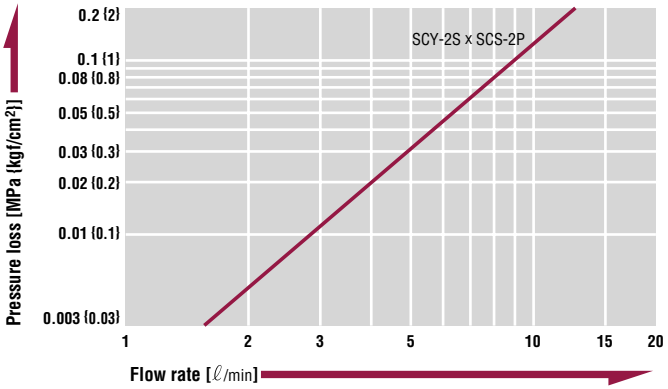
*If you need other seal material than Perfluoroelastomer, please consult with us.

Min. Cross-Sectional Area (mm²)

Model	SCY-1S	SCY-2S	SCY-3S	SCY-4S	SCY-6S	SCY-8S
Min. Cross-Sectional Area	15	23	28	71	110	162

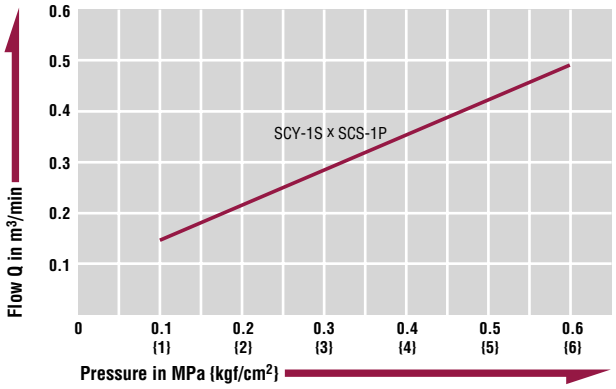
Flow Rate – Pressure Loss Characteristics

[Test conditions] •Fluid : water •Temperature : 10°C ±5°C



Pressure - Flow Characteristics

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



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.

Interchangeability check list (SCS Type • SCY Type)

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

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

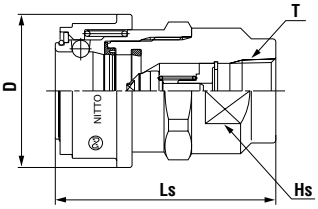
Interchangeability

Can be connected with plugs of SCS Type of the same size.

Models and Dimensions

WAF : WAF stands for width across flats.

Socket Female thread



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

SCF Type

For semiconductor manufacturing equipment

Working pressure: 0.2 MPa {2 kgf/cm²}

Valve structure: Two-way shut-off

Applicable fluids: 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

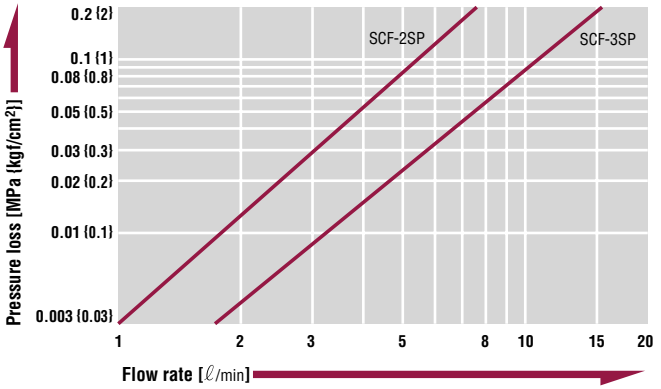
Body material	Fluorine contained resin (PFA)			
Size	1/4" • 3/8"			
Working pressure MPa {kgf/cm²}	0.2 {2}			
Pressure resistance MPa {kgf/cm²}	0.3 {3}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	FEP-coated fluoro-rubber	–	+5°C~+50°C	Standard material
Valve	Fluorine contained resin (+5°C~+50°C)			

Min. Cross-Sectional Area (mm²)

Model	SCF-2SP	SCF-3SP
Min. Cross-Sectional Area	23.8	44.2

Flow Rate – Pressure Loss Characteristics

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

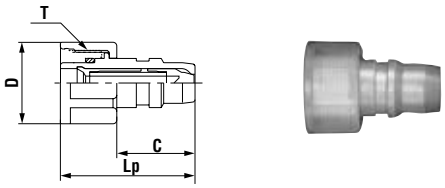


Please see page 134 for details how to cut and mount a tube on to the socket.

Models and Dimensions

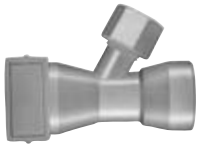
WAF : WAF stands for width across flats.

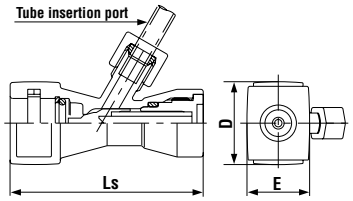
Plug Female thread



Model	Container capacity	Mass (g)	Dimensions (mm)			
			Lp	D(WAF)	C	T(Female thread)
SCF-2P-M26	For 10ℓ~20ℓ	33	54.2	Hex.30 x ø32.5	31.2	M26 x 1.5
SCF-3P-M32	For 10ℓ~20ℓ	50	57.9	Hex.36 x ø39	35.2	M32 x 1.5

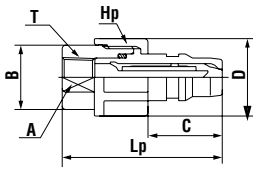
Socket For tube connection





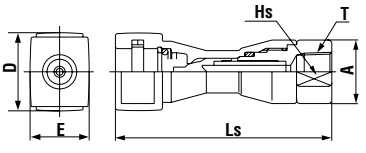
Model	Container capacity	Mass (g)	Dimensions (mm)			
			Ls	D	E	Applicable tube
SCF-2SL-N08	For 10ℓ~20ℓ	76	77	45	34	ø6 x ø8
SCF-3SL-N10	For 10ℓ~20ℓ	116	85	51	39	ø8 x ø10

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	Two flats 24	27	Rc 3/8
SCF-3P-4	79	71.2	35.2	39	Hex.36	Two flats 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	Two flats 24	45	34	Rc 3/8
SCF-3S-4	124	102.5	33	Two flats 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 High Purity Chemicals

Semicon Cupla

SCT Type

For semiconductor production installation using fluororesin pipe lines

Working pressure: 0.2 MPa {2 kgf/cm²}

Valve structure: Two-way shut-off

Applicable fluids: High purity chemicals, Water, Gas, Air

Specifications

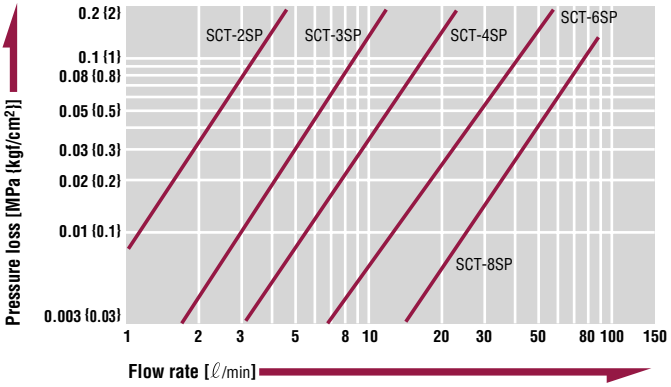
Body material	Polytetrafluoroethylene (PTFE)			
Size	1/4" • 3/8" • 1/2" • 3/4" • 1"			
Working pressure MPa {kgf/cm²}	0.2 {2}			
Pressure resistance MPa {kgf/cm²}	0.3 {3}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	FEP-coated Fluoro-rubber	—	+5°C~+50°C	Standard material
Valve	Fluorine contained resin (+5°C~+50°C)			

Min. Cross-Sectional Area (mm²)

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



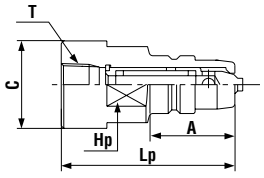
Adopted is polytetrafluoroethylene (PTFE) for the body.

- 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.

Models and Dimensions

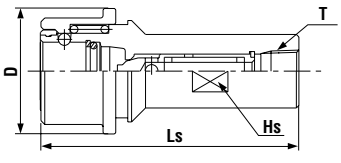
WAF : WAF stands for width across flats.

Plug Female thread



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

Socket Female thread



Model	Mass (g)	Dimensions (mm)			
		Ls	øD	Hp(WAF)	T(Female thread)
SCT-2S	101	89.5	41	Two flats 19	Rc 1/4
SCT-3S	156	102	49.5	Two flats 24	Rc 3/8
SCT-4S	192	107	54.5	Two flats 30	Rc 1/2
SCT-6S	340	123	68	Two flats 36	Rc 3/4
SCT-8S	770	172.5	82	Two flats 46	Rc 1

* 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.

For Dialysis Fluid

Dialyzer Cupla

Plastic / Stainless Steel

For dialyzer fluid piping

Working pressure

0.06 MPa {0.6 kgf/cm²}

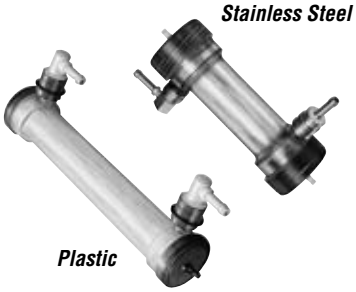
1.5 MPa {15 kgf/cm²}

Valve structure

Straight through

Applicable fluids

Dialysate | Water | Air



Connect directly to dialysis fluid supply and discharge ports! For quick dialyzer unit replacement.

- Available with excellent corrosion-resistant stainless steel or light-weight plastic body.
- Simple, labor-saving connection/disconnection.

Specifications

Body material	Stainless Steel (SUS304)		Denatured polyphenylene ether	
Size	3/8"		ø6 X ø12 • ø8 X ø13.5	
Working pressure MPa {kgf/cm²}	1.5 {15}		0.06 {0.6}	
Pressure resistance MPa {kgf/cm²}	2.2 {22}		0.08 {0.8}	
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks*
	Silicon rubber	SI	-40°C~+150°C	Standard material
	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Standard material

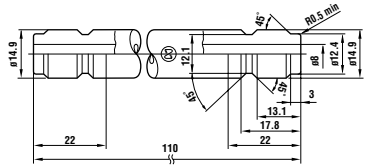
*Available are the combination of stainless steel body with fluoro rubber or denatured polyphenylene ether body with silicon rubber.

Models and Dimensions

WAF : WAF stands for width across flats.

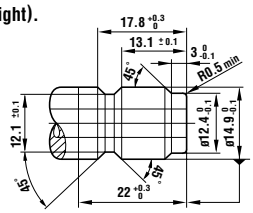
Plug M-3TPP type (For connection to socket)

- Application: Intermediate plug
- Mass: 136g



Dimensions (mm)

- Plug on dialyzer (plugs with dimensions below can be connected to sockets shown on right).



Dimensions (mm)

Interchangeability

Socket and plug can be connected regardless of their end configurations.

Min. Cross-Sectional Area (mm²)

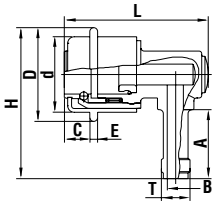
Model	M-3TS
Min. Cross-Sectional Area	33 (Plastic), 28 (Stainless steel)

Models and Dimensions

WAF : WAF stands for width across flats.

Socket SL-C type (Plastic, for hose connection)

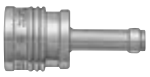
Sales unit of the following models are 2 pcs.per carton consisted of 1pc.with red sleeve and 1pc. with blue sleeve.

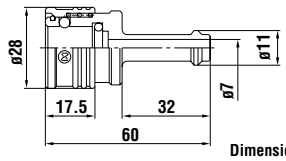


Model	Application (Hose)	Mass (g)	Dimensions (mm)								
			L	øD	ød	C	E	A	øT	øB	H
M-3TSL-C6B/R	ø6 X ø12	23.2	55.3	36	29	9.8	3	26.5	9.5	6.5	58
M-3TSL-C8B/R	ø8 X ø13.5	23.7	55.3	36	29	9.8	3	26.5	11	6.5	58

Socket Model M-3TSH (Stainless steel, for hose connection)

- Application: For 3/8" hose
- Mass: 90g

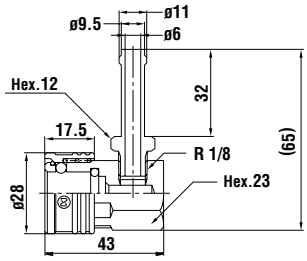




Dimensions (mm)

Socket Model M-3TSL-A (Stainless steel, for hose connection)

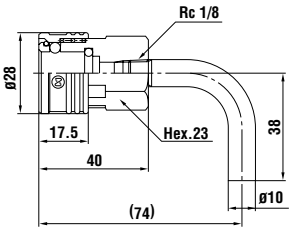
- Application: For 3/8" hose
- Mass: 130g



Dimensions (mm)

Socket Model M-3TSL-B (Stainless steel, for hose connection)

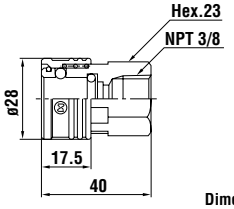
- Application: For 3/8" hose
- Mass: 120g



Dimensions (mm)

Socket Model M-3TSF (Stainless steel, female thread)

- Application: NPT 3/8
- Mass: 120g



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.

Multi Cupla Series

Multi Cupla

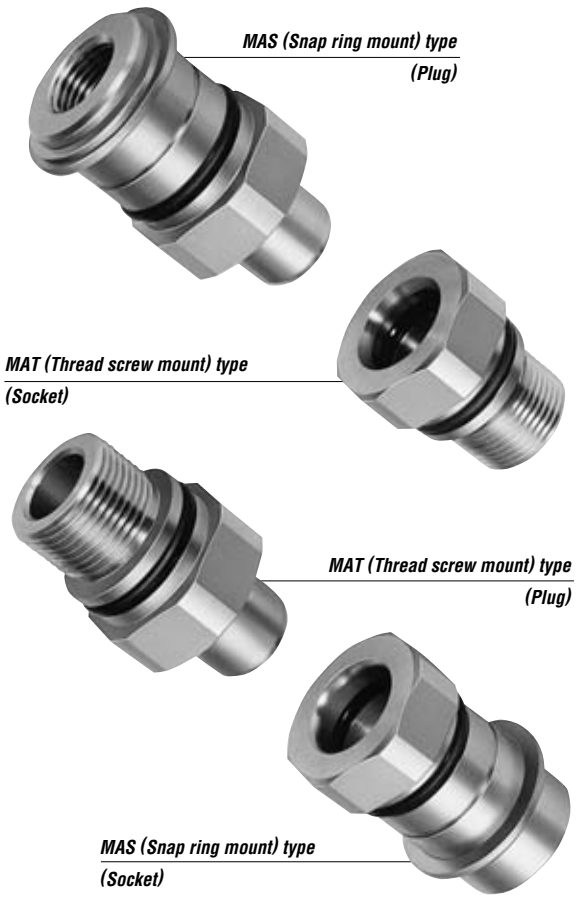
MAS Type / MAT Type

7.0MPa {71kgf/cm²} general purpose type

Working pressure: 7.0 MPa {71 kgf/cm²}

Valve structure: Two-way shut-off

Applicable fluids: Air, Water, Hydraulic oil



** The types are classified by the method of mounting on the base plate.*

Specifications

Body material	Stainless steel (with Autocatalytic Nickel-Phosphorus coating)			
Size	1/4" • 3/8" • 1/2" • 3/4" • 1"			
Working pressure MPa {kgf/cm²}	7.0 {71}			
Pressure resistance MPa {kgf/cm²}	10.0 {102}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Fluoro rubber	FKM (X-100)	−20°C~+180°C	Standard material

Interchangeability

MAS & MAT or MAS & MAS types of the same size are to be connected.
Connection between the same MAT types virtually not possible due to no allowance for the eccentricity.

Min. Cross-Sectional Area (mm²)

Model	1/4"	3/8"	1/2"	3/4"	1"
Min. Cross-Sectional Area	23	49	75	145	220

Suitability for Vacuum 1.3 x 10⁻¹Pa {1 x 10⁻³mmHg}

Socket only	Plug only	When connected
—	—	Operational

Admixture of air on connection (mℓ)

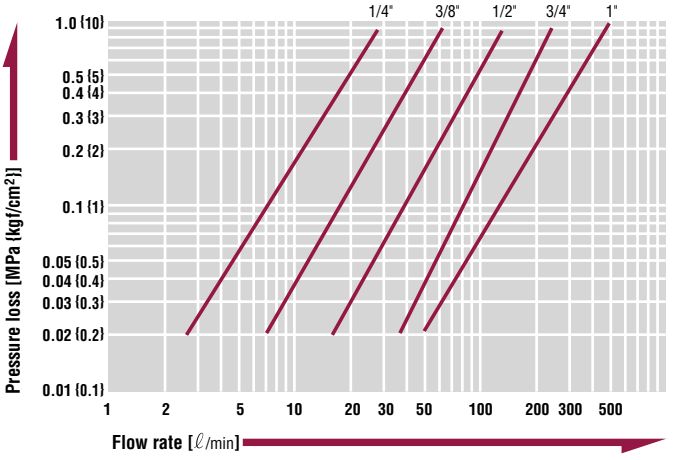
Size	1/4"	3/8"	1/2"	3/4"	1"
Volume of spillage	1.1	2.4	3.2	10.5	17.0

Appropriate load to maintain the connection when the line is pressurized (Internal pressure 10.0MPa {102kgf/cm²})

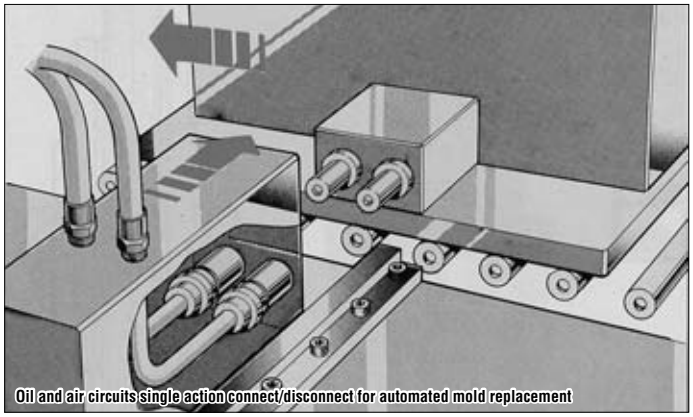
Size	1/4"	3/8"	1/2"	3/4"	1"
Maximum acceptable Load kN {kgf}	1.9 {193}	3.1 {319}	5.5 {561}	8.6 {875}	12.3 {1258}
Min. required load N at pressure P (MPa) {kgf at pressure p (kgf/cm²)}	Px185+45 {px1.85+4.5}	Px310+70 {px3.1+7}	Px545+75 {px5.45+7.5}	Px850+95 {px8.5+9.5}	Px1225+120 {px12.25+12}

Flow Rate – Pressure Loss Characteristics

[Test conditions] •Fluid : Hydraulic oil •Temperature : 30°C ±5°C
•Fluid viscosity : 32 x 10⁻⁶m²/s •Density : 0.87 x 10³kg/m³



Application example


Oil and air circuits single action connect/disconnect for automated mold replacement

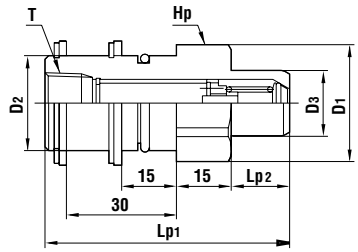
Connects multiple lines simultaneously with a single operation for different fluids and sizes.

- 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 of socket and plug, or allow a plate hole position tolerance of ±0.3mm because of the O-ring around the body.

Models and Dimensions

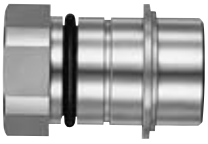
WAF : WAF stands for width across flats.

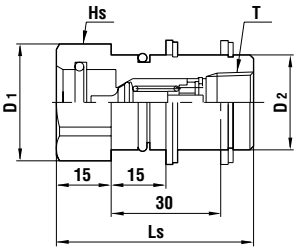
Plug MAS type (Snap ring mount type)



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

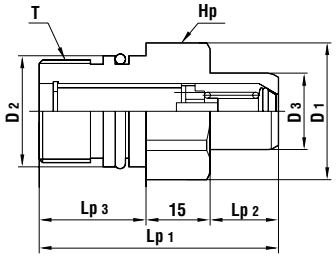
Socket MAS type (Snap ring mount type)

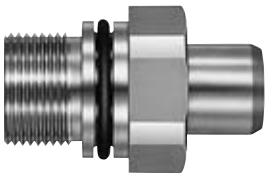




Model	Application	Mass (g)	Dimensions (mm)				
			Ls	øD1	øD2	Hs(WAF)	T
MAS-2S	R 1/4	126	51.5	28	21.9	Hex.26	Rc 1/4
MAS-3S	R 3/8	171	55	35	25.9	Hex.32	Rc 3/8
MAS-4S	R 1/2	406	65	44	35.9	Hex.41	Rc 1/2
MAS-6S	R 3/4	604	76	50	41.9	Hex.46	Rc 3/4
MAS-8S	R 1	825	87	58	47.9	Hex.54	Rc 1

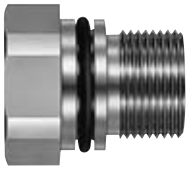
Plug MAT type (Thread screw mount type)

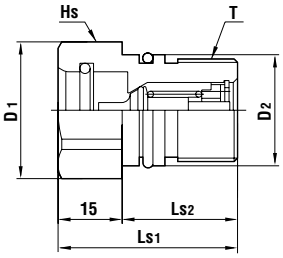




Model	Application	Mass (g)	Dimensions (mm)							
			Lp1	Lp2	Lp3	øD1	øD2	øD3	Hp(WAF)	T
MAT-2P	M20x1.5	121	53	14	24	28	21.9	14	Hex.26	M20x1.5
MAT-3P	M24x1.5	164	56	16	25	32	25.9	18	Hex.29	M24x1.5
MAT-4P	M30x2	332	67	20	32	44	35.9	24	Hex.41	M30x2
MAT-6P	M39x2	453	73	23.5	34.5	50	41.9	30	Hex.46	M39x2
MAT-8P	M45x2	571	76	24	37	54	47.9	36	Hex.50	M45x2

Socket MAT type (Thread screw mount type)

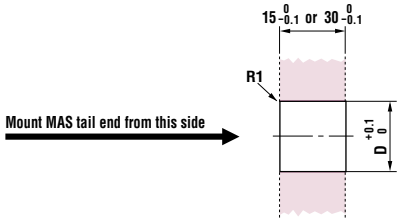




Model	Application	Mass (g)	Dimensions (mm)					
			Ls1	Ls2	øD1	øD2	Hs(WAF)	T
MAT-2S	M20x1.5	95	39	24	28	21.9	Hex.26	M20x1.5
MAT-3S	M24x1.5	124	42	27	32	25.9	Hex.29	M24x1.5
MAT-4S	M30x2	246	48	33	44	35.9	Hex.41	M30x2
MAT-6S	M39x2	382	58	43	50	41.9	Hex.46	M39x2
MAT-8S	M45x2	506	66	51	54	47.9	Hex.50	M45x2

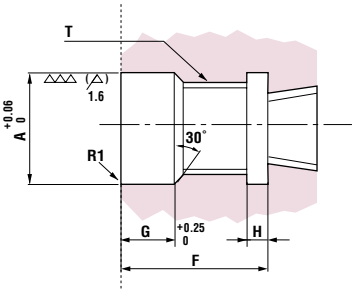
• MAT type muse be used in combination with MAS type.

Tail end configuration



● MAS type

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		H	T
			Pulg	Socket		
1/4"	22	10.5	25		4	M20x1.5
3/8"	26	10.5	26	28	4	M24x1.5
1/2"	36	12.5	33	34	5	M30x2.0
3/4"	42	13.5	35.5	44	5	M39x2.0
1"	48	13.5	38	52	5	M45x2.0

Multi Cupla Series

Multi Cupla

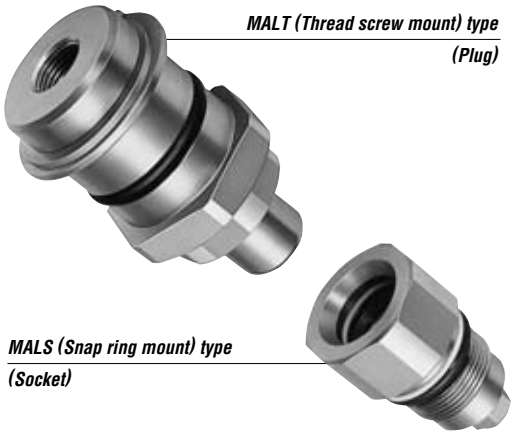
MALS Type / MALT Type

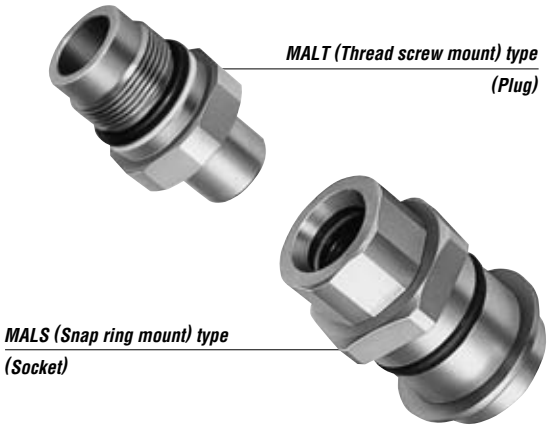
14MPa {142kgf/cm²} airless type

Working pressure: 14.0 — 14.0 MPa {142 kgf/cm²}

Valve structure: Two-way shut-off

Applicable fluids: Air, Hydraulic oil





** The types are classified by the method of mounting on the base plate.*

Connects multiple lines simultaneously with a single operation for different fluids and sizes. A special design minimizes air admixture in fluid lines upon connection.

- Special valve structure allows minimal air admixture in fluid lines during Cupla connection.
- Liquid seep out on Cuplas disconnection is very little, which makes it best for frequent connection/disconnection applications.
- Snap-ring and screw thread-in types to mount on the base plate are standardized.
- 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 (with Autocatalytic Nickel-Phosphorus coating)			
Size	1/4" • 3/8" • 1/2" • 3/4"			
Working pressure MPa {kgf/cm²}	14.0 {142}			
Pressure resistance MPa {kgf/cm²}	20.6 {210}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Fluoro rubber	FKM (X-100)	-20°C~+180°C	Standard material

Interchangeability

MALS & MALT or MALS & MALS types of the same size are to be connected.
Connection between the same MALT types virtually not possible due to no allowance for the eccentricity.

Min. Cross-Sectional Area (mm²)

Model	1/4"	3/8"	1/2"	3/4"
Min. Cross-Sectional Area	19	39	77	108

Suitability for Vacuum 1.3 x 10⁻¹Pa {1 x 10⁻³mmHg}

Socket only	Plug only	When connected
—	—	Operational

Admixture of air on connection (mℓ)

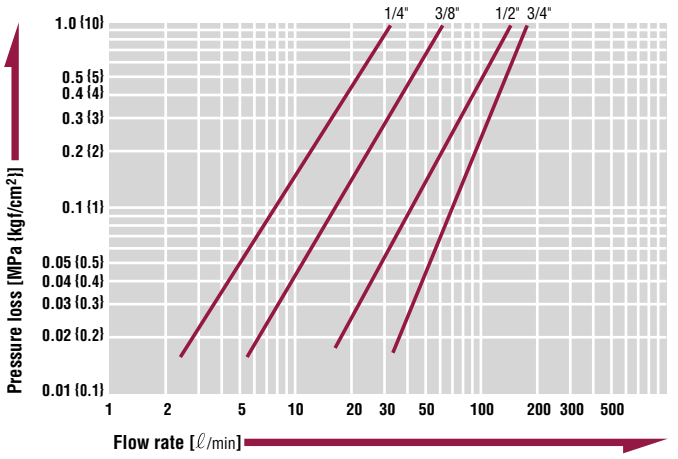
Size	1/4"	3/8"	1/2"	3/4"
Volume of spillage	0.1	0.2	0.4	0.5

Appropriate load to maintain the connection when the line is pressurized (Internal pressure 20.6MPa {210kgf/cm²})

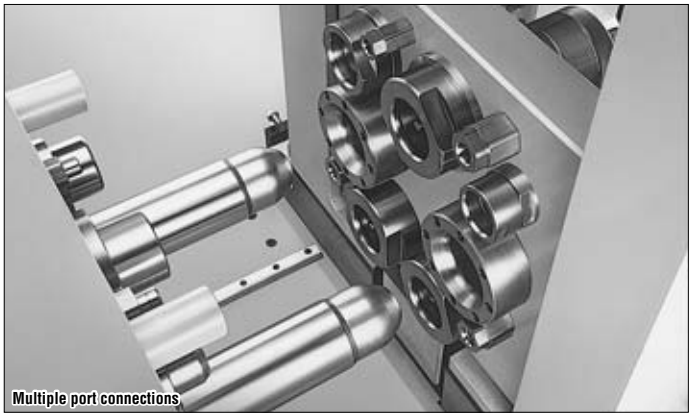
Size	1/4"	3/8"	1/2"	3/4"
Maximum acceptable Load kN {kgf}	7.1 {727}	11.0 {1117}	16.5 {1681}	22.7 {2311}
Min. required load N at pressure P (MPa) {kgf at pressure p (kgf/cm²)}	Px340+120 {px3.4+12}	Px530+140 {px5.3+14}	Px795+160 {px7.95+16}	Px1090+215 {px10.9+21.5}

Flow Rate – Pressure Loss Characteristics

[Test conditions] •Fluid : Hydraulic oil •Temperature : 30°C ± 5°C
•Fluid viscosity : 32 x 10⁻⁶m²/s •Density : 0.87 x 10³kg/m³



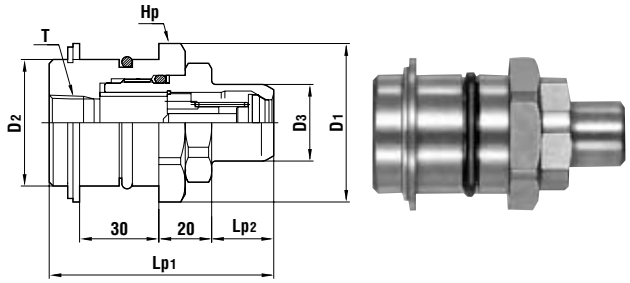
Application example


Multiple port connections

Models and Dimensions

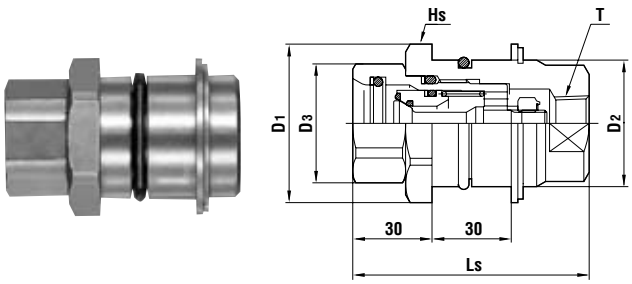
WAF : WAF stands for width across flats.

Plug MALS type (Snap ring mount type)



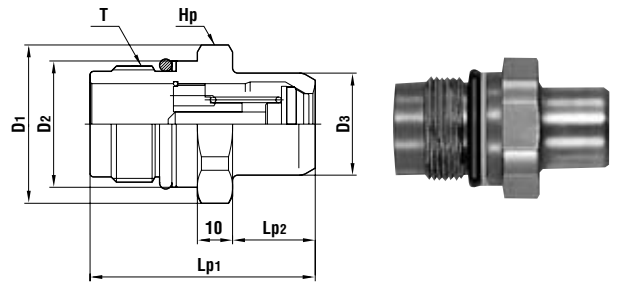
Model	Application	Mass (g)	Dimensions (mm)						
			Lp1	Lp2	øD1	øD2	øD3	Hp(WAF)	T
MALS-2HP	R 1/4	236	75	17.5	40	31.9	19	Hex.36	Rc 1/4
MALS-3HP	R 3/8	450	85	20.5	51	39.9	23.6	Hex.46	Rc 3/8
MALS-4HP	R 1/2	576	85	23.5	60	47.9	29	Hex.54	Rc 1/2
MALS-6HP	R 3/4	922	85.5	24.5	67	55.9	34	Two flats 60	Rc 3/4

Socket MALS type (Snap ring mount type)



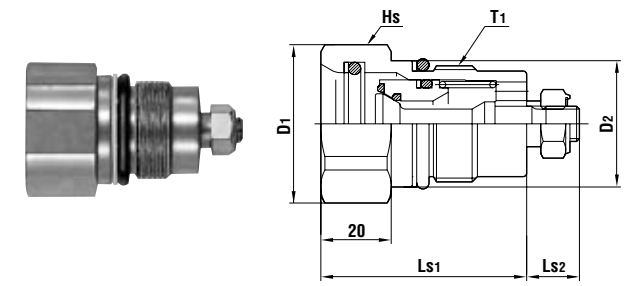
Model	Application	Mass (g)	Dimensions (mm)					
			Ls	øD1	øD2	øD3	Hs(WAF)	T
MALS-2HS	R 1/4	258	69	40	31.9	29	Hex.36	Rc 1/4
MALS-3HS	R 3/8	489	76	51	39.9	35.5	Hex.46	Rc 3/8
MALS-4HS	R 1/2	668	90.5	60	47.9	45	Hex.54	Rc 1/2
MALS-6HS	R 3/4	1259	106	67	55.9	55	Two flats 60	Rc 3/4

Plug MALT type (Thread screw mount type)



Model	Application	Mass (g)	Dimensions (mm)						
			Lp1	Lp2	øD1	øD2	øD3	Hp(WAF)	T
MALT-2HP	M22x1	91	48.5	17.5	29	23.9	19	Hex.27	M22x1
MALT-3HP	M28x1.5	180	59	20.5	35.5	30.9	23.6	Hex.32	M28x1.5
MALT-4HP	M33x2	266	64	23.5	45	35.9	29	Hex.41	M33x2
MALT-6HP	M42x2	430	66	24.5	55	43.9	34	Hex.50	M42x2

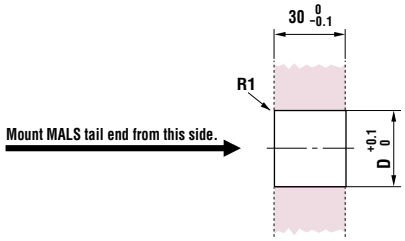
Socket MALT type (Thread screw mount type)



Model	Application	Mass (g)	Dimensions (mm)					
			Ls1	Ls2	øD1	øD2	Hs(WAF)	T1
MALT-2HS	M22x1	113	42.5	9.5	29	23.9	Hex.27	M22x1
MALT-3HS	M28x1.5	219	50.5	12	35.5	30.9	Hex.32	M28x1.5
MALT-4HS	M33x2	301	58.5	15	45	35.9	Hex.41	M33x2
MALT-6HS	M42x2	558	68	17	55	43.9	Hex.50	M42x2

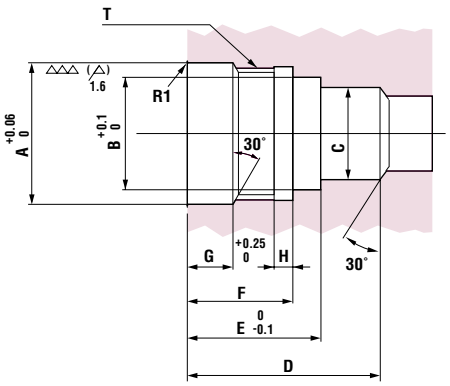
• MALT type muse be used in combination with MALS type.

Tail end configuration



● MALS type

Size	Diameter (mm)
	øD
1/4"	33
3/8"	41
1/2"	49
3/4"	57



● MALT type

Size	Dimensions (mm)									
	øA	øB	øC	D	E		F	G	H	T
				Socket	Pulg	Socket				
1/4"	24	20.1	15	36	23.3		18	8	3	M22x1.0
3/8"	31	25.1	20	46.5	31.3		23	10	4	M28x1.5
1/2"	36	30.1	26	57.5	31.3	39.3	28	12	5	M33x2.0
3/4"	44	38.1	30	69	32.3	48.8	28.5	12	5	M42x2.0

Semi-Standard Cupla Series
Index

For Vacuum

Screw Cupla

PCS Type

For vacuum and pressure testing

Working pressure: 3.0 MPa {31 kgf/cm²}

Valveless

Applicable fluids: Inert gas vacuum, Air, Water, Hydraulic oil

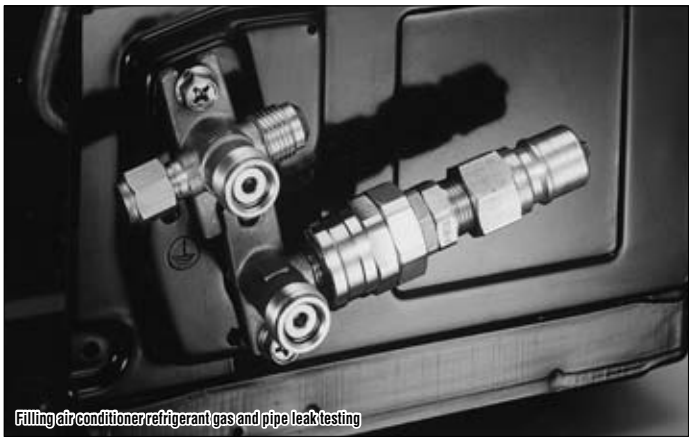
Direct connection on to the male thread part greatly improves working efficiency! Equipped with stopper for safety.

- Connects directly to a parallel male thread (unified thread).
- Just push it onto the male threaded part for connection. When connected, its locking claws securely grip the threaded part.
- Equipped with safety stopper mechanism that prevents accidental disconnection while in use.
- Since the tedious job of screw tightening is eliminated, the time required for connection work is minimized.

Specifications

Body material	Steel (some parts are of stainless steel)			
Size	For 7/16-20UNF, 5/8-18UNF, 3/4-16UNF, 7/8-14UNF, or 11/16-14UNS			
Working pressure MPa {kgf/cm²}	3.0 {31}			
Pressure resistance MPa {kgf/cm²}	4.5 {46}			
Seal material Working temperature range	**Seal material**	**Mark**	**Working temperature range**	**Remarks**
	Chloroprene rubber	CR (C308)	−20°C~+80°C	Standard material
	Hydrogenated nitrile rubber	HNBR (H708)	−20°C~+120°C	Available on request

Application example

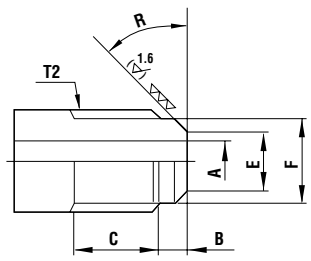


Filling air conditioner refrigerant gas and pipe leak testing

Models and Dimensions

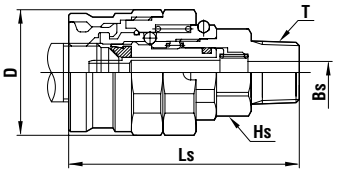
WAF : WAF stands for width across flats.

Application Work



Dimensions (mm)						
øE	**øF**	**R**	**B**	**C**	**øA**	**T₂**
5.5	8.7	45°	3.7	8.3 or more	4.8	7/16-20UNF
8	13.5	45°	4.8	8.2 or more	7	5/8-18UNF
11	16	45°	6	10 or more	10	3/4-16UNF
13.5	19	45°	6	14 or more	12	7/8-14UNF
18	24	45°	6	20 or more	16	11/16-14UNS

Socket PCS type (Male thread)



Model	Mountable Thread Size	Type	Application	Mass (g)	Dimensions (mm) Ls	øD	øBs	Hs(WAF)	T
PCS-7U	7/16-20UNF	PCS-7U-2	Rc 1/4	127	55	28	4	Hex.19	R 1/4
		PCS-7U-3	Rc 3/8	133					R 3/8
PCS-10U	5/8-18UNF	PCS-10U-2	Rc 1/4	191	63	34	7	Hex.21	R 1/4
		PCS-10U-3	Rc 3/8	196					R 3/8
PCS-12U	3/4-16UNF	PCS-12U-2	Rc 1/4	299	71.5	40	7	Hex.24	R 1/4
		PCS-12U-3	Rc 3/8	305			10		R 3/8
PCS-14U	7/8-14UNF	PCS-14U-2	Rc 1/4	359	75.5	43	7	Hex.27	R 1/4
		PCS-14U-3	Rc 3/8	365			10		R 3/8
PCS-17U	11/16-14UNS	PCS-17U-3	Rc 3/8	—	75	51	11	Hex.35	R 3/8

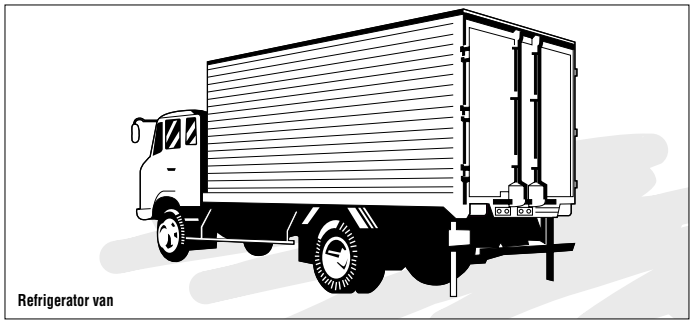
Charge Cupla CS Type

For various industrial gases

Working pressure: 3.0 — 3.0 MPa {31 kgf/cm²}
Valve structure: Two-way shut-off
Applicable fluids: Inert gas vacuum, Gas, Air, Water, Hydraulic oil

- Cupla for charging refrigerant gas, exhausting air to attain vacuum or removing residual pressure.
- Connects/disconnects even under residual pressure, lever action opens/closes valves.
- Accepts SP-V Cupla plug of either 1/4" or 3/8".

Application example



Refrigerator van

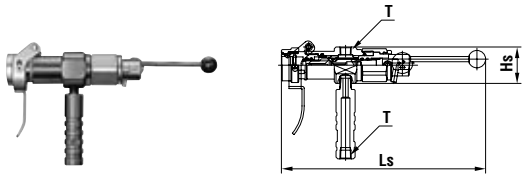
Specifications

Body material	Stainless steel (Partly aluminum and brass)			
Size	1/4" • 3/8"			
Working pressure MPa {kgf/cm²}	3.0 {31}			
Pressure resistance MPa {kgf/cm²}	3.6 {37}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Chloroprene rubber	CR (C308)	−20°C~+80°C	Available on request
	Hydrogenated nitrile rubber	HNBR (H708)	−20°C~+120°C	Available on request

Models and Dimensions

WAF : WAF stands for width across flats.

Socket CS type (Female thread)



Model	Application	Dimensions (mm)		
		Ls	øHs	T
CS-2S-V	For connection to plug 2P-V	232.5	42	Rc 1/4
CS-3S-V	For connection to plug 3P-V	235.5	42	Rc 1/4

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

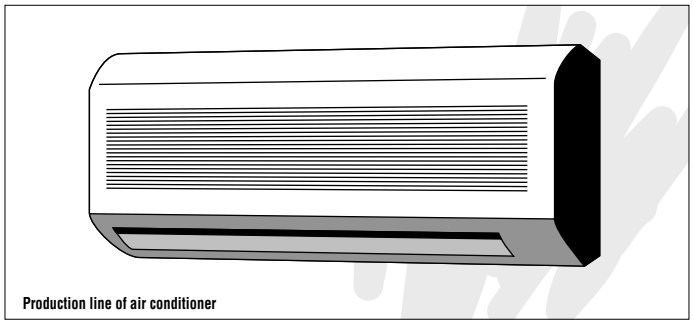
Charge Cupla CNR Type

For various industrial gases

Working pressure: 4.5 — 4.5 MPa {46 kgf/cm²}
Valve structure: Two-way shut-off
Applicable fluids: Inert gas vacuum, Gas, Air, Water, Hydraulic oil

- Cupla for charging refrigerant gas, exhausting air to attain vacuum or removing residual pressure.
- Connects/disconnects even under residual pressure, lever action opens/closes valves.
- Accepts SP-V Cupla 3/8" and 1/2" plugs.

Application example



Production line of air conditioner

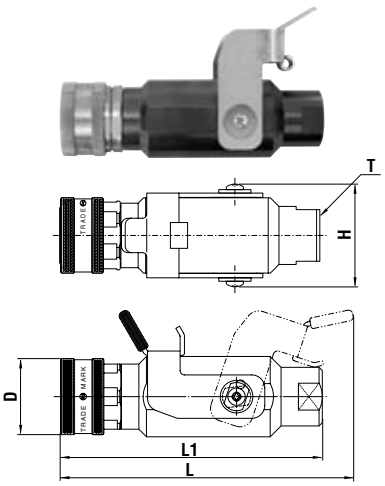
Specifications

Body material	Stainless steel (Partly aluminum and brass)			
Size	3/8" • 1/2"			
Working pressure MPa {kgf/cm²}	4.5 {46}			
Pressure resistance MPa {kgf/cm²}	5.0 {51}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Chloroprene rubber	CR (C308)	−20°C~+80°C	Available on request
	Hydrogenated nitrile rubber	HNBR (H708)	−20°C~+120°C	Available on request

Models and Dimensions

WAF : WAF stands for width across flats.

Socket CNR type (Female thread)



Model	Application	Dimensions (mm)				
		L	øD	L1	H	T
CNR-3S	For connection to plug 3P-V	135	35	121	48	Rc 3/8
CNR-4S	For connection to plug 4P-V	161	45	145	54	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.

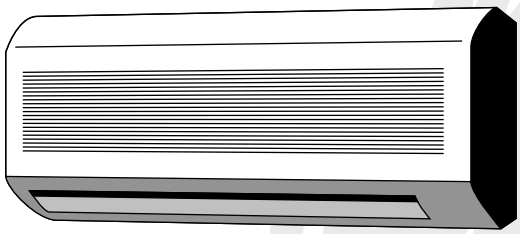
Auto Cupla AC Type

For various industrial gases

Working pressure: 3.0 MPa {31 kgf/cm²}
Valve structure: Two-way shut-off
Applicable fluids: Inert gas vacuum, Gas, Air, Water, Hydraulic oil

- This is used in the gas charge lines for air conditioners and refrigerators.
- Air-operated connection/disconnection with plug and valve opening/closing.
- Designed to be connectable to SP-V Cupla 1/4" and 3/8" plugs.

Application example



Filling air conditioner refrigerant

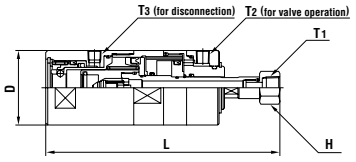
Specifications

Body material	Stainless steel (some parts are made of aluminum, and/or brass)			
Size	1/4" • 3/8"			
Working pressure MPa {kgf/cm²}	3.0 {31}			
Pressure resistance MPa {kgf/cm²}	3.6 {37}			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Chloroprene rubber	CR (C308)	−20°C~+80°C	Available on request
	Hydrogenated nitrile rubber	HNBR (H708)	−20°C~+120°C	Available on request
	Nitrile rubber	NBR (SG)	−20°C~+80°C	Available on request
Cupla maximum internal working pressure	On valve operation		1.0 {10}	
	On plug disconnection		1.0 {10}	

Models and Dimensions

WAF : WAF stands for width across flats.

Socket AC type (Female thread)



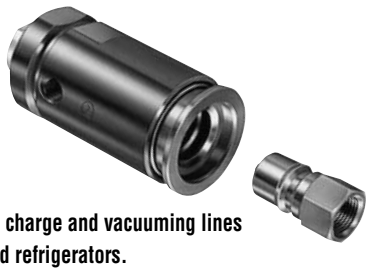
Model	Application	Dimensions (mm)					
		H(WAF)	øD	L	T1	T2	T3
AC-2S	R 1/4	Hex.17	44	155	Rc 1/4	Rc 1/8	Rc 1/8
AC-3S	R 3/8	Hex.21	55	173	Rc 3/8	Rc 1/8	Rc 1/8

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

Auto Cupla ACV Type

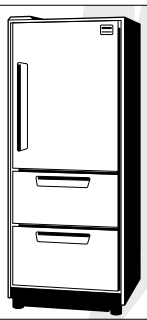
For various industrial gases

Working pressure: 3.0 MPa {31 kgf/cm²}
Valve structure: Two-way shut-off
Applicable fluids: Inert gas vacuum, Gas, Air, Water, Hydraulic oil



- This is used in the gas charge and vacuuming lines for air conditioners and refrigerators.
- Air-operated disconnection of socket and plug.
- Designed to be connectable to SP-V Cupla 1/4" and 3/8" plugs.

Application example



Exhausting a refrigerant from the pipeline of refrigerators

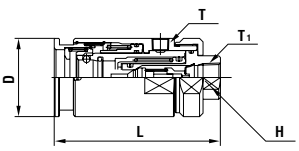
Specifications

Body material	Stainless steel (some parts are made of aluminum, and/or brass)			
Size	1/4" • 3/8"			
Working pressure MPa {kgf/cm²}	3.0 {31}			
Pressure resistance MPa {kgf/cm²}	3.6 {37}			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Chloroprene rubber	CR (C308)	−20°C~+80°C	Available on request
	Hydrogenated nitrile rubber	HNBR (H708)	−20°C~+120°C	Available on request
	Nitrile rubber	NBR (SG)	−20°C~+80°C	Available on request
Cupla maximum internal working pressure	On plug disconnection		1.0 {10}	

Models and Dimensions

WAF : WAF stands for width across flats.

Socket ACV type (Female thread)



Model	Application	Dimensions (mm)				
		H(WAF)	øD	L	T	T1
ACV-2S	R 1/4	Two flats 19	42	100	Rc 1/8	Rc 1/4
ACV-3S	R 3/8	Two flats 21	45	96	Rc 1/8	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.

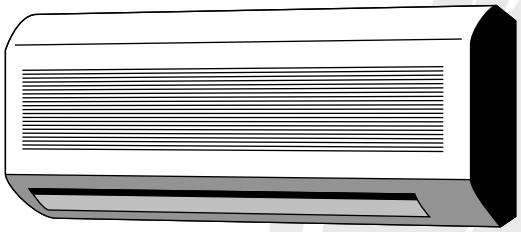
Airless Cupla CNA Type

For various industrial gases

Working pressure: 3.0 MPa {31 kgf/cm²}
Valve structure: Two-way shut-off
Applicable fluids: Gas, Air, Water, Hydraulic oil

- Airtight construction minimizes admixture of air on connection and fluid spill out on disconnection.
- Built-in automatic shut-off valves in socket and plug.
- Connects/disconnects even under pressure, lever action opens/closes valves.

Application example



Filling air conditioner refrigerant

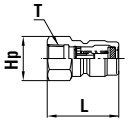
Specifications

Body material	Stainless steel (some parts are made of aluminum, and brass)			
Size	3/8"			
Working pressure MPa {kgf/cm²}	3.0 {31}			
Pressure resistance MPa {kgf/cm²}	3.6 {37}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Chloroprene rubber	CR (C308)	−20°C~+80°C	Available on request
	Hydrogenated nitrile rubber	HNBR (H708)	−20°C~+120°C	Available on request

Models and Dimensions

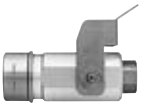
WAF : WAF stands for width across flats.

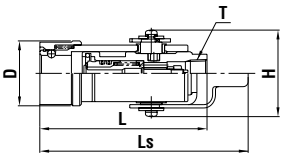
Plug CNA type (Female thread)



Model	Application	Mass (g)	Dimensions (mm)		
			L	Hp(WAF)	T
CNA-3P-V	R 3/8	75	43	Hex.22	Rc 3/8

Socket CNA type (Female thread)





Model	Application	Mass (g)	Dimensions (mm)				
			Ls	L	øD	H	T
CNA-3S-V	R 3/8	380	114	103	38	48	Rc3/8

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

TSP-HP Cupla for High Pressure

For high pressure and general purposes

Working pressure: 9.0 MPa {92 kgf/cm²}
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.

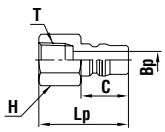
Specifications

Body material	Stainless steel			
Size	1/4" • 3/8" • 1/2"			
Working pressure MPa {kgf/cm²}	9.0 {92}			
Pressure resistance MPa {kgf/cm²}	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

Models and Dimensions

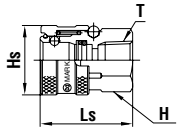
WAF : WAF stands for width across flats.

Plug TPF type (Female thread)



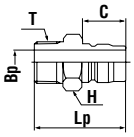
Model	Application	Dimensions (mm)				
		Lp	H(WAF)	C	T	øBp
2TPF-HP	R 1/4	34	Hex.17	18	Rc 1/4	6.5
3TPF-HP	R 3/8	38	Hex.21	21	Rc 3/8	10
4TPF-HP	R 1/2	47.5	Hex.29	26.5	Rc 1/2	13

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)



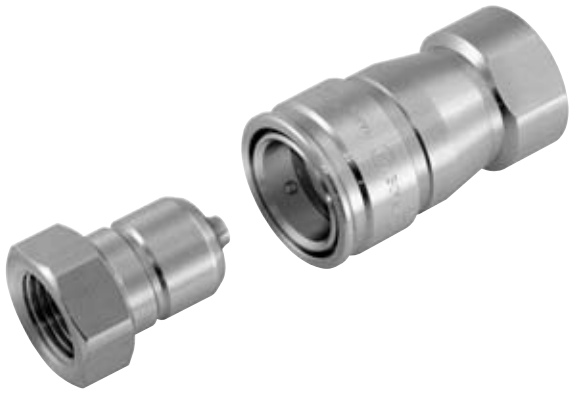
Model	Application	Dimensions (mm)				
		Lp	H(WAF)	C	T	øBp
2TPM-HP	Rc 1/4	38	Hex.17	18	R 1/4	6.5
3TPM-HP	Rc 3/8	43	Hex.19	21	R 3/8	10

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 MPa {10 kgf/cm²}
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.

Specifications

Body material	Stainless steel • Brass			
Size	1/4" • 3/8" • 1/2"			
Working pressure MPa {kgf/cm²}	1.0 {10}			
Pressure resistance MPa {kgf/cm²}	1.5 {15}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Ethylene-propylene rubber	EPDM (EPT)	-5°C~+100°C	Standard material
	Fluoro rubber	FKM (X-100)	-5°C~+150°C	Available on request

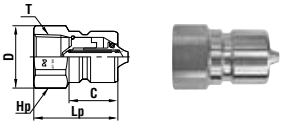
Min. Cross-Sectional Area (mm²)

Model	HFL-2SP	HFL-3SP	HFL-4SP
Min. Cross-Sectional Area	33	59	93

Models and Dimensions

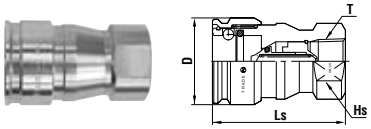
WAF : WAF stands for width across flats.

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)

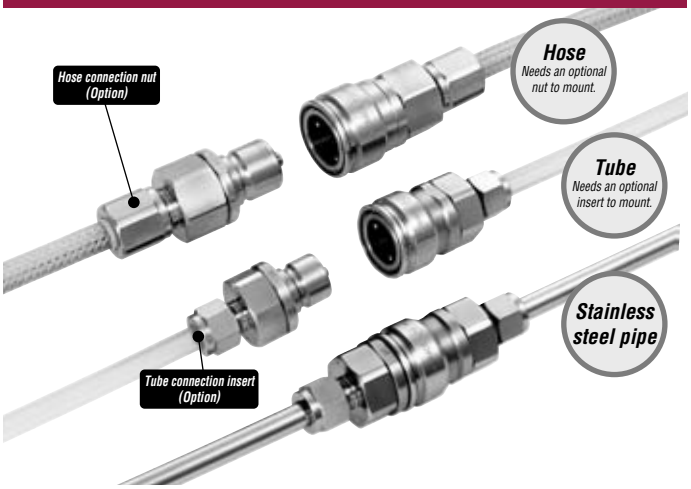


Model	Application	Mass (g)	Dimensions (mm)			
			Ls	øD	Hs(WAF)	T
HFL-2S	R 1/4	99	47	26	Two flats 19	Rc 1/4
HFL-3S	R 3/8	150	49	32	Two flats 24	Rc 3/8
HFL-4S	R 1/2	211	60	35	Two flats 29	Rc 1/2

High Flow Cupla BI Type

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

Working pressure: 1.0 MPa {10 kgf/cm²}
Valve structure: Two-way shut-off
Applicable fluids: Water, Cooling water



- High Flow Cupla and ferrule flange 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.

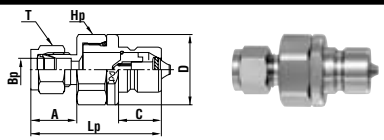
Specifications

Body material	Stainless steel			
Applicable pipe size	1/8" • 1/4" • 3/8" • 1/2"			
Working pressure MPa {kgf/cm²}	1.0 {10}			
Pressure resistance MPa {kgf/cm²}	1.5 {15}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Ethylene-propylene rubber	EPDM (EPT)	-5°C~+100°C	Standard material
	Fluoro rubber	FKM (X-100)	-5°C~+150°C	Available on request

Models and Dimensions

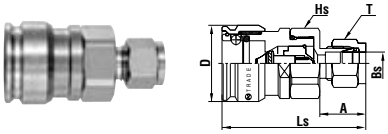
WAF : WAF stands for width across flats.

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	15.15	15.5	3.18	Hex.9/16	Hex.7/16
HFL-2P-BI 1/4	1/4"	51.9	16.5	17.86	23	6.35	Hex.13/16	Hex.9/16
HFL-2P-BI 3/8	3/8"	53.4	16.5	19.29	23	9.53	Hex.13/16	Hex.11/16
HFL-3P-BI 3/8	3/8"	54.8	18	19.29	29.5	9.53	Hex.1 1/16	Hex.11/16
HFL-3P-BI 1/2	1/2"	59	18	22.2	29.5	12.7	Hex.1 1/16	Hex.7/8
HFL-4P-BI 1/2	1/2"	68.7	22.5	22.2	32	12.7	Hex.1 1/8	Hex.7/8

Socket HFL-S-BI type (For pipe connection)

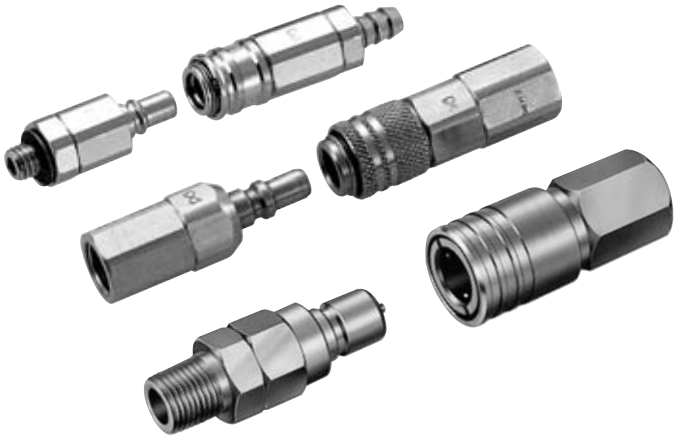


Model	Application (Pipe size)	Dimensions (mm)					
		Ls	A	øD	øBs	Hs(WAF)	T(WAF)
CO-1S-BI 1/8	1/8"	45.2	15.15	16.5	3.18	Hex.9/16	Hex.7/16
HFL-2S-BI 1/4	1/4"	54.9	17.86	26	6.35	Hex.13/16	Hex.9/16
HFL-2S-BI 3/8	3/8"	56.5	19.29	26	9.53	Hex.13/16	Hex.11/16
HFL-3S-BI 3/8	3/8"	60.3	19.29	32	9.53	Hex.1 1/16	Hex.11/16
HFL-3S-BI 1/2	1/2"	64.6	22.2	32	12.7	Hex.1 1/16	Hex.7/8
HFL-4S-BI 1/2	1/2"	73.2	22.2	35	12.7	Hex.1 1/8	Hex.7/8

Two-way Shut-off Type Small Size Cuplas

For small bore piping to control temperatures

Working pressure: 1.0 — 1.0 MPa {10 kgf/cm²}
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)			
	Compact Cupla: Stainless steel • Brass (chrome plated)			
Size	Please check with us.			
Working pressure MPa {kgf/cm²}	1.0 {10}			
Pressure resistance MPa {kgf/cm²}	1.5 {15}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−5°C~+80°C	Standard material
	Ethylene-propylene rubber	EPDM (EPT)	−5°C~+150°C	Standard material
	Fluoro rubber	FKM (X-100)	−5°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 — Min. Cross-Sectional Area: 4.9mm² (ø2.5)

Plug / Socket

Little Cupla — Min. Cross-Sectional Area: 6.1mm² (ø2.8)

Plug / Socket

Compact Cupla — Min. Cross-Sectional Area: 8.8mm² (ø3.1)

Plug / Socket

Compact Cupla

For small pneumatic equipment

Working pressure: 0.7 — 0.7 MPa {7 kgf/cm²}
Valve structure: Two-way shut-off
Applicable fluids: Air, Water, Hydraulic oil

- 16.5mm outer diameter, yet socket and plug have built-in automatic shut-off valves.
- Lightweight, compact, push-to-connect design.

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

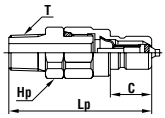
Specifications

Body material	Brass • Stainless steel			
Size	1/8"			
Working pressure MPa {kgf/cm²}	0.7 {7}			
Pressure resistance MPa {kgf/cm²}	1.0 {10}			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C~+80°C	Available on request

Models and Dimensions

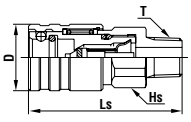
WAF : WAF stands for width across flats.

Plug PM type (Male thread)



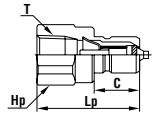
Model	Application	Mass (g)	Dimensions (mm) Lp	C	Hp(WAF)	T
CO-1PM	Rc 1/8	31	39	11.3	Hex.13	R 1/8

Socket SM type (Male thread)



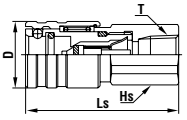
Model	Application	Mass (g)	Dimensions (mm) Ls	øD	Hs(WAF)	T
CO-1SM	Rc 1/8	44	38	16.5	Hex.14	R 1/8

Plug PF type (Female thread)



Model	Application	Mass (g)	Dimensions (mm) Lp	C	Hp(WAF)	T
CO-1PF	R 1/8	26	25.5	11.3	Hex.14	Rc 1/8

Socket SF type (Female thread)



Model	Application	Mass (g)	Dimensions (mm) Ls	øD	Hs(WAF)	T
CO-1SF	R 1/8	49	38	16.5	Hex.14	Rc 1/8

Cupla with Single Lock
Cupla with Safety Lock

Mechanism to prevent accidental disconnection

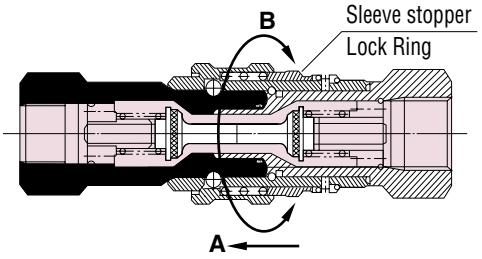
Cupla with single lock

Cupla with safety lock

The standard Cuplas listed on the right can have an additional single lock or a safety lock mechanism that will be locked after they have been connected and prevent accidental disconnection.

- **Cupla with single lock**
  The sleeve is provided with a notch and the body of the socket has a projecting lock pin or ball. After connecting the Cuplas, simply turn the sleeve to lock the up and down movement of the sleeve.
- **Cupla with safety lock**
  A sleeve stopper Lock Ring is provided below the sleeve. After connecting the Cuplas, simply turning the Lock Ring to disable the up and down movement of the sleeve (see diagram sketch on the right top).

How to lock the safety lock (to prevent disconnection)



● **To lock the sleeve**

Push the sleeve stopper toward A and turn 90° (toward B) to the left or right to engage the sleeve stopper.

● **To unlock the sleeve**

Push the sleeve stopper toward A and turn 90° (toward B) to the left or right to disengage the sleeve stopper. Socket and plug can now be simply disconnected.

How to lock the safety lock (to prevent disconnection)

Cuplas possibly with single lock

- **Hi Cupla**
- **SP Cupla Type A**
- **SP Cupla**
- **TSP Cupla**
- **HSP Cupla**
- **210 Cupla**
- **Mold Cupla**

The following Cuplas come with single lock as standard feature.

- **Lock Cupla 200**
- **350 Cupla**
- **Flat Face Cupla F35**
- **450B Cupla**

*The above all with single lock are made-to-order.

Cuplas with safety lock

- **SP Cupla Type A**
- **SP Cupla**
- **TSP Cupla**
- **HSP Cupla**
- **210 Cupla**
- **350 Cupla**

The following Cupla comes with safety lock as standard feature.

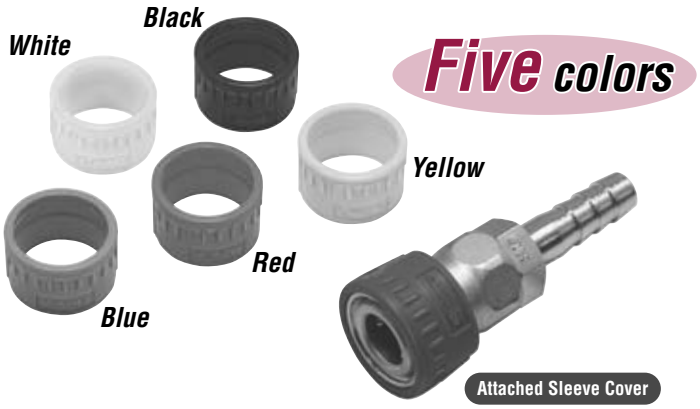
- **S210 Cupla**

*The above all with safety lock are made-to-order.

Sleeve Cover

Plastic cover for Hi Cupla Series (5pcs.per package)

Accessories for Cuplas



- 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	

Dust Cap

Plastic Cap for Hi Cupla Series

Accessories for Cuplas

- Dust caps prevent dust from getting inside Cuplas.

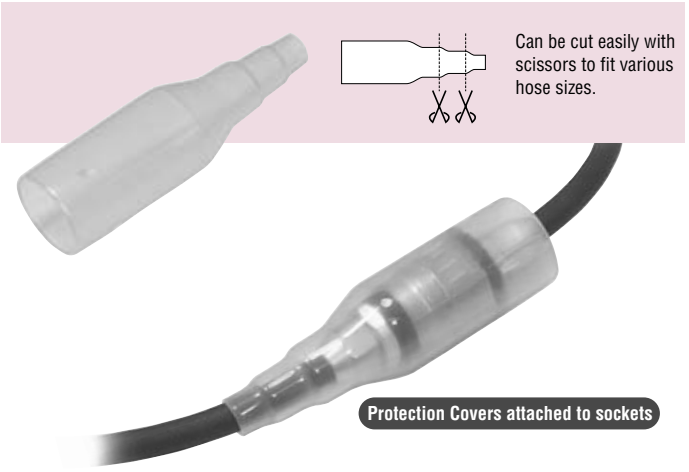
Dust covers cannot be used together with sleeve covers.

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)

Protection Cover

Plastic Cover for Nut Cupla and Full-Blow Cupla Nut Type (Semitransparent)

Accessories for Cuplas



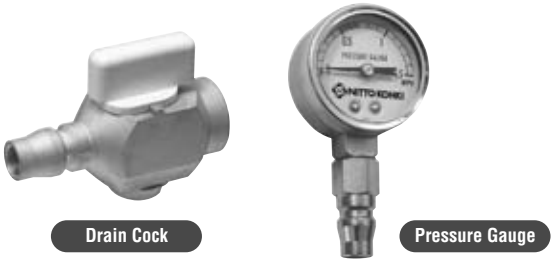
- For Nut Cupla and Full-Blow Cupla Nut Type.
- Protection cover wraps up the whole Cupla to absorb impacts and to reduce the risk of damage if the Cupla accidentally strikes other components or products.
- Protection covers can be cut to fit the hose diameter which the Cupla is connected to.
- Can be 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)

Accessories for Air Lines

Air Lines for Hi Cupla Series

Accessories for Cuplas



- Connects directly to 20/30/40 type Hi Cupla sockets.
- Convenient to control drainage and pressure in air lines.

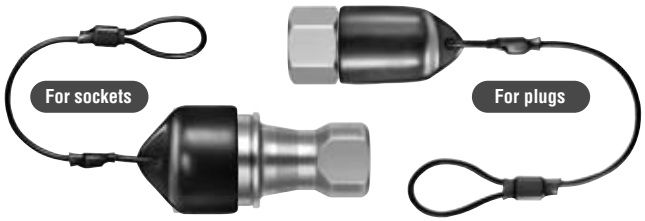
Part number	Model	Cuplas that accessories can be mounted on	Sales unit	Description
CB23625	DC-30PF	Hi Cupla sockets	1	Drain Cock
CB11253	PG-10P	Hi Cupla sockets	1	Pressure Gauge

When ordering, please indicate Model Name or the part number.

Dip Mold Cap

Dust caps for Hi Cupla, SP Cupla, TSP Cupla, and Hydraulic Cupla

Accessories for Cuplas



- **PVC Dust Caps produced by dip molding are available for Hi Cuplas, SP Cuplas, 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
Socket	CA96462	For 20 type	1
		For 30 type	1
		For 40 type	1
	CA96464	For 400 type	1
		For 600 type	1
		For 800 type	1
Plug	CA96453	For 20 type	1
		For 30 type	1
		For 40 type	1
	CA96455	For 400 type	1
		For 600 type	1
		For 800 type	1

	Part number	Cap for SP Cupla	Sales unit
Socket	CA96462	For 1S	1
	CA96463	For 2S	1
	CA96464	For 3S	1
	CA96465	For 4S	1
	CA96466	For 6S	1
	CA96467	For 8S	1
	CA96468	For 10S	1
	CA96449	For 12S	1
	CA96470	For 16S	1
Plug	CA96453	For 1P	1
	CA96454	For 2P	1
	CA96455	For 3P	1
	CA96456	For 4P	1
	CA96457	For 6P	1
	CA96458	For 8P	1
	CA96459	For 10P	1
	CA96460	For 12P	1
	CA96461	For 16P	1

	Part number	Cap for TSP Cupla	Sales unit
Socket	CA96542	For 1TS	1
	CA96462	For 2TS	1
	CA96463	For 3TS	1
	CA96464	For 4TS	1
	CA96465	For 6TS	1
	CA96479	For 8TS	1
	CA96553	For 10TS	1
	CA96555	For 12TS	1
	CA96557	For 16TS	1
Plug	CA96541	For 1TP	1
	CA96453	For 2TP	1
	CA96454	For 3TP	1
	CA96455	For 4TP	1
	CA96456	For 6TP	1
	CA96551	For 8TP	1
	CA96552	For 10TP	1
	CA96459	For 12TP	1
	CA96556	For 16TP	1

	Part number	Cap for HSP Cupla	Sales unit
Socket	CA96463	For 2HS	1
	CA96476	For 3HS	1
	CA96477	For 4HS	1
	CA96477	For 6HS	1
	CA96478	For 66HS	1
	CA96479	For 8HS	1
	CA96481	For 10HS	1
	CA96481	For 12HS	1
	CA96482	For 16HS	1
Plug	CA96454	For 2HP	1
	CA96455	For 3HP	1
	CA96456	For 4HP	1
	CA96456	For 6HP	1
	CA96471	For 66HP	1
	CA96472	For 8HP	1
	CA96473	For 10HP	1
	CA96473	For 12HP	1
	CA96475	For 16HP	1

	Part number	Cap for 210 Cupla	Sales unit
Socket	CA96463	For 210-2S	1
	CA96476	For 210-3S	1
	CA81555	For 210-4S	1
	CA96478	For 210-6S	1
	CA96466	For 210-8S	1
Plug	CA96454	For 210-2P	1
	CA96455	For 210-3P	1
	CA82643	For 210-4P	1
	CA96471	For 210-6P	1
	CA96551	For 210-8P	1

	Part number	Cap for 280 Cupla	Sales unit
Socket	CB17082	For 280-2S	1
	CA96476	For 280-3S	1
	CA81555	For 280-4S	1
	CA96478	For 280-6S	1
	CA96466	For 280-8S	1
Plug	CA96453	For 280-2P	1
	CA96455	For 280-3P	1
	CA82643	For 280-4P	1
	CA96471	For 280-6P	1
	CA96551	For 280-8P	1

	Part number	Cap for F35/350 Cupla	Sales unit
Socket	CA81551	For F35/350-3S	1
	CA81555	For F35/350-4S	1
	CA97213	For F35/350-6S	1
	CA80401	For F35/350-8S	1
Plug	CA81553	For F35/350-3P	1
	CA81557	For F35/350-4P	1
	CA97215	For F35/350-6P	1
	CA80402	For F35/350-8P	1

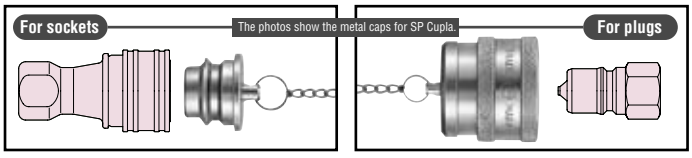
	Part number	Cap for 700R Cupla	Sales unit
Socket	CB00614	For 700R-3S	1
	CA82644	For 700R-4S	1
Plug	CA83164	For 700R-3P	1
	CA82643	For 700R-4P	1

Safety Cap

Metal caps for Hi Cupla Series, SP Cupla, TSP Cupla and Hydraulic Cupla

Accessories for Cuplas (Semi-standard)

- **Metal Cap equipped with dust-proof and leak prevention function.**
- **Caps with metal material corresponding to that of Cupla body are available.**



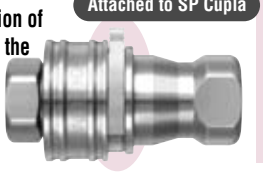
Model	Applicable Cuplas	Sales unit
Model name of Safety Cap is stated in the following manner. **Model= Cupla Model (normal Cupla) + SD (safety cap)** Example:"2S-SD" identifies a safety cap for SP Cupla Model 2S.	Sockets and plugs for Hi Cupla, SP Cupla, TSP Cupla, HSP Cupla, 210 Cupla, S210 Cupla, 350 Cupla, 450B Cupla and SP-V Cupla	1pc.

Sleeve Stopper

Sleeve Stopper for SP Cupla Type A

Accessories for Cuplas

- **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
Socket	CB24350	For 1S-A	SP Cupla type A sockets	10	Engineering plastics (POM)
	CB24351	For 2S-A		10	
	CB24352	For 3S-A		10	
	CB24353	For 4S-A		10	
	CB24354	For 6S-A		10	
	CB24355	For 8S-A		10	

	Part number	Stopper for SP Cupla type A socket	Applicable Cuplas	Sales unit	Material
Socket	CB26456	For 10S-A	SP Cupla type A sockets	1	SUS 304
	CB26457	For 12S-A		1	
	CB26458	For 16S-A		1	

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.

Accessories for O-ring Maintenance

Jigs & grease for replacement of O-rings for SP Cupla, TSP Cupla and HSP Cupla

Accessories for Cuplas

- **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 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.

Grease for O-ring

- **GRE-M1 (mineral oil series) for NBR • FKM O-ring or packing** (Part.No.CB23701)
  - Sales unit: 1pc.

Grease for O-ring

- **GRE-S1 (silicon series) NBR, FKM and EPDM O-ring or packing** (Part.No.CB23702)
  - Sales unit: 1pc.

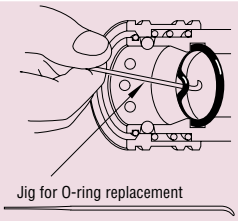
O-ring for SP Cupla	Part number NBR	FKM	EPDM	Sales unit
For 1S	CP01314	CP00907	CP03270	1
For 2S	CP00927	CP00928	CP03333	1
For 3S	CP00955	CP00956	CP03276	1
For 4S	CP00978	CP00979	CP03283	1
For 6S	CP01003	CP01004	CP03292	1
For 8S	CP01029	CP01030	CP03298	1
For 10S	CP00398	CP01053	CP07179	1
For 12S	CP01076	CP01077	CP03902	1
For 16S	CP01099	CP01100	CP06953	1

O-ring for TSP Cupla	Part number NBR	FKM	EPDM	Sales unit
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

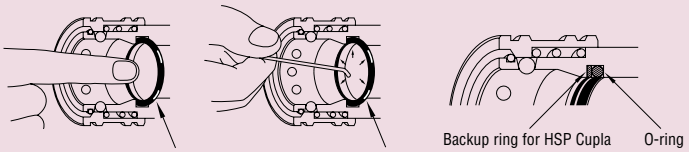
O-ring for HSP Cupla	Part number NBR	FKM	Sales unit
For 2HS	CP01185	CP02215	1
For 3HS	CP01194	CP03335	1
For 4HS	CP00294	CP02093	1
For 6HS	CP00294	CP02093	1
For 66HS	CP09658	CP25937	1
For 8HS	TP00293	CP01179	1
For 10HS	CP01516	CP03371	1
For 12HS	CP01516	CP03371	1
For 16HS	CP03035	CP03453	1

Backup ring for HSP Cupla	Part number PTFE	Sales unit
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

How to detach an O-ring



How to attach an O-ring

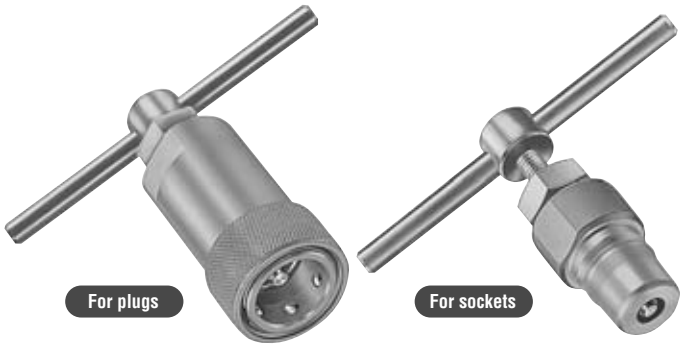


Residual Pressure Release Jig

Residual Pressure Release Metal Jig

Accessories for Cuplas

- **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. **ZN – Type of Cupla to be attached** (ZN: Residual pressure release jig) **Example: For the Cupla model 350-3S, the jig name would be ZN-350-3S**	Sockets and plugs for SP Cupla, HSP Cupla, 210 Cupla, 280 Cupla and 350 Cupla	1pc.

Purge Adapter

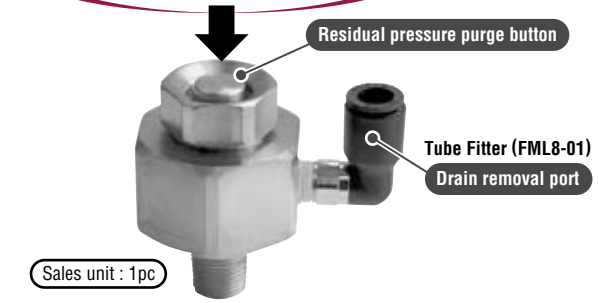
Metal Purge Adapter for hydraulic lines

Accessories for Cuplas (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{kgf/cm²}	35.0 {357}
Pressure resistance MPa{kgf/cm²}	52.5 {536}
Working temperature range	−5℃〜+80

Simple one push purge button for easy pressure release



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.

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	○	○	○
	Diesel fuel	○	○	○
D	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	○	○	
	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.

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 specifing 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	△	△	—	○		○

Seal Material Selection Table (For reference)

	Fluids	Seal Material					
		Nitrile rubber	Chloroprene rubber	Fluoro rubber	Ethylene-propylene rubber	Perfluoroelastomer	Silicon rubber
P	Propionitrile	◎	◎	◎	◎		◎
	Propyl acetate	—	—	—	○		—
	Propyl alcohol (65˚C)	◎	◎	◎	◎		◎
	Propylene	—	—	◎	—		—
	Pyridine	—	—	—	○	◎	—
S	Secondary butyl alcohol	—	—	—	—		—
	Soapy water (65˚C)	◎	○	◎	◎		◎
	Sodium acetate	○	○	—	◎		—
	Sodium aluminate	—	—	—	◎		—
	Sodium bichromate	◎	◎	◎	◎		◎
	Sodium carbonate	◎	◎	◎	◎		◎
	Sodium chloride	◎	◎	◎	◎		◎
	Sodium chloride (salt water)	◎	◎	◎	◎		◎
	Sodium cyanide	◎	◎	—	◎		◎
	Sodium hydroxide (50%)	◎	◎	△	◎	◎	—
	Sodium hydroxide (50˚C)	○	○	—	◎		—
	Sodium hypochlorite	○	—	◎	○	◎	○
	Sodium iodide	—	—	—	—		—
	Sodium metaphosphate	◎	○	◎	◎		—
	Sodium nirate	○	◎	—	◎		—
	Sodium nitrite	—	—	—	◎		—
	Sodium peroxide	○	○	◎	◎		—
	Sodium phosphate	◎	◎	—	—		△
	Sodium plumbate	—	—	—	—		—
	Sodium silicate	◎	◎	◎	◎		—
	Sodium sulfate	◎	◎	◎	◎		◎
	Sodium sulfide	◎	◎	◎	◎		◎
	Sodium sulfite	◎	◎	◎	◎		◎
	Sodium thiosulfate	—	—	—	—		—
	Spindle oil	◎	—	◎	—		△
	Starch	◎	◎	◎	◎		◎
	Steam (100˚C)	—	—	—	◎		—
	Styrene monomer	—	—	○	—		—
	Sugar and sugared water	◎	◎	◎	◎		—
	Sulfur	—	◎	◎	◎		◎
	Sulfur chloride (dry)	—	—	◎	—		—
	Sulfur dioxide	—	○	◎	◎		○
	Sulfur tetroxide	—	—	◎	—		—
	Syrup	◎	—	—	—		—
T	Tertiary butyl alcohol	—	—	—	—		—
	Tetraethyl lead	○	—	◎	—		—
	Tetralin	—	—	◎	—		△
	Titanium terachloride	○	—	◎	—		—
	Toluene (Toluol)	—	—	△	—	◎	—
	Triethanolamine	△	◎	—	○		—
	Tung oil	◎	○	◎	—		—
V	Vinyl acetate	—	○	—	◎		—
	Vinyl chloride	—	—	◎	△		◎
	Vinyl chloride resin	—	—	◎	—		—
W	Water (65˚C)	◎	○	◎	◎		◎
	Whisky	◎	◎	◎	◎		◎
X	Xylene	—	—	◎	—	◎	—

	Fluids	Seal Material					
		Nitrile rubber	Chloroprene rubber	Fluoro rubber	Ethylene-propylene rubber	Perfluoroelastomer	Silicon rubber
Z	Zinc chloride (65˚C)	◎	◎	◎	◎		◎
	Zinc sulfate (65˚C)	◎	◎	◎	◎		◎

Unit Conversion Tables

Length

m	cm	in	tf	yd	km	mile	n-mile
1	1×10^{2}	3.937 x 10	3.281	1.094	1	6.214×10^{-1}	5.400×10^{-1}
1×10^{-2}	1	3.937×10^{-1}	3.281×10^{-2}	1.094×10^{-2}	1.6093	1	8.690×10^{-1}
2.54×10^{-2}	2.540	1	8.333×10^{-2}	2.778×10^{-2}	1.852	1.151	1
3.048×10^{-1}	3.048 x 10	1.2 x 10	1	3.333×10^{-1}			
9.144×10^{-1}	9.144 x 10	3.9 x 10	3	1			

Area

m^2	in^2	ft^2	yd^2	km^2	acre	$mile^2$	ha
1	1.550×10^{3}	1.076 x 10	1.196	1	2.471×10^{2}	3.861×10^{-1}	1.00×10^{2}
6.452×10^{-4}	1	6.944×10^{-3}	7.716×10^{-4}	4.046×10^{-3}	1	1.562×10^{-3}	4.047×10^{-2}
9.290×10^{-2}	1.44×10^{2}	1	1.111×10^{-1}	2.590	6.40×10^{2}	1	2.590×10^{2}
8.361×10^{-1}	1.296×10^{3}	9	1	1×10^{-2}	2.471	3.861×10^{-3}	1

Mass (Weight)

kg	gr	oz	lb	t	l.t	s.t
1	1.5432×10^{4}	3.527 x 10	2.205	1×10^{-3}	9.842×10^{-4}	1.102×10^{-3}
6.480×10^{-5}	1	2.286×10^{-3}	1.429×10^{-4}	6.480×10^{-8}	6.328×10^{-8}	7.143×10^{-8}
2.835×10^{-2}	4.375×10^{2}	1	6.25×10^{-2}	2.835×10^{-5}	2.790×10^{-5}	3.125×10^{-5}
4.536×10^{-1}	7.000×10^{3}	1.6 x 10	1	4.536×10^{-4}	4.464×10^{-4}	5×10^{-4}
1.000×10^{3}	1.543×10^{7}	3.5274×10^{4}	2.205×10^{3}	1	9.842×10^{-1}	1.102
1.016×10^{3}	1.568×10^{7}	3.5840×10^{4}	2.240×10^{3}	1.016	1	1.12
9.072×10^{2}	1.4×10^{7}	3.2000×10^{4}	2.000×10^{3}	9.072×10^{-1}	8.929×10^{-1}	1

Force

N	kgf	lbf	pdl
1	1.020×10^{-1}	2.248×10^{-1}	7.233
9.807	1	2.205	7.093 x 10
4.448	4.536×10^{-1}	1	3.217 x 10
1.383×10^{-1}	1.410×10^{-2}	3.108×10^{-2}	1

Pressure

MPa	kgf/cm^2	lbf/in^2 (PSI)	atm	mmHg	inHg	mmH_2O	ftH_2O
1	1.020 x 10	1.450×10^{2}	9.869	7.501×10^{3}	2.953×10^{2}	1.01972×10^{5}	3.346×10^{2}
9.807×10^{-2}	1	1.422 x 10	9.678×10^{-1}	7.356×10^{2}	2.896 x 10	1.0000×10^{4}	3.281 x 10
6.895×10^{-3}	7.031×10^{-2}	1	6.805×10^{-2}	5.172 x 10	2.036	7.031×10^{2}	2.307
1.013×10^{-1}	1.033	1.470 x 10	1	7.60×10^{2}	2.992 x 10	1.0332×10^{4}	3.390 x 10
1.333×10^{-4}	1.360×10^{-3}	1.934×10^{-2}	1.316×10^{-3}	1	3.937×10^{-2}	1.360 x 10	4.460×10^{-2}
3.386×10^{-3}	3.453×10^{-2}	4.912×10^{-1}	3.342×10^{-2}	2.54 x 10	1	3.453×10^{2}	1.133
9.806×10^{-6}	1×10^{-4}	1.422×10^{-3}	9.678×10^{-5}	7.356×10^{-2}	2.896×10^{-3}	1	3.281×10^{-3}
2.2989×10^{-2}	3.048×10^{-2}	4.335×10^{-1}	2.950×10^{-2}	2.242 x 10	8.827×10^{-1}	3.048×10^{2}	1

Taper Pipe Threads

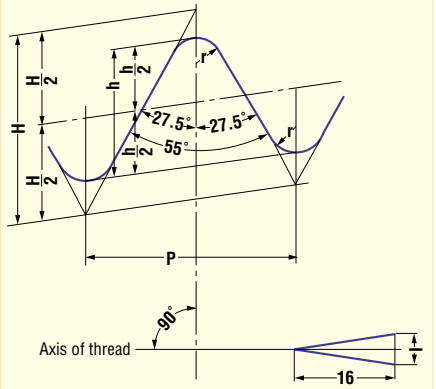
JIS B 0203:1999
ISO 7-1:1994
(BS21)

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

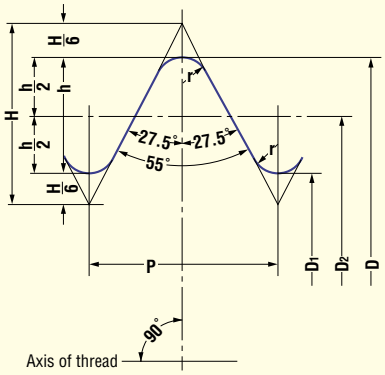


Thick continuous line shows basic profile.

$P = \frac{25.4}{n}$

H = 0.960237 P
h = 0.640327 P
r = 0.137278 P

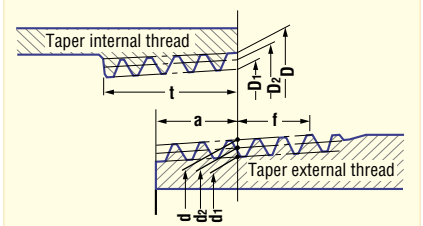
Basic Profile Applied for Parallel Internal Threads



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	**R 3/8**
Taper internal thread	**Rc 3/8**

Unit: mm

Designation of thread	Thread				Gauge dia.			Position of gauge plane			Tolerance on *D*, *D2* and *D1* of parallel internal thread ±	Length of useful thread (min.)				Size of carbon steel pipe for ordinary piping (Given for reference)	
					External thread			External thread		Internal thread		External thread	Internal thread				
					Major dia. *d*	Pitch dia. *d2*	Minor dia. *d1*	From pipe end		At pipe end		From position of gauge plane toward larger dia. end *f*	When there is incomplete thread part		When there is no incomplete thread part	Outer dia.	Thickness
	Number of threads (in 25.4mm) *n*	Pitch *P* (Given for reference)	Height of thread *h*	Radius *r* or *r'*	Internal thread			Gauge length *a*	Axial tolerance ±*b*	Axial tolerance ±*c*			Taper internal thread	Parallel internal thread			
					Major dia. *D*	Pitch dia. *D2*	Minor dia. *D1*						From position of gauge plane toward smaller dia. end *l*	From end of pipe or coupler *l'* (Given for reference)	Taper internal thread/ Parallel internal thread From gauge plane or end of pipe or coupler *t*		
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)	

Can be connected with each other

SOCKET		
Model		**Type**
17SH, 20SH, 30SH, 40SH		**Hi Cupla**
10SM, 20SM, 30SM, 40SM		
20SF, 30SF, 40SF		
TW20SH, TW30SH, TW40SH		**Hi Cupla TW Type**
TW20SM, TW30SM, TW40SM		
TW20SF, TW30SF, TW40SF		
200-17SH, 200-20SH, 200-30SH, 200-40SH		**Hi Cupla 200**
200-20SM, 200-30SM, 200-40SM		
200-20SF, 200-30SF, 200-40SF		
200-60SC, 200-80SC, 200-100SC		
FBH-20SH, FBH-30SH, FBH-40SH		**Full-Blow Cupla**
FBH-20SM, FBH-30SM, FBH-40SM		
FBH-20SF, FBH-30SF, FBH-40SF		
FBH-65SN, FBH-80SN, FBH-85SN, FBH-110SN		
50SN (10SAH), 60SN (20SAH), 65SN		**Nut Cupla**
80SN (30SAH), 85SN, 110SN (40SAH)		
200-50SN, 200-60SN, 200-65SN, 200-80SN		**Nut Cupla 200**
200-85SN, 200-110SN		
200-50SNG, 200-65SNG, 200-85SNG		
65SNR, 85SNR		**Rotary Nut Cupla**
65SNRG, 85SNRG		
OC-65SNG, OC-85SNG		**Oil Cupla**
DCS-20PH, DCS-30PH, DCS-40PH		**Duster Cupla**
DCS-65PNG, DCS-85PNG		
L200-20SH, L200-30SH, L200-40SH		**Lock Cupla 200**
L200-20SM, L200-30SM, L200-40SM		
L200-20SF, L200-30SF, L200-40SF		
L200-65SNR, L200-85SNR		
PV-20SM, PV-30SM, PV-40SM		**Purge Hi Cupla**
RT Type		**Rotary Line Cupla**
RE Type		
200T Type		**Line Cupla 200**
200L Type		
200S Type		
FBH-RE Type		**Rotary Full-Blow Line Cupla**
FBH-RT Type		
HA-20SH, HA-30SH		**Hi Cupla Ace**
HA-20SM, HA-30SM, HA-50SN, HA-60SN		
HA-65SN, HA-80SN, HA-85SN		
HA-T		
HA-50SNG, HA-65SNG, HA-85SNG		
NKU-605B, NKU-610B, NKU-620B	(HA-65SNG)	**NK Cupla Hose**
NKU-810B, NKU-820B	(HA-85SNG)	
NKC-503B, NKC-505B	(HA-50SNG)	**NK Cupla Coil Hose**
NKC-603B, NKC-605B	(HA-65SNG)	

PLUG	
Type	**Model**
Hi Cupla	400PH, 600PH, 800PH
	400PM, 600PM, 800PM
	400PF, 600PF, 800PF
Line Cupla 200	200L Type (Inler Port)
	200S Type (Inlet Port)

Can be connected with each other

SOCKET	
Model	**Type**
400SH, 600SH, 800SH	**Hi Cupla**
400SM, 600SM, 400SF	
800SM, 600SF, 800SF	
PV-400SM, PV-600SM	**Purge Hi Cupla**
PVR-400SH, PVR-600SH, PVR-800SH	**Purge Hi Cupla PVR Type**
PVR-400SM, PVR-600SM, PVR-800SM	
PVR-400SF, PVR-600SF, PVR-800SF	

Production Facilities that assure our Product Quality

Large scale production facilities in Tochigi Prefecture, Japan and Ayuttaya, 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 developemnt 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.

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**	
Address		**TEL**	
Department / Section		**Full Name**	

■ 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 • 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 ( ) ℃ Normal ( ) ℃ Minimum ( ) ℃		
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.

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.

Accessories for O-ring maintenance

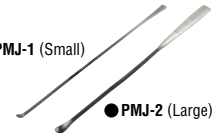
Grease for O-ring

- **GRE-M1** (mineral oil) for NBR • FKM
- **GRE-SI** (silicon oil) NBR, FKM and EPDM

15m ℓ container

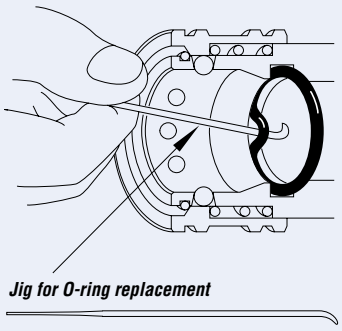
Jig for O-ring replacement

- **PMJ-1** (Small)
- **PMJ-2** (Large)



How to take out the O-Ring

❶ Use an optional “Jig for O-ring replacement” to remove the O-ring. Even used O-rings with wear and tear or deterioration can be removed easily with the jig.

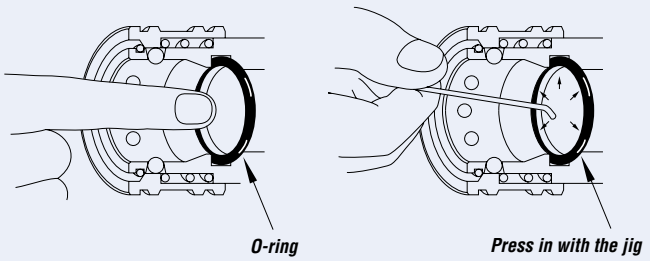


Jig for O-ring replacement

❷ After removing the O-ring, wipe the groove clean with a cloth.

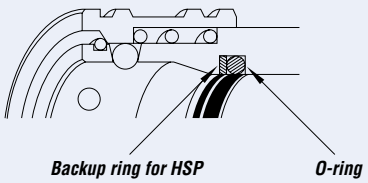
Install a new O-ring

❶ To fit a new O-ring, press in one part of the O-ring and the remaining part can be easily pressed in with the jig.



O-ring *Press in with the jig*

❷ 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.



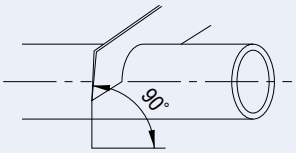
Backup ring for HSP *O-ring*

Semicon Cupla SCF Type

How to attach a tube to the socket

❶ Cut the tube

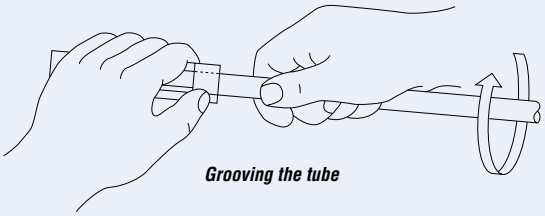
Cut the tube (PFA) as shown below with a cutter blade or a knife.



❷ 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

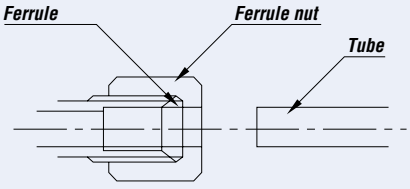
- **Special jigs**

Socket type	Tube size	Jig Model No.
SCF-2SL-N08	ø8 x ø6	T-8
SCF-3SL-N10	ø10 x ø8	T-10

You may buy the jigs through Nitto Kohki.

❸ 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)

❹ 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.

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 products, and "Caution" on the package before use.

Cuplas for air piping (Pages 17~60)

⚠ Caution

- Do not use for the purpose of other than quick connective coupling between fluid pipelines.
- Do not put fluids other than the specified by the maker through Cuplas.
- Do not connect with other brands' quick connective couplings.
- Do not use Cuplas 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 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 metal debris or sands may be around. This may cause malfunction or leakage.
- Careless paint on Cuplas may cause malfunction or leakage.
- Never disassemble Cuplas without enough repair know-how.

Cautions on Handling Hose (Pages 48)

⚠ 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. They 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 place hoses near fire as this may lead to softening or deformation of hoses.
- Keep hoses in a shaded, dry and well-ventilated place.
- Do not bend a polyurethane hose at less than the minimum-bending radius of 30mm.

Cupla for oxygen / fuel gas (Pages 61~64)

⚠ Warning

- Fluid must be supplied from socket to plug.
- Apply liquid/tape sealant on male taper threads to ensure no leak.
- Do not tighten screws in excess of the rated maximum tightening torque, otherwise it may cause damage.
- Do not put fluids other than the specified by the maker through Cuplas.
- Do not connect with other brands' quick connective couplings.
- Do not use Cuplas 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 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 metal debris or sands 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. Otherwise it may cause spontaneous combustion.
- Cut off and throw away the hose at least 3cm from the end before it is reused.

⚠ Caution

- Do not use for the purpose of other than quick connect coupling between fluid pipelines.
- 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, which 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 to which the Cupla is connected is closed before connection.

Cupla for Inert Gas (Pages 65~68)

⚠ Warning

- Do not use Cuplas continuously under any pressure exceeding the rated working pressure. It might damage the seal material and result in a leak.
- Do not use at temperatures outside the rated working temperature range. Otherwise you 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 with fluid under dynamic pressure or static residual pressure. (excluding connection of HSP-PV type)
- Do not disassemble.

⚠ Caution

- Apply liquid/tape sealant on male taper threads to ensure no leak.
- Do not apply any artificial impact, bend, or tension other than necessary in connection and disconnection. This may cause leakage or damage.
- Do not put fluids other than the specified by the maker through Cuplas.
- Do not use for the purpose of other than quick connect coupling between fluid pipelines.
- Do not connect with other brands' quick connect couplings.
- Do not use in a place where metal debris or sands 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.

Cuplas for gases or liquids (Pages 69~72, 75~80)

⚠ Warning

- Do not put fluids other than the specified by the maker through Cuplas.
- Do not use Cuplas 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 material inside and cause leakage.
- Do not pressurize the socket or plug with fluid while disconnected.
- Do not disassemble.

⚠ Caution

- Apply liquid/tape sealant on male taper threads to ensure no leak.
- Do not tighten up the screw on Cupla exceeding the rated maximum tightening torque, which may cause damage.
- Do not use for the purpose of other than quick connect coupling between fluid pipelines.
- Do not connect with other brands' quick connect 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 metal debris or sands 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 reaching the Cuplas.
- O-rings in Cuplas must remain lubricated at all times.
- Don't strike the revealed end of an automatic shut-off valve with a hammer or the like. It 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.

HCF Cupla Series (Pages 73~74)

⚠ Danger

- Do not pressurize the socket or plug with fluid while disconnected. This may cause damage on seal material or possible valve blow out.
- Do not touch Cuplas with bare hands when heated to high temperature.
- Do not connect/disconnect Cuplas with fluid of high temperature in line. This may cause heated fluid splash. Wear appropriate clothes and protective gear while in connection or disconnection operation.

⚠ Warning

- Do not use Cuplas 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 material inside and cause leakage.
- Do not disassemble.
- Do not put fluids other than the specified by the maker through Cuplas.
- Do not connect/disconnect with fluid under dynamic pressure or static residual pressure in line. This may cause heated fluid splash.

⚠ Caution

- Apply liquid/tape sealant on male tapered pipe threads to ensure no leak.
- Do not tighten up the screw on Cupla exceeding the rated maximum tightening torque, which may cause damage.
- Do not apply any artificial impact, bend, or tension other than necessary in connection and disconnection. This may cause leakage or damage.
- Avoid scratching or hitting the projected ring-shaped seal surface of the plug. Otherwise such may cause leakage.
- Do not use in a place where metal debris or sands may be around. This may cause malfunction or leakage.
- Do not connect Cuplas with dirt or dust still sticking to the seal material. This may cause malfunction or leakage. When dirt or dust is found to be sticking to the seal material, clean the seal material so as not to damage.
- Do not use for the purpose of other than quick connect coupling between fluid pipelines.
- Do not use as a swivel joint.
- Fluid must be cleaned through filters before reaching the Cuplas.
- A shut-off valve must be installed between pressure source and the Cupla.
- Direct hookup to a vibration or impact device may result with reduced lifetime.
- Do not strike the revealed end of an automatic shut-off valve with a hammer or similar. This may cause leakage or malfunction.
- Do not connect with other brands' quick connective couplings.
- Design and keep the fluid flow speed through Cuplas below 8 m/s.
- Check up Cuplas periodically. If any disorder is shown, stop using the Cuplas until properly repaired or replaced with new ones.

⚠ 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 attached on the bottom-right corner, which are always inscribed on Nitto Kohki Cupla products, when you order and purchase.

Precautions relating to the use of all Cuplas

- **Be sure to read "Instruction Sheet" that comes with the products, and "Caution" on the package before use.**

Hydraulic Cupla (Pages 81~98)

⚠ Warning

- Do not put fluids other than the specified by the maker through Cuplas.
- Do not use Cuplas 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 material inside and cause leakage.
- Do not connect/disconnect with fluid under dynamic pressure or static residual pressure. (excluding connection of HSP-PV type)
- Do not pressurize the socket or plug with fluid while disconnected. (SP type Cupla)
- Do not disassemble.

⚠ Caution

- Apply liquid/tape sealant on male taper threads to ensure no leak.
- Do not tighten up the screw on Cupla exceeding the rated maximum tightening torque, which may cause damage.
- Do not use for the purpose of other than quick connect coupling between fluid pipelines.
- Do not connect with other brands' quick connect 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 use in a place where metal debris or sands 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 invade zinc plating.
- Fluid must be cleaned through filters before reaching the Cuplas.
- O-rings in Cuplas must remain lubricated at all times.
- Design and keep the fluid flow speed through Cuplas below 8 m/s.
- Don't strike the revealed end of an automatic shut-off valve with a hammer or the like. It 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 cooling water and heating oil (Pages 99~101)

⚠ Caution

- Do not put fluids other than the specified by the maker through Cuplas.
- Do not use Cuplas 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 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 metal debris or sands may be around. This may cause malfunction or leakage.
- Careless paint on Cuplas may cause malfunction or leakage.
- Do not tighten screws in excess of the rated maximum tightening torque, otherwise it may cause damage.
- Do not use a hose with cracks, which 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 reaching the Cuplas.
- Do not disassemble.

Paint Cupla (Pages 102)

⚠ Warning

- Do not use Cuplas 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 material inside and cause leakage.
- Do not put fluids other than the specified by the maker through Cuplas.
- Check carefully if your special paint or solvent is suitable with the Cupla before use.
- Grounding must be secured for such a hose where earth wire is embedded. 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.
- Never disassemble Cuplas without enough repair know-how.

⚠ Caution

- This Cupla is designed for paints diluted by solvents. Don't use this Cupla for other than this specific application.
- Do not tighten up the screw on Cupla exceeding the rated maximum tightening torque, which may cause damage.
- 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 as a swivel joint.
- Fluid must be cleaned through filters before reaching the 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 connect 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 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.

Semicon Cupla (Pages 103~107)

⚠ Caution

- Prior to initial use, the seal material should be tested to confirm the material suitability for the fluid.
- Apply liquid/tape sealant on male taper threads to ensure no leak.
- Do not tighten up the screw on Cupla exceeding the rated maximum tightening torque, which may cause damage.
- 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 and tear.
- Small amount of fluid will spill out during 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.
- Do not use for the purpose of other than quick connect coupling between fluid pipelines.
- 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 disconnected. This may cause possible valve blow out.
- Be sure to mount a proper dust cap while the Cuplas are left disconnected.
- Never disassemble Cuplas without enough repair know-how.

Dialyzer Cupla (Pages 108)

⚠ Caution

- Do not use Cuplas 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 material inside and cause leakage.
- Do not use for the purpose of other than quick connect coupling between fluid pipelines.
- Do not apply any artificial impact, bend, or tension other than necessary in connection and disconnection. This may cause leakage or damage.
- Never disassemble Cuplas without enough repair know-how.

Multi Cupla (Pages 109~112)

⚠ Caution

- 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 purpose of other than quick connect coupling between fluid pipelines.
- Direct hookup to a vibration or impact device may result in reduced lifetime.
- Connection under pressure may cause damage to the valve seal depending on use conditions and result in fluid leakage.

Semi-Standard Cupla Series (Pages 115~120)

⚠ Caution

- Do not use for the purpose of other than quick connect coupling between fluid pipelines.
- Do not put fluids other than the specified by the maker through Cuplas.
- Do not connect with other brands' quick connect couplings.
- Do not use Cuplas 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 material inside and cause leakage.
- Do not tighten up the screw on Cupla exceeding the rated maximum tightening torque, which may cause damage.
- 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 metal debris or sands may be around. This may cause malfunction or leakage.
- Careless paint on Cuplas may cause malfunction or leakage.
- Never disassemble Cuplas without enough repair know-how.

Nitto Kohki's CUPLA

Nitto Kohki's Quality Products

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NITTO KOHKI CO., LTD. SEOUL REPRESENTATIVE OFFICE

★Specifications and designs are subject to change at any time without notice.

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