NITTO
NITTO KOHKI CO., LTD.

AIRSERVICE 24

Ck040d

Quick Connect Couplings

CUPLA

Cuplas Enable Flexible, Fast, and Secure Connections in Various Fluid Lines.

Contents

Standard Cupla Series

Semi-Standard Cupla Series

Accessories *(136 to 139)*

Quick Connect Couplings

CUPLA

Cuplas Enable Flexible, Fast, and Secure Connections in Various Fluid Lines.

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

- Applications diversify from general household to high-tech industries such as in oceanic and space development.
- Numerous sizes are available for various needs.
- Wide varieties of body materials such as steel, brass, plastic, aluminum or stainless steel are available.

For easy replacements:	*Replacements of pneumatic / hydraulic tools, pneumatic / hydraulic cylinders, mold attachments, etc.*
For temporary installation in test line:	*Vacuum tests, pressure durability tests, leakage tests, running tests, etc.*
For filling:	*For filling up various industrial gases, including inert gases, nitrogen, LPG, carbon dioxide, oxygen, fuel gas, etc.*
For maintenance services:	*For computer cooling system, hydraulic cylinders in die-casting machines.*
For transfer:	*For transfer of solid items through pipes such as screws and nuts as well as for electric power cable lines.*
As joints:	*Applications other than fluid transfer covering connections for holding works while anchored or carried around.*

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

ISO 9001 and 14001 Certification Award

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

ISO 14001
JQA-EM4057
NITTO KOHKI CO.,LTD.

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

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.

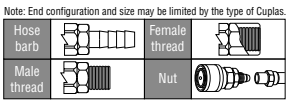
Select an Appropriate Cupla for the Job

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 5.0 MPa (50 kgf/cm^2) and 68.6 MPa (700 kgf/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.



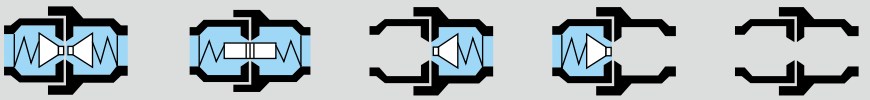
If you cannot find a suitable Cupla, please enter the above details in the “Cupla Inquiry Form” at the end of this catalog and send it to our distributor in your country or directly to Nitto Kohki by fax or post.

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

Plug Socket Valve



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

Working pressure

1.0 MPa {10 kgf/cm^2}

Applicable fluids

Air | Water | Hydraulic oil | Steam | Oxygen, Fuel Gas | Cooling water | Gas | Inert gas, Vacuum, Helium | High purity chemicals | Heated oil

Powder | Solvent based paint

Glossary

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

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

Glossary

The Meaning of Each Letter in the Model Name

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

Model name (in case of Hi Cupla 200)

200 - 20 S H

Series name

End configuration *2

Symbol	H	M	F
Meaning	Hose barb	Male thread	Female thread

Plug or Socket

Symbol	P	S
Meaning	Plug	Socket

Size *1

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

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

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

Body material

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

Body Material		Major applicable fluid
Common name	Mark	
Brass	BRASS	Air, Water, Oil
Iron, Steel	STEEL	Air, Oil
Stainless steel	SUS	Air, Water, Oil

Please refer to Page 144 for body material selection table.

Size

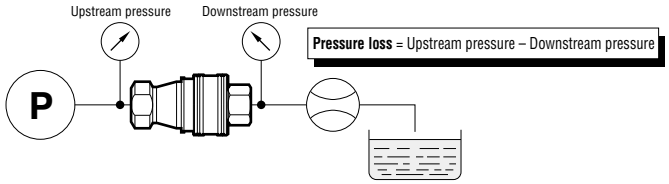
This indicates the nominal size of the pipe thread connection or of the hose to be used.

Working pressure

This shows the normal allowable fluid pressure under continuous use.

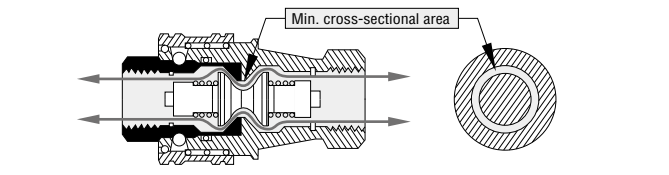
Pressure Loss

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

• Properties of rubbers used for O-rings

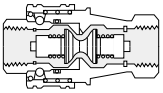
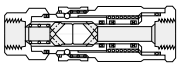
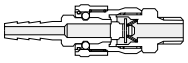
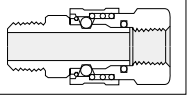
Seal material		Working Temperature Range	Features
Common name	Nitto symbol		
Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard seal with excellent oil resistance.
Hydrogenated nitrile rubber	HNBR	−20°C to +120°C	Compared with the standard nitrile rubber, the seal material is more heat and weather resistant.
	HNBR (H708)	−20°C to +120°C	In addition to the above features, the seal material can also be used for refrigeration oil and refrigerant applications such as HFC-134a. (The seal material is employed only in SP-V Cupla and PCV Pipe Cupla.)
Fluoro rubber	FKM (X-100)	−20°C to +180°C	Excellent for heat, weather, and oil resistance. Applicable to wide range of applications.
Chloroprene rubber	CR (X-306)	−20°C to +80°C	Excellent weather resistance.
	CR (C308)	−20°C to +80°C	In addition to the above features, the seal material can also be used for refrigeration oil and refrigerant applications such as HFC-134a.
Ethylene-propylene rubber	EPDM (EPT)	−40°C to +150°C	Excellent resistance to steam and hot water, also excellent resistance to weather and ozone.
Perfluoroelastomer	P	0°C to +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. The above are general features, but the seal resistance depends on fluid temperature, fluid concentration, and additives contained in the fluid.

Working Temperature Range

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

Valve Structure

Two-way shut-off		Automatic shut-off valves are mounted in both plug and socket. The valves prevent spill out of fluid from the lines on disconnection. 
Two-way shut-off (Spill Reductin)		"Two-way shut-off" with spill reduction design allows extremely little admixture of air on connection and minimizes 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

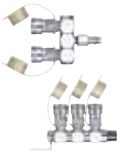
The design of some Cuplas may restrict the fluid flow direction only to one way. Check the maker's suggested direction before mount.

Guide for Selecting "NITTO" Standard Cuplas

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

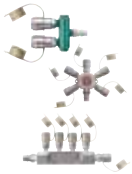
Applicable fluid		For Low Pressure (Air)							
Name		Micro Cupla	Small Cupla	Compact Cupla	Cube Cupla	Super Cupla	Hi Cupla	Hi Cupla BL	Hi Cupla 200
Photo									
Body material • Working pressure (MPa)	Brass	1.0	1.0	1.0			1.0		
	Stainless steel	1.0		1.0			1.5	1.5	
	Steel					1.0	1.5	1.5	1.5
	Plastic				1.0				
	Others					1.0			
Body surface treatment		Chrome-plated (Brass only)	Chrome-plated Nickel-plated (With Tube Fitter only)	–	–	Chrome-plated (Steel only) Nickel-plated (With Tube Fitter only)	Chrome-plated (Steel only)	Chrome-plated (Steel 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		-20˚C to +80˚C (NBR)	-20˚C to +80˚C (NBR)	-20˚C to +180˚C (FKM)	-20˚C to +60˚C (NBR)	-20˚C to +80˚C (NBR)	-20˚C to +80˚C (NBR)	-20˚C to +80˚C (NBR)	-20˚C to +60˚C (NBR)
Seal material		NBR, FKM	NBR	FKM, EPDM	NBR	NBR	NBR, FKM	NBR	NBR
Connection method	Manual			○			○	○	
	Push-to-connect	○	○		○	○			○
Valve structure	Two-way shut-off			○	○				
	Two-way shut-off (Non-Spill)								
	One-way shut-off	○	○		○	○	○	○	○
	Straight through				○				
Detailed information page		*17*	*21*	*23*	*25*	*27*	*29*	*31*	*33*

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

For Low Pressure (Air)									
Hi Cupla for Connection to Braided Hoses	**Nut Cupla** Rotary Nut Cupla	**Nut Cupla 200**	**Lock Cupla 200**	**Hi Cupla** Two Way Type	**Full-Blow Cupla**	**Purge** Hi Cupla PVR	**Purge** Hi Cupla	**Purge Line** Cupla	**Rotary** Line Cupla
									
1.0							1.0	1.0	
1.5	1.5	1.5	1.5	1.5					
					1.5	1.5			1.5
Chrome-plated (Steel only)	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	–	–	Chrome-plated	Chrome-plated	Chrome-plated
			○	○	○		○		○
			○	○	○		○		
			○	○	○	○	○	○	○
						○	○		
						○			
○	○	○	○		○				○
-20˚C to +80˚C (NBR)	-20˚C to +60˚C (NBR)	-20˚C to +60˚C (NBR)	-20˚C to +60˚C (NBR)	-20˚C to +80˚C (NBR)	-20˚C to +60˚C (NBR)	-20˚C to +60˚C (NBR)	-20˚C to +60˚C (NBR)	-20˚C to +60˚C (NBR)	-20˚C to +60˚C (NBR)
NBR	NBR	NBR	NBR	NBR, FKM	NBR	NBR	NBR	NBR	NBR
○	○			○					○
		○	○		○	○	○	○	
○	○	○	○	○	○	○	○	○	○
35	*35*	*35*	*37*	*38*	*39*	*41*	*43*	*44*	*45*

Guide for Selecting "NITTO" Standard Cuplas

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

Applicable fluid		For Low Pressure (Air)							
Name		Line Cupla 200T/L/S	Rotary Full-Blow Line Cupla	Hi Cupla Ace	Rotary Plug	Twist Plug	Purge Plug	Anti-Vibration Plug Hose	Duster Cupla
Photo									
Body material • Working pressure (MPa)	Brass								
	Stainless steel								
	Steel				1.5	1.0	1.0		
	Plastic			1.0, 1.5					
	Others	1.5	1.5					1.5	1.0
Body surface treatment		Chrome-plated	—	—	Nickel-plated	Nickel-plated	Chrome-plated	—	Chrome-plated
Size	1/8"					○			
	1/4"	○	○	○	○	○	○	○	○
	5/16"								
	3/8"			○	○	○	○	○	○
	1/2"	○	○				○		○
	3/4"								
	1"								
	1 1/4"								
	1 1/2"								
	2"								
	2 1/2"								
	3"								
	4"								
	Others		○	○			○		○
Working temperature range		-20˚C to +60˚C (NBR)	-20˚C to +60˚C (NBR)	-20˚C to +60˚C (NBR)	-20˚C to +80˚C (NBR)	-20˚C to +60˚C (NBR)	-20˚C to +60˚C (NBR)	—	-20˚C to +60˚C (NBR)
Seal material		NBR	NBR	NBR	NBR	NBR	NBR	—	NBR
Connection method	Manual								○
	Push-to-connect	○	○	○					
Valve structure	Two-way shut-off								
	Two-way shut-off (Non-Spill)								
	One-way shut-off	○	○	○					○
	Straight through								
Detailed information page		*47*	*49*	*51*	*53*	*54*	*55*	*56*	*57*

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

For Low Pressure (Air)		For Oxygen and Fuel Gas		For Low Pressure (Water)					
NK Cupla Hose	NK Cupla Coil Hose	Mini Cupla	Mini Cupla Super	Micro Cupla	Small Cupla	Compact Cupla	Cube Cupla	Hi Cupla	Hi Cupla Ace
									
		0.7	0.7	1.0	1.0	1.0		1.0	
				1.0		1.0		1.5	
			0.7						
							1.0		1.0, 1.5
1.0	0.7								
Chrome-plated (Plug only)	Chrome-plated (Plug only)	–	Chrome-plated	Chrome-plated (Brass only)	Chrome-plated	–	–	–	–
		○		○	○	○	○	○	
		○	○		○			○	○
		○	○						
		○	○					○	○
								○	
								○	
								○	
○	○	○	○	○	○	○	○		○
-5˚C to +60˚C (NBR)	-5˚C to +60˚C (NBR)	-20˚C to +80˚C (NBR)	-20˚C to +80˚C (NBR)	-20˚C to +80˚C (NBR)	-20˚C to +80˚C (NBR)	-20˚C to +180˚C (FKM)	-20˚C to +60˚C (NBR)	-20˚C to +80˚C (NBR)	-20˚C to +60˚C (NBR)
NBR	NBR	NBR	NBR	NBR, FKM	NBR	FKM, EPDM	NBR	NBR, FKM	NBR
						○		○	
○	○	○	○	○	○		○		○
						○	○		
○	○	○	○	○	○		○	○	○
							○		
58	*58*	*59*	*61*	*20*	*21*	*23*	*25*	*29*	*51*

Guide for Selecting "NITTO" Standard Cuplas

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

Applicable fluid		For Low Pressure (Water)				For Medium Pressure / For Low Pressure			
Name		Mold Cupla	Mold Cupla High Flow Type	Flow Meter	Lever Lock Cupla	TSP Cupla	TSP Cupla with Ball Valve	SP Cupla Type A	Zerospill Cupla
Photo									
Body material • Working pressure (MPa)	Brass	1.0	1.0			5.0,3.0,2.0,1.5	1.0	5.0,3.0,2.0,1.5	3.5
	Stainless steel				1.8, 1.6, 1.1	7.5,4.5,3.0,2.0		7.5,4.5,3.0,2.0	3.5
	Steel					7.5,4.5,3.0,2.0		7.5,4.5,3.0,2.0	
	Plastic				0.5, 0.2				
	Others			0.5	1.8,1.1,0.9,0.7				
Body surface treatment		–	–	–	–	Nickel-plated (Steel only)	–	Nickel-plated (Steel only)	–
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 to +80˚C (NBR)	-20˚C to +80˚C (NBR)	+20˚C to +60˚C (NBR)	-20˚C to +80˚C (NBR) +5˚C to +50˚C (PP body)	-20˚C to +80˚C (NBR)	-5˚C to +120˚C (FKM)	-20˚C to +80˚C (NBR)	-20˚C to +80˚C (NBR)
Seal material		NBR, FKM	NBR, FKM	NBR	NBR, FKM, SI, EPDM	NBR, FKM, EPDM	FKM	NBR, FKM, EPDM	NBR, FKM, 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		*63*	*65*	*66*	*67*	*71*	*73*	*75*	*77*

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

For High Pressure									
HSP Cupla	Hyper HSP Cupla	210 Cupla	HSU Cupla	S210 Cupla	280 Cupla	350 Cupla	Flat Face Cupla F35	Flat Face Cupla FF	450B Cupla
									
			21.0	20.6					
20.6,18.0,14.0	20.6	20.6			31.5, 27.5	34.5	35	35	44.1
Nickel-plated	Nickel-plated	Nickel-plated	–	–	Bright chromate conversion coating	Nickel-plated	Nickel-plated	Autocatalytic nickel-phosphorus coating	Nickel-plated
○	○	○	○	○	○	○	○		
○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	
○	○	○	○	○	○	○	○	○	
○						○			
○						○			
○						○			
-20˚C to +80˚C (NBR)	-20˚C to +80˚C (NBR)	-20˚C to +80˚C (NBR)	-20˚C to +120˚C (HNBR)	-20˚C to +180˚C (FKM)	-20˚C to +80˚C (NBR)	-20˚C to +180˚C (FKM)	-20˚C to +180˚C (FKM)	-20˚C to +80˚C (NBR)	-20˚C to +80˚C (NBR)
NBR, FKM	NBR	NBR, FKM	HNBR	FKM, NBR	NBR	FKM, NBR	FKM, NBR	NBR	NBR, FKM
○	○	○	○	○	○				○
						○	○	○	
○	○	○	○	○	○				○
						○	○	○	
79	*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 High Pressure	For Multi-Port Connection (Manual)			For Multi-Port Connection (Automatic)			
Name		700R Cupla	Multi Cupla MAM Type	Multi Cupla MAM-B Type	Multi Cupla MAM-A Type	Multi Cupla MAS	Multi Cupla MAT	Multi Cupla MALC-SP	Multi Cupla MALC-HSP
Photo									
Body material • Working pressure (MPa)	Brass		0.7	1.0	1.0				
	Stainless steel					7.0	7.0	7.5, 5.0, 1.5	
	Steel	68.6							25.0, 21.0
	Plastic								
	Others								
Body surface treatment		Nickel-plated	Chrome-plated	Nickel-plated	Nickel-plated	Autocatalytic nickel-phosphorus coating	Autocatalytic nickel-phosphorus coating	Autocatalytic nickel-phosphorus coating	Autocatalytic nickel-phosphorus coating
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 to +80˚C (NBR)	-20˚C to +60˚C (NBR)	-20˚C to +180˚C (FKM)	-20˚C to +180˚C (FKM)	-20˚C to +180˚C (FKM)	-20˚C to +180˚C (FKM)	-20˚C to +180˚C (FKM)	-20˚C to +180˚C (FKM)
Seal material		NBR, FKM	NBR	FKM	FKM	FKM	FKM	FKM	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*	*105*	*109*	*109*	*111*	*115*

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

For High Purity Chemicals						For Paint	For Inert Gas and Vacuum		
Semicon Cupla SP Type	Semicon Cupla SCS Type	Semicon Cupla SCY Type	Semicon Cupla SCT Type	Semicon Cupla SCAL Type	Semicon Cupla SCF Type	Paint Cupla	SP-V Cupla	PCV Pipe Cupla	
									
							5.0, 3.0	4.5	
0.2	0.2	0.2				1.0	7.5, 4.5		
			0.2	0.2	0.2				
						1.0			
Electropolished	Electropolished	Electropolished	–	–	–	–	–	–	
○	○	○							
○	○	○	○	○			○	○	
○	○	○	○	○	○	○	○	○	
○	○	○	○	○	○		○		
○	○	○	○	○			○		
○	○	○	○	○					
				○					
					○			○	
0˚C to +50˚C (FKM)	0˚C to +50˚C (P)	0˚C to +50˚C (P)	+5˚C to +50˚C (FKM)	+5˚C to +50˚C (FKM)	+5˚C to +50˚C (FKM)	0˚C to +50˚C (PFA)	-20˚C to +80˚C (CR)	-20˚C to +80˚C (CR)	
FKM, EPDM, P, KL	P (O-ring for socket)	P, PTFE (Packing seal for socket)	FEP-coated FKM	FEP-coated FKM	FEP-coated FKM	PFA	CR, FKM, HNBR	CR, FKM, HNBR	
○	○	○	○			○	○	○	
				○	○				
○	○	○	○		○		○		
				○					
						○			
								○	
119	*120*	*121*	*122*	*123*	*124*	*125*	*127*	*129*	

Semi-standard Cupla Series

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

Accessories

Special Made-to-Order Cuplas

Cupla Safety Mechanism

Cupla with Single Lock
131 Page

Accidental disconnection prevention mechanism

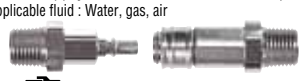
Cupla with Safety Lock
131 Page

Accidental disconnection prevention mechanism

For Temperature Controllers

MYU Cupla
132 Page

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



Valve structure: Two-way shut-off

Working pressure : 1.0 MPa {10 kgf/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
132 Page

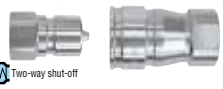
For small bore piping (max.14 mm outer diameter) to control temperatures
Applicable fluid : Water, gas, air

Valve structure: Two-way shut-off

Working pressure : 1.5 MPa {15 kgf/cm²}
Body material : Stainless steel, brass (chrome-plated)
Application : Please let us know the required sizes and end configurations.
Seal material : NBR, EPDM, FKM

High Flow Cupla
133 Page

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

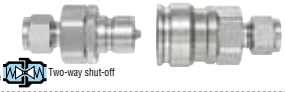


Valve structure: Two-way shut-off

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

High Flow Cupla BI Type
134 Page

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



Valve structure: Two-way shut-off

Working pressure : 1.0 MPa {10 kgf/cm²}
Body material : Stainless steel
Application : 1/8" to 1/2"
Seal material : EPDM, FKM

For Water

TSP-HP Cupla (for High Pressure)
132 Page

High pressure and general purpose type

Valve structure: Straight through

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

For Low Pressure (air)

Plastic Cupla BC Type
135 Page

Valveless type for low pressure air piping

Valve structure: Straight through

Working pressure : 0.07 MPa {0.7 kgf/cm²}
Body material : Plastic
Application : 1/4", 3/8"
Seal material : NBR

Plastic Cupla BCC Type
135 Page

Equipped with flow controller for low pressure air piping

Valve structure: One-way shut-off

Working pressure : 0.07 MPa {0.7 kgf/cm²}
Body material : Plastic
Application : 3/8"
Seal material : NBR

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.

Accessories

Dip Mold Cap
136 Page

Dust caps for Hi Cupla, SP Cupla Type A, TSP Cupla, Zerosupill Cupla and Hydraulic Cupla

Safety Cap
136 Page

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

Sleeve Cover
137 Page

Plastic cover for Hi Cupla Series

Protection Cover
137 Page

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

Dust Cap
137 Page

Plastic cap for Hi Cupla Series

Drain Cock / Pressure Gauge
137 Page

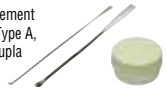
Accessories for Air Lines of Hi Cupla Series

Sleeve Stopper
137 Page

Sleeve Stopper for SP Cupla Type A

Accessories for O-ring Maintenance
138 Page

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

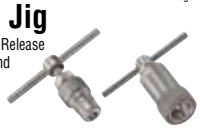


Purge Adapter
138 Page

Metal Purge Adapter for Hydraulic lines
•Semi-standard

Residual Pressure Release Jig
138 Page

Residual Pressure Release Jig for SP Cupla and Hydraulic Cuplas



Cupla Adapter for Braided Hose Connection
139 Page

Mounts on Cupla plug / socket with female thread

NEW

For Inert Gases

Charge Cupla CS Type

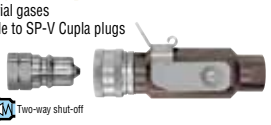
For industrial gases
Connectable to SP-V Cupla plugs

Valve structure: Two-way shut-off

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

Charge Cupla CNR Type

For industrial gases
Connectable to SP-V Cupla plugs



Valve structure: Two-way shut-off

Working pressure : 4.5 MPa {46 kgf/cm²}
Body material : Stainless steel (some parts are made of aluminum and brass)
Application : 1/4", 3/8", 1/2"
Seal material : CR, HNBR

Auto Cupla AC Type

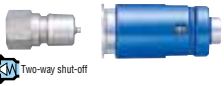
For industrial gases
Connectable to SP-V Cupla plugs

Valve structure: Two-way shut-off

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

Auto Cupla ACV Type

For industrial gases
Connectable to SP-V Cupla plugs



Valve structure: Two-way shut-off

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

Airless Cupla CNA Type

For industrial gases

Valve structure: Two-way shut-off

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

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.

⚠ Important notice

Special made-to-order Cuplas are supplied based upon the specific instructions/ specifications detailed by the customer. Once written acceptance of our final drawing/ specifications of the Cupla is received from the customer we formally accept this as a final order. It is essential, as the customer, to carry out a performance test of the special made-to-order Cupla, in its specific usage conditions, for assurance of safety and adaptability to the hoses, pipes or devices used in the application. Use of the made-to-order Cupla in any application or condition other than those specified in the design drawing, will exclude Nitto Kohki from any liabilities for any special, indirect or consequential loss or damages.

For Gases and Liquids (Pipe Cupla Series)

PCB Cupla
For expanded pipes

Valve structure: Straight through

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

PCBW Cupla
For bulged pipes and spool pipes

Valve structure: Straight through

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

PCP Cupla
For bulged pipes and spool pipes

Valve structure: Straight through

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

PCBL Cupla
For straight pipes

Valve structure: Straight through

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

PCL Cupla
For straight pipes

Valve structure: Straight through

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

PCW Cupla
For straight pipes

Valve structure: Straight through

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

For Inert Gas and Vacuum

PCA Cupla
Pipes for high pressure line

Valve structure: Straight through

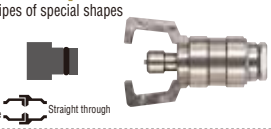
Working pressure : To be defined after consultation.
Body material : Brass (some of the parts are of stainless steel and steel)
Pipe sizes : To be complied with your requirements.
Seal material : CR, FKM, NBR

PCIO Cupla
For pipes that have inner locking system

Valve structure: Straight through

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

PCD Cupla
For pipes of special shapes



Valve structure: Straight through

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

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

Valve structure: Straight through

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

For Pneumatics and Hydraulics

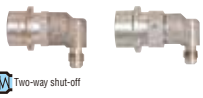
NCM Cupla
For connecting pneumatic/hydraulic lines

Valve structure: Straight through

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

For High Purity Chemicals

SML Cupla
For semiconductor manufacturing equipment



Valve structure: Two-way shut-off

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

SCF Straight Cupla
For semiconductor manufacturing equipment
•see page 124

Valve structure: Two-way shut-off

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

For Water

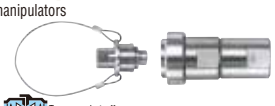
Airless Cupla
For physical and chemical devices

Valve structure: Two-way shut-off

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

For Manipulators

MP Cupla
For manipulators

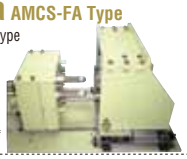


Valve structure: Two-way shut-off

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

For Automatic Multi Cupla

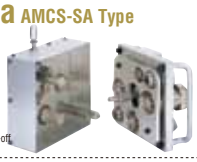
AMCS-FA Type
Full automatic operation type



Valve structure: Two-way shut-off

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

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 Purifiers

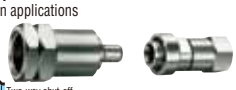
Cupla for Water Purifier
For water purifier

Valve structure: One-way shut-off

Working pressure : 0.5 MPa {5 kgf/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.

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

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.

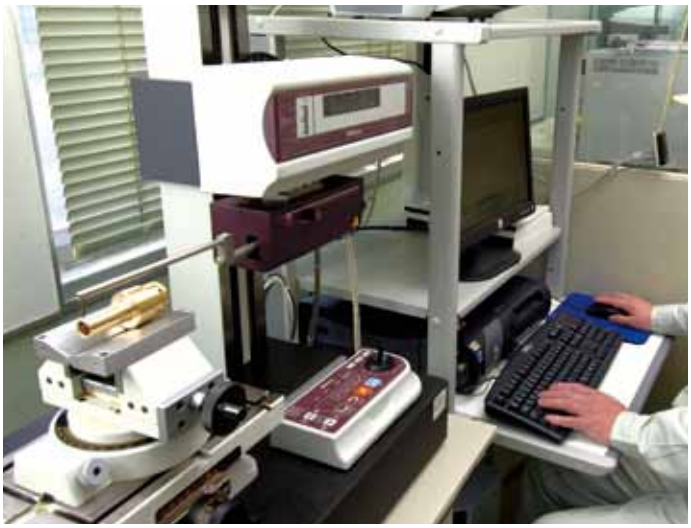
Quality control system that earns the constant trust from users

Electron microscope

Inspection and measurement with various testing devices

Automatic Cupla inspection system

Inspection in clean room



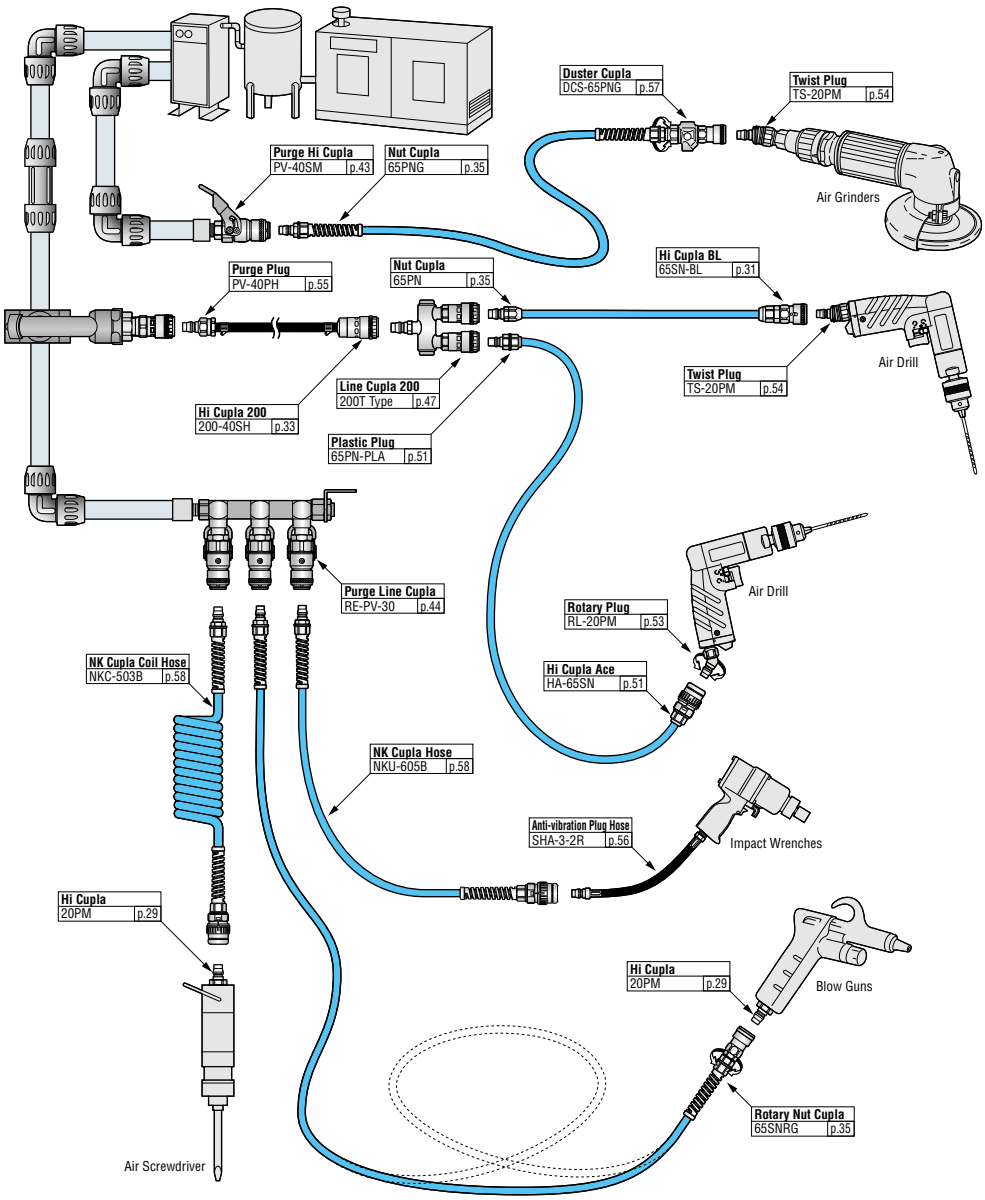
Shape measuring machine

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 Low Pressure

Micro Cupla

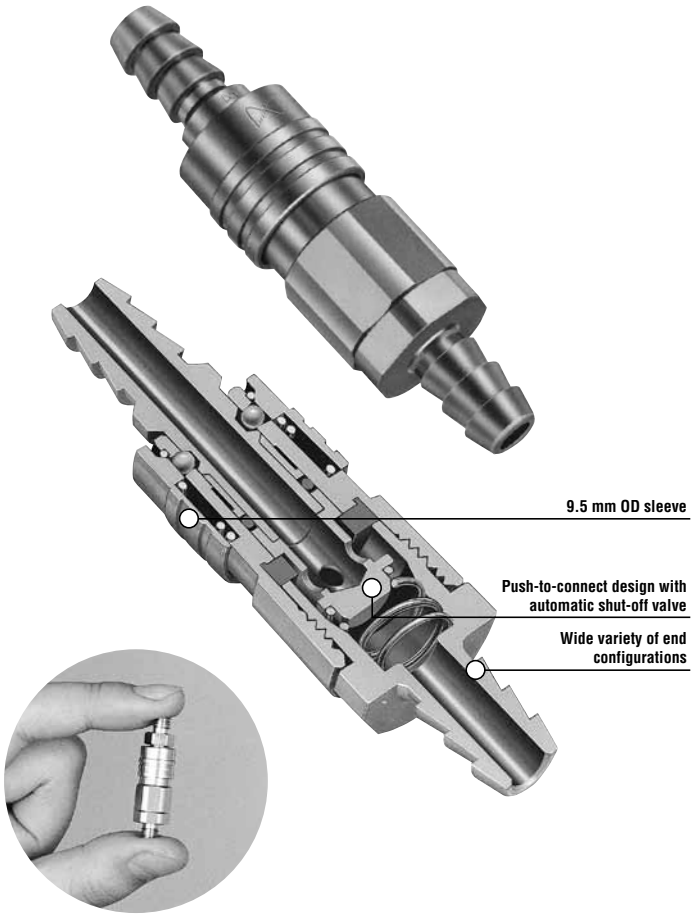
For piping in pneumatic control devices

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.)

Compact, lightweight Cuplas with only 9.5 mm 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 9.5 mm.
- Push-to-connect design.
- Compact design for piping in narrow spaces.
- Plated brass and stainless steel bodies are available for excellent corrosion resistance.
- Available in various end configurations to satisfy a wide range of pneumatic applications.

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



Specifications

Body material			Cupla : Brass (Plated), Stainless steel (SUS 304) Tube Fitter Type : Brass (Chrome-plated)		
Size	Thread		1/8" , M5 x 0.8		
	Tube barb (Tube fitter)		Tube ID ø3, ø4 Polyurethane tube: Outside Dia. ø4 ± 0.1, ø6 ± 0.1 Polyamide tube: Outside Dia. $ø4^{+0.05}_{-0.08}$, $ø6^{+0.05}_{-0.08}$ Fluorine contained resin tube: Outside Dia. ø4 ± 0.05, ø6 ± 0.07		
Working pressure		MPa	1.0		
		kgf/cm²	10		
		bar	10		
		PSI	145		
Seal material Working temperature range			Seal material	Mark	Working temperature range / Remarks
			Nitrile rubber	NBR (SG)	−20°C to +80°C / Standard material
			Fluoro rubber	FKM (X-100)	−20°C to +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 its working temperature range.
  Micro Cupla with Tube Fitter has NBR packing material only.

Max. Tightening Torque — Nm {kgf•cm}

Size (Thread)	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)

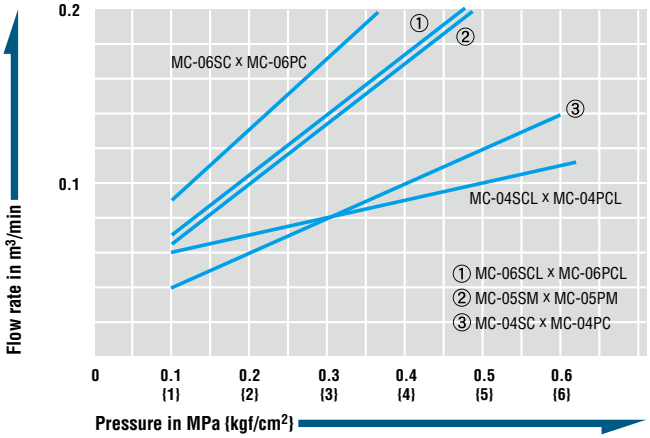
Model	MC-03SP	MC-04SP	MC-05SP	MC-10SP	Tube Fitter Type for 4 mm OD tube	Tube Fitter Type for 6 mm OD tube
Min. cross-sectional area	1.1	4.9	4.9	4.9	4.9	4.9

Suitability for Vacuum — 53.0 kPa {400 mmHg}

Socket only	Plug only	When connected
—	—	Operational

Pressure - Flow Characteristics

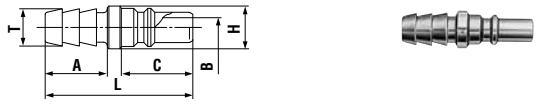
[Test conditions] •Fluid : Air •Temperature : Room temperature
•Tube size : ø4 mm x ø2 mm, ø6 mm x ø4 mm (Micro Cupla with Tube Fitter)



Models and Dimensions

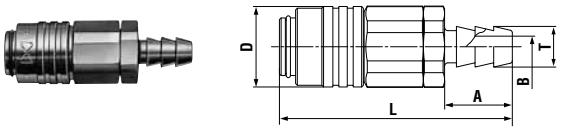
WAF : WAF stands for width across flats.

Plug PH type (Tube barb)



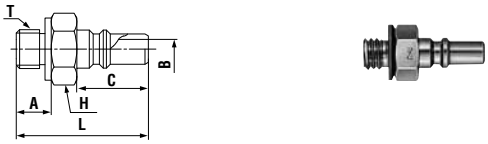
Model	Application (Tube)	Body material•Mass (g)	Dimensions (mm)					
		Brass	L	C	A	øH	øT	øB
MC-03PH	3 mm ID	1.2	19	9.2	8	5.5	3.5	1.2
MC-04PH	4 mm ID	1.4	19	9.2	8	5.5	4.8	2.5

Socket SH type (Tube barb)



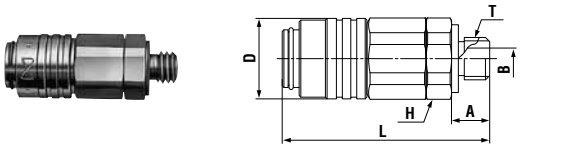
Model	Application (Tube)	Body material•Mass (g)	Dimensions (mm)				
		Brass	L	øD	A	øT	øB
MC-03SH	3 mm ID	7	(27.5)	9.5	8	3.5	1.2
MC-04SH	4 mm ID	7.3	(27.5)	9.5	8	4.8	2.5

Plug PM type (Male thread)



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

Socket SM type (Male thread)

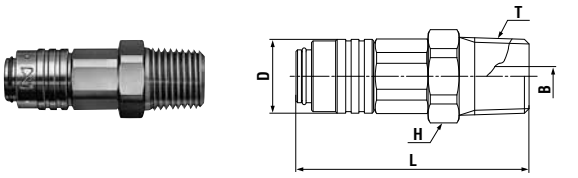


Model	Application	Body material•Mass (g)	Dimensions (mm)					
		Brass	L	øD	A	T	H(WAF)	øB
MC-05SM	M5 x 0.8	7.4	(24.5)	9.5	4.5	M5x0.8	Hex.9	2.5

Plug PM type (Male thread)

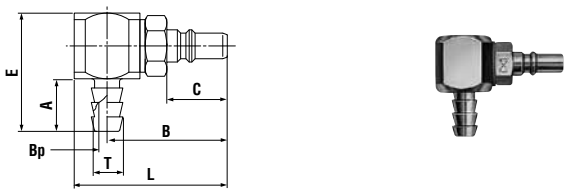
Model	Application	Body material•Mass (g)	Dimensions (mm)				
		Brass	L	C	H(WAF)	T	øB
MC-10PM	Rc 1/8	9	26	9.2	Hex.11	R 1/8	2.5

Socket SM type (Male thread)



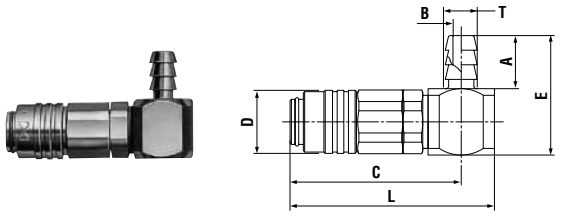
Model	Application	Body material•Mass (g)	Dimensions (mm)				
		Brass	L	øD	T	H(WAF)	øB
MC-10SM	Rc 1/8	13.1	(30)	9.5	R 1/8	Hex.11	3

Plug PHL type (Tube barb)



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

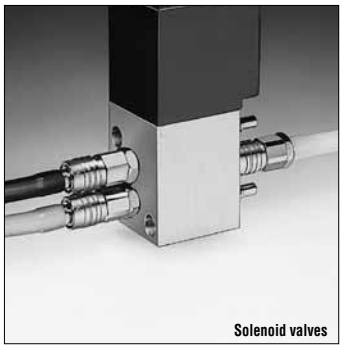
Socket SHL type (Tube barb)



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

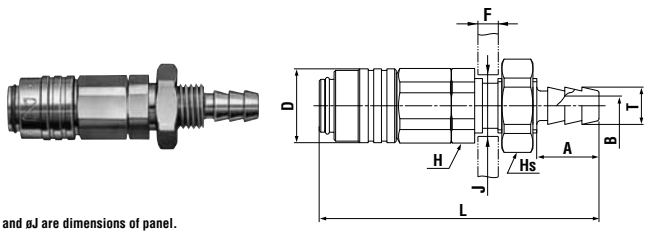
Application Example

Always fix tubes with hose clamps when using hose barb types.



Always fix tubes with hose clamps when using hose barb types.

Socket SHB type (For panel mounting)



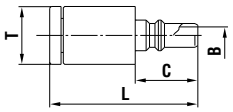
• F and øJ are dimensions of panel.

Model	Application (Tube)	Body material•Mass (g)	Dimensions (mm)								
		Brass	L	A	øD	øT	øB	Hs(WAF)	øJ	H(WAF)	F
MC-04SHB	4 mm ID	11.5	(36)	8	9.5	4.8	2.5	Hex.11	$7.1^{+0.3}_{0}$	Hex.9	1.2 to 3.5

Models and Dimensions (Micro Cupla with Tube Fitter)

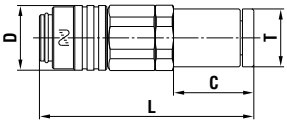
WAF : WAF stands for width across flats.

Plug PC type (With Tube Fitter)



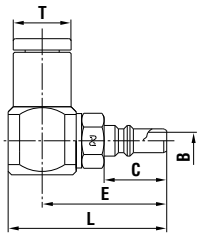
Model	Application (Tube)	Mass (g)	Dimensions (mm)			
			L	C	øT	øB
MC-04PC	4 mm OD	3	(21.7)	9.2	8	2.5
MC-06PC	6 mm OD	5	(25)	9.2	9.8	2.5

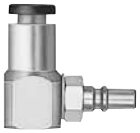
Socket SC type (With Tube Fitter)



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

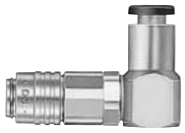
Plug PCL type (With L-shaped Tube Fitter)

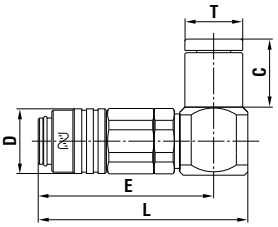




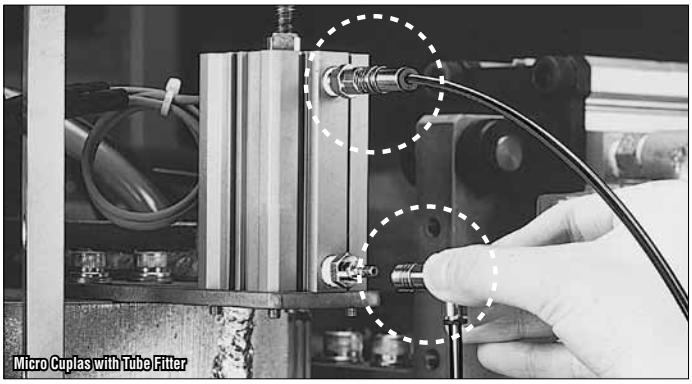
Model	Application (Tube)	Mass (g)	Dimensions (mm)				
			L	C	E	øT	øB
MC-04PCL	4 mm OD	10	(23.3)	9.2	(18.3)	8	2.5
MC-06PCL	6 mm OD	13.5	(24.3)	9.2	(18.8)	9.8	2.5

Socket SCL type (With L-shaped Tube Fitter)

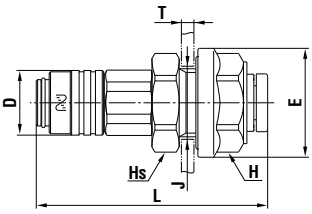




Model	Application (Tube)	Mass (g)	Dimensions (mm)				
			L	E	øD	C	øT
MC-04SCL	4 mm OD	16	(30.8)	(25.8)	9.5	(10)	8
MC-06SCL	6 mm OD	19	(31.8)	(26.3)	9.5	(12.5)	9.8



Socket SCB type (With Tube Fitter for panel mounting)



• T and øJ are dimensions of panel.

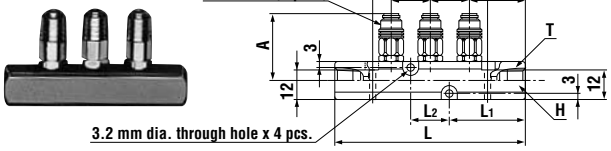
Model	Application (Tube)	Mass (g)	Dimensions (mm)						
			L	øD	øE	Hs(WAF)	H(WAF)	T	øJ
MC-04SCB	4 mm OD	15	(34)	9.5	16	Hex.13	Hex.13	3.5 or less	$10.5^{+0.3}_{0}$
MC-06SCB	6 mm OD	18.5	(36)	9.5	18	Hex.15	Hex.15	3.5 or less	$12.5^{+0.3}_{0}$

Models and Dimensions (Micro Line Cupla)

WAF : WAF stands for width across flats.

Socket Micro Line Cupla with three branch ports

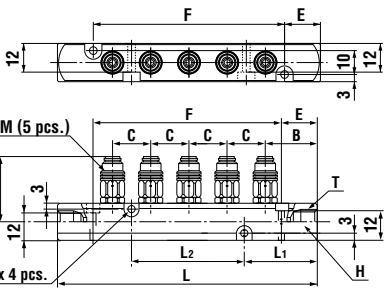
• The branch body is made of aluminum alloy.



Model	Mass (g)	Dimensions (mm)									
		L	L1	L2	A	B	C	E	F	T	H(WAF)
MC-03	65	78	31	16	(28.8)	23	16	15	48	2xRc 1/8	Box 16

Socket Micro Line Cupla with 5 branch ports

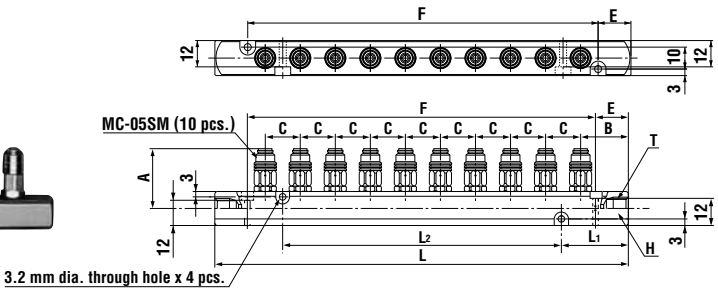
• The branch body is made of aluminum alloy.



Model	Mass (g)	Dimensions (mm)									
		L	L1	L2	A	B	C	E	F	T	H(WAF)
MC-05	101	110	31	48	(28.8)	23	16	15	80	2xRc 1/8	Box 16

Socket Micro Line Cupla with 10 branch ports

• The branch body is made of aluminum alloy.

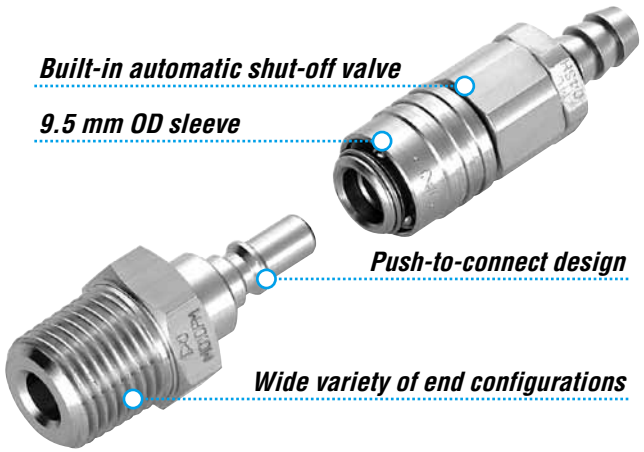


Model	Mass (g)	Dimensions (mm)									
		L	L1	L2	A	B	C	E	F	T	H(WAF)
MC-10	187	190	31	128	(28.8)	23	16	15	160	2xRc 1/8	Box 16

Micro Cupla

Stainless Steel Models

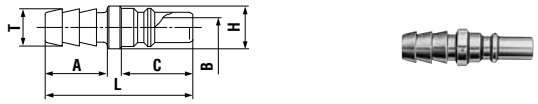
Highly Corrosion-resistant Stainless Steel Micro Cupla



Models and Dimensions (Stainless Steel)

WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



Model	Application (Tube)	Body material•Mass (g)	Dimensions (mm)					
		Stainless steel	L	C	A	øH	øT	øB
MC-04PH	4 mm ID	1.3	19	9.2	8	5.5	4.8	2.5

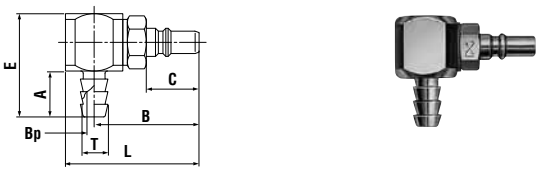
Plug PM type (Male thread)

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

Plug PM type (Male thread)

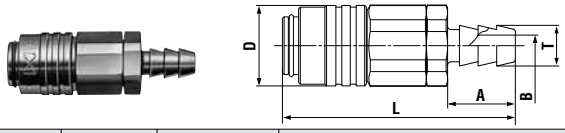
Model	Application	Body material•Mass (g)	Dimensions (mm)				
		Stainless steel	L	C	H(WAF)	T	øB
MC-10PM	Rc 1/8	8.1	26	9.2	Hex.11	R 1/8	2.5

Plug PHL type (Hose barb)



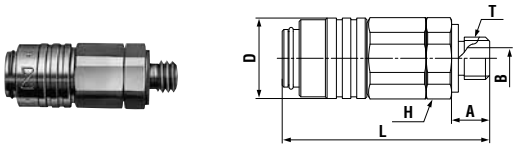
Model	Application (Tube)	Body material•Mass (g)	Dimensions (mm)						
		Stainless steel	L	C	A	B	E	øT	øBp
MC-04PHL	4 mm ID	9	(23.3)	9.2	8	(18.3)	18	4.8	2.5

Socket SH type (Hose barb)



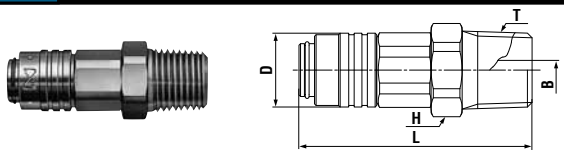
Model	Application (Tube)	Body material•Mass (g)	Dimensions (mm)				
		Stainless steel	L	øD	A	øT	øB
MC-04SH	4 mm ID	6.7	(27.5)	9.5	8	4.8	2.5

Socket SM type (Male thread)



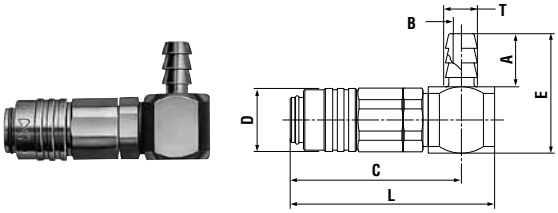
Model	Application	Body material•Mass (g)	Dimensions (mm)					
		Stainless steel	L	øD	A	T	H(WAF)	øB
MC-05SM	M5 x 0.8	6.8	(24.5)	9.5	4.5	M5x0.8	Hex.9	2.5

Socket SM type (Male thread)



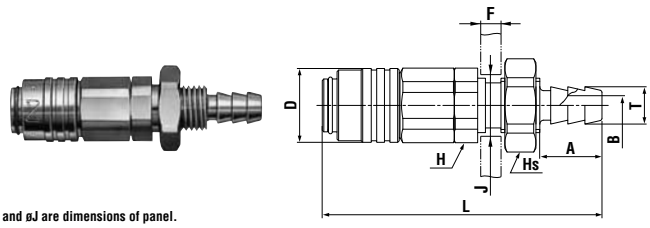
Model	Application	Body material•Mass (g)	Dimensions (mm)				
		Stainless steel	L	øD	T	H(WAF)	øB
MC-10SM	Rc 1/8	12.1	(30)	9.5	R 1/8	Hex.11	3

Socket SHL type (Hose barb)



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

Socket SHB type (For panel mounting)



• F and øJ are dimensions of panel.

Model	Application (Tube)	Body material•Mass (g)	Dimensions (mm)								
		Stainless steel	L	A	øD	øT	øB	Hs(WAF)	øJ	H(WAF)	F
MC-04SHB	4 mm ID	10.6	(36)	8	9.5	4.8	2.5	Hex.11	$7.1^{+0.3}_{0}$	Hex.9	1.2 to 3.5

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

For Low Pressure

Small Cupla

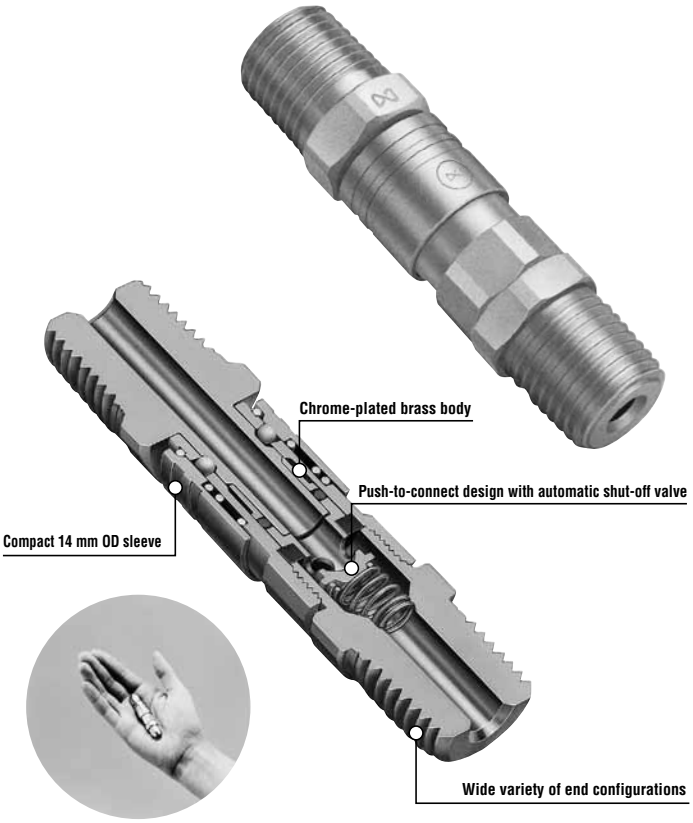
Lightweight and compact for use on air lines and scientific equipment

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

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

- **Compact socket with built-in valve and 14 mm 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 quick connect/disconnect Tube Fitter 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	Thread	1/8", 1/4"
	Hose barb	Polyamide hose: ø4 x ø6, ø4.5 x ø6 Urethane hose: ø4 x ø6
	Tube barb (Tube fitter)	Polyurethane tube: Outside Dia. ø6 ± 0.1, ø8 ± 0.15 Polyamide tube: Outside Dia. ø6 $^{+0.05}_{-0.08}$, ø8 $^{+0.05}_{-0.1}$ Fluorine contained resin tube: Outside Dia. ø6 ± 0.07, ø8 ± 0.07
Working pressure	MPa	1.0
	kgf/cm²	10
	bar	10
	PSI	145

Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard material

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

Max. Tightening Torque — Nm {kgf•cm}

Size (Thread)	1/8"	1/4"	PN • SN 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)

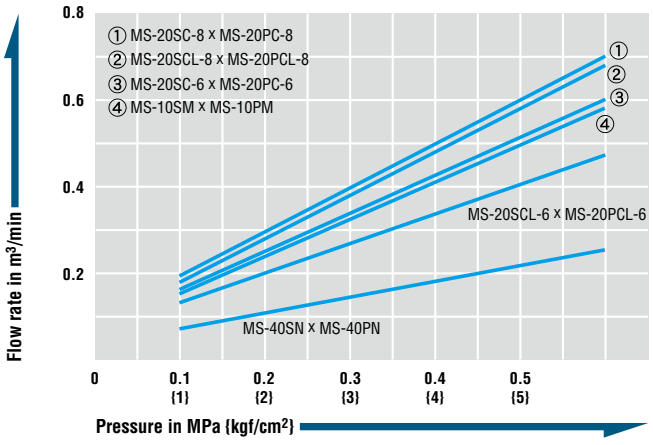
Model	MS-10SM x MS-10PM	MS-20SM x MS-20PM	MS-40SN x MS-40PN	MS-45SN x MS-45PN	Tube Fitter Type for 6 mm OD tube	Tube Fitter Type for 8 mm OD tube
Min. cross-sectional area	12.5	12.5	4.9	7	12.5	12.5

Suitability for Vacuum — 53.0 kPa {400 mmHg}

Socket only	Plug only	When connected
—	—	Operational

Pressure - Flow Characteristics

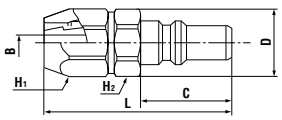
[Test conditions] •Fluid : Air •Temperature : Room temperature
•Tube size : ø6 mm x ø4 mm, ø8 mm x ø6 mm (Small Cupla with Tube Fitter)



Models and Dimensions

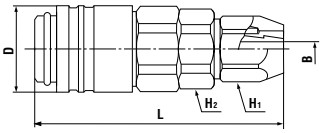
WAF : WAF stands for width across flats.

Plug PN type (For connection to hose)



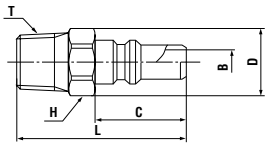

Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			L	C	øD	H1(WAF)	H2(WAF)	øB
MS-40PN	ø4 mm x ø6 mm Polyamide	10.5	(31)	15.2	11	Hex.10	Hex.10	2.5
MS-45PN	ø4.5 mm x ø6 mm Polyamide ø4 mm x ø6 mm Polyurethane	11	(31)	15.2	11	Hex.10	Hex.10	3

Socket SN type (For connection to hose)

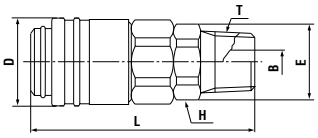
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	H1(WAF)	H2(WAF)	øD	øB
MS-40SN	ø4 mm x ø6 mm Polyamide	26.5	(40.8)	Hex.10	Hex.12	14	2.5
MS-45SN	ø4.5 mm x ø6 mm Polyamide ø4 mm x ø6 mm Polyurethane	27.0	(40.8)	Hex.10	Hex.12	14	3

Plug PM type (Male thread)



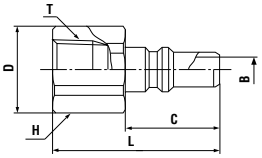

Model	Application	Mass (g)	Dimensions (mm)					
			L	øD	C	H(WAF)	T	øB
MS-10PM	Rc 1/8	9	28.5	12	15.2	Hex.11	R 1/8	4
MS-20PM	Rc 1/4	19.5	32.5	15.2	15.2	Hex.14	R 1/4	4

Socket SM type (Male thread)

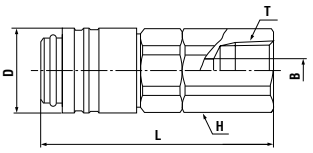
Model	Application	Mass (g)	Dimensions (mm)					
			L	H(WAF)	T	øD	øE	øB
MS-10SM	Rc 1/8	24	(36.8)	Hex.12	R 1/8	14	13.2	4
MS-20SM	Rc 1/4	34	(40.8)	Hex.14	R 1/4	14	15.2	4

Plug PF type (Female thread)



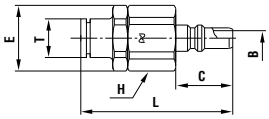

Model	Application	Mass (g)	Dimensions (mm)					
			L	øD	C	H(WAF)	T	øB
MS-10PF	R 1/8	11	27	14	15.2	Hex.13	Rc 1/8	4

Socket SF type (Female thread)

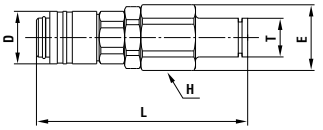
Model	Application	Mass (g)	Dimensions (mm)				
			L	H(WAF)	T	øD	øB
MS-10SF	R 1/8	29.5	(38.8)	Hex.13	Rc 1/8	14	4

Plug PC type (Tube Fitter)



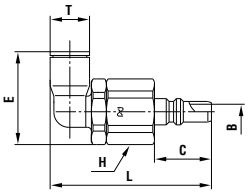
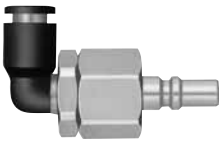

Model	Application (Tube)	Mass (g)	Dimensions (mm)					
			L	C	øE	H(WAF)	øT	øB
MS-20PC-6	6 mm OD	26.5	(40.5)	15.2	17.5	Hex.16	10.3	4
MS-20PC-8	8 mm OD	31	(47.5)	15.2	17.5	Hex.16	13.5	4

Socket SC type (Tube Fitter)

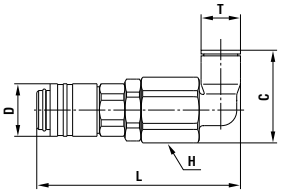
Model	Application (Tube)	Mass (g)	Dimensions (mm)				
			L	øD	øE	H(WAF)	øT
MS-20SC-6	6 mm OD	46	(56.3)	14	17.5	Hex.16	10.3
MS-20SC-8	8 mm OD	50.5	(60.8)	14	17.5	Hex.16	13.5

Plug PCL type (L-shaped Tube Fitter)

Model	Application (Tube)	Mass (g)	Dimensions (mm)					
			L	C	E	H(WAF)	øT	øB
MS-20PCL-6	6 mm OD	27.5	(43)	15.2	(24.8)	Hex.16	10.5	4
MS-20PCL-8	8 mm OD	32	(46.5)	15.2	(31.8)	Hex.16	13.5	4

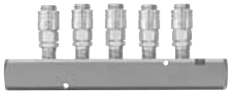
Socket SCL type (L-shaped Tube Fitter)

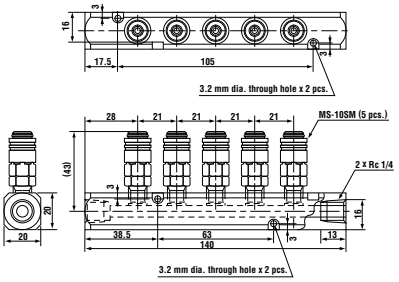



Model	Application (Tube)	Mass (g)	Dimensions (mm)				
			L	øD	C	H(WAF)	øT
MS-20SCL-6	6 mm OD	47.5	(56.8)	14	(24.8)	Hex.16	10.5
MS-20SCL-8	8 mm OD	49.5	(59.8)	14	(31.8)	Hex.16	13.5

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

• The branch body is made of aluminum alloy.

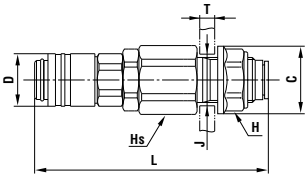




Mass : 238 g

Dimensions (mm)

Socket SCB type (Tube Fitter for panel mounting)

• T and øJ are dimensions of panel.

Model	Application (Tube)	Mass (g)	Dimensions (mm)						
			L	øD	øC	Hs(WAF)	H(WAF)	T	øJ
MS-20SCB-6	6 mm OD	57.5	(61.3)	14	18	Hex.17	Hex.15	7 or less	$12.5^{+0.3}_{0}$
MS-20SCB-8	8 mm OD	58.5	(62.8)	14	21	Hex.17	Hex.18	8 or less	$15.5^{+0.3}_{0}$

For Low Pressure

Compact Cupla

Small multipurpose type for low pressure lines

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

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

- Both socket and plug have built-in automatic shut-off valves.
- Compact size with max. outer dia. 17.5 mm.
- For small bore piping from temperature control piping to scientific equipment.
- Body materials in stainless steel (SUS304) or brass, excellent in corrosion resistance.
- Four types of end configuration enable suitability with a wide range of piping applications.

Specifications

Body material		Brass, Stainless steel (SUS 304)			
Size	Thread	1/8"			
	Tube barb	Polyamide tube : ø4 x ø6, ø6 x ø8 Polyolefin tube : ø4 x ø6, ø6 x ø8 Fluorine contained resin tube : ø4 x ø6, ø6 x ø8			
Working pressure	MPa	1.0			
	kgf/cm²	10			
	bar	10			
	PSI	145			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks	
	Fluoro rubber	FKM	−20°C to +180°C	Standard material	
	Ethylene-propylene rubber	EPDM	−40°C to +150°C	Available on request	

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

Max. Tightening Torque — N m {kgf•cm}

Size (Thread)		1/8"	Tube barb
Torque	Brass	5 {51}	5 {51}
	Stainless steel	9 {92}	7 {71}

Flow Direction

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

Interchangeability

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

Min. Cross-Sectional Area — (mm²)

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

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

Socket only	Plug only	When connected
—	—	Operational

Admixture of Air on Connection — (mL)

Admixture of air may vary depending upon the usage conditions.

Volume of air admixture	0.34

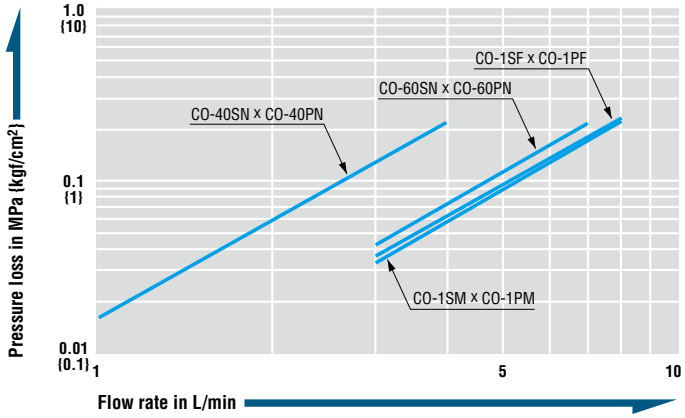
Volume of Spillage per Disconnection — (mL)

Volume of spillage may vary depending upon the usage conditions.

Volume of spillage	0.23

Flow Rate – Pressure Loss Characteristics

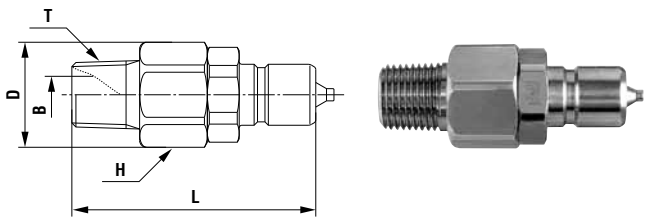
[Test conditions] •Fluid : Water •Temperature : 20°C ± 5°C



Models and Dimensions

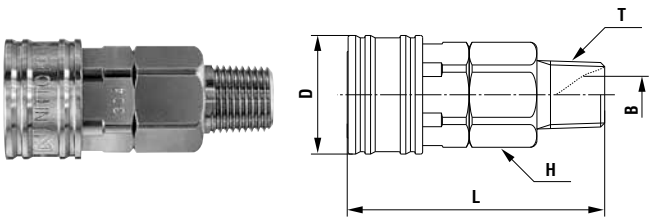
WAF : WAF stands for width across flats.

Plug PM type (Male thread)



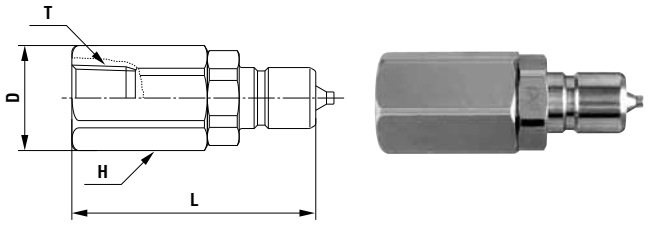
Model	Application	Body material, Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	L	øD	H (WAF)	T	øB
CO-1PM	Rc 1/8	20	19	(36)	15.5	Hex.14	R 1/8	5.5

Socket SM type (Male thread)



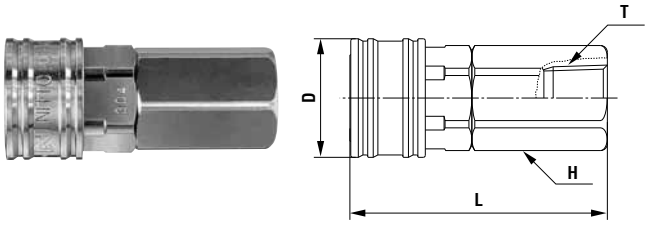
Model	Application	Body material, Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	L	øD	H (WAF)	T	øB
CO-1SM	Rc 1/8	34	32	(38)	17.5	Hex.14	R 1/8	5.5

Plug PF type (Female thread)



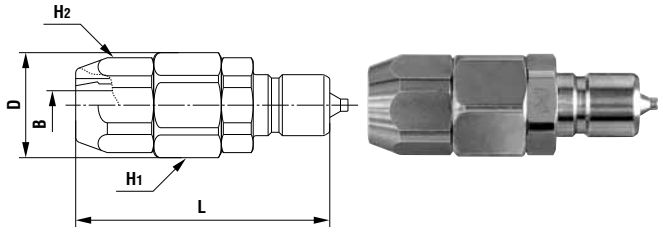
Model	Application	Body material, Mass (g)		Dimensions (mm)			
		Brass	Stainless steel	L	øD	H (WAF)	T
CO-1PF	R 1/8	25	23	(36)	15.5	Hex.14	Rc 1/8

Socket SF type (Female thread)



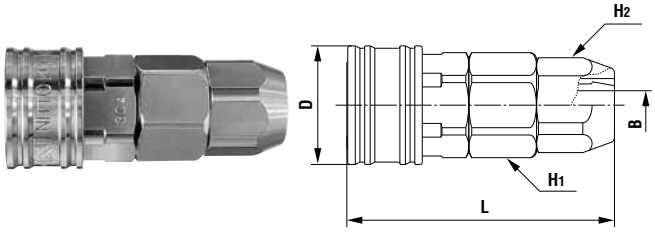
Model	Application	Body material, Mass (g)		Dimensions (mm)			
		Brass	Stainless steel	L	øD	H (WAF)	T
CO-1SF	R 1/8	39	36	(38)	17.5	Hex.14	Rc 1/8

Plug PN type (For connection to tube)



Model	Application (Tube)	Body material, Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	L	øD	H1 (WAF)	H2 (WAF)	øB
CO-40PN	ø4 x ø6	23	22	(38.5)	15.5	Hex.14	Hex.10	2.5
CO-60PN	ø6 x ø8	25	24	(37.5)	15.5	Hex.14	Hex.13	4.2

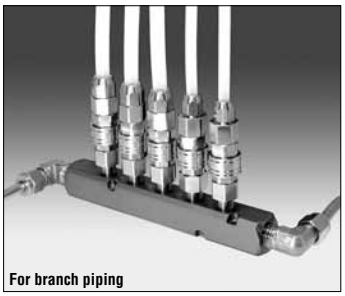
Socket SN type (For connection to tube)

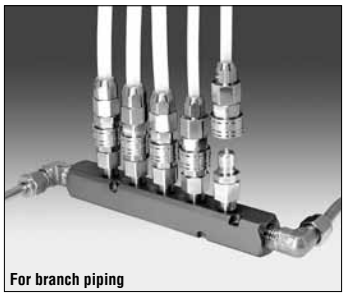


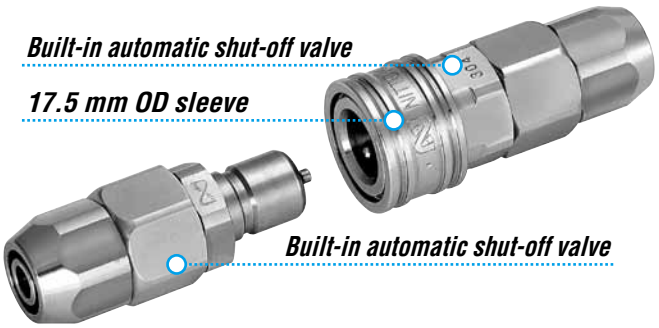
Model	Application (Tube)	Body material, Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	L	øD	H1 (WAF)	H2 (WAF)	øB
CO-40SN	ø4 x ø6	38	35	(40.5)	17.5	Hex.14	Hex.10	2.5
CO-60SN	ø6 x ø8	40	37	(39.5)	17.5	Hex.14	Hex.13	4.2

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

Application Example


For branch piping

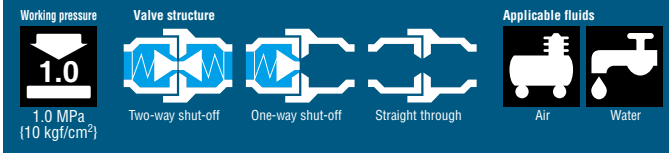

For branch piping



For Low Pressure

Cube Cupla

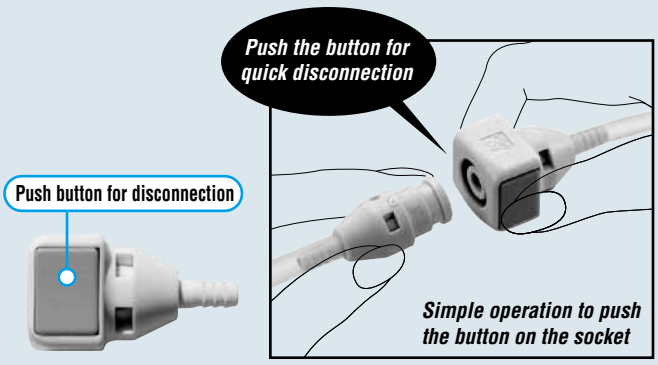
Small and lightweight coupling for air supply lines to medical and/or scientific equipment



Both socket and plug have built-in valve types and valveless types. Simple one action for connection or disconnection. Lightweight plastic coupling.

- Ultra-lightweight, made of polyacetal resin.
- Compact design for space saving.
- Just push plug into socket for connection.
  Simply press 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.
- Socket and plug cannot be disconnected unless two buttons on the socket are pressed simultaneously.

Note: When valveless type socket or plug is used, fluid will flow out of it when disconnected. Take necessary precaution if the fluid is water.



Specifications

Body material		Polyacetal resin (POM)			
Size		4 mm and 6 mm ID tube, Rc 1/8			
Working pressure	MPa	1.0			
	kgf/cm²	10			
	bar	10			
	PSI	145			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks	
	Nitrile rubber	NBR (SG)	−20°C to +60°C	Standard material	

Max. Tightening Torque — N·m {kgf·cm}

Size (Thread)	1/8"
Torque	1.3 {13}

Flow Direction

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

Interchangeability

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

Min. Cross-Sectional Area — (mm²)

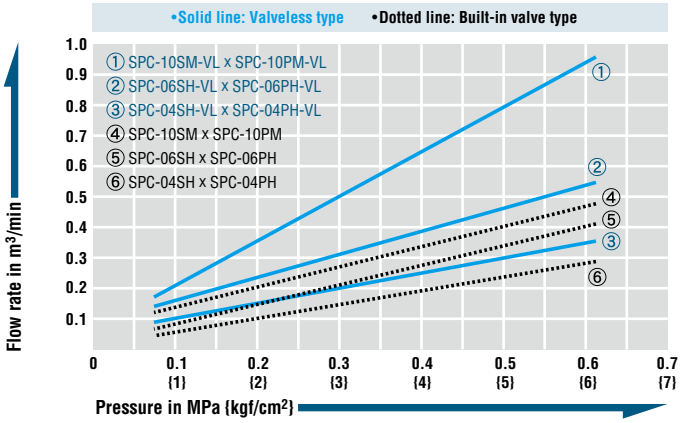
Model	04PH/04PHB	06PH/06PHB	10PM	04PH-VL/04PHB-VL	06PH-VL/06PHB-VL	10PM-VL
SPC-04SH	5	5	5	—	—	—
SPC-06SH	5	8.6	8.6	—	—	—
SPC-10SM	5	8.6	8.6	—	—	—
SPC-04SH-VL	5	5	5	5	5	5
SPC-06SH-VL	5	8.6	8.6	5	10.2	10.2
SPC-10SM-VL	5	8.6	8.6	5	10.2	16.6

Suitability for Vacuum — 53.0 kPa {400 mmHg}

Socket only	Plug only	When connected
—	—	Operational

Pressure - Flow Characteristics

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



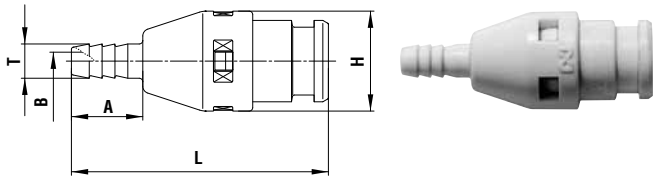
Connection capability — Select the combination of models suitable to your applications

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

Models and Dimensions

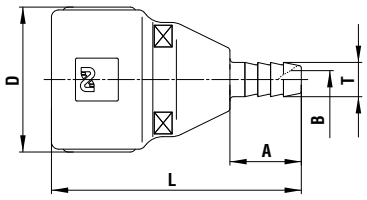
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



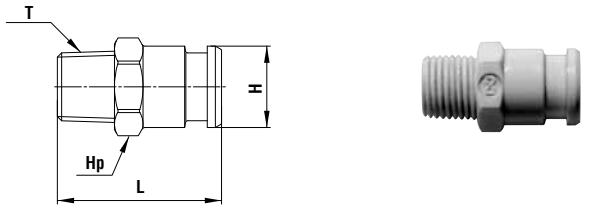
Model	Application (Tube)	Built-in valve	Mass (g)	Dimensions (mm)				
				L	A	øH	øT	øB
SPC-04PH	4 mm ID	With	3.1	(36)	10	14	4.8	2.5
SPC-04PH-VL	4 mm ID	Without	2.6	(36)	10	14	4.8	2.5
SPC-06PH	6 mm ID	With	3.4	(40)	15	14	7	3.6
SPC-06PH-VL	6 mm ID	Without	2.9	(40)	15	14	7	3.6

Socket SH type (Hose barb)



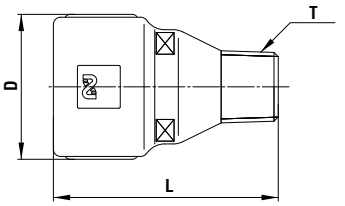
Model	Application (Tube)	Built-in valve	Mass (g)	Dimensions (mm)				
				L	A	D	øT	øB
SPC-04SH	4 mm ID	With	6.5	35	10	(20.3)	4.8	2.5
SPC-04SH-VL	4 mm ID	Without	6.1	35	10	(20.3)	4.8	2.5
SPC-06SH	6 mm ID	With	7.0	40	15	(20.3)	7	3.6
SPC-06SH-VL	6 mm ID	Without	6.6	40	15	(20.3)	7	3.6

Plug PM type (Male thread)



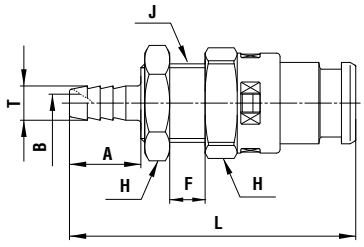
Model	Application	Built-in valve	Mass (g)	Dimensions (mm)			
				L	øH	Hp(WAF)	T
SPC-10PM	Rc 1/8	With	2.0	23	11.4	Hex.12	R 1/8
SPC-10PM-VL	Rc 1/8	Without	1.5	23	11.4	Hex.12	R 1/8

Socket SM type (Male thread)



Model	Application	Built-in valve	Mass (g)	Dimensions (mm)		
				L	D	T
SPC-10SM	Rc 1/8	With	6.8	31.5	(20.3)	R 1/8
SPC-10SM-VL	Rc 1/8	Without	6.4	31.5	(20.3)	R 1/8

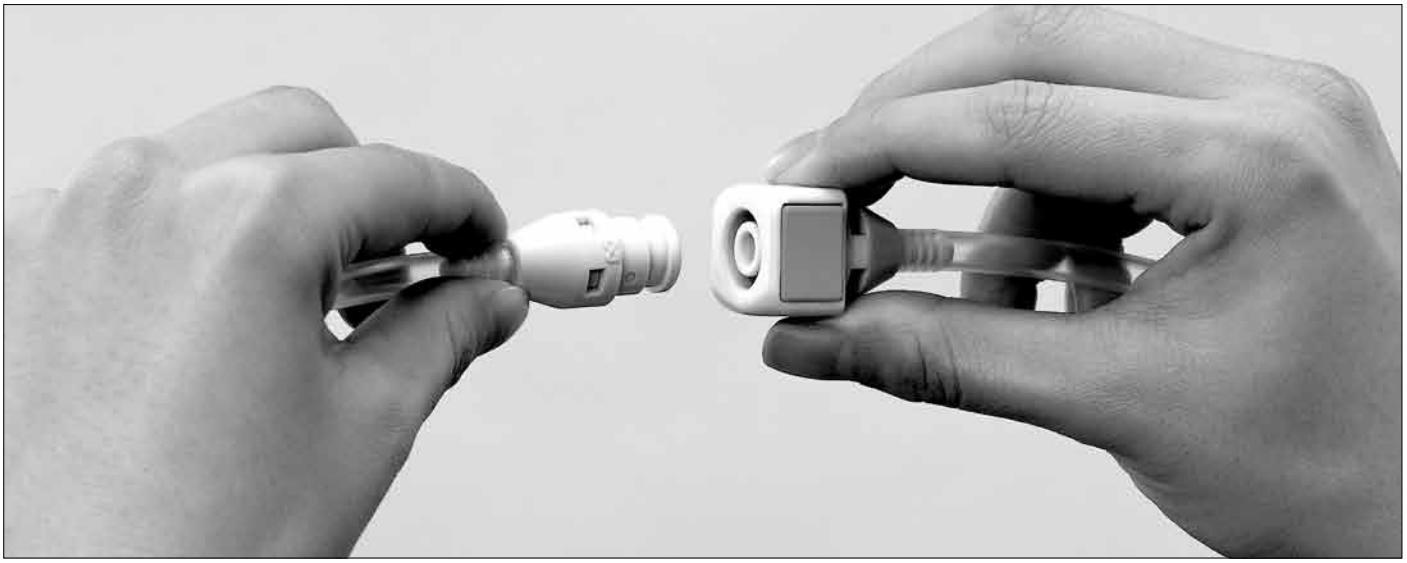
Plug PHB type (For panel mount)



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

Model	Application	Built-in valve	Mass (g)	Dimensions (mm)				
				L	A	H(WAF)	øT	øB
SPC-04PHB	4 mm ID	With	5.9	(40)	10	Hex.14	4.8	2.5
SPC-04PHB-VL	4 mm ID	Without	5.4	(40)	10	Hex.14	4.8	2.5
SPC-06PHB	6 mm ID	With	6.2	(45)	15	Hex.14	7	3.6
SPC-06PHB-VL	6 mm ID	Without	5.7	(45)	15	Hex.14	7	3.6

Application Example



For Low Pressure (Air)

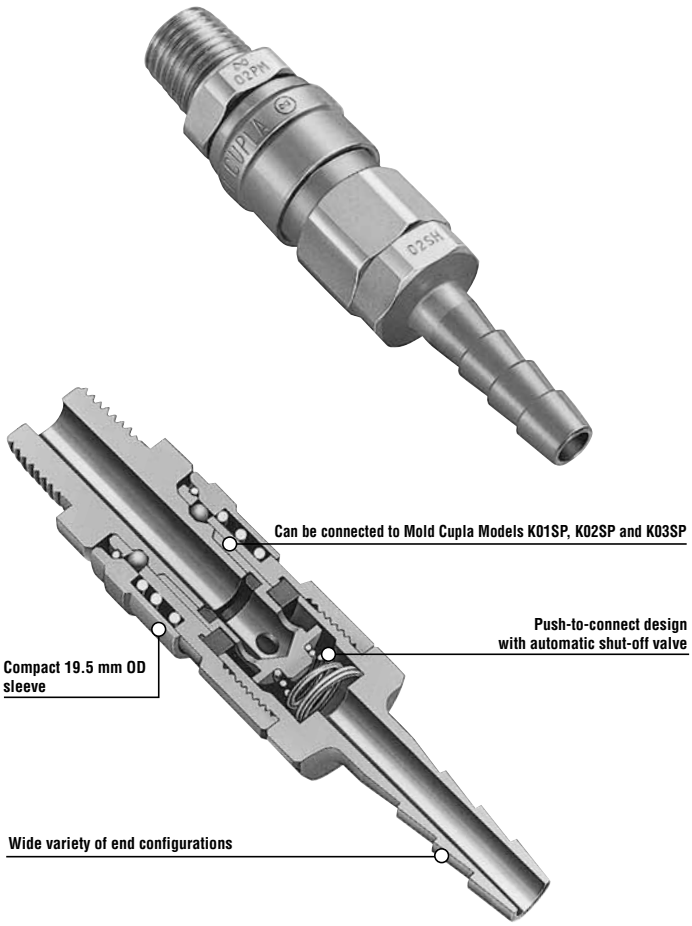
Super Cupla

Light, compact for air piping connections

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

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

- Lightweight design suits direct connection to power tools. Aluminum body is adopted for some models to reduce the weight.
- Just push the plug into socket for easy one hand connection.
- Available in various end configurations for a wide range of pneumatic applications.
- Model 02S20P can be connected with sockets for Hi Cupla Models 10, 17, 20, 30 and 40.
- Also available with quick connect / disconnect Tube Fitter type.



Specifications

Body material		Cupla : Steel (Chrome-plated), Aluminum Tube Fitter Type: Brass (Nickel-plated)
Size	Thread	1/8", 1/4"
	Hose barb	1/4", Urethane hose : ø5 x ø8, ø6.5 x ø10
	Tube barb (Tube fitter)	Polyurethane tube: Outside Dia. ø6 ± 0.1, ø8 ± 0.15 Polyamide tube: Outside Dia. $ø6^{+0.05}_{-0.08}$, $ø8^{+0.05}_{-0.1}$ Fluorine contained resin tube: Outside Dia. ø6 ± 0.07, ø8 ± 0.07
Working pressure	MPa	1.0
	kgf/cm²	10
	bar	10
	PSI	145

Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard material

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

Max. Tightening Torque — Nm {kgf•cm}

Size (Thread)	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 sizes and end configurations.
*Can be connected with Mold Cuplas.
*When conversion socket+plug Model 02S20P is used, Super Cupla plugs can be connected with sockets for Hi Cupla Models 20, 30 and 40.

Min. Cross-Sectional Area — (mm²)

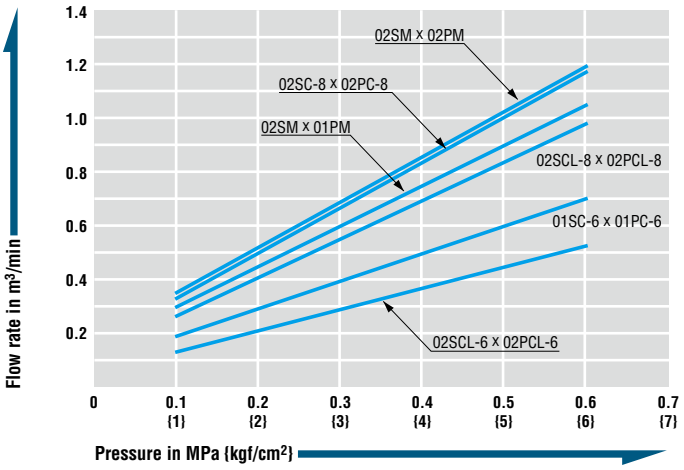
Model	01SP	02SP	Tube Fitter Type for 6 mm OD tube	Tube Fitter Type for 8 mm OD tube
Min. cross-sectional area	19	19	12.5	19

Suitability for Vacuum

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

Pressure - Flow Characteristics

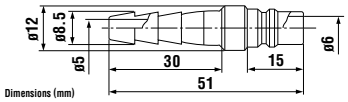
[Test conditions] •Fluid : Air •Temperature : Room temperature
•Tube size : ø6 mm x ø4 mm, ø8 mm x ø6 mm (Super Cupla with Tube Fitter)



Models and Dimensions

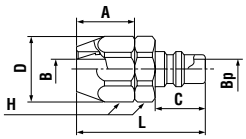
WAF : WAF stands for width across flats.

Plug 02PH type (Hose barb)



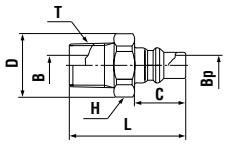
Model	Application (Hose)	Mass (g)
02PH	1/4"	16

Plug PN type (For connection to urethane hose)



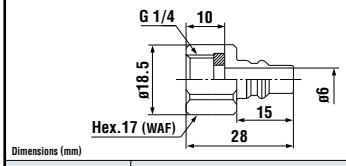
Model	Application (Hose)	Mass (g)	Dimensions (mm)						
			L	C	øD	A	H(WAF)	øBp	øB
01PN	ø5 mm x ø8 mm	27.6	(38.5)	15	18.5	17	Hex.17	6	3.8
02PN	ø6.5 mm x ø10 mm	27.6	(38.5)	15	18.5	17	Hex.17	6	5.3

Plug PM type (Male thread)



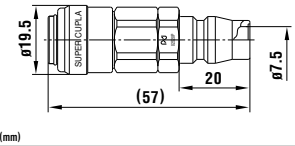
Model	Application	Mass (g)	Dimensions (mm)						
			L	C	øD	H(WAF)	T	øBp	øB
01PM	Rc 1/8	12	31	15	–	Hex.12	R 1/8	6	5
02PM	Rc 1/4	22.7	34	15	18.5	Hex.17	R 1/4	6	6

Plug 02PFF type (Parallel female thread)



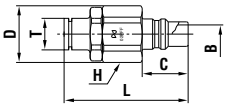
Model	Application	Mass (g)
02PFF	G 1/4	17.7

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



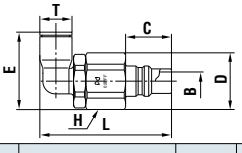
Model	Application	Mass (g)
02S20P	Hi Cupla (Socket)	58

Plug PC type (With Tube Fitter)



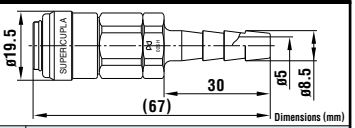
Model	Application (Tube)	Mass (g)	Dimensions (mm)						
			L	C	øD	E	H(WAF)	øT	øB
02PC-6	6 mm OD	28.5	(40.5)	15	18.5	18.5	Hex.17	10.3	6
02PC-8	8 mm OD	33	(47.5)	15	18.5	18.5	Hex.17	13.5	6

Plug PCL type (With L-shaped Tube Fitter)



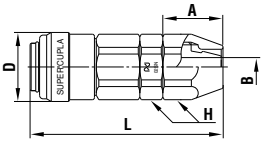
Model	Application (Tube)	Mass (g)	Dimensions (mm)						
			L	C	øD	E	H(WAF)	øT	øB
02PCL-6	6 mm OD	29.5	(43)	15	18.5	(25.3)	Hex.17	10.5	6
02PCL-8	8 mm OD	34.5	(46.5)	15	18.5	(32.3)	Hex.17	13.5	6

Socket 02SH type (Hose barb)



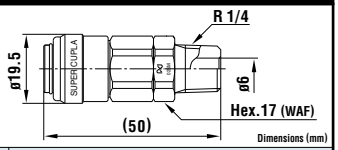
Model	Application (Hose)	Mass (g)
02SH	1/4"	56

Socket SN type (For connection to urethane hose)



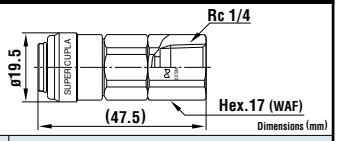
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	A	øD	H(WAF)	øB
01SN	ø5 mm x ø8 mm	35	(54.5)	17	19.5	Hex.17	3.8
02SN	ø6.5 mm x ø10 mm	35	(54.5)	17	19.5	Hex.17	5.3

Socket SM type (Male thread)



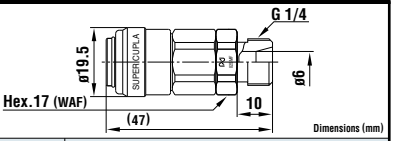
Model	Application	Mass (g)
02SM	Rc 1/4	57

Socket 02SF type (Female thread)



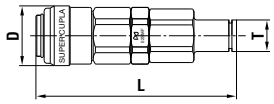
Model	Application	Mass (g)
02SF	R 1/4	26

Socket 02SMF type (Parallel male thread)



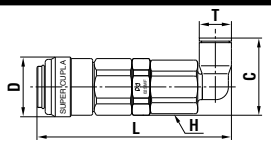
Model	Application	Mass (g)
02SMF	G 1/4	27

Socket SC type (With Tube Fitter)



Model	Application (Tube)	Mass (g)	Dimensions (mm)		
			L	øD	øT
02SC-6	6 mm OD	46	(65.5)	19.5	10.5
02SC-8	8 mm OD	50.5	(70)	19.5	13.5

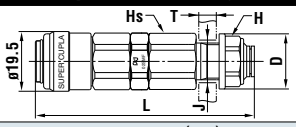
Socket SCL type (With L-shaped Tube Fitter)



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

Socket SCB type (With Tube Fitter for panel mounting)

• T and øJ are dimensions of panel.



Model	Application (Tube)	Mass (g)	Dimensions (mm)					
			L	øD	Hs(WAF)	H(WAF)	T	øJ
02SCB-6	6 mm OD	45.5	(71.5)	18	Hex.17	Hex.15	7 or less	$12.5^{+0.3}_{0}$
02SCB-8	8 mm OD	46.5	(72)	21	Hex.17	Hex.18	8 or less	$15.5^{+0.3}_{0}$

For Low Pressure

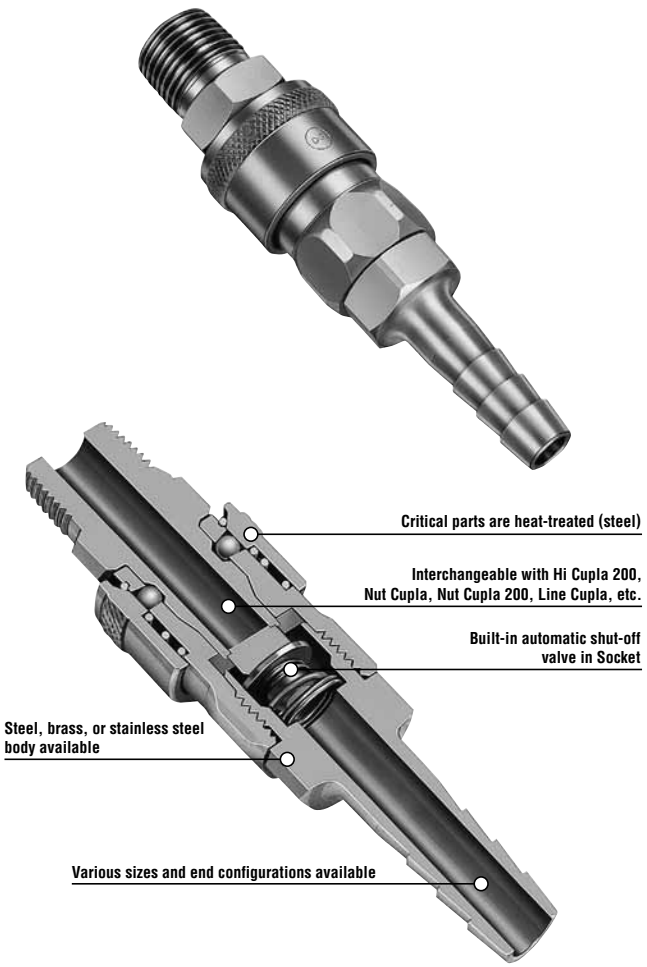
Hi Cupla

Universal purpose couplings for air lines

Working pressure 1.5 MPa {15 kgf/cm²} | Working pressure 1.0 MPa {10 kgf/cm²} | Valve structure: One-way shut-off | Applicable fluids (Steel applies to air only): Air, Water

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

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



Specifications

Body material		Steel (Chrome-plated)	Brass	Stainless steel
Size	Thread	1/8" to 1"		
	Hose barb	1/4" to 1" hose		
Working pressure	MPa	1.5	1.0	1.5
	kgf/cm²	15	10	15
	bar	15	10	15
	PSI	218	145	218

Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard material
	Fluoro rubber	FKM (X-100)	−20°C to +180°C	

Max. Tightening Torque

Nm {kgf•cm}

Size (Thread)		1/8"	1/4"	3/8"	1/2"	3/4"	1"
Torque	Steel	7 {71}	14 {143}	22 {224}	60 {612}	100 {1020}	120 {1224}
	Brass	5 {51}	9 {92}	11 {112}	30 {306}	50 {510}	65 {663}
	Stainless steel	—	14 {143}	22 {224}	60 {612}	100 {1020}	120 {1224}

Flow Direction

Fluid must run from socket to plug.

Interchangeability

❶ Sockets and plugs for Models 10, 17, 20, 30, and 40 can be connected with each other regardless of end configurations.
❷ Sockets and plugs for Models 400, 600, and 800 can be connected with each other regardless of end configurations. ❶ and ❷ can not be connected across each group.
❸ Interchangeable with all other Hi Cupla Series products. Please see the page for "Hi Cupla Series Interchangeability."

Min. Cross-Sectional Area

(mm²)

■10, 17, 20, 30, 40 type

Socket \ Plug	17PH	20PH	30PH	40PH	10PM	20PM	30PM	40PM	20PF	30PF	40PF
10SM	13	13	13	13	13	13	13	13	13	13	13
17SH	16	16	16	16	13	16	16	16	16	16	16
20SH	16	20	20	20	13	20	20	20	20	20	20
20SM, SF	16	20	33	33	13	33	33	33	33	33	33
30SH	16	20	33	33	13	33	33	33	33	33	33
30SM, SF	16	20	33	33	13	33	33	33	33	33	33
40SH	16	20	33	33	13	33	33	33	33	33	33
40SM, SF	16	20	33	33	13	33	33	33	33	33	33

■400, 600, 800 type

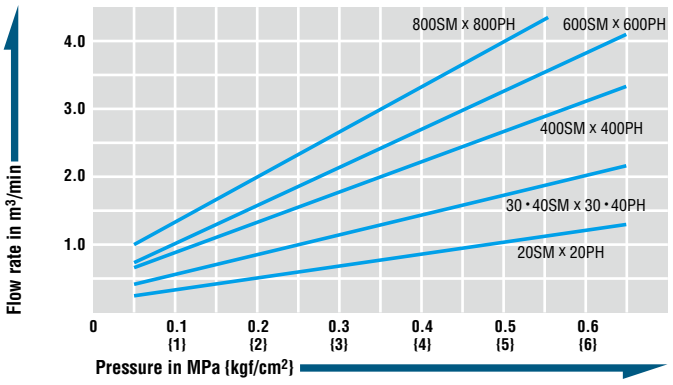
Socket \ Plug	400PH	600PH	800PH	400PM	600PM	800PM	400PF	600PF	800PF
400SH	64	64	64	64	64	64	64	64	64
400SM, SF	64	94	94	94	94	94	94	94	94
600SH	64	94	94	94	94	94	94	94	94
600SM, SF	64	94	94	94	94	94	94	94	94
800SH	64	94	94	94	94	94	94	94	94
800SM, SF	64	94	94	94	94	94	94	94	94

Suitability for Vacuum

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

Pressure - Flow Characteristics

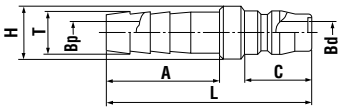
[Test conditions] •Fluid : Air •Temperature : Room temperature



Models and Dimensions

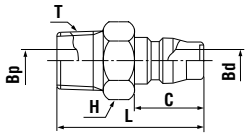
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



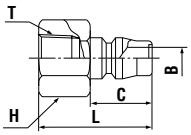
Model	Application (Hose)	Body material•Mass (g)			Dimensions (mm)						
		Steel	Brass	Stainless steel	L	øH	A	C	øT	øBp	øBd
17PH	1/4"	24	–	–	54	16	27	20	7.2	4.5	7.5
20PH	1/4"	28	31	27	57	16	30	20	9	5	7.5
30PH	3/8"	32	34	33	61	16	34	20	11.3	7.5	7.5
40PH	1/2"	59	64	60	63	20	36	20	15	9	7.5
400PH	1/2"	65	71	66	66	22	36	23	15	9	13
600PH	3/4"	123	130	124	77	30	45	23	21	13	13
800PH	1"	151	161	151	85	34	54	23	27	20	13

Plug PM type (Male thread)



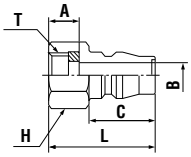
Model	Application	Body material•Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	L	H(WAF)	C	T	øBp	øBd
10PM	Rc 1/8	22	24	–	37	Hex.14	20	R 1/8	4	7.5
20PM	Rc 1/4	25	27	26	41	Hex.14	20	R 1/4	7.5	7.5
30PM	Rc 3/8	40	43	41	42	Hex.19 *3	20	R 3/8	7.5	7.5
40PM	Rc 1/2	60	65	60	46	Hex.22	20	R 1/2	12	7.5
400PM	Rc 1/2	70	73	69	50	Hex.22	23	R 1/2	13	13
600PM	Rc 3/4	113	121	114	55	Hex.32	23	R 3/4	19	13
800PM	Rc 1	182	196	183	63	Hex.35	23	R 1	22	13

Plug PF type (Female thread)



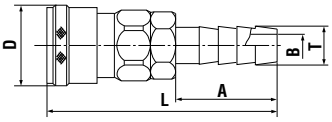
Model	Application	Body material•Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	L	H(WAF)	C	T	øB
20PF	R 1/4	28	31	29	36	Hex.17	20	Rc 1/4	7.5
30PF	R 3/8	35	41	38	37	Hex.21	20	Rc 3/8	7.5
40PF	R 1/2	69	76	70	38	Hex.29	20	Rc 1/2	7.5
400PF	R 1/2	82	86	81	41	Hex.29	23	Rc 1/2	13
600PF	R 3/4	115	124	115	45	Hex.35	23	Rc 3/4	13
800PF	R 1	189	207	190	54	Hex.41	23	Rc 1	13

Plug PFF type (Parallel female thread)



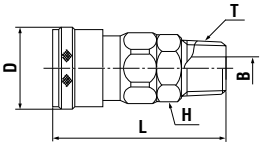
Model	Application	Body material•Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	L	H(WAF)	A	C	T	øB
20PFF	G 1/4	23	–	–	32	Hex.17	9	20	G 1/4	7.5

Socket SH type (Hose barb)



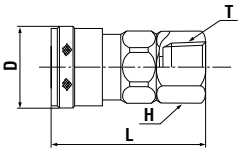
Model	Application (Hose)	Body material•Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	L	øD	A	øT	øB
17SH	1/4"	99	–	–	(69.5)	(26.5)	27	7.2	4.5
20SH	1/4"	99	105	97	(72.5)	(26.5) *1	30	9	5
30SH	3/8"	102	107	100	(76.5)	(26.5) *1	34	11.3	7.5
40SH	1/2"	115	122	113	(78.5)	(26.5) *1	36	15	9
400SH	1/2"	220	235	230	(83)	35	36	15	9
600SH	3/4"	243	262	242	(92)	35	45	21	14
800SH	1"	327	350	325	(102)	35	55	27	16

Socket SM type (Male thread)



Model	Application	Body material•Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	L	øD	H(WAF)	T	øB
10SM	Rc 1/8	97	–	–	(52.5)	(26.5)	Hex.19	R 1/8	5
20SM	Rc 1/4	97	103	96	(55.5)	(26.5) *1	Hex.19	R 1/4	7
30SM	Rc 3/8	104	108	100	(56.5)	(26.5) *1	Hex.19	R 3/8	8 *4
40SM	Rc 1/2	127	135	126	(59.5)	(26.5) *1	Hex.23 *2	R 1/2	9
400SM	Rc 1/2	210	224	212	(63)	35	Hex.29	R 1/2	13
600SM	Rc 3/4	242	259	243	(67)	35	Hex.32	R 3/4	16
800SM	Rc 1	329	353	328	(72)	35	Hex.36	R 1	16

Socket SF type (Female thread)



Model	Application	Body material•Mass (g)			Dimensions (mm)			
		Steel	Brass	Stainless steel	L	øD	H(WAF)	T
20SF	R 1/4	97	101	94	(49.5)	(26.5) *1	Hex.19	Rc 1/4
30SF	R 3/8	98	103	95	(50.5)	(26.5) *1	Hex.21	Rc 3/8
40SF	R 1/2	136	146	136	(52.5)	(26.5) *1	Hex.29	Rc 1/2
400SF	R 1/2	216	233	215	(57)	35	Hex.29	Rc 1/2
600SF	R 3/4	259	277	257	(61)	35	Hex.35	Rc 3/4
800SF	R 1	327	361	327	(68)	35	Hex.41	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 : H = Hex. 22 for brass and stainless steel models.
*3 : H = Hex. 17 for brass and stainless steel models.
*4 : B = 9 for brass and stainless steel models.

Application Example


Pneumatic tools


Automatic woodworking assembler

For Low Pressure

Hi Cupla BL

Universal purpose couplings with sleeve lock mechanism for air lines

Working pressure: 1.5 MPa {15 kgf/cm²}
Valve structure: One-way shut-off
Applicable fluids (Steel applies to air only): Air, Water

Sleeve-lock mechanism is engaged by rotating the sleeve after connection.

- Sleeve-lock mechanism prevents accidental disconnection.
- An excellent general purpose coupling for connecting factory air supply to pneumatic tools.
- Steel coupling is suitable for air. Stainless steel is suitable for water. Note that fluid will come out from the plug when disconnected.
- Critical structural parts made of steel are heat-treated for increased strength giving greater durability and resistance to wear.
- Various body materials, sizes, and end configurations are available.
- SN-BL type for connection to urethane hose requires no hose clamp.

Specifications

Body material		Steel (Chrome-plated)		Stainless steel
Size	Thread and hose barb	1/4", 3/8", 1/2"		
	SN Type	For ø6.5 x ø10 mm hose For ø8 x ø12 mm hose For ø8.5 x ø12.5 mm hose		–
Working pressure	MPa	1.5		
	kgf/cm²	15		
	bar	15		
	PSI	218		
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard material

Note: Working temperature range of SN-BL type is −20°C – +60°C.

Max. Tightening Torque — Nm {kgf•cm}

Size (Thread)		1/4"	3/8"	1/2"
Torque	Steel	14 {143}	22 {224}	60 {612}
	Stainless steel	14 {143}	22 {224}	60 {612}

Tightening Torque Range — Nm {kgf•cm}

SN Type
9 to 11 {92 to 112}

Flow Direction

Fluid must run from socket to plug.

Interchangeability

❶ Sockets and plugs for Models 10, 17, 20, 30, and 40 can be connected with each other regardless of end configurations.
❷ Interchangeable with all other Hi Cupla Series products. Please see the page for "Hi Cupla Series Interchangeability."

Min. Cross-Sectional Area — (mm²)

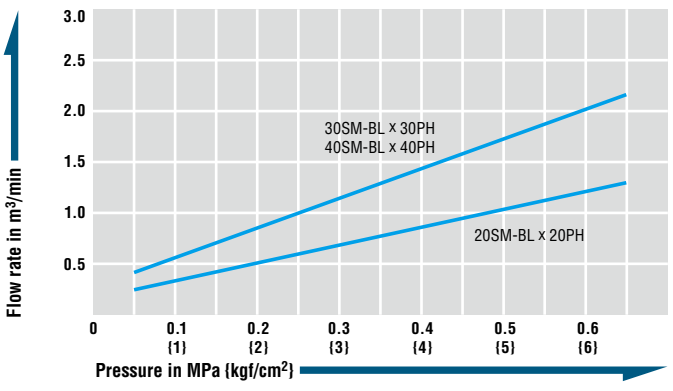
Socket \ Plug	17PH	20PH	30PH	40PH	10PM	20PM	30PM	40PM	20PF	30PF	40PF
20SH-BL	16	20	20	20	13	20	20	20	20	20	20
20SM-BL	16	20	33	33	13	33	33	33	33	33	33
20SF-BL	16	20	33	33	13	33	33	33	33	33	33
30SH-BL	16	20	33	33	13	33	33	33	33	33	33
30SM-BL	16	20	33	33	13	33	33	33	33	33	33
30SF-BL	16	20	33	33	13	33	33	33	33	33	33
40SH-BL	16	20	33	33	13	33	33	33	33	33	33
40SM-BL	16	20	33	33	13	33	33	33	33	33	33
40SF-BL	16	20	33	33	13	33	33	33	33	33	33
65SN-BL	16	20	22	22	13	22	22	22	22	22	22
80SN-BL	16	20	33	33	13	33	33	33	33	33	33
85SN-BL	16	20	33	33	13	33	33	33	33	33	33

Suitability for Vacuum

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

Pressure - Flow Characteristics

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

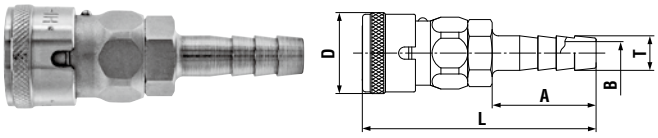


Models and Dimensions

WAF : WAF stands for width across flats.

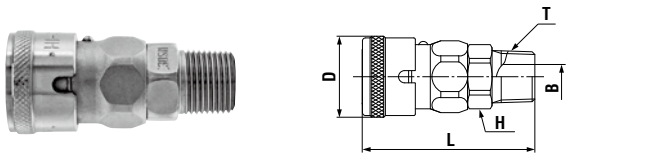
Steel

Socket SH-BL type (Hose barb)



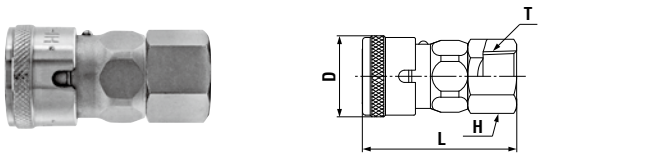
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	øD	A	øT	øB
20SH-BL	1/4"	103	(72.5)	(26.5)	30	9	5
30SH-BL	3/8"	106	(76.5)	(26.5)	34	11.3	7.5
40SH-BL	1/2"	118	(78.5)	(26.5)	36	15	9

Socket SM-BL type (Male thread)



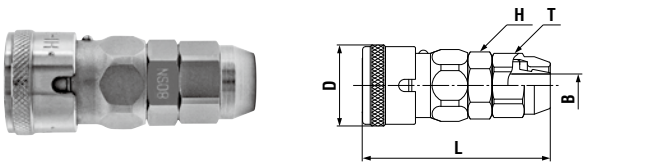
Model	Application	Mass (g)	Dimensions (mm)				
			L	øD	H(WAF)	T	øB
20SM-BL	Rc 1/4	101	(55.5)	(26.5)	Hex.19	R 1/4	7
30SM-BL	Rc 3/8	108	(56.5)	(26.5)	Hex.19	R 3/8	8
40SM-BL	Rc 1/2	131	(59.5)	(26.5)	Hex.23	R 1/2	9

Socket SF-BL type (Female thread)



Model	Application	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
20SF-BL	R 1/4	95	(49.5)	(26.5)	Hex.19	Rc 1/4
30SF-BL	R 3/8	103	(50.5)	(26.5)	Hex.21	Rc 3/8
40SF-BL	R 1/2	139	(52.5)	(26.5)	Hex.29	Rc 1/2

Socket SN-BL type (For urethane hose connection)

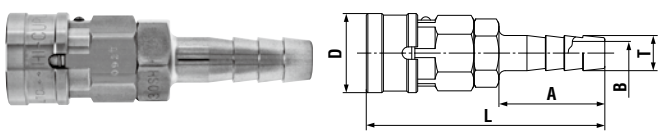


Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	øD	øB	H(WAF)	T(WAF)
65SN-BL	ø6.5 x ø10	115	(59.5)	(26.5)	5.3	Hex.19	Hex.17
80SN-BL	ø8 x ø12	120	(61.5)	(26.5)	7.5	Hex.19	Hex.19
85SN-BL	ø8.5 x ø12.5	120	(61.5)	(26.5)	7.5	Hex.19	Hex.19

• Above pictures are sockets of 30 and 80 models.

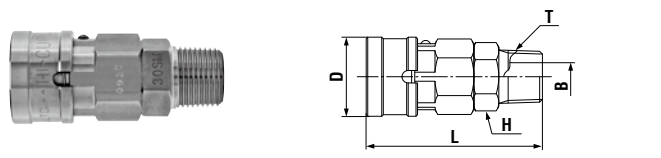
Stainless steel

Socket SH-BL type (Hose barb)



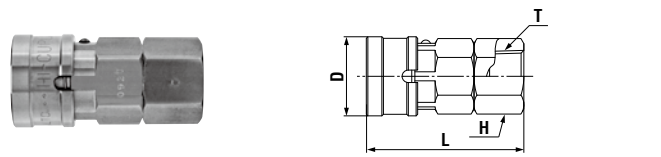
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	øD	A	øT	øB
20SH-BL	1/4"	100	(72.5)	25.4	30	9	5
30SH-BL	3/8"	101	(76.5)	25.4	34	11.3	7.5
40SH-BL	1/2"	118	(78.5)	25.4	36	15	9

Socket SM-BL type (Male thread)



Model	Application	Mass (g)	Dimensions (mm)				
			L	øD	H(WAF)	T	øB
20SM-BL	Rc 1/4	96	(55.5)	25.4	Hex.19	R 1/4	7
30SM-BL	Rc 3/8	105	(56.5)	25.4	Hex.19	R 3/8	8
40SM-BL	Rc 1/2	120	(59.5)	25.4	Hex.22	R 1/2	9

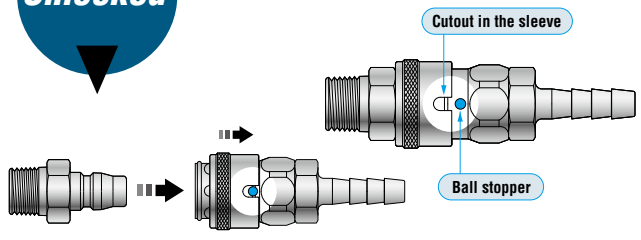
Socket SF-BL type (Female thread)



Model	Application	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
20SF-BL	R 1/4	98	(49.5)	25.4	Hex.19	Rc 1/4
30SF-BL	R 3/8	99	(50.5)	25.4	Hex.21	Rc 3/8
40SF-BL	R 1/2	138	(52.5)	25.4	Hex.29	Rc 1/2

Unlocked

Align the cutout in the sleeve with the ball stopper, and pull the sleeve to connect the plug.

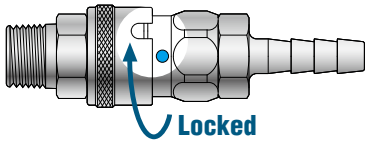


The stopper is marked with blue for visual understanding.

Locking the sleeve

Without alignment of the cutout with the ball stopper disconnection cannot be made.

Accidental disconnection is prevented.



Align the cutout in the sleeve with the ball stopper, and pull the sleeve for disconnection.

For Low Pressure (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

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

- Just push the plug into the socket for simple and secure connection. This reduces connection time and improves efficiency.
- New valve design for low pressure loss to achieve flow rate increase (15% up over the conventional model).
- End-face seal is achieved when connected.
- Enhanced operability with low connection resistance.
- End-face seal design is superior to external seal with an O-ring due to no seal damage caused by exhausted lubrication.
- Available only with steel body. Not suitable for water or oil.
- Also available with quick connect/disconnect Tube Fitter type.

▼ With Tube Fitter

Specifications

Body material		Steel (Chrome-plated)
Size	Thread and hose barb	1/4", 3/8", 1/2"
	Tube barb (Tube fitter)	Polyurethane tube: Outside Dia. ø6 ± 0.1, ø8 ± 0.15, ø10 ± 0.15 Polyamide tube: Outside Dia. ø6 $^{+0.05}_{-0.08}$, ø8 $^{+0.05}_{-0.1}$, ø10 $^{+0.05}_{-0.1}$ Fluorine contained resin tube: Outside Dia. ø6 ± 0.07, ø8 ± 0.07, ø10 ± 0.07

Working pressure	
MPa	1.5
kgf/cm²	15
bar	15
PSI	218

Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +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 its working temperature range.

Max. Tightening Torque — Nm {kgf•cm}

Size (Thread)	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)

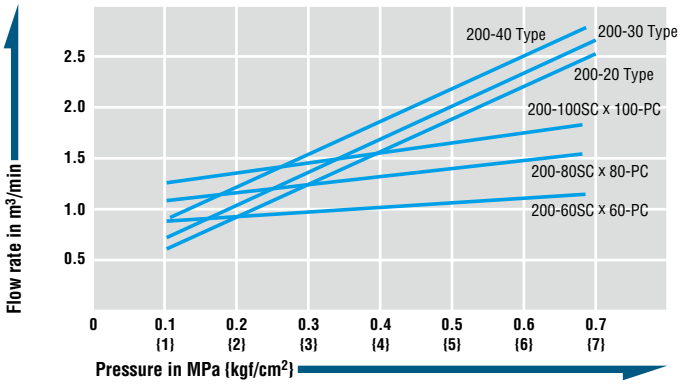
Socket \ Plug	17PH	20PH	30PH	40PH	10PM	20PM	30PM	40PM	20PF	30PF	40PF
200-17SH	16	16	16	16	13	16	16	16	16	16	16
200-20SH	16	20	20	20	13	20	20	20	20	20	20
200-30SH	16	20	41	41	13	41	41	41	41	41	41
200-40SH	16	20	41	41	13	41	41	41	41	41	41
200-20SM	16	20	41	41	13	41	41	41	41	41	41
200-30SM	16	20	41	41	13	41	41	41	41	41	41
200-40SM	16	20	41	41	13	41	41	41	41	41	41
200-20SF	16	20	41	41	13	41	41	41	41	41	41
200-30SF	16	20	41	41	13	41	41	41	41	41	41
200-40SF	16	20	41	41	13	41	41	41	41	41	41

Suitability for Vacuum

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

Pressure - Flow Characteristics

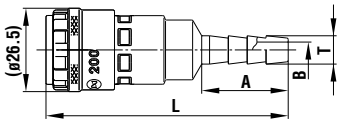
[Test conditions] •Fluid : Air •Temperature : Room temperature



Models and Dimensions

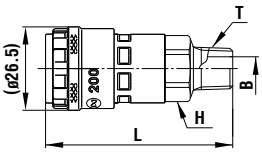
WAF : WAF stands for width across flats.

Socket SH type (Hose barb)



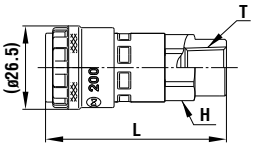
Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			L	A	øT	øB
200-17SH	1/4"	86	(77)	27	7.2	4.5
200-20SH	1/4"	90	(77)	27.5	9	5
200-30SH	3/8"	92	(79)	32	11.3	7.5
200-40SH	1/2"	104	(79.5)	32	15	10

Socket SM type (Male thread)



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

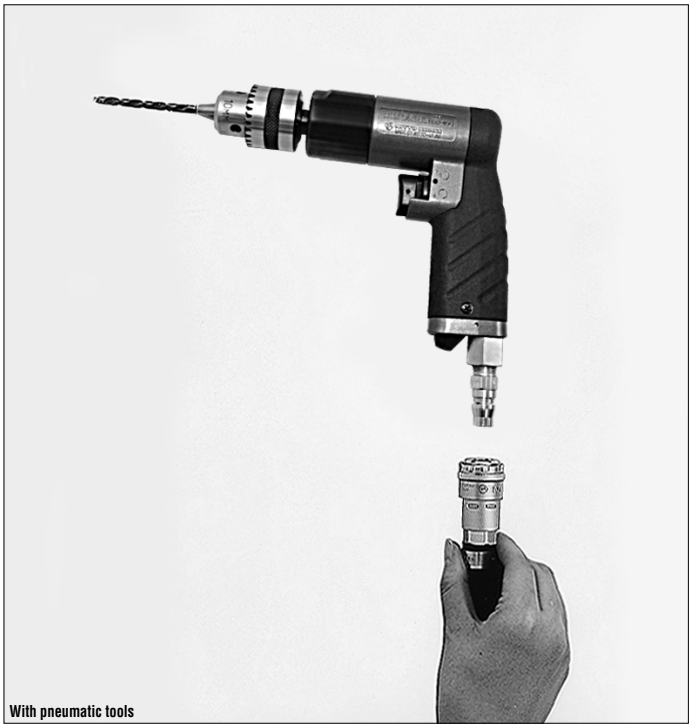
Socket SF type (Female thread)



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

Application example

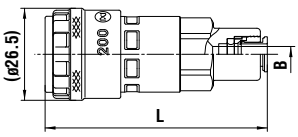
Air piping



With pneumatic tools

Models and Dimensions (With Tube Fitter)

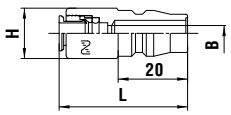
Socket SC type (Tube Fitter)



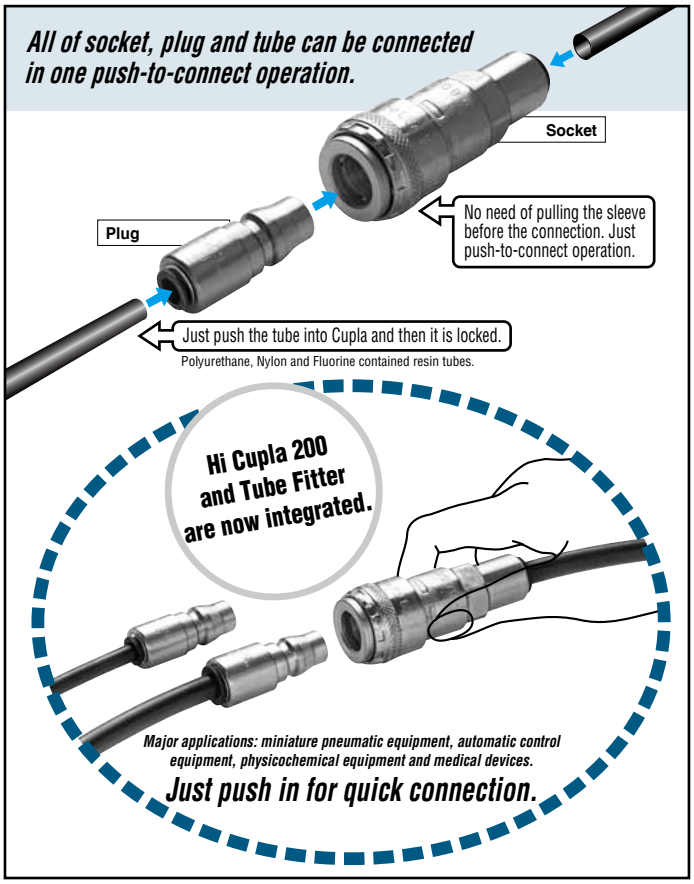
Model	Application	Mass (g)	Dimensions (mm)	
			L	øB
200-60SC	For 6 mm OD tube	100	(64)	5
200-80SC	For 8 mm OD tube	105	(67.5)	6.5
200-100SC	For 10 mm OD tube	123	(70.5)	8.5

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

Plug PC type (Tube Fitter)



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



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

For Low Pressure (Air)

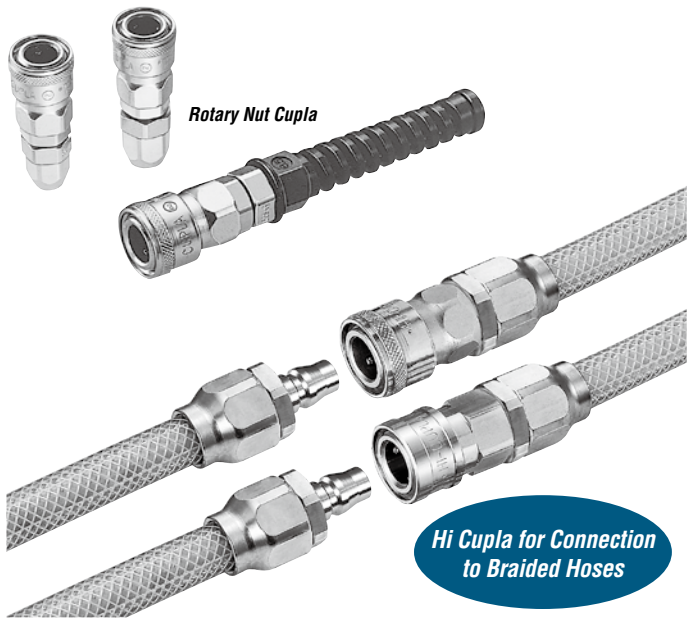
Hi Cupla for Connection to Braided Hoses
Nut Cupla
Nut Cupla 200
Rotary Nut Cupla

For connection to urethane hose

Working pressure: 1.5 MPa {15 kgf/cm²}; 1.0 MPa {10 kgf/cm²}
Valve structure: One-way shut-off
Applicable fluids (Steel applies to air only): Air; Water

No hose clamp required!
Fitted with hose guard nut to prevent possible kinking.
Hi Cupla for connection to braided hoses is now available.

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



Specifications (Nut Cupla / Nut Cupla 200 / Rotary Nut Cupla)

Body material		Steel (Chrome-plated)			
Urethane hose size		For ø5 mm x ø8 mm, ø6 mm x ø9 mm hose For ø6.5 mm x ø10 mm, ø8 mm x ø12 mm hose For ø8.5 mm x ø12.5 mm, ø11 mm x ø16 mm hose			
Working pressure	MPa	1.5			
	kgf/cm²	15			
	bar	15			
	PSI	218			
Seal material Working temperature range		Seal material	Mark	Working temperature range	Remarks
		Nitrile rubber	NBR (SG)	−20°C to +60°C	Standard material

Specifications (Hi Cupla for Connection to Braided Hoses)

Body material		Steel (Chrome-plated)		Brass	
Braided hose size		For ø9 mm x ø15 mm hose			
Working pressure	MPa	1.5		1.0	
	kgf/cm²	15		10	
	bar	15		10	
	PSI	218		145	
Seal material Working temperature range		Seal material	Mark	Working temperature range	Remarks
		Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard material

Working pressure and temperature range of PN/SN type for braided hoses depends upon the specification of the braided hose to be used.

Tightening Torque Range — Nm {kgf•cm}

Model	SN, PN, SNR Type	65SNG, PNG, SNRG Type	85SNG, PNG, SNRG Type
Torque	9 to 11 {92 to 112}	5 to 6 {51 to 61}	7 to 8 {71 to 82}

To mount on braided hose or urethane hose, slide it over to the hose barb and tighten the nut until it is flush against the hose barb base. It is recommended that grease is applied to the inside of the nut (threaded part and hose contact part) for easy tightening.

Flow Direction

Fluid must run from socket to plug.

Interchangeability

Interchangeable with Hi Cupla Models 10, 17, 20, 30 and 40.
Interchangeable with each corresponding Hi Cupla Series models.

Min. Cross-Sectional Area — (mm²)

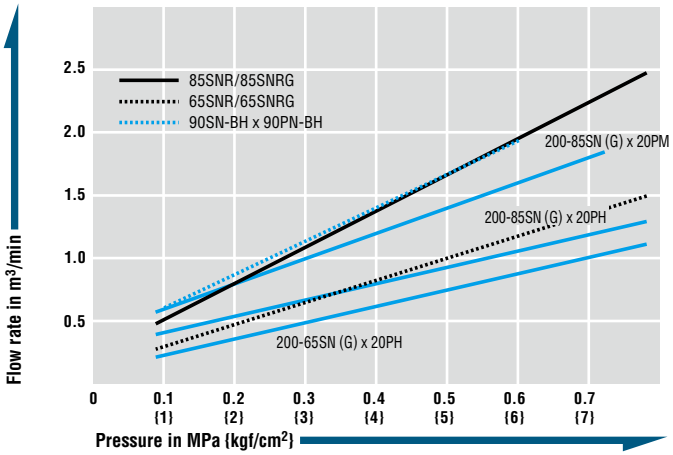
Socket \ Plug	17PH	20PH	30PH	40PH	10PM	20PM	30PM	40PM	20PF	30PF	40PF	90PN-BH
200-50SN	16	16	16	16	13	16	16	16	16	16	16	16
200-60SN	16	20	22	22	13	22	22	22	22	22	22	22
200-65SN	16	20	22	22	13	22	22	22	22	22	22	22
200-80SN	16	20	41	41	13	41	41	41	41	41	41	41
200-85SN	16	20	41	41	13	41	41	41	41	41	41	41
200-110SN	16	20	41	41	13	41	41	41	41	41	41	41
200-50SNG	16	16	16	16	13	16	16	16	16	16	16	16
200-65SNG	16	20	22	22	13	22	22	22	22	22	22	22
200-85SNG	16	20	40	41	13	41	41	41	41	41	41	41
90SN-BH	16	20	33	33	13	33	33	33	33	33	33	33

Suitability for Vacuum

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

Pressure - Flow Characteristics

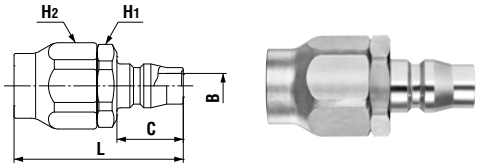
[Test conditions] •Fluid : Air •Temperature : Room temperature



Models and Dimensions (Nut Cupla / Nut Cupla 200)

WAF : WAF stands for width across flats.

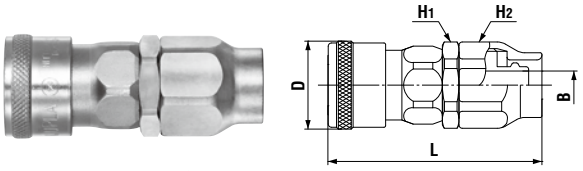
Plug PN type (Hi Cupla for connection to braided hoses)



Grease is applied to the threaded part of steel nut to prevent galling.

Model	Application (Hose)	Wall Thickness (mm)	Body material•Mass (g)		Dimensions (mm)				
			Steel	Brass	L	H1(WAF)	H2(WAF)	C	øB
90PN-BH	ø9 x ø15	3±0.3	86	88	(51)	Hex.24	Hex.24	20	7.5

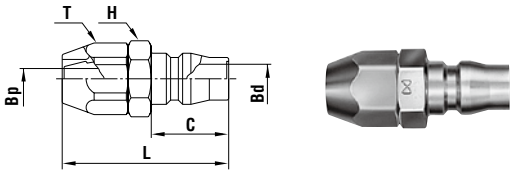
Socket SN type (Hi Cupla for connection to braided hoses)



Grease is applied to the threaded part of steel nut to prevent galling.

Model	Application (Hose)	Wall Thickness (mm)	Body material•Mass (g)		Dimensions (mm)				
			Steel	Brass	L	øD	H1(WAF)	H2(WAF)	øB
90SN-BH	ø9 x ø15	3±0.3	147	154	(64.5)	(26.5) *1	Hex.24	Hex.24	8.5

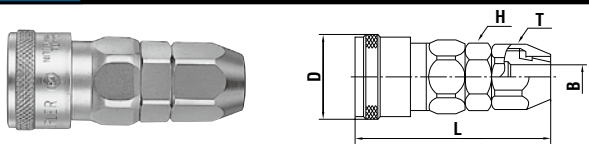
Plug PN type (For urethane hose connection)



Grease is applied to the threaded part of stainless steel nut to prevent galling.

Model	Application (Hose)	Body material•Mass (g)		Dimensions (mm)					
		Steel	Stainless steel	L	C	øBp	øBd	H(WAF)	T(WAF)
50PN	ø5 x ø8	30	–	(43)	20	4.5	7.5	Hex.17	Hex.17
60PN	ø6 x ø9	40	–	(43)	20	5.3	7.5	Hex.17	Hex.17
65PN	ø6.5 x ø10	42	43	(43)	20	5.3	7.5	Hex.17	Hex.17
80PN	ø8 x ø12	50	52	(45)	20	7.5	7.5	Hex.19	Hex.19
85PN	ø8.5 x ø12.5	52	53	(45)	20	7.5	7.5	Hex.19	Hex.19
110PN	ø11 x ø16	75	–	(52)	20	7.5	7.5	Hex.23	Hex.24

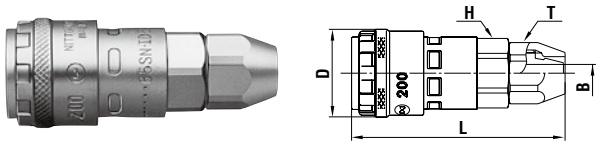
Socket SN type (For urethane hose connection)



Grease is applied to the threaded part of stainless steel nut to prevent galling.

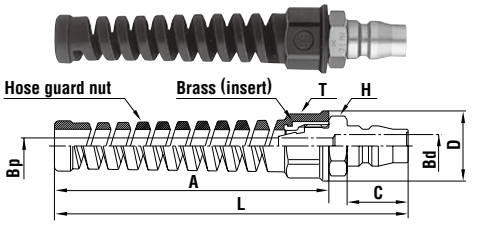
Model	Application (Hose)	Body material•Mass (g)		Dimensions (mm)				
		Steel	Stainless steel	L	øD	øB	H(WAF)	T(WAF)
50SN	ø5 x ø8	117	–	(60)	(26.5)	4.5	Hex.19	Hex.17
60SN	ø6 x ø9	115	–	(59.5)	(26.5)	5.3	Hex.19	Hex.17
65SN	ø6.5 x ø10	115	110	(59.5)	(26.5) *2	5.3	Hex.19	Hex.17
80SN	ø8 x ø12	120	114	(61.5)	(26.5) *2	7.5	Hex.19	Hex.19
85SN	ø8.5 x ø12.5	120	115	(61.5)	(26.5) *2	7.5	Hex.19	Hex.19
110SN	ø11 x ø16	153	–	(64.5)	(26.5)	10	Hex.23	Hex.24

Socket SN type (For urethane hose connection)



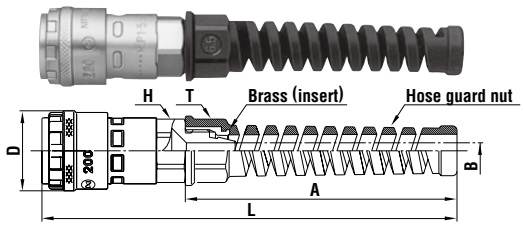
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	øD	øB	H(WAF)	T(WAF)
200-50SN	ø5 x ø8	105	(64.5)	(26.5)	4.5	Hex.19	Hex.17
200-60SN	ø6 x ø9	105	(64.5)	(26.5)	5.3	Hex.19	Hex.17
200-65SN	ø6.5 x ø10	106	(64.5)	(26.5)	5.3	Hex.19	Hex.17
200-80SN	ø8 x ø12	112	(66.5)	(26.5)	7.5	Hex.19	Hex.19
200-85SN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

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



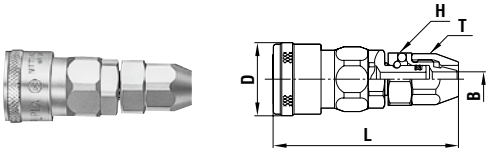
Model	Application (Hose)	Mass (g)	Dimensions (mm)							
			L	C	A	øD	øBp	øBd	H(WAF)	T(WAF)
50PNG *3	ø5 x ø8	41	(116)	20	90	23	4.5	7.5	Hex.17	Hex.19
65PNG	ø6.5 x ø10	43	(116)	20	90	23	5.3	7.5	Hex.17	Hex.19
85PNG	ø8.5 x ø12.5	55	(116)	20	90	26	7.5	7.5	Hex.19	Hex.22

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



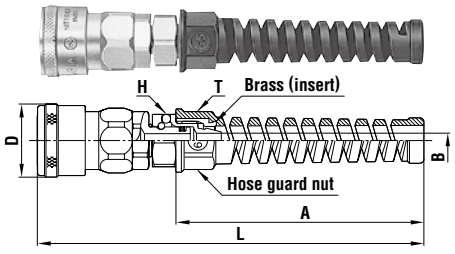
Model	Application (Hose)	Mass (g)	Dimensions (mm)						
			L	A	øD	øB	H(WAF)	T(WAF)	
200-50SNG *3	ø5 x ø8	105	(137.5)	90	(26.5)	4.5	Hex.19	Hex.19	
200-65SNG	ø6.5 x ø10	107	(137.5)	90	(26.5)	5.3	Hex.19	Hex.19	
200-85SNG	ø8.5 x ø12.5	116	(137.5)	90	(26.5)	7.5	Hex.19	Hex.22	

Socket SNR type (With ball bearing swivel mechanism)



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

Socket SNRG type (With ball bearing swivel mechanism)



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

The pictures of Hi Cupla for connection to braided hoses and PN type and SN type of Nut Cupla show steel bodies. *1: Brass: øD=25.4 *2: Stainless steel: øD=25.4 *3: 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 Low Pressure (Air)

Lock Cupla 200

Air line coupling with sleeve safety lock feature

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

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

- Locking mechanism prevents accidental disconnection 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

Suitability for Vacuum

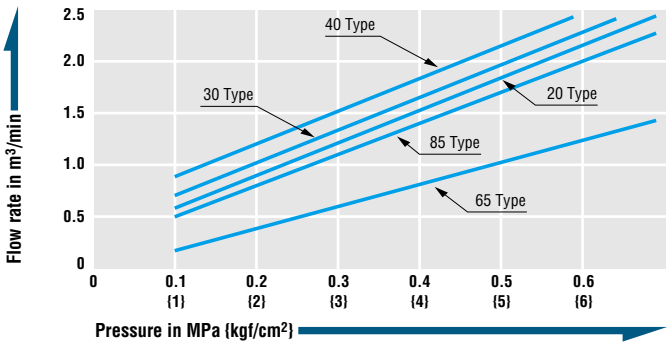
Not suitable for vacuum application in either connected or disconnected condition.

Min. Cross-sectional Area (mm²)

Plug / Lock Cupla 200	17PH	20PH	30PH	40PH	10PM	20PM	30PM	40PM	20PF	30PF	40PF
L200-20SH	16	20	20	20	13	20	20	20	20	20	20
L200-30SH	16	20	41	41	13	41	41	41	41	41	41
L200-40SH	16	20	41	41	13	41	41	41	41	41	41
L200-20SM	16	20	41	41	13	41	41	41	41	41	41
L200-30SM	16	20	41	41	13	41	41	41	41	41	41
L200-40SM	16	20	41	41	13	41	41	41	41	41	41
L200-20SF	16	20	41	41	13	41	41	41	41	41	41
L200-30SF	16	20	41	41	13	41	41	41	41	41	41
L200-40SF	16	20	41	41	13	41	41	41	41	41	41
L200-65SNRG	16	20	20	20	13	20	20	20	20	20	20
L200-85SNRG	16	38	38	38	13	38	38	38	38	38	38

Pressure - Flow Characteristics

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



Specifications

Body material		Steel (Chrome-plated)
Size	Thread and hose barb	1/4", 3/8", 1/2"
	SNRG type	For ø6.5 mm x ø10mm, ø8.5 mm x ø12.5 mm hose
Working pressure	MPa	1.5
	kgf/cm²	15
	bar	15
	PSI	218

Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +60°C	Standard material

Max. Tightening Torque, Tightening Torque Range Nm {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 to 6 {51 to 61}	7 to 8 {71 to 82}

Flow Direction

Fluid must run from socket to plug.

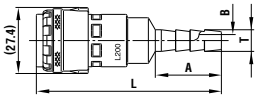
Interchangeability

Can be connected with plugs for Hi Cupla Models 10, 17, 20, 30 and 40.
Interchangeable with each corresponding Hi Cupla Series models.

Models and Dimensions

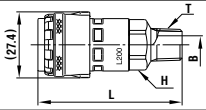
WAF : WAF stands for width across flats.

Socket SH type (Hose barb)



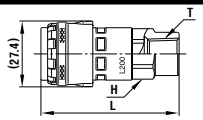
Model	Application (Hose)	Mass (g)	Dimensions (mm) L	A	øT	øB
L200-20SH	1/4"	90	(77)	27.5	9	5
L200-30SH	3/8"	92	(79)	32	11.3	7.5
L200-40SH	1/2"	104	(79.5)	32	15	10

Socket SM type (Male thread)



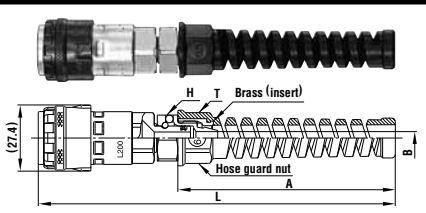
Model	Application	Mass (g)	Dimensions (mm) L	H(WAF)	T	øB
L200-20SM	Rc 1/4	89	(60)	Hex.19	R 1/4	7.5
L200-30SM	Rc 3/8	91	(60.5)	Hex.19	R 3/8	10
L200-40SM	Rc 1/2	102	(56)	Hex.24	R 1/2	13

Socket SF type (Female thread)



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

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



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

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

For Low Pressure (Air)

Hi Cupla

Two Way Type

For bidirectional compressed air flow

Working pressure	Valve structure	Applicable fluid
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 for Hi Cupla Models 10, 17, 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	Thread		1/4", 3/8", 1/2"
	Hose barb		For ø6.5 mm x ø10mm, ø8.5 mm x ø12.5 mm hose
Working pressure		MPa	1.5
		kgf/cm²	15
		bar	15
		PSI	218

Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard material
	Fluoro rubber	FKM (X-100)	−20°C to +180°C	Made-to-order item

Max. Tightening Torque

Nm {kgf•cm}

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

Flow Direction

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

Interchangeability

Can be connected with plugs for Hi Cupla Models 10, 17, 20, 30 and 40.
Interchangeable with each corresponding Hi Cupla Series models.

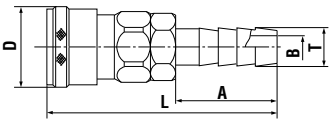
Suitability for Vacuum

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

Models and Dimensions

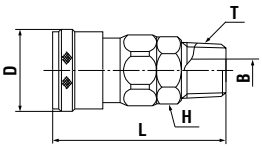
WAF : WAF stands for width across flats.

Socket SH type (Hose barb)



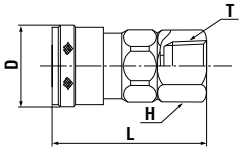
Model	Application (Hose)	Mass (g)	Dimensions (mm) L	øD	A	øT	øB
TW20SH	1/4"	98	(72.5)	(26.5)	30	9	5
TW30SH	3/8"	102	(76.5)	(26.5)	34	11.3	7.5
TW40SH	1/2"	117	(78.5)	(26.5)	36	15	9

Socket SM type (Male thread)



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

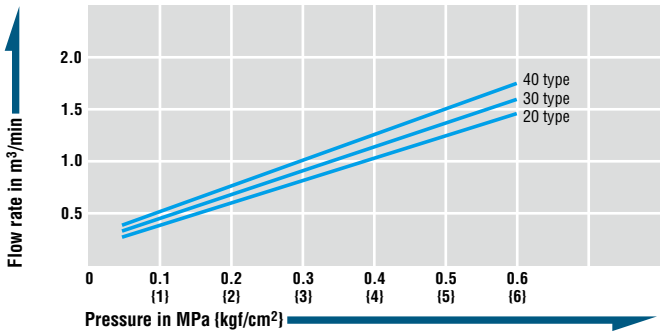
Socket SF type (Female thread)



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

Pressure - Flow Characteristics

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



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

For Low Pressure (Air)

Full-Blow Cupla

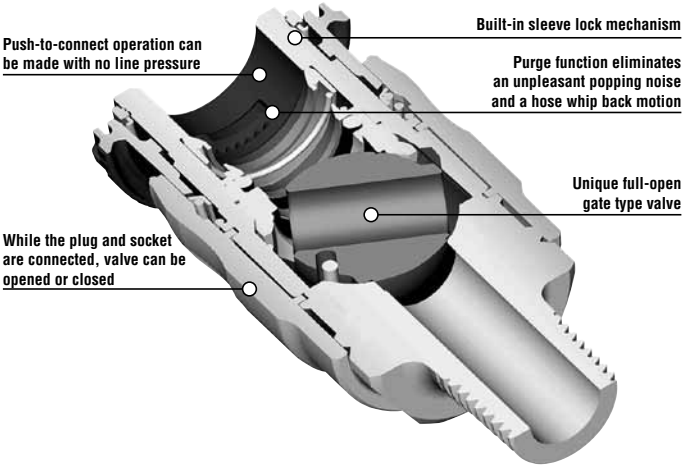
Air line coupling with low pressure loss and high flow rate

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 its original position, the purge mechanism releases the residual air pressure in the plug, eliminating an unpleasant popping noise and a hose whip back motion on disconnection.
- Built-in sleeve lock mechanism prevents accidental disconnection of Cuplas, ensuring safe operation.
- The valve can be opened and closed while the socket and plug are 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	Thread and hose barb	1/4", 3/8", 1/2"			
	SN 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	1.5			
	kgf/cm²	15			
	bar	15			
	PSI	218			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks	
	Nitrile rubber	NBR (SG)	−20°C to +60°C	Standard material	

Max. Tightening Torque — Nm {kgf•cm}

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

Flow Direction

Fluid must run from socket to plug.

Interchangeability

Can be connected with plugs for Hi Cupla Models 10, 17, 20, 30, and 40.
Interchangeable with all other Hi Cupla Series products. Please see the page for "Hi Cupla Series Interchangeability."
Cannot be interchangeable with some plugs for plastic Hi Cupla 250 (discontinued product).

Min. Cross-Sectional Area — (mm²)

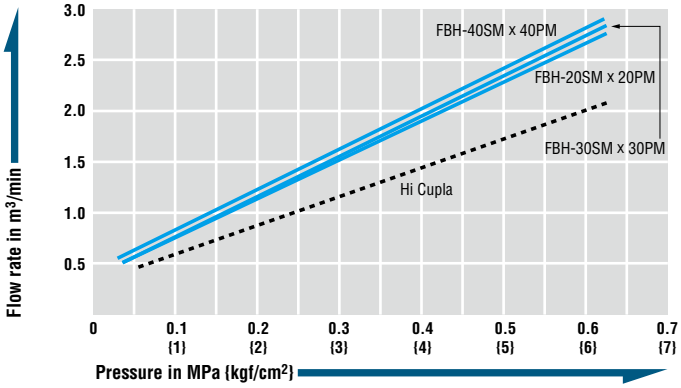
Socket \ Plug	17PH	20PH	30PH	40PH	10PM	20PM	30PM	40PM	20PF	30PF	40PF
FBH-20SH	16	20	24	24	13	24	24	24	24	24	24
FBH-30SH	16	20	44	44	13	44	44	44	44	44	44
FBH-40SH	16	20	44	44	13	44	44	44	44	44	44
FBH-20SM	16	20	44	44	13	44	44	44	44	44	44
FBH-30SM	16	20	44	44	13	44	44	44	44	44	44
FBH-40SM	16	20	44	44	13	44	44	44	44	44	44
FBH-20SF	16	20	44	44	13	44	44	44	44	44	44
FBH-30SF	16	20	44	44	13	44	44	44	44	44	44
FBH-40SF	16	20	44	44	13	44	44	44	44	44	44
FBH-65SN	16	20	24	24	13	24	24	24	24	24	24
FBH-80SN	16	20	44	44	13	44	44	44	44	44	44
FBH-85SN	16	20	44	44	13	44	44	44	44	44	44
FBH-110SN	16	20	44	44	13	44	44	44	44	44	44

Suitability for Vacuum

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

Pressure - Flow Rated Characteristics (Comparison with Hi Cupla)

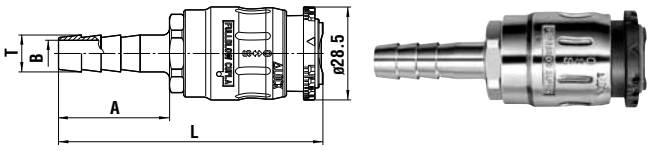
[Test conditions] •Fluid : Air •Temperature : Room temperature



Models and Dimensions

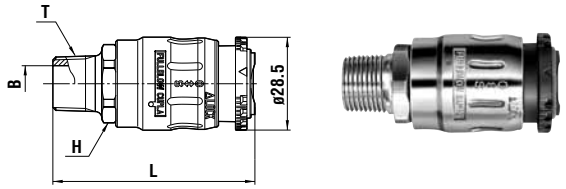
WAF : WAF stands for width across flats.

Socket SH type (Hose barb)



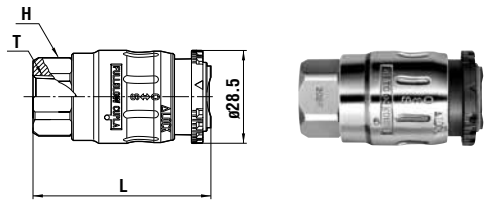
Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			L	A	øT	øB
FBH-20SH	1/4"	70	(77)	30	9	5.5
FBH-30SH	3/8"	74	(81)	34	11.3	8
FBH-40SH	1/2"	85	(83)	36	15	10

Socket SM type (Male thread)



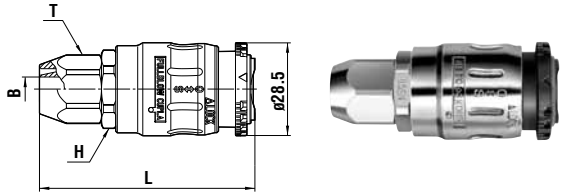
Model	Application	Mass (g)	Dimensions (mm)			
			L	H(WAF)	T	øB
FBH-20SM	Rc 1/4	71	(62)	Hex.22	R 1/4	8
FBH-30SM	Rc 3/8	75	(62)	Hex.22	R 3/8	11
FBH-40SM	Rc 1/2	86	(66)	Hex.22	R 1/2	15

Socket SF type (Female thread)



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

Socket SN type (For urethane hose connection)

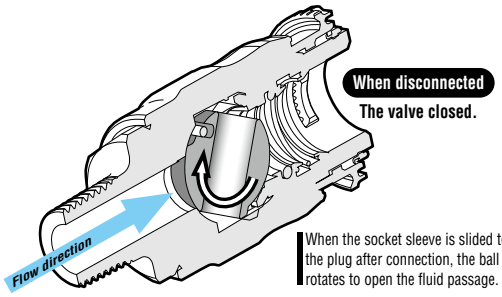


Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			L	H(WAF)	T(WAF)	øB
FBH-65SN	ø6.5 mm x ø10 mm	64	(64)	Hex.22	Hex.17	5.5
FBH-80SN	ø8 mm x ø12 mm	67	(66)	Hex.22	Hex.19	7.5
FBH-85SN	ø8.5 mm x ø12.5 mm	68	(66)	Hex.22	Hex.19	7.5
FBH-110SN	ø11 mm x ø16 mm	86	(71)	Hex.26	Hex.24	10

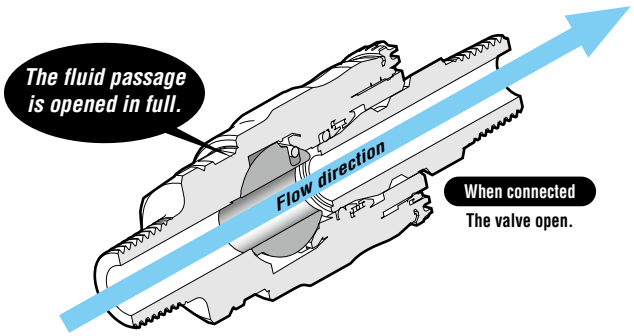
Features of Full-Blow Cupla

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.



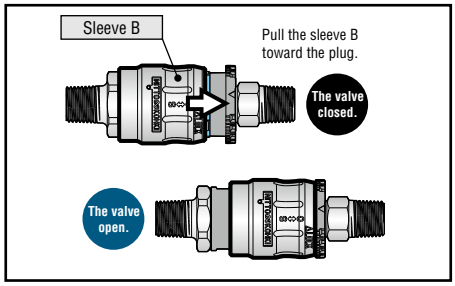
When the socket sleeve is slided toward the plug after connection, the ball valve rotates to open the fluid passage.



How It Works

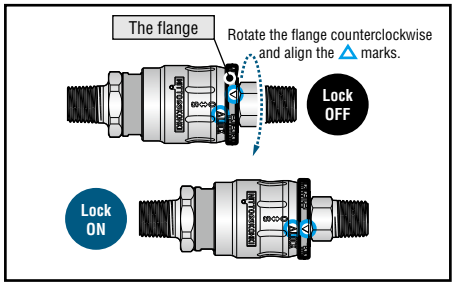
1. Open the valve

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.



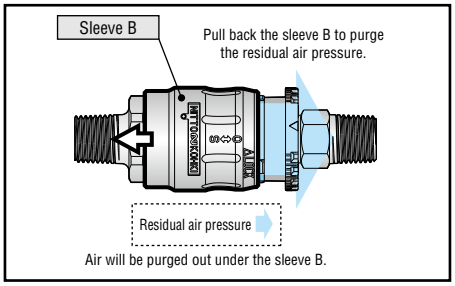
2. Lock the sleeve

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



3. Purge the residual air

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



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

For Low Pressure (Air)

Purge Hi Cupla

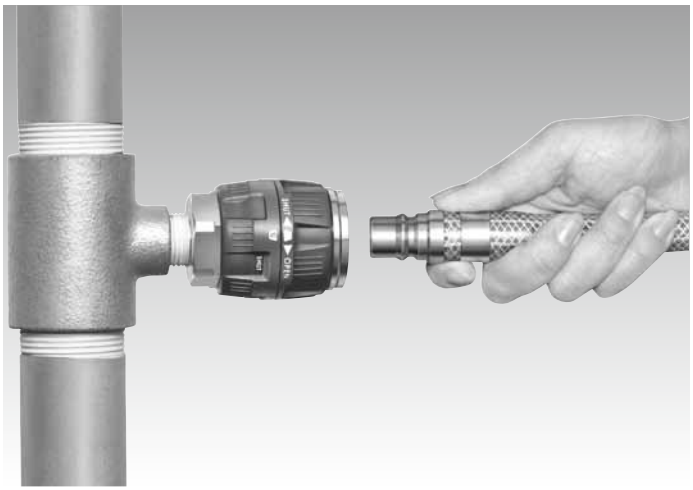
PVR Type

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

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

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

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



Specifications

Body material		Zinc alloy die casting, brass, and others			
Size	Thread	1/2", 3/4", 1"			
	Hose barb	1/2", 3/4", 1" hose			
Working pressure	MPa	1.5			
	kgf/cm²	15			
	bar	15			
	PSI	218			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks	
	Nitrile rubber Hydrogenated nitrile rubber	NBR (SG)	−20°C to +60°C	Standard material	

Max. Tightening Torque Nm {kgf•cm}

Size (Thread)	1/2"	3/4"	1"
Torque	30 {306}	50 {510}	65 {663}

Flow Direction

Fluid must run from socket to plug.

Interchangeability

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

Min. Cross-Sectional Area (mm²)

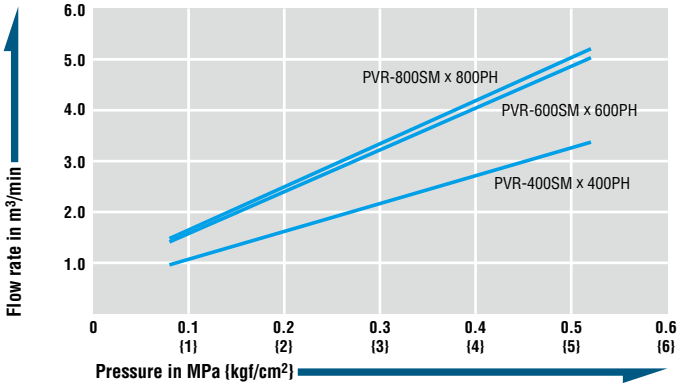
Model	400PH	600PH	800PH	400PM	600PM	800PM	400PF	600PF	800PF
PVR-400SH	64	71	71	71	71	71	71	71	71
PVR-600SH	64	116	116	116	116	116	116	116	116
PVR-800SH	64	116	116	116	116	116	116	116	116
PVR-400SM	64	116	116	116	116	116	116	116	116
PVR-600SM	64	116	116	116	116	116	116	116	116
PVR-800SM	64	116	116	116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

Suitability for Vacuum

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

Pressure - Flow Rated Characteristics

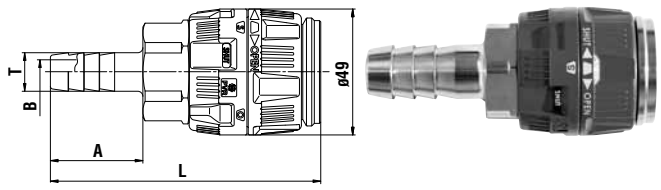
[Test conditions] •Fluid : Air •Temperature : Room temperature



Models and Dimensions

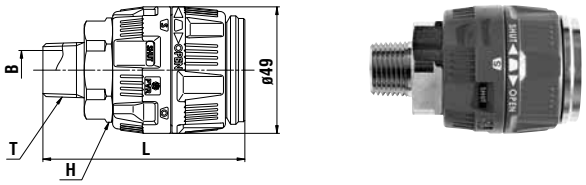
WAF : WAF stands for width across flats.

Socket SH type (Hose barb)



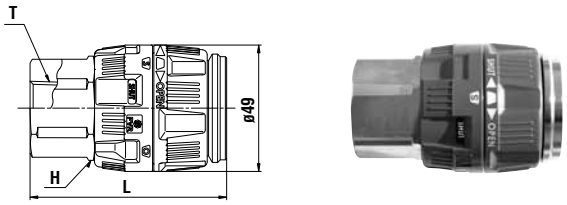
Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			L	A	øT	øB
PVR-400SH	1/2"	380	(105)	36	15	9.5
PVR-600SH	3/4"	361	(109)	45	21	14
PVR-800SH	1"	440	(118)	55	27	16

Socket SM type (Male thread)



Model	Application	Mass (g)	Dimensions (mm)			
			L	H(WAF)	T	øB
PVR-400SM	Rc 1/2	327	(78)	Hex.35	R 1/2	14
PVR-600SM	Rc 3/4	345	(82)	Hex.35	R 3/4	18
PVR-800SM	Rc 1	374	(84)	Hex.35	R 1	24

Socket SF type (Female thread)

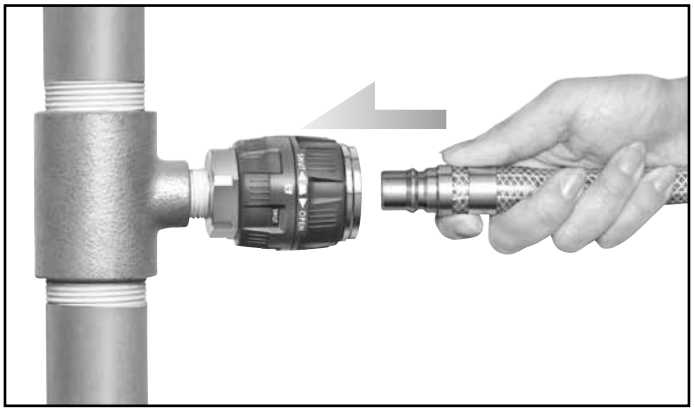


Model	Application	Mass (g)	Dimensions (mm)		
			L	H(WAF)	T
PVR-400SF	R 1/2	394	(76)	Hex.35	Rc 1/2
PVR-600SF	R 3/4	370	(77)	Hex.35	Rc 3/4
PVR-800SF	R 1	440	(82)	Hex.41	Rc 1

Function of Purge Hi Cupla PVR Type

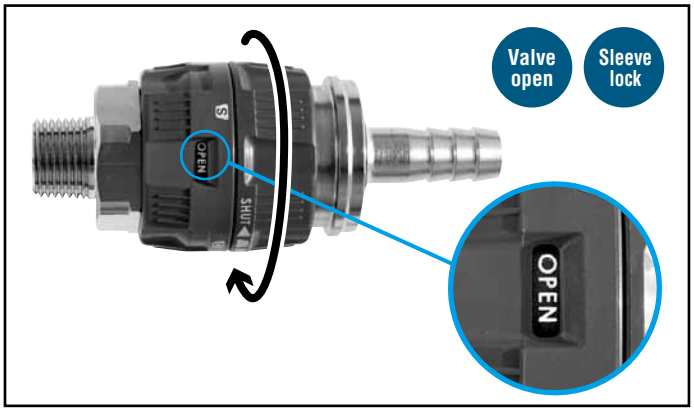
1. Connection

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



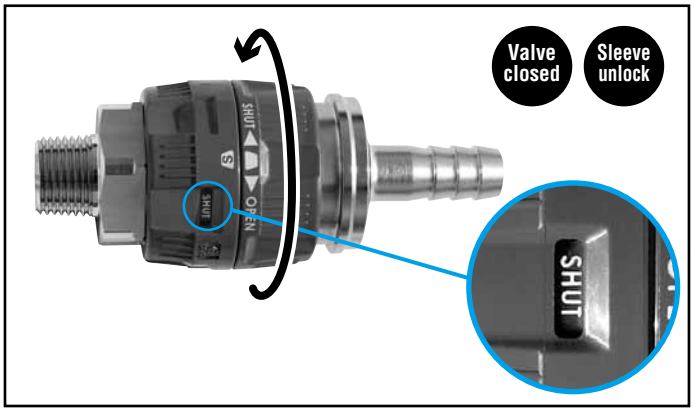
2. Open the valve and lock the sleeve.

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



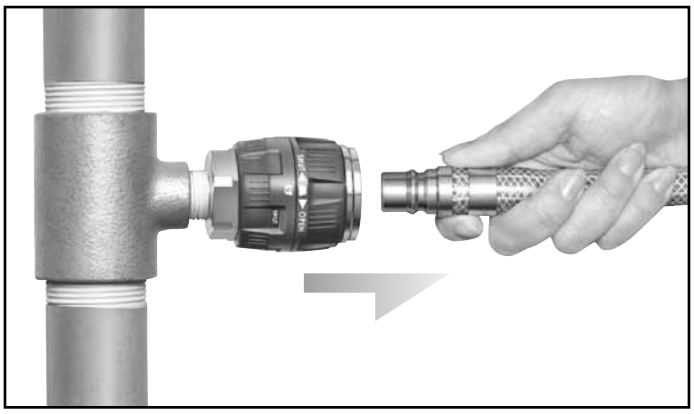
3. Close the valve and unlock the sleeve

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



4. Disconnection

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



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For Low Pressure (Air)

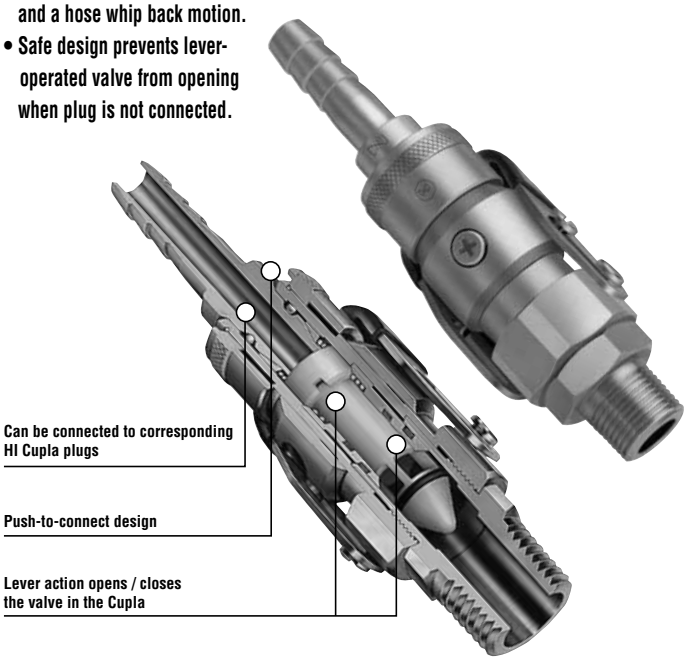
Purge Hi Cupla

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

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

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



Specifications

Body material		Brass (Chrome-plated)			
Size (Thread)		1/4", 3/8", 1/2", 3/4"			
Working pressure	MPa	1.0			
	kgf/cm²	10			
	bar	10			
	PSI	145			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks	
	Nitrile rubber	NBR (SG)	−20°C to +60°C	Standard material	

Max. Tightening Torque — Nm {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 10, 17, 20, 30 and 40.
Models 400, 600 can be connected to plugs of Hi Cupla Models 400, 600 and 800.
Interchangeable with each corresponding Hi Cupla Series models.

Min. Cross-Sectional Area — (mm²)

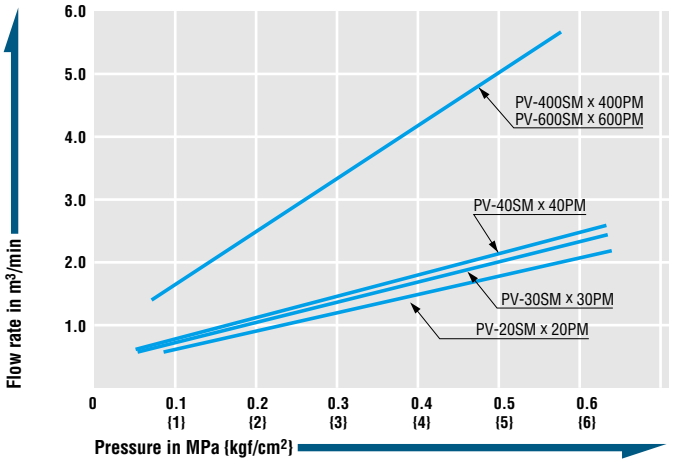
Model	PV-20SM	PV-30SM	PV-40SM	PV-400SM	PV-600SM
Min. cross-sectional area	38	41	41	94	94

Suitability for Vacuum

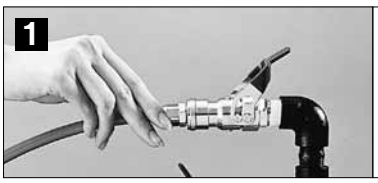
Not suitable for vacuum application in either connected or disconnected condition.

Pressure - Flow Characteristics

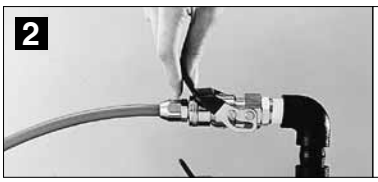
[Test conditions] •Fluid : Air •Temperature : Room temperature



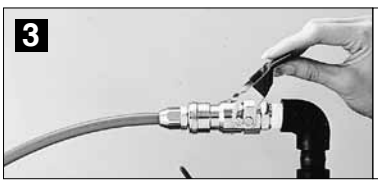
How to Operate



1 Just push the plug into socket.
(In this stage the valve of the socket is not open.)



2 Turning down the lever opens the valve and allows the fluid flow.
(The turned-down lever works as a sleeve stopper and prevents disconnection.)

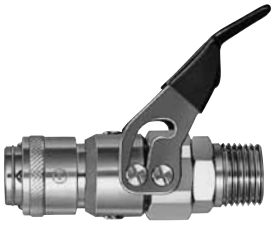


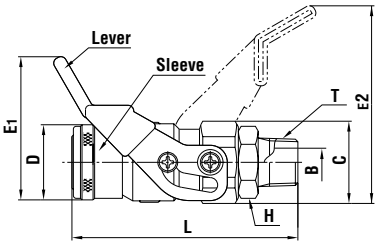
3 When the lever is pulled up, residual air pressure in the plug is purged without an unpleasant popping noise and a hose whip back motion on disconnection. In this stage, the socket valve is still closed.

Models and Dimensions

WAF : WAF stands for width across flats.

Socket





Model	Application	Mass (g)	Dimensions (mm)							
			L	øD	E1	E2	H(WAF)	øC	T	øB
PV-20SM	Rc 1/4	225	(79)	26.5	(50.5)	(70)	Hex.22	29	R 1/4	7
PV-30SM	Rc 3/8	229	(80)	26.5	(50.5)	(70)	Hex.22	29	R 3/8	10
PV-40SM	Rc 1/2	235	(82)	26.5	(50.5)	(70)	Hex.22	29	R 1/2	14
PV-400SM	Rc 1/2	411	(94)	35	(61.5)	(82)	Hex.30	37.5	R 1/2	13
PV-600SM	Rc 3/4	424	(97)	35	(61.5)	(82)	Hex.30	37.5	R 3/4	18

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

For Low Pressure (Air)

Purge Line Cupla

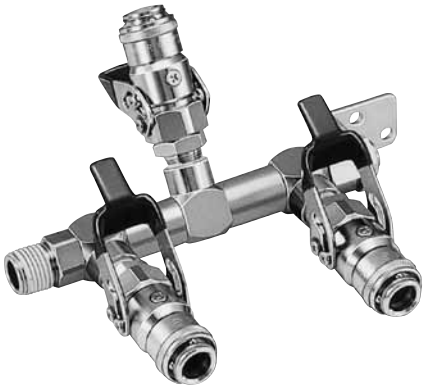
Simple air line coupling manifold with residual pressure release function

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

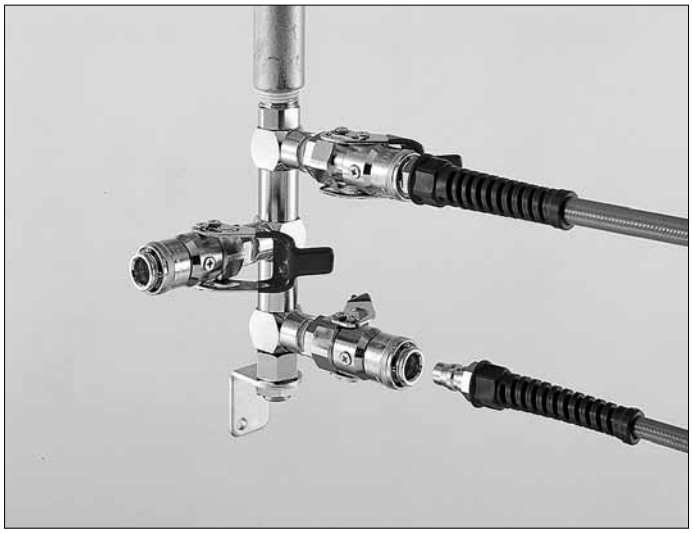
Residual pressure can be released by a mere lever turn. Very smooth connection/disconnection!

- **Single action, just push in the plug to connect regardless of internal pressure in socket.**
- **No unpleasant noise of air pressure discharge and no hose whip back motion on disconnection for safety operation.**
- **Safe design – socket valve will not open or close unless plug is connected.**
- **Even after connection, a lever turn will open/close valve with perfect control of air flow or line shut-off.**
- **Enables simultaneous air supply to three outlets from a single air line.**

(A single outlet Purge Hi Cupla is also available – see the pages of Purge Hi Cupla for details.)



Application Example



Specifications

Body material		Brass (Chrome-plated)		
Size		Inlet	R 1/2	
		Outlet	Socket (PV-30SM)	
Working pressure	MPa	1.0		
	kgf/cm²	10		
	bar	10		
	PSI	145		
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +60°C	Standard material

Max. Tightening Torque — Nm {kgf•cm}

Size (Thread)	1/2"
Torque	30 {306}

Flow Direction

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

Interchangeability

Can be connected with plugs for Hi Cupla Models 10, 17, 20, 30 and 40.
Interchangeable with each corresponding Hi Cupla Series models.

Min. Cross-Sectional Area — (mm²)

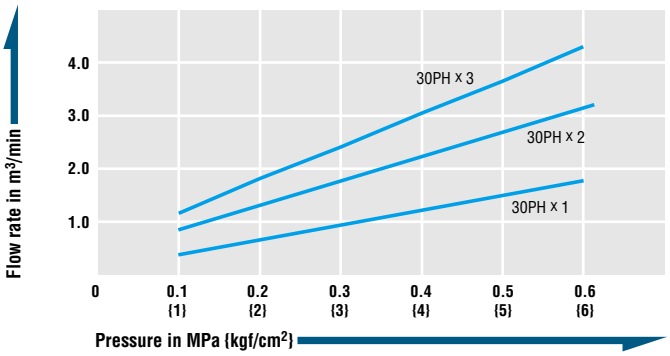
41

Suitability for Vacuum

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

Pressure - Flow Characteristics

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



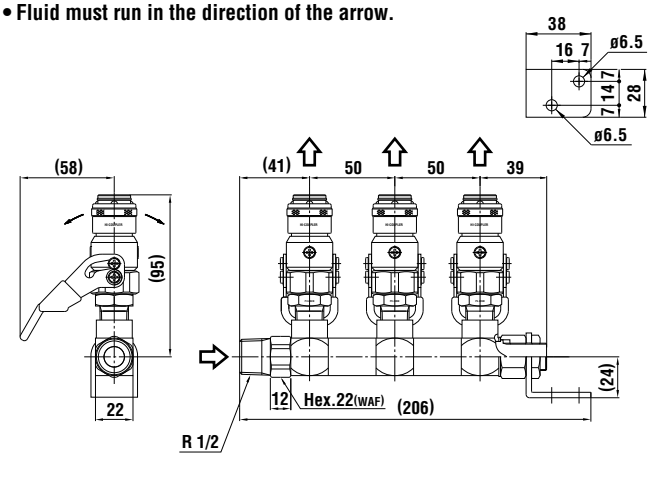
Models and Dimensions

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 Low Pressure (Air)

Rotary Line Cupla

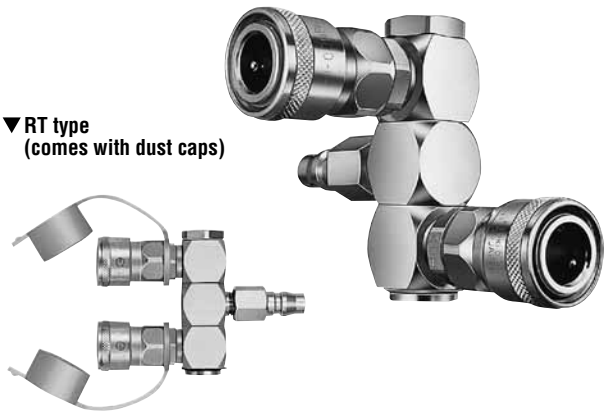
Simple design air line couplings on free turn manifold

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

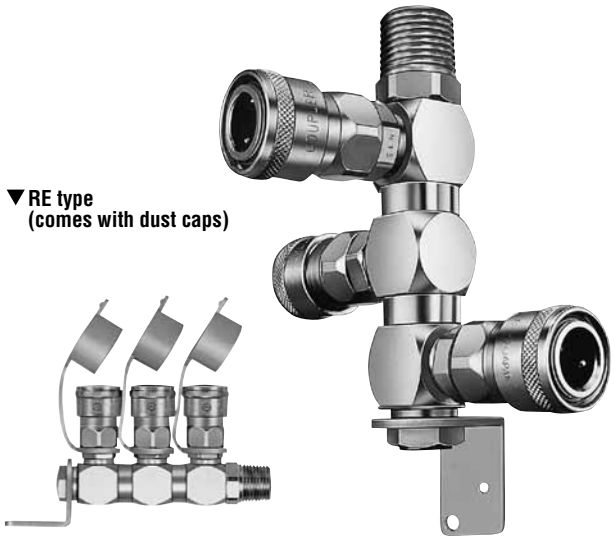
Each air outlet can be turned freely to any angle independently.

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

▼RT type
(comes with dust caps)



▼RE type
(comes with dust caps)



Specifications

Body material		Body : Brass (Chrome-plated), Cupla : Steel (Chrome-plated)			
Model		RT Type (for two branch lines)		RE Type (for three branch lines)	
Size		Inlet	Hi Cupla Plug 20PF	Inlet	R 1/2
		Outlet	2 sockets for Hi Cupla Model 20	Outlet	3 sockets for Hi Cupla Model 20
Working pressure	MPa	1.5			
	kgf/cm²	15			
	bar	15			
	PSI	218			

Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +60°C	Standard material

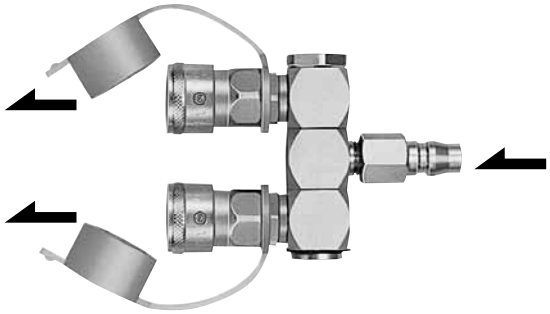
• The products come with dust caps.

Max. Tightening Torque (RE Type) Nm {kgf•cm}

Size (Thread)	1/2"
Torque	30 {306}

Fluid Flow Direction

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



Interchangeability

Can be connected with plugs for Hi Cupla Models 10, 17, 20, 30 and 40.
Interchangeable with each corresponding Hi Cupla Series models.

Min. Cross-Sectional Area (mm²)

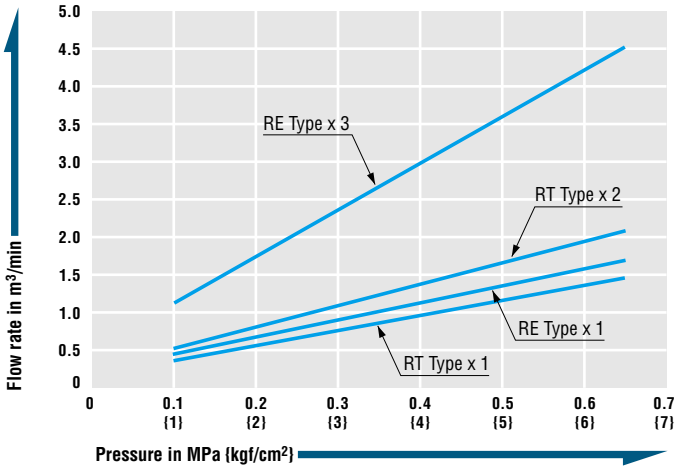
Model	RT type	RE type
Min. cross-sectional area	33	

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)



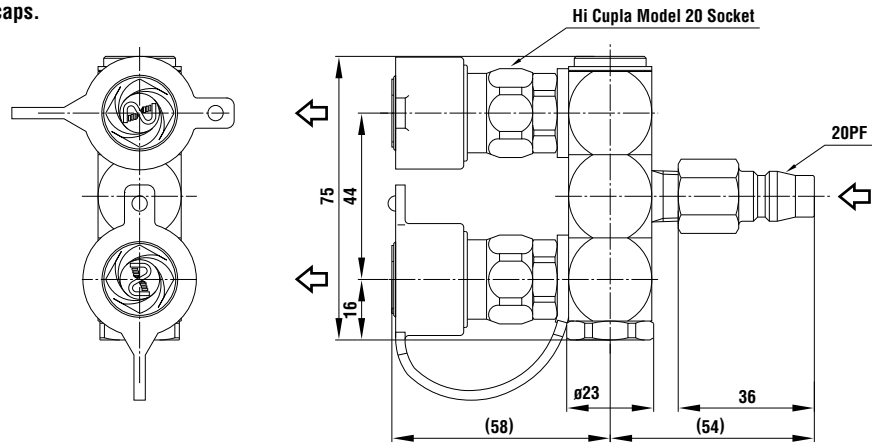
Models and Dimensions

WAF : WAF stands for width across flats.

Socket RT type (For two outlets)

Mass : 490 g

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

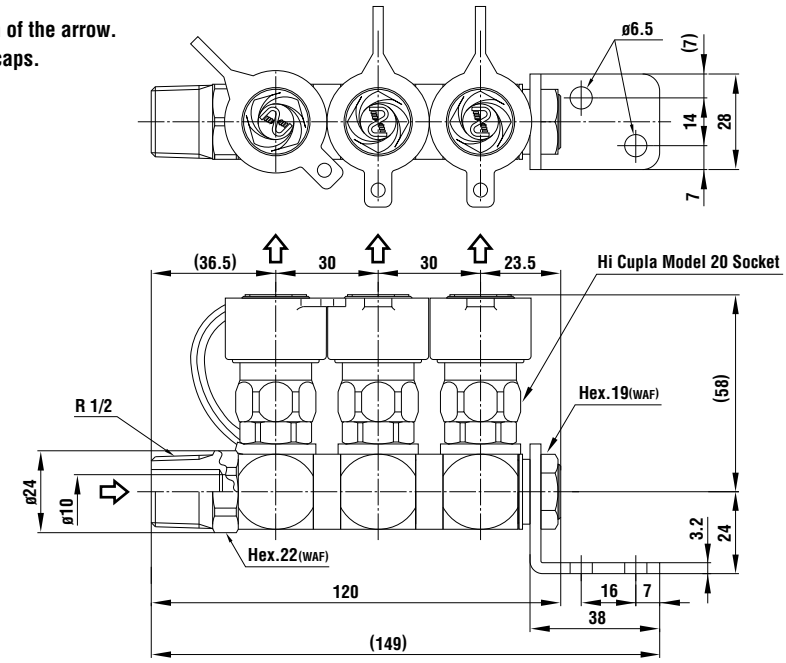


Dimensions (mm)

Socket RE type (For three outlets)

Mass : 660 g

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



Dimensions (mm)

Application Example

Air line manifold

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

For Low Pressure (Air)

Line Cupla

200T Type, 200L Type, 200S Type

Simple design air line coupling on manifold

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

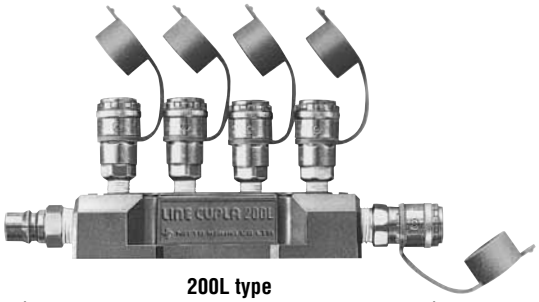
Valve structure: One-way shut-off

Applicable fluid: Air

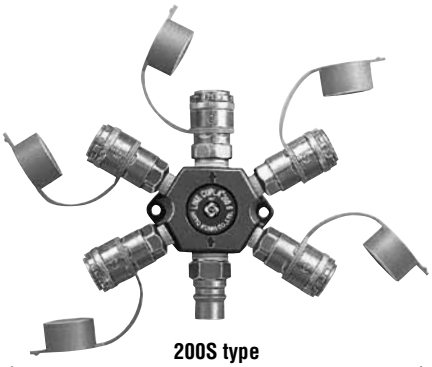
Enables several air lines to be taken simultaneously from one supply line!

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

200T type



200L type
(comes with an accessory 400SH and dust caps)



200S type
(comes with an accessory 400SH and dust caps)

Specifications

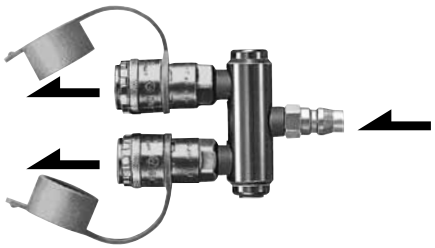
Body material		Body : Aluminum, Cupla : Steel (Chrome-plated)	
Size		Inlet	200T Type : 20PM 200L Type / 200S Type : 400PM
		Outlet	200T Type : 200-20SM 200L Type / 200S Type : 200-20SM, 40SM
Working pressure	MPa	1.5	
	kgf/cm²	15	
	bar	15	
	PSI	218	

Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +60°C	Standard material

• The products come with dustproof caps.

Flow Direction

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



Interchangeability

Can be connected with plugs for Hi Cupla Models 10, 17, 20, 30 and 40.
Interchangeable with each corresponding Hi Cupla Series models.

Min. Cross-Sectional Area (mm²)

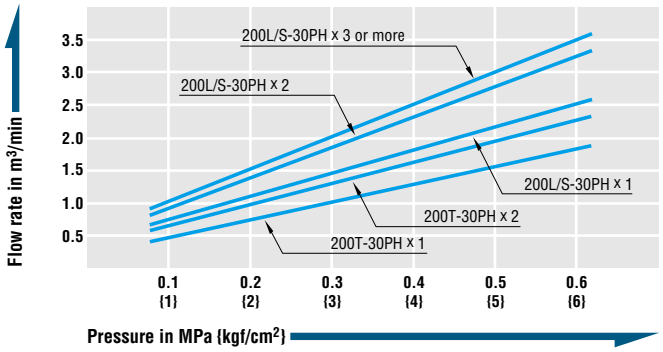
Model	200T type, 200L type, 200S type
Min. cross-sectional area	19

Suitability for Vacuum

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

Pressure - Flow Characteristics

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



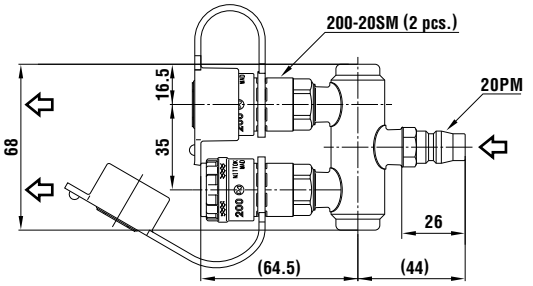
Models and Dimensions

WAF : WAF stands for width across flats.

Socket 200T type (For two outlets)

Mass : 272 g

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

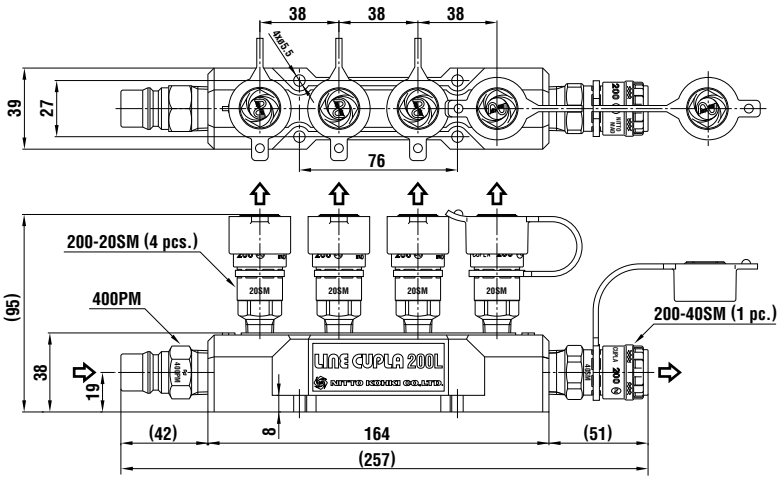


Dimensions (mm)

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

Mass : 890 g

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

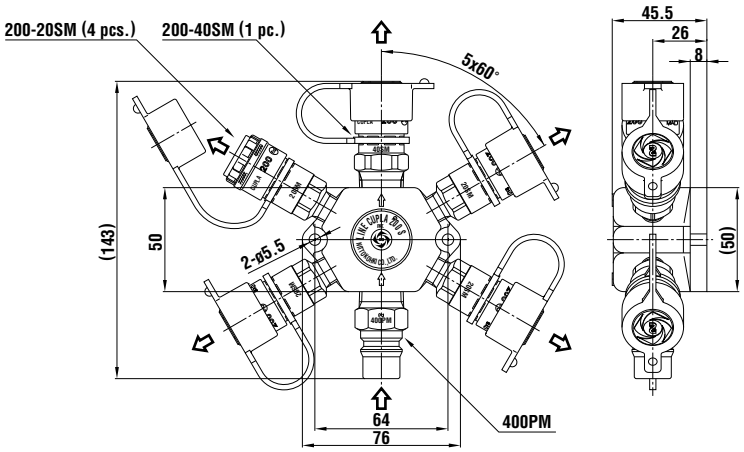


Dimensions (mm)

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

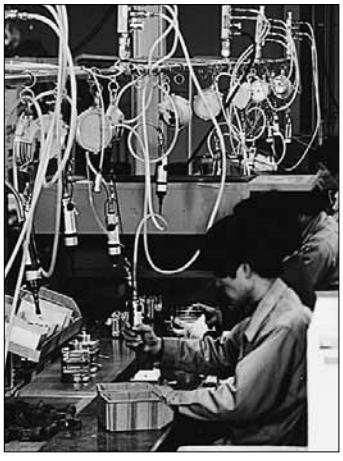
Mass : 769 g

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



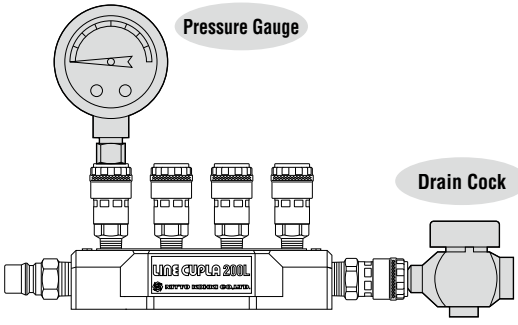
Dimensions (mm)

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.



Appearance subject to change for improvement without notice.

For Low Pressure (Air)

Rotary Full-Blow Line Cupla

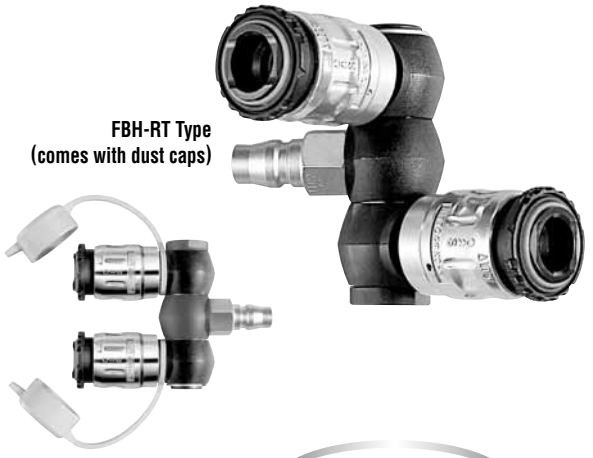
Free rotating branch air line coupling with low pressure loss & high flow rate

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

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

- Multiple outlets are available from single air supply source.
- Sideway air outlets are rotatable to any angle.
- 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 connection and disconnection, the valve is closed, enabling connection/disconnection under zero line pressure.
- When the sleeve of socket is returned to its original position, the purge mechanism releases the residual pressure inside the plug, eliminating an unpleasant popping noise and a hose whip back motion.
- Built-in sleeve lock mechanism prevents accidental disconnection of Cuplas, ensuring safe operation.
- The valve can be opened and closed while the socket and plug is connected.

FBH-RT Type
(comes with dust caps)



FBH-RE Type
(comes with dust caps)

Specifications

Body material		Zinc alloy			
Size		RT type (For two outlets)		RE type (For three outlets)	
		Inlet	Plug (20PFF)	Inlet	R 1/2
		Outlet	Full-Blow Cupla	Outlet	Full-Blow Cupla
Working pressure	MPa	1.5			
	kgf/cm²	15			
	bar	15			
	PSI	218			

Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +60°C	Standard material

• The product comes with dust caps.

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

Size (Thread)	1/2"
Torque	30 {306}

Flow Direction

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

Interchangeability

Can be connected with plugs for Hi Cupla Models 10, 17, 20, 30, and 40.
Interchangeable with all other Hi Cupla Series products. Please see the page for “Hi Cupla Series Interchangeability.”
Cannot be interchangeable with some plugs for plastic Hi Cupla 250 (discontinued product).

Min. Cross-Sectional Area (mm²)

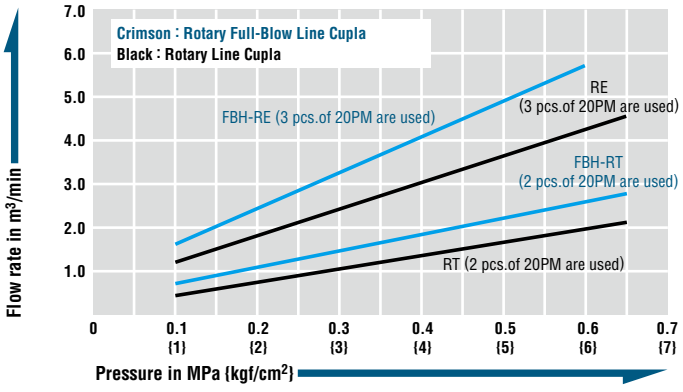
Model	FBH-RT	FBH-RE
Min. cross-sectional area	44	44

Suitability for Vacuum

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

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

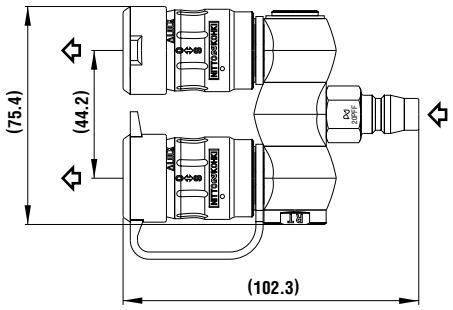
[Test conditions] •Fluid : Air •Temperature : Room temperature •Plug : 20PM



Models and Dimensions

Socket FBH-RT type (For two branch lines)

- Inlet : 1/4" Hi Cupla (20PFF)
- Outlet : Full-Blow Cupla
- Mass : 358 g
- Fluid must run in the direction of the arrow.

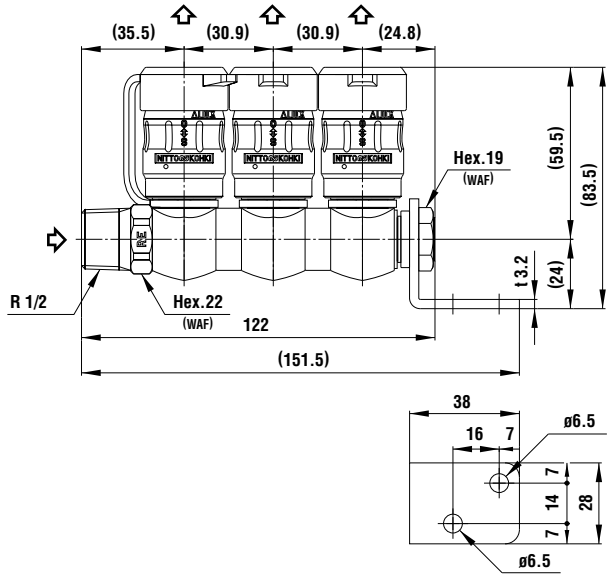


• The product comes with dust caps.

Dimensions (mm)

Socket FBH-RE type (For three branch lines)

- Inlet : R 1/2
- Outlet : Full-Blow Cupla
- Mass : 527 g
- Fluid must run in the direction of the arrow.



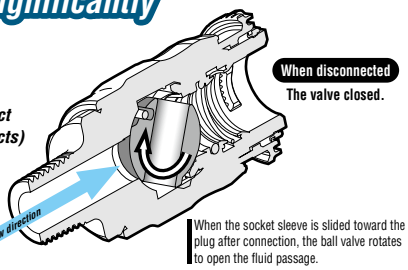
• The product comes with dust caps.

Dimensions (mm)

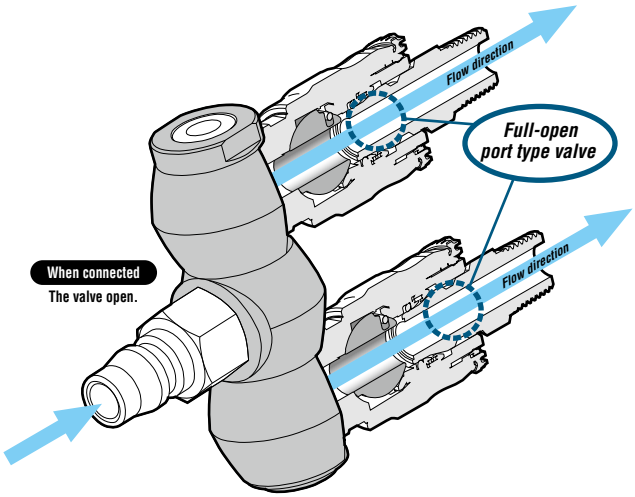
Features of Rotary Full-Blow Line Cupla

Flow rate is significantly increased.

Significant energy saving effect (Source pressure reduction effects)

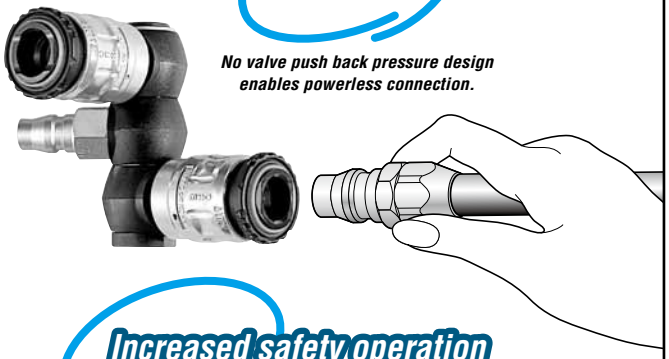


When the socket sleeve is slided toward the plug after connection, the ball valve rotates to open the fluid passage.



Far easier operation

No valve push back pressure design enables powerless connection.



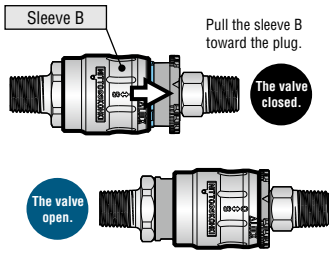
Increased safety operation

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

How It Works

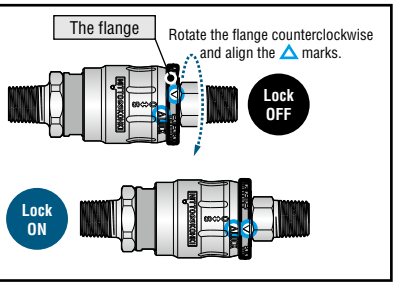
1. Open the valve

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



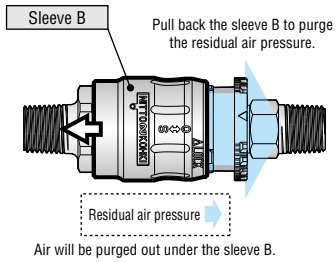
2. Lock the sleeve

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



3. Purge the residual air

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



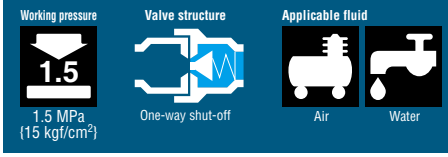
Air will be purged out under the sleeve B.

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

For Low Pressure

Hi Cupla Ace

Lightweight plastic coupling with automatic safety lock for air line applications



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

Specifications

Body material		Engineering plastics (PBT, POM)			
Size	Thread and hose barb	1/4", 3/8" / 1/4", 3/8"			
	PN type, SN type (PNG type, SNG type)	For ø5 mm x ø8 mm, ø6 mm x ø9 mm, ø6.5 mm x ø10 mm, ø8 mm x ø12 mm, ø8.5 mm x ø12.5 mm polyurethane hose			
	T type	HA-T type • Inlet : 20P-PLA • Outlet : HA-65S x 2			
Working pressure	MPa	1.5 / 1.0 for Model HA-T			
	kgf/cm²	15 / 10 for Model HA-T			
	bar	15 / 10 for Model HA-T			
	PSI	218 / 145 for Model HA-T			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks	
	Nitrile rubber	NBR (SG)	−20°C to +60°C	Standard material	

Tightening Torque Range

Nm {kgf·cm}

Model	20/30SM 20/30PM	50/60/65SN 50/60/65PN	80/85SN 80/85PN	20PFF
Torque	2.5 to 3.0 {26 to 31}	1.6 to 2.0 {16 to 20}	2.2 to 2.8 {22 to 29}	2.0 to 2.5 {20 to 25}

Flow Direction

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

Interchangeability

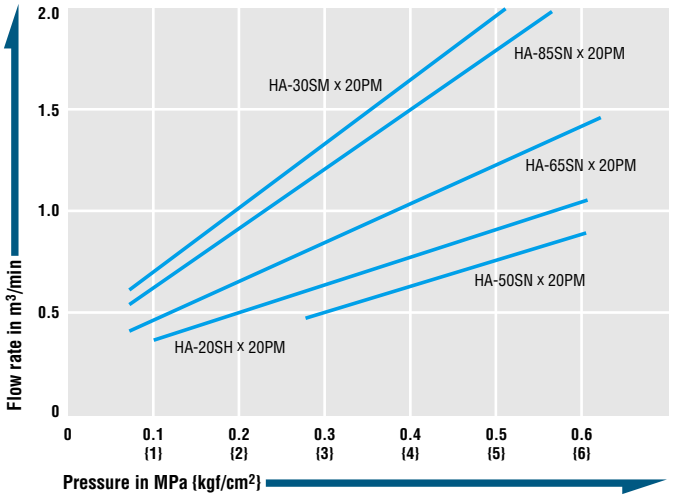
Can be connected with Hi Cupla Models 10, 17, 20, 30 and 40.
Interchangeable with models of Nut Cupla Series and Hi Cupla Series except models 400, 600, and 800.

Suitability for Vacuum

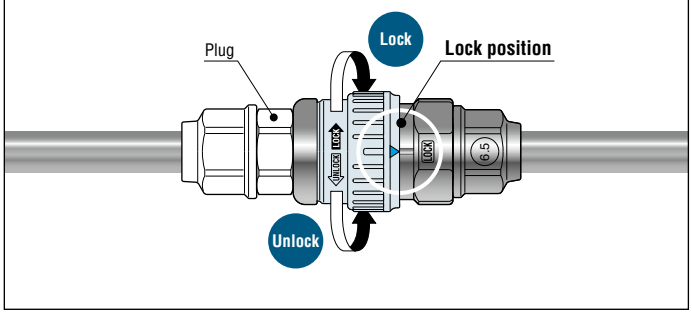
Not suitable for vacuum application in either connected or disconnected condition.

Pressure - Flow Characteristics

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



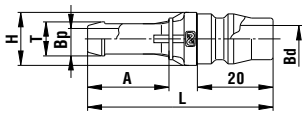
Sleeve lock function



Models and Dimensions

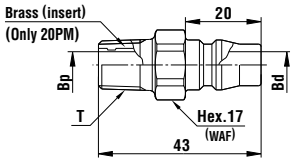
WAF : WAF stands for width across flats.

Plug PH type (Plastic plug / Hose barb)



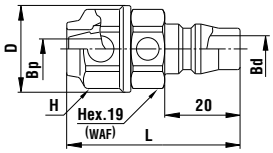
Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			L	øH	A	øT	øBp	øBd
20PH-PLA	1/4"	3	49	14	21.5	9	5.5	7
30PH-PLA	3/8"	4	52	16	23.5	11.5	7.5	7

Plug PM type (Plastic plug / Male thread)



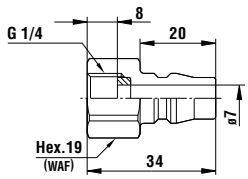
Model	Application	Mass (g)	Dimensions (mm)		
			T	øBp	øBd
20PM-PLA	Rc 1/4	8	R 1/4	7.1	7.4
30PM-PLA	Rc 3/8	6	R 3/8	10	7.4

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



Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	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	7
85PN-PLA	ø8.5 mm x ø12.5 mm	12	(48.5)	26	Hex.22	7	7

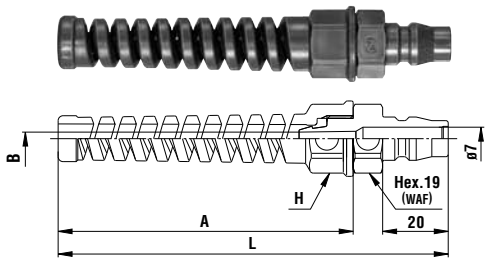
Plug PFF type (Plastic plug / Parallel female thread)



Dimensions (mm)

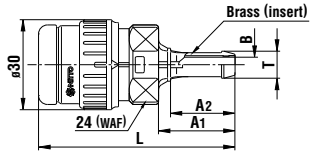
Model	Application	Mass (g)
20PFF-PLA	G 1/4	6

Plug PNG type (Plastic plug / For hose with hose guard nut connection)



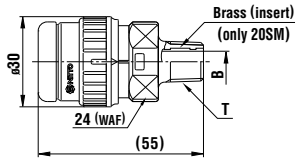
Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			L	H(WAF)	A	øB
50PNG-PLA	ø5 mm x ø8 mm	14	(119)	Hex.19	(90)	4
65PNG-PLA	ø6.5 mm x ø10 mm	15	(119)	Hex.19	(90)	5.3
85PNG-PLA	ø8.5 mm x ø12.5 mm	17	(119)	Hex.22	(90)	7

Socket SH type (Hose barb)



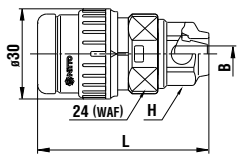
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	A1	A2	øT	øB
HA-20SH	1/4"	26	(65.5)	25.5	21.5	9	5
HA-30SH	3/8"	28	(68)	28	23.5	11.5	7

Socket SM type (Male thread)



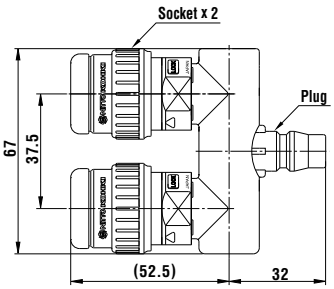
Model	Application	Mass (g)	Dimensions (mm)	
			T	øB
HA-20SM	Rc 1/4	27	R 1/4	7.1
HA-30SM	Rc 3/8	26	R 3/8	8

Socket SN type (For urethane hose connection)



Model	Application (Hose)	Mass (g)	Dimensions (mm)		
			L	H(WAF)	øB
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

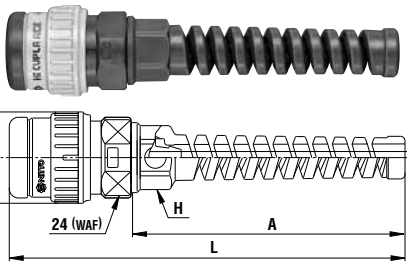
Socket T type (For two branch lines)



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)			
			L	H(WAF)	A	øB
HA-50SNG	ø5 mm x ø8 mm	31	(130)	Hex.19	(90)	4
HA-65SNG	ø6.5 mm x ø10 mm	33	(130)	Hex.19	(90)	5.3
HA-85SNG	ø8.5 mm x ø12.5 mm	35	(130)	Hex.22	(90)	7

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

For Low Pressure (Air)

Rotary Plug

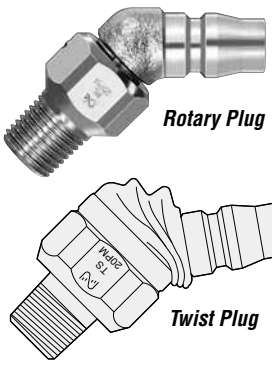
For pneumatic tools and devices

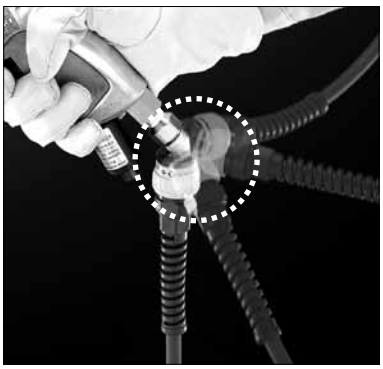
Working pressure: 1.5 MPa {15 kgf/cm²}
Valve structure: One-way shut-off
Applicable fluid: Air

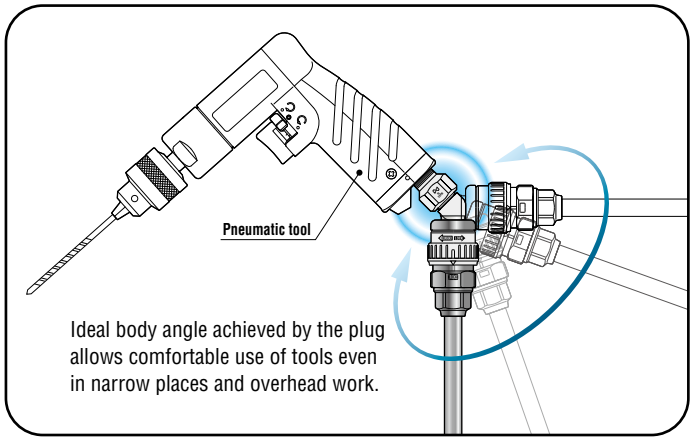
Newly developed rotary function allows 360° swivelling! Big improvement for handling of pneumatic tools!

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

Comparison by appearance




Pneumatic tools



Specifications

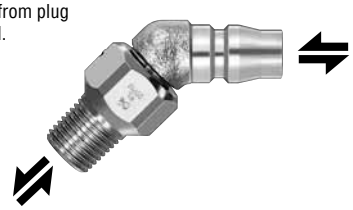
Body material		Steel (Nickel-plated)			
Size (Thread)		1/4", 3/8"			
Working pressure	MPa	1.5			
	kgf/cm²	15			
	bar	15			
	PSI	218			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks	
	Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard material	

Max. Tightening Torque — N·m {kgf·cm}

Size (Thread)	1/4"	3/8"
Torque	14 {143}	22 {224}

Flow Direction

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



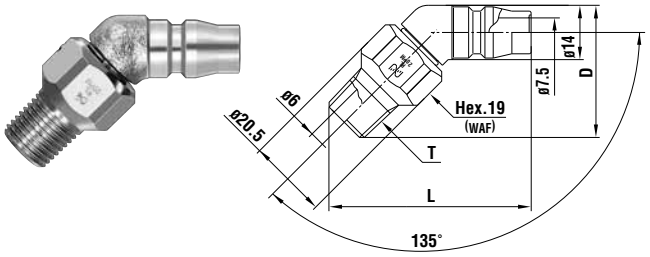
Interchangeability

Can be connected with sockets for Hi Cupla Models 10, 17, 20, 30, and 40.
Interchangeable with each corresponding models of Hi Cupla Series and Nut Cupla Series.

Models and Dimensions

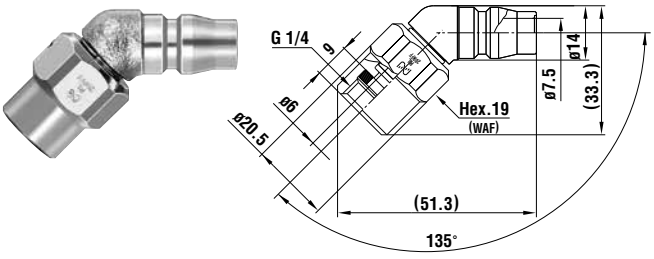
WAF : WAF stands for width across flats.

Plug PM type (Male thread)



Model	Application	Mass (g)	Dimensions (mm)		
			L	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 : 57 g

Dimensions (mm)

For Low Pressure (Air)

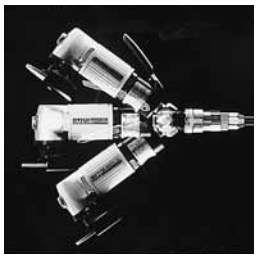
Twist Plug

For pneumatic tools and devices

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

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.
- Dust protector over the flexible part prevents dirt and swarf from entering.



Pneumatic tools

Specifications

Body material		Steel (Nickel-plated)		
Size (Thread)		1/8", 1/4", 3/8"		
Working pressure	MPa	1.0		
	kgf/cm²	10		
	bar	10		
	PSI	145		
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +60°C	Standard material

Tightening Torque Range — Nm {kgf·cm}

Size (Thread)	1/8"	1/4"	3/8"
Torque	8 to 10 {82 to 102}	12 to 15 {122 to 153}	22 to 25 {224 to 255}

Flow Direction

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

Interchangeability

Can be connected with socket for Hi Cupla Models 10, 17, 20, 30 and 40.
Interchangeable with each corresponding models of Hi Cupla Series and Nut Cupla Series.

Suitability for Vacuum

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

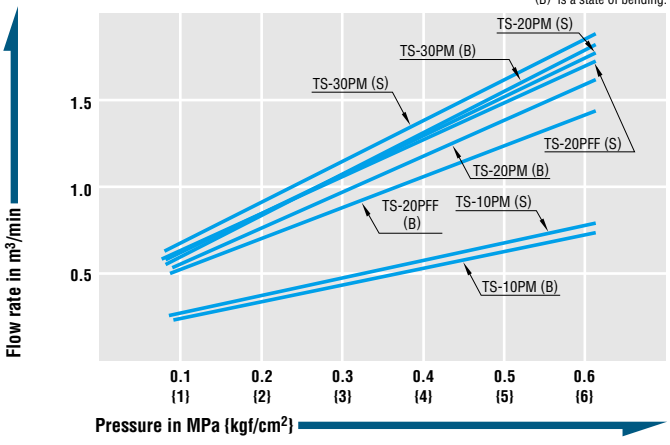
Min. Cross-Sectional Area — (mm²)

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

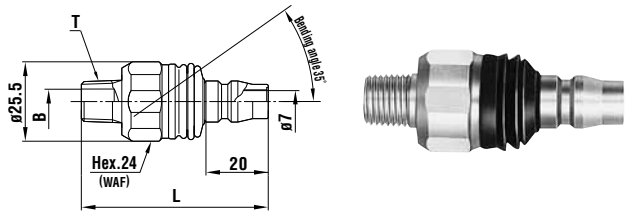
(S) is a state of straight.
(B) is a state of bending.



Models and Dimensions

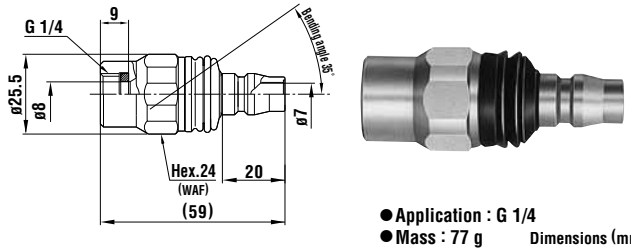
WAF : WAF stands for width across flats.

Plug PM type (Male thread)



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

Plug Model TS-20PFF (Female thread)



● Application : G 1/4
● Mass : 77 g

Dimensions (mm)

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

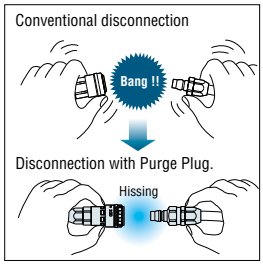
For Low Pressure (Air)

Purge Plug

For air lines with purge mechanism

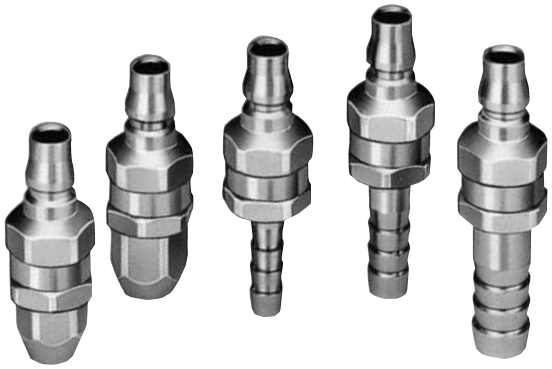
Working pressure: 1.0 MPa {10 kgf/cm²}
Valve structure: Purge valve
Applicable fluid: Air

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



- When the Cupla is disconnected, the pressure left in the plug side hose is released gradually without an unpleasant popping noise and a hose whip back motion.
- Unique design of air purge system enables the residual pressure release quickly and quietly.
- A unique but simple purge valve design is good for long and repeated use.
- The function is assured even under a high supply pressure or with a long hose.

Note: This product is not a check valve to totally stop the air flow.



Specifications

Body material		Steel (Chrome-plated)		
Size		1/4", 3/8", 1/2" / ø6.5 x ø10, ø8.5 x ø12.5 hose		
Working pressure	MPa	1.0		
	kgf/cm²	10		
	bar	10		
	PSI	145		
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +60°C	Standard material

Tightening Torque Range — Nm {kgf•cm}

Torque	9 to 11 {92 to 112}

Flow Direction

Fluid must run from socket to plug.

Interchangeability

Can be connected with sockets for Hi Cupla Models 10, 17, 20, 30 and 40.
Interchangeable with each corresponding models of Hi Cupla Series and Nut Cupla Series.

Min. Cross-Sectional Area — (mm²)

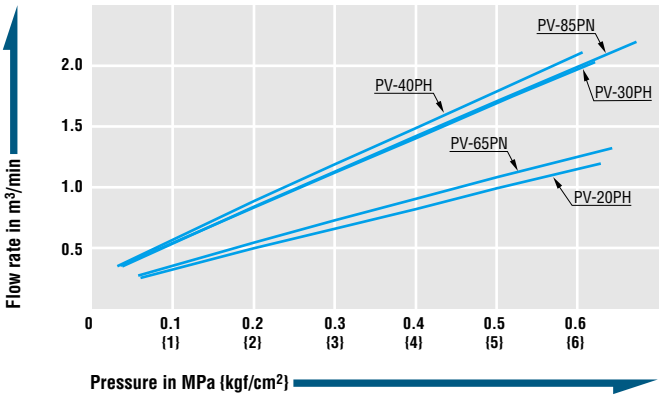
Model	PV-20PH	PV-30PH	PV-40PH	PV-65PN	PV-85PN
Min. cross-sectional area	19.6	44.1	50.4	22.0	44.1

Suitability for Vacuum

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

Pressure - Flow Characteristics

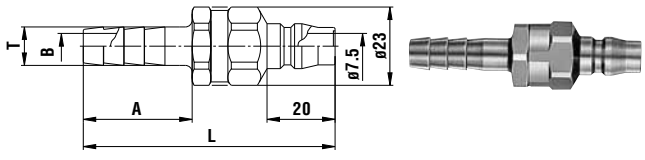
[Test conditions] •Fluid : Air •Temperature : Room temperature



Models and Dimensions

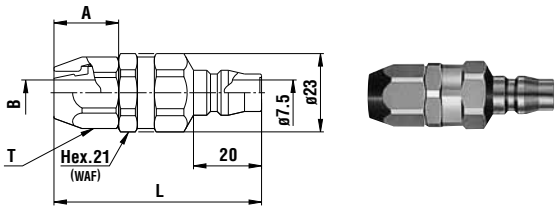
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			L	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 connection)

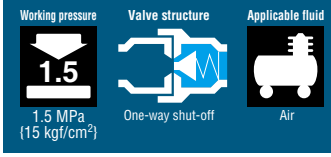


Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			L	A	øB	T(WAF)
PV-65PN	ø6.5 mm x ø10 mm	71	(59)	17	5.3	Hex.17
PV-85PN	ø8.5 mm x ø12.5 mm	78	(61)	19	7.5	Hex.19

For Low Pressure (Air)

Anti-vibration Plug Hose

Plug hose for vibrating and percussive air tools

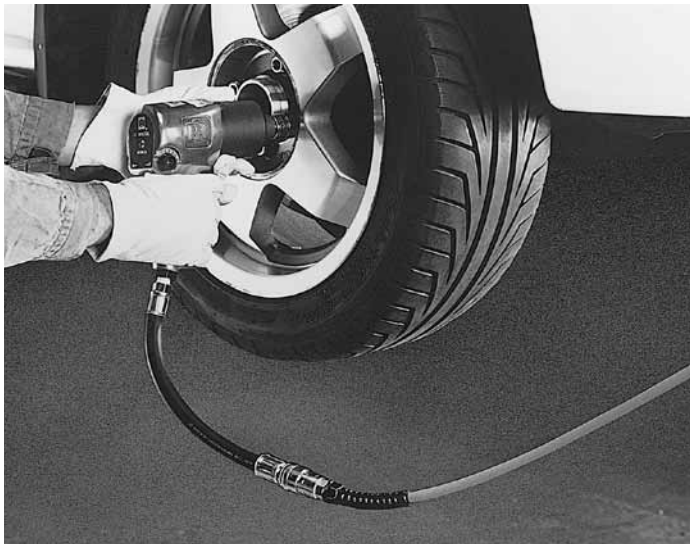


Protects the Cupla from shocks generated by vibrating tools and impact tools.

- **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.**

SHA-3-2R
R 1/4 male thread type

SHA-3-3R
R 3/8 male thread type



Specifications

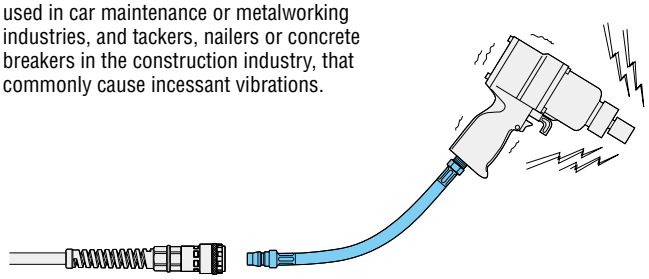
Applicable fluid		Air	
Model		SHA-3-2R	SHA-3-3R
Size (Thread)		R 1/4"	R 3/8"
Inlet (Plug)		Hi Cupla (30PH)	
Working pressure	**MPa**	1.5	
	kgf/cm²	15	
	bar	15	
	PSI	218	
Air hose		Rubber hose for air	
Overall length		320 mm	
Min. bend radius		135 mm	

Interchangeability

Can be connected with sockets for Hi Cupla Models 10, 17, 20, 30 and 40.
Interchangeable with each corresponding models of Hi Cupla Series and Nut Cupla Series.

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.



As an intermediate connection hose between "Cupla" and a vibrating air tool.

For Low Pressure (Air)

Duster Cupla

Air line coupling with air blower function

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

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

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

Photo shows simulated air flow.

Specifications

Body material		Body: Aluminum, Cupla: Steel (Chrome-plated)			
Size		For 1/4", 3/8", 1/2" hose For ø6.5 x ø10 mm, ø8.5 x ø12.5 mm polyurethane hose			
Working pressure	MPa	1.0			
	kgf/cm²	10			
	bar	10			
	PSI	145			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks	
	Nitrile rubber	NBR (SG)	−20°C to +60°C	Standard material	

Tightening Torque Range — Nm {kgf•cm}

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

Flow Direction

Fluid must run from socket to plug.

Interchangeability

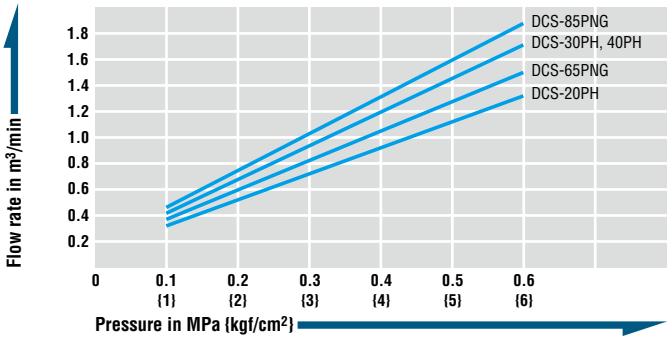
Can be connected with plugs for Hi Cupla Models 10, 17, 20, 30 and 40.
Interchangeable with each corresponding models of Hi Cupla Series and Nut Cupla Series.

Suitability for Vacuum

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

Pressure - Flow Characteristics

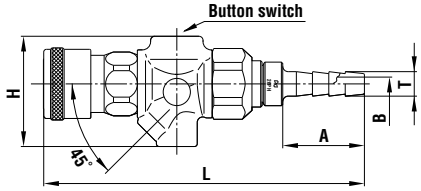
[Test conditions] •Fluid : Air •Temperature : Room temperature



Models and Dimensions

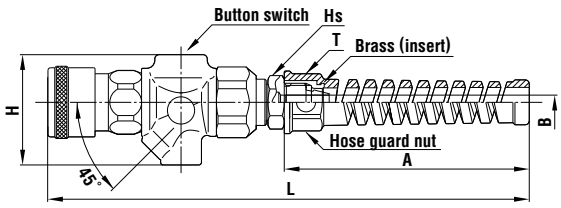
WAF : WAF stands for width across flats.

Socket PH type (Hose barb)



Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	A	H	øB	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)



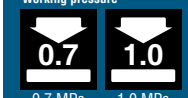
Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			L	A	H	øB	H(WAF)	T(WAF)
DCS-65PNG	ø6.5 mm x ø10 mm	176	(176.9)	90	40.5	5.3	Hex.17	Hex.19
DCS-85PNG	ø8.5 mm x ø12.5 mm	185	(176.9)	90	40.5	7.5	Hex.19	Hex.22

For Low Pressure (Air)

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

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

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

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	NK Cupla Hose : 1.0 / NK Cupla Coil Hose : 0.7			
	kgf/cm²	NK Cupla Hose : 10 / NK Cupla Coil Hose : 7			
	bar	NK Cupla Hose : 10 / NK Cupla Coil Hose : 7			
	PSI	NK Cupla Hose : 145 / NK Cupla Coil Hose : 102			
Seal material Working temperature range		Seal material	Mark	Working temperature range	Remarks
		Nitrile rubber	NBR (SG)	−5°C to +60°C	Standard material

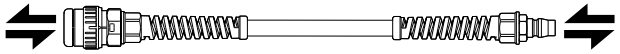
Tightening Torque Range

Nm {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 to 2.0 {16 to 20}	1.6 to 2.0 {16 to 20}	2.2 to 2.8 {22 to 29}
Torque (Plug)	5 to 6 {51 to 61}	5 to 6 {51 to 61}	7 to 8 {71 to 82}

Flow Direction

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



Interchangeability

Interchangeable with Hi Cupla Models 10, 17, 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.

Models and Dimensions / Hose length

Plug / Socket NK Cupla Hose

Model	Hose size	Hose length	Socket	Plug
			Hi Cupla Ace	Nut Cupla
NKU-605B	ø6.5 mm x ø10 mm	5 m	HA-65SNG	65PNG
NKU-610B	ø6.5 mm x ø10 mm	10 m	HA-65SNG	65PNG
NKU-620B	ø6.5 mm x ø10 mm	20 m	HA-65SNG	65PNG
NKU-810B	ø8.5 mm x ø12.5 mm	10 m	HA-85SNG	85PNG
NKU-820B	ø8.5 mm x ø12.5 mm	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	ø5 mm x ø8 mm	2 m	HA-50SNG	50PNG
NKC-505B	ø5 mm x ø8 mm	4 m	HA-50SNG	50PNG
NKC-603B	ø6.5 mm x ø10 mm	2 m	HA-65SNG	65PNG
NKC-605B	ø6.5 mm x ø10 mm	4 m	HA-65SNG	65PNG

For Low Pressure

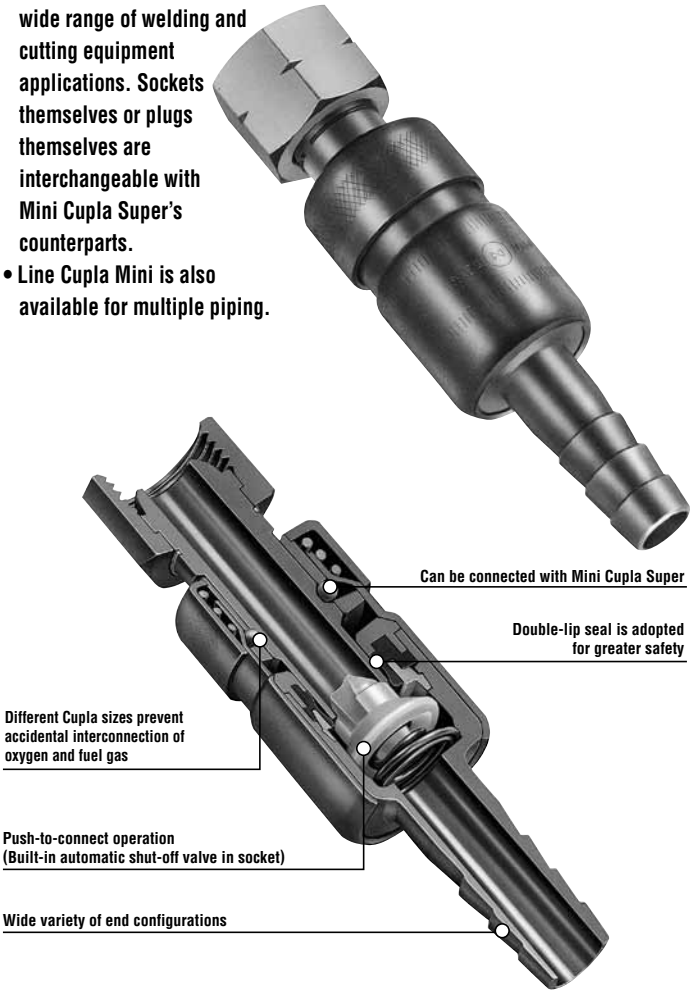
Mini Cupla

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

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

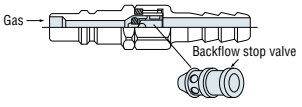


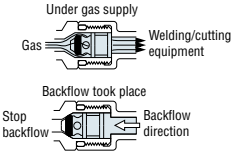
Structure and Principle of Backflow Prevention

Plug with backflow stop valve

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

Cross-section sketch showing the structure





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

Specifications

Body material		Brass
Size	Thread	1/8", 1/4", 3/8" / M16, W12.5-20
	Hose barb	1/4", 5/16", 3/8"
Working pressure	MPa	0.7
	kgf/cm²	7
	bar	7
	PSI	102

Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard material

Max. Tightening Torque — Nm {kgf•cm}

Model	22PF, 22PFB, 22SF, 25PF, 33PF, 33PFB, 33SF	22SM	33SM
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 can be connected with those for fuel gas Cuplas. However, oxygen plugs and sockets are interchangeable regardless of end configurations and fuel gas plugs and sockets are interchangeable regardless of end configurations.
Also Mini Cupla models for oxygen are interchangeable with Mini Cupla Super models for oxygen, while fuel gas models are interchangeable.

Min. Cross-Sectional Area — (mm²)

Model	22SP, 25SP	33SP, 35SP
Min. cross-sectional area	20	44

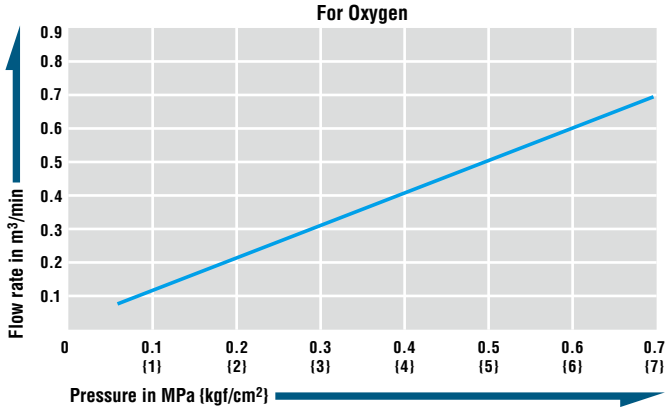
Suitability for Vacuum

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

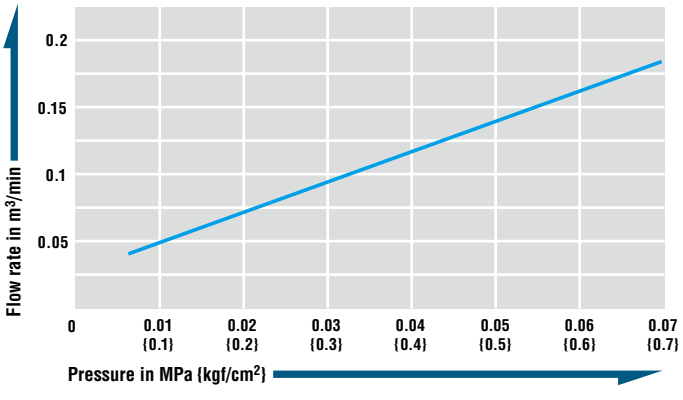
Pressure - Flow Characteristics

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

For Oxygen



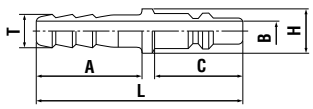
For Fuel Gas



Models and Dimensions

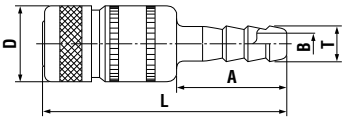
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



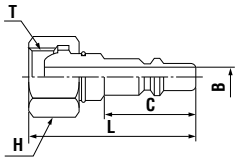
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				L	C	A	øH	øT	øB
For Oxygen	22PH	1/4"	16	55	23.5	28	11	7.8	5
	25PH	5/16"	19					9	
For Fuel Gas	33PH	3/8"	22	57	25.5	28	14	10.5	7.5
	35PH	5/16"	20					9	6

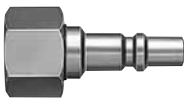
Socket SH type (Hose barb)



Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)				
				L	øD	A	øT	øB
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

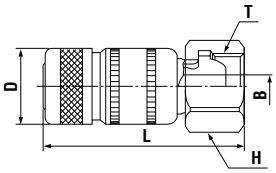
Plug PF type (Female thread for torch connection)





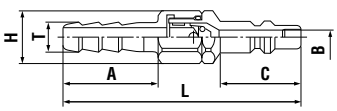
Usage	Model	Application	Mass (g)	Dimensions (mm)				
				L	C	H(WAF)	T	øB
For Oxygen	22PF	For oxygen torch side	31	(43)	23.5	Hex.19	M16x1.5	5
	22PFF		29	(43.5)		Hex.17	G 1/4	
	25PF		26				W12.5-20	
For Fuel Gas	33PF	For fuel gas torch side	36	(44.5)	25.5	Hex.19	M16x1.5 left-hand thread	7.5

Socket SF type (Female thread for cylinder connection)



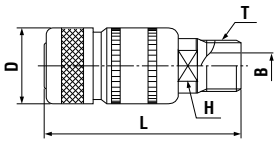
Usage	Model	Application	Mass (g)	Dimensions (mm)				
				L	øD	T	øB	H(WAF)
For Oxygen	22SF	For oxygen gauge side	80	(52)	(19.8)	M16x 1.5	5	Hex.19
For Fuel Gas	33SF	For fuel gas gauge sid	96	(54)	(22.6)	M16x1.5 left-hand thread	5	Hex.19

Plug PHB type (Hose barb with backflow stop valve)



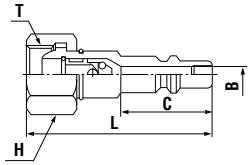
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				L	C	A	øH	øT	øB
For Oxygen	22PHB	1/4"	31	(69.6)	23.5	28	15.5	7.8	4.5
	25PHB	5/16"	34					9	
For Fuel Gas	33PHB	3/8"	41	(70.6)	25.5	28	15.5	10.5	4.5
	35PHB	5/16"	39					9	

Socket SM type (Male thread)



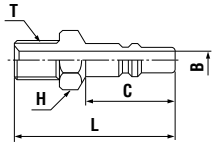
Usage	Model	Application	Mass (g)	Dimensions (mm)				
				L	øD	H(WAF)	T	øB
For Oxygen	22SM	Rc 1/4	51	(52)	(19.8)	12	R 1/4	7.5
For Fuel Gas	33SM	Rc 3/8	77	(55)	(22.6)	14	R 3/8	10

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



Usage	Model	Application	Mass (g)	Dimensions (mm)				
				L	C	H(WAF)	T	øB
For Oxygen	22PFB	For oxygen torch side	36	(48.5)	23.5	Hex.19	M16x 1.5	4.5
For Fuel Gas	33PFB	For fuel gas torch side	41	(49)	25.5	Hex.19	M16x1.5 left-hand thread	4.5

Plug PMT type (Male thread)

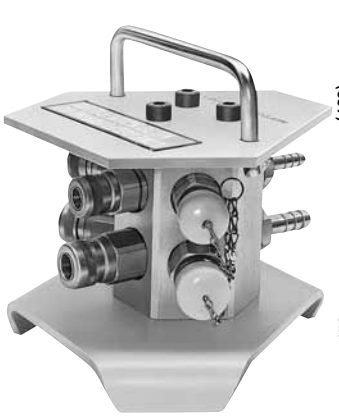


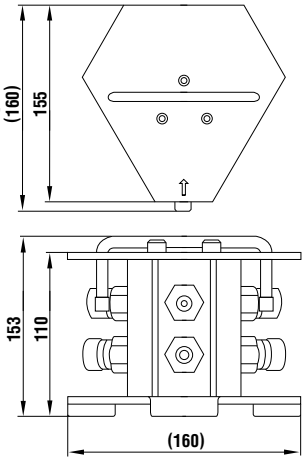
Usage	Model	Application	Mass (g)	Dimensions (mm)				
				L	C	H(WAF)	T	øB
For Oxygen	21PMT	Rc 1/8	22	43.5	24	Hex.14	R 1/8	5
	22PMT	Rc 1/4	27	45	24	Hex.14	R 1/4	5

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

Mass : 4,300 g

- **Dust caps come with the product as standard.**





Dimensions (mm)

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

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

For Low Pressure

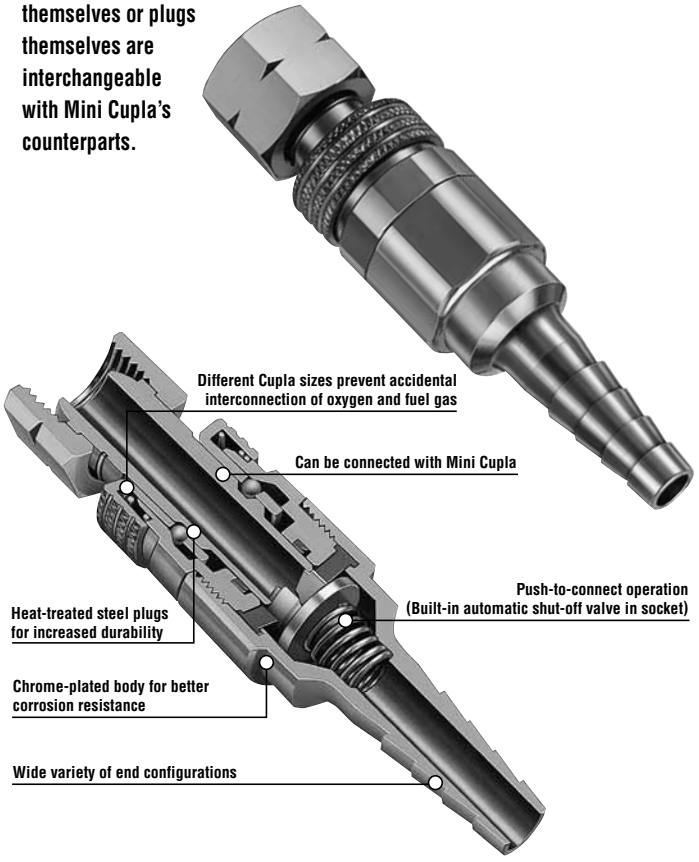
Mini Cupla Super

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

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

Exclusively for welding and cutting equipment.

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

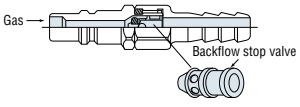


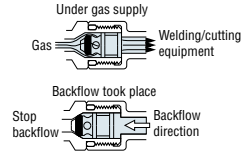
Structure and Principle of Backflow Prevention

Plug with backflow stop valve

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

Cross-section sketch showing the structure





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

Specifications

Body material		Socket : Brass (Chrome-plated) Plug : Steel (Chrome-plated)
Size	Thread	1/4", 3/8", M16
	Hose barb	1/4", 5/16", 3/8" / 5 mm ID
Working pressure	MPa	0.7
	kgf/cm²	7
	bar	7
	PSI	102

Seal material	Mark	Working temperature range	Remarks
Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard material

Max. Tightening Torque — Nm {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 can be connected with those for fuel gas Cuplas. However, oxygen plugs and sockets are interchangeable regardless of end configurations and fuel gas plugs and sockets are interchangeable regardless of end configurations.
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

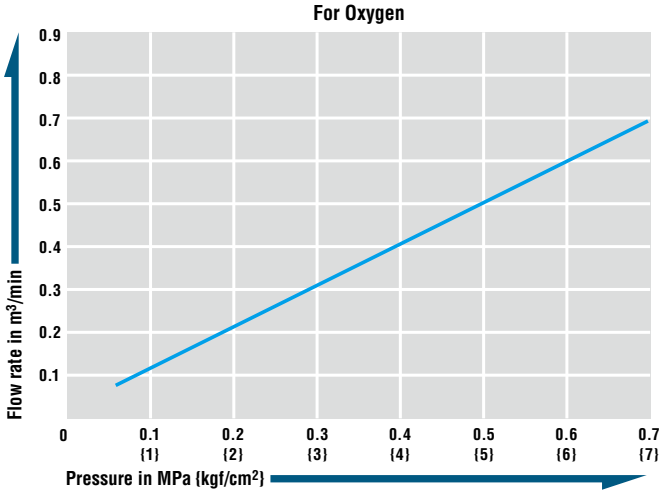
Suitability for Vacuum

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

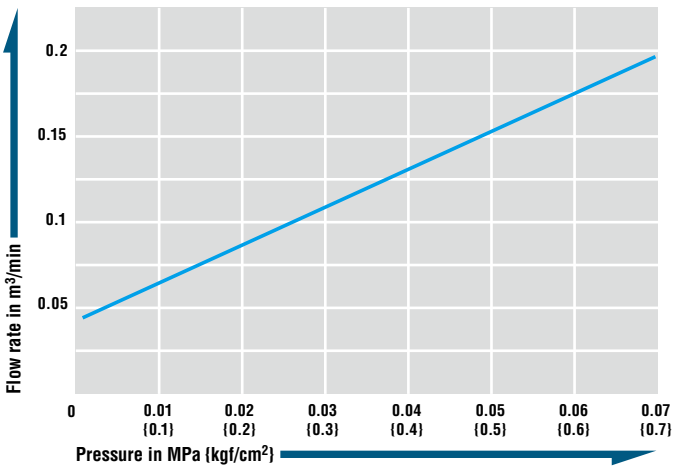
Pressure - Flow Characteristics

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

For Oxygen



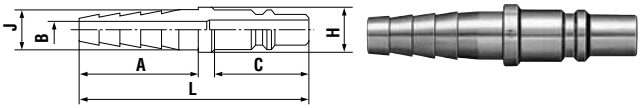
For Fuel Gas



Models and Dimensions

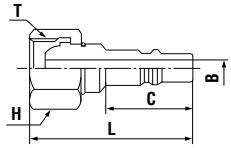
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



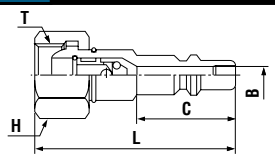
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				L	C	A	øH	øJ	øB
For Oxygen	S22PH	1/4", 5/16"	17	58	23.5	30	11	9.5	4.5
For Oxygen	S225PH	5 mm ID	12	49	23.5	21	11	6.2	3.1
For Fuel Gas	S33PH	5/16", 3/8"	22	59.5	25.5	30	14	11	6
For Fuel Gas	S335PH	5 mm ID	15	50.5	25.5	21	14	6.2	3.1
For Fuel Gas	S32PH *1	1/4", 5/16"	20	59.5	25.5	30	14	9	4.5

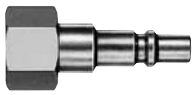
Plug PF type (Female thread for torch connection)



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

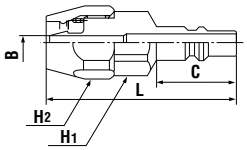
Plug PFB type (Female thread with backflow stop valve for toch connection)





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

Plug PN type (Nut type for small diameter hose)

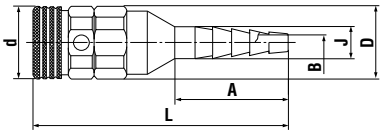


Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)				
				L	C	H1(WAF)	H2(WAF)	øB
For Oxygen	S22PN	5 mm ID *2	54	(53.5)	23.5	Hex.17	Hex.19	4.5
For Fuel Gas	S33PN	5 mm ID *2	57	(54.5)	25.5	Hex.17	Hex.19	4.5

Application Example

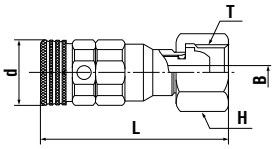
Welding and cutting torches

Socket SH type (Hose barb)



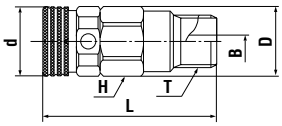
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				L	ød	øD	A	øJ	øB
For Oxygen	S22SH	1/4", 5/16"	50	(64.5)	(19.5)	20	30	9.5	4.5
For Oxygen	S225SH	5 mm ID	54	(62.5)	(19.5)	20	21	6.2	3.1
For Fuel Gas	S33SH	5/16", 3/8"	73	(68)	(22)	22	30	11	6
For Fuel Gas	S335SH	5 mm ID	65	(63)	(22)	22	21	6.2	3.1
For Fuel Gas	S32SH *1	1/4", 5/16"	74	(72.5)	(22)	22	30	9	4.5

Socket SF type (Female thread for cylinder connection)



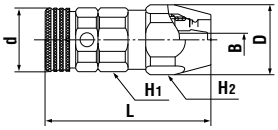
Usage	Model	Application	Mass (g)	Dimensions (mm)				
				L	ød	T	H(WAF)	øB
For Oxygen	S22SF	For oxygen torch side	74	(52.5)	(19.5)	M16x1.5	Hex.19	4.5
For Fuel Gas	S33SF	For fuel gas torch side	97	(57.5)	(22)	M16x1.5 left-hand thread	Hex.19	6
For Oxygen	S23SF-BS *1	For oxygen torch side	82	(55.5)	(19.5)	BS 3/8	Hex.21	4.5
For Fuel Gas	S33SF-BS *1	For fuel gas torch side	88	(59)	(22)	BS 3/8 left-hand thread	Hex.21	6

Socket SM type (Male thread)



Usage	Model	Application	Mass (g)	Dimensions (mm)					
				L	ød	øD	H(WAF)	T	øB
For Oxygen	S22SM	Rc 1/4	58	(48.5)	(19.5)	20	Hex.18	R 1/4	4.5
For Fuel Gas	S33SM	Rc 3/8	85	(52)	(22)	23	Hex.21	R 3/8	6

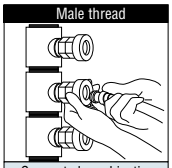
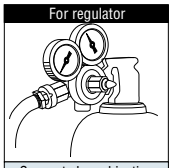
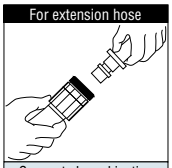
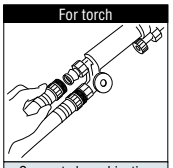
Socket SN type (Nut type for small diameter hose)



Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				L	ød	øD	H1(WAF)	H2(WAF)	øB
For Oxygen	S22SN	5 mm ID *2	74	(52)	(19.5)	20.5	Hex.18	Hex.19	4.5
For Fuel Gas	S33SN	5 mm ID *2	91	(57)	(22)	20.5	Hex.21	Hex.19	4.5

*1 : Made-to-order item.
*2 : Available hose sizes are ø5 mm x ø11.2 mm, ø5 mm x ø11.5 mm and ø5 mm x ø11.8 mm.

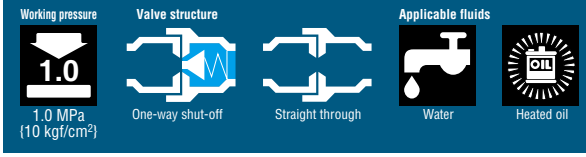
Select the combination in accordance with your own application.

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

For Low Pressure

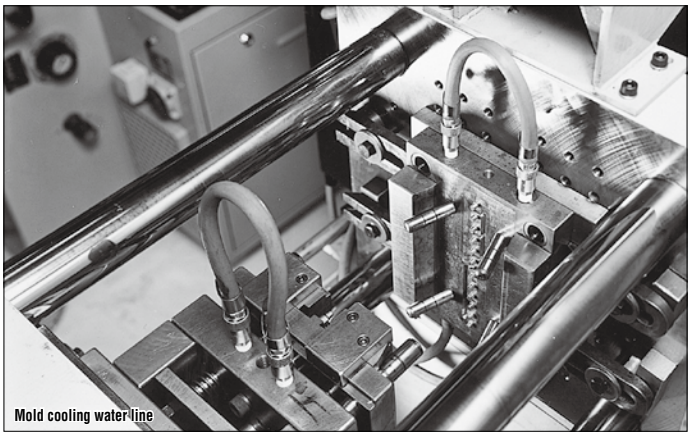
Mold Cupla

General purpose and mold coolant port coupling



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 cooling water line connection/disconnection.
- Various sizes and end configurations to suit a wide variety of mold applications.
- Can be connected with Super Cuplas, excluding K3 and K4 types.
- Push-to-connect design. (Built-in automatic shut-off valve in the socket) Also available is Cupla without valve (Please specify in ordering).
- Cupla for braided hose connection requires no hose clamp. (Model K-90SN)


Mold cooling water line

Specifications

Body material		Brass			
Size	Thread	1/8", 1/4", 3/8"			
	Hose barb	Hose: 1/4", 3/8" / Braided hose: ø9 x ø15			
Working pressure	MPa	1.0			
	kgf/cm²	10			
	bar	10			
	PSI	145			
Seal material Working temperature ran		Seal material	Mark	Working temperature range	Remarks
		Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard material
		Fluoro rubber	FKM (X-100)	−20°C to +180°C	Available on request

Working pressure and working temperature of Cupla for braided hoses depend upon the specifications of braided hoses to be used.

Max. Tightening Torque — Nm {kgf•cm}

Size (Thread)	1/8"	1/4"	3/8"
Torque	5 {51}	9 {92}	11 {112}

Tighten the nut until it is flush against the hose barb base after pushing a braided hose to the end.

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. K01, K-02, and K-03 series are not interchangeable with high flow type K3 and K4 series. Can be connected to Super Cupla.

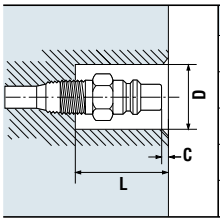
Min. Cross-Sectional Area — (mm²)

Plug \ Socket	K-02SH	K-03SH	K-02SM	K-03SM	K-02SF	K-02SHL	K-03SHL	K-90SN
K-02PH	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
K-03PH	19	28	28	28	28	15.5	28	28
K-01PM	19	23	23	23	23	15.5	23	23
K-01PM-HH	19	23	23	23	23	15.5	23	23
K-02PM	19	28	28	28	28	15.5	28	28
K-02PM-HH	19	23	23	23	23	15.5	23	23
K-03PM	19	28	28	28	28	15.5	28	28
K-01PF	19	28	28	28	28	15.5	28	28
K-02PF	19	28	28	28	28	15.5	28	28
K-03PF	19	28	28	28	28	15.5	28	28
K-01PML	19	19	19	19	19	15.5	19	19
K-02PML	19	28	28	28	28	15.5	28	28
K-03PML	19	28	28	28	28	15.5	28	28

Suitability for Vacuum

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

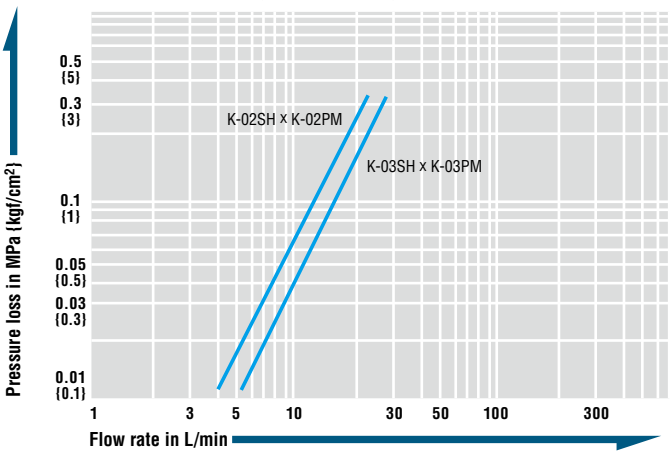
Plug Embedment Dimensions — (mm)



Model	D*	C*	L	Remarks
K-01PM	20 or more	0 to 3	28	* Socket interference prevents connection/disconnection when C exceeds 3 mm.
K-01PM-HH	20 or more	0 to 3	24	* Size D should be bigger than the outer diameter of the socket wrench to be used. (See JISB4636-1, JISB4636-2)
K-02PM	20 or more	0 to 3	29	
K-02PM-HH	20 or more	0 to 3	24	
K-03PM	20 or more	0 to 3	30	

Flow Rate – Pressure Loss Characteristics

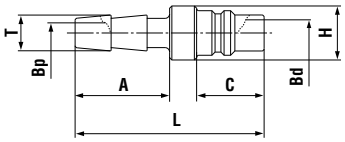
[Test conditions] •Fluid : Water •Temperature : Room temperature



Models and Dimensions

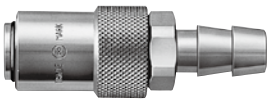
WAF : WAF stands for width across flats.

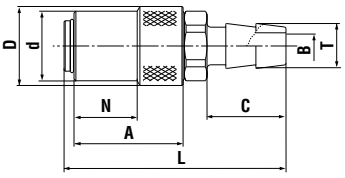
Plug PH type (Hose barb)



Model	Application (Hose)	Mass (g)	Dimensions (mm)						
			L	A	C	øH	øT	øBp	øBd
K-02PH	1/4"	17	42	21	15	12	8	4.5	6
K-03PH	3/8"	19	42	21	15	15	12	7	6

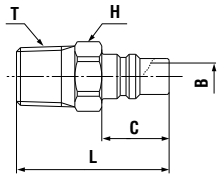
Socket SH type (Hose barb)





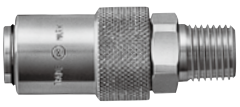
Model	Application (Hose)	Mass (g)	Dimensions (mm)							
			L	øD	ød	N	A	C	øT	øB
K-02SH	1/4"	52	(67)	(21)	18.5	16.8	29	29	8	5
K-03SH	3/8"	60	(59)	(21)	18.5	16.8	29	21	12	7

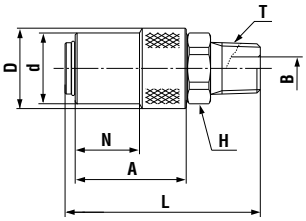
Plug PM type (Male thread)



Model	Application	Mass (g)	Dimensions (mm)				
			L	H(WAF)	C	T	øB
K-01PM	Rc 1/8	14	31	Hex.12	15	R 1/8	5.5
K-02PM	Rc 1/4	20	34	Hex.14	15	R 1/4	6
K-03PM	Rc 3/8	35	35	Hex.17	15	R 3/8	6

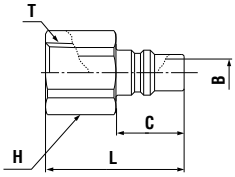
Socket SM type (Male thread)





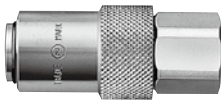
Model	Application	Mass (g)	Dimensions (mm)							
			L	øD	ød	N	A	H(WAF)	T	øB
K-02SM	Rc 1/4	70	(51)	(21)	18.5	16.8	29	Hex.17	R 1/4	6
K-03SM	Rc 3/8	82	(52)	(21)	18.5	16.8	29	Hex.19	R 3/8	6

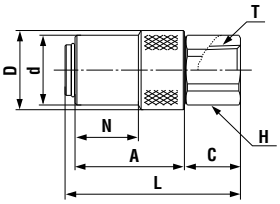
Plug PF type (Female thread)



Model	Application	Mass (g)	Dimensions (mm)				
			L	H(WAF)	C	T	øB
K-01PF	R 1/8	16	28	Hex.14	15	Rc 1/8	6
K-02PF	R 1/4	22	30.5	Hex.17	15	Rc 1/4	6
K-03PF	R 3/8	35	32	Hex.21	15	Rc 3/8	6

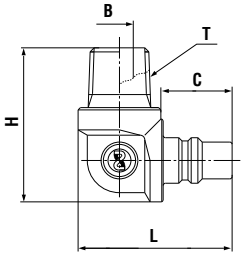
Socket SF type (Female thread)





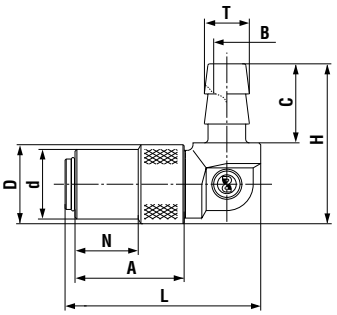
Model	Application	Mass (g)	Dimensions (mm)							
			L	øD	ød	N	A	C	T	H(WAF)
K-02SF	R 1/4	57	(46.5)	(21)	18.5	16.8	29	14.5	Rc 1/4	Hex.17

Plug PML type (Male thread)



Model	Application	Mass (g)	Dimensions (mm)				
			L	C	H	T	øB
K-01PML	Rc 1/8	43	33.5	15	30.5	R 1/8	5
K-02PML	Rc 1/4	53	33.5	15	33.5	R 1/4	6
K-03PML	Rc 3/8	71	33.5	15	33.5	R 3/8	6

Socket SHL type (Hose barb)

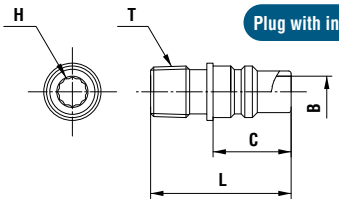


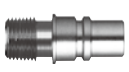
Model	Application (Hose)	Mass (g)	Dimensions (mm)								
			L	øD	ød	N	A	C	øT	H	øB
K-02SHL	1/4"	79	(52)	(21)	18.5	16.8	29	21	8	(42.5)	4.5
K-03SHL	3/8"	87	(52)	(21)	18.5	16.8	29	21	12	(42.5)	7

Note: Also available without socket valve (Made-to-order item), identified by product code TS (e.g. K-03SH without valve is K-03TSH). Also available are Cuplas with sleeve stopper (Made-to-order item).

Plug PM-HH type (Male thread)

Plug with internal hexagon socket for Allen wrench



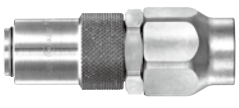


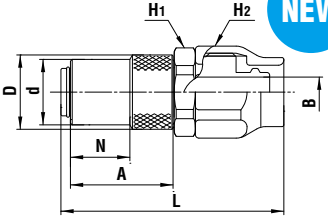
• The photo shows model K-01PM-HH.

Model	Application	Mass (g)	Dimensions (mm)					
			Outside Diameter	L	H	C	T	øB
K-01PM-HH	Rc 1/8	9	ø11	27	5	15	R 1/8	6
K-02PM-HH	Rc 1/4	15	(ø13.4)	29	5	15	R 1/4	6

Socket SN type (For braided hose connection)

NEW





Model	Application (Hose) (mm)	Hose wall thickness (mm)	Mass (g)	Dimensions (mm)							
				L	øD	ød	N	A	H1(WAF)	H2(WAF)	øB
K-90SN	ø9 x ø15	3±0.3	122	(63)	(21)	18.5	16.8	29	Hex.23	Hex.24	8.5

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

For Low Pressure

Mold Cupla

High Flow Type

High flow type mold coolant port coupling

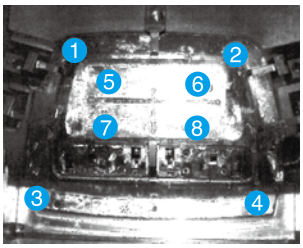
Working pressure: 1.0 MPa {10 kgf/cm²}
Valve structure: One-way shut-off, Straight through
Applicable fluids: Water, Heated oil

Flow rate has doubled to increase productivity.

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

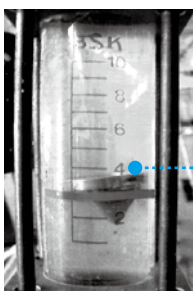
Results of reduced cooling time in the field

A customer replaced conventional K-0 series Mold cuplas with the K3 series and shortened the cooling time from 30 seconds to 21 seconds meaning an 18% reduction per shot and increased productivity by 20%. Temperature checks at 8 positions on the mold showed that surface temperatures on average had fallen by 3˚C, providing evidence of the high cooling efficiency.



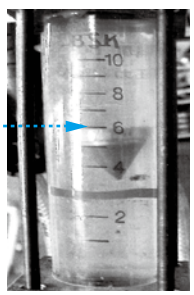
Flow comparison

Coolant water flow rate was checked with a flow meter, which confirmed increase by 1.7 to 1.8 times, when Mold Cupla K3 series are used.



Conventional K-0 series Mold Cuplas were used.

Increased by 1.7 to 1.8 times UP



K3 series are used.

Specifications

Body material			Brass		
Size	Thread		1/4", 3/8", 1/2"		
	Hose barb		3/8", 1/2" hose		
Working pressure		MPa	1.0		
		kgf/cm²	10		
		bar	10		
		PSI	145		
Seal material Working temperature rang			Seal material	Mark	Working temperature range	Remarks
			Nitrile rubber	NBR (SG)	−20˚C to +80˚C	Standard material
			Fluoro rubber	FKM (X-100)	−20˚C to +180˚C	Available on request

Max. Tightening Torque — Nm {kgf•cm}

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

Flow Direction

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

Interchangeability

In K3 series sockets and plugs can be connected regardless of end configurations and sizes.
In K4 series sockets and plugs can be connected regardless of end configurations and sizes.
K3 series and K4 series cannot be cannot to each other, or indeed to other mold Cuplas.

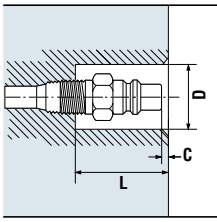
Min. Cross-Sectional Area — (mm²)

Plug \ Socket	K3-03SH	K3-04SH	K3-03SM	K3-03SF	K4-04SH
K3-03PH	38	38	38	38	–
K3-02PM	38	62.5	62.5	62.5	–
K3-03PM	38	62.5	62.5	62.5	–
K3-03PF	38	62.5	62.5	62.5	–
K4-04PM	–	–	–	–	78.5

Suitability for Vacuum

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

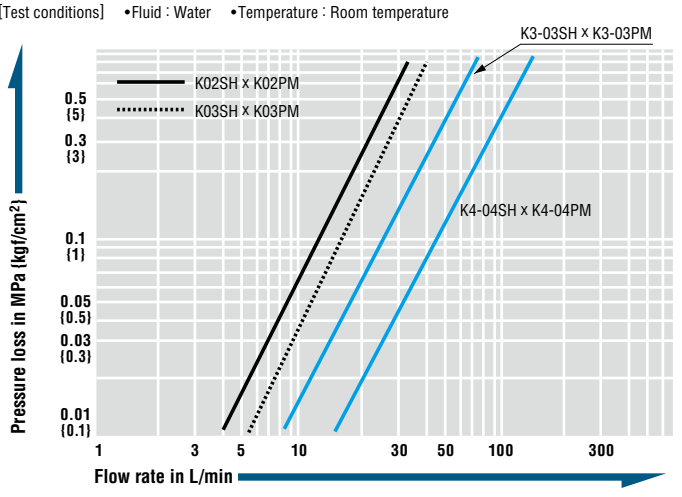
Plug Embedment Dimensions — (mm)



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

Flow Rate – Pressure Loss Characteristics (Comparison with Mold Cupla)

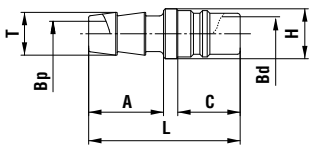
[Test conditions] •Fluid : Water •Temperature : Room temperature



Models and Dimensions

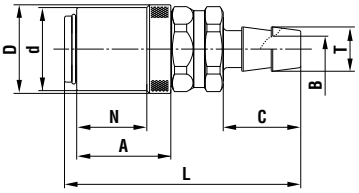
WAF : WAF stands for width across flats.

Plug PH type (Hose barb / High flow type)



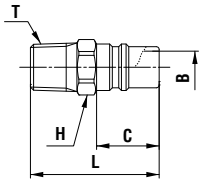
Model	Application (Hose)	Mass (g)	Dimensions (mm)						
			L	A	C	øH	øT	øBp	øBd
K3-03PH	3/8"	19	42.5	21	17.5	14	12	7	9.5

Socket SH type (Hose barb / High flow type)



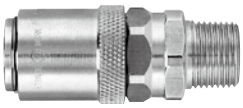
Model	Application (Hose)	Mass (g)	Dimensions (mm)							
			L	øD	ød	N	A	C	øT	øB
K3-03SH	3/8"	100	(65)	(24)	22.5	19	25.5	21	12	7
K3-04SH	1/2"	102	(67)	(24)	22.5	19	25.5	23	15	10
K4-04SH	1/2"	226	(82)	(32)	30	26.5	34	23	15	10

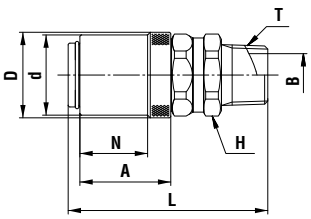
Plug PM type (Male thread / High flow type)



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

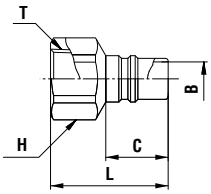
Socket SM type (Male thread / High flow type)

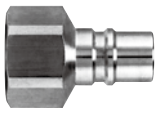




Model	Application	Mass (g)	Dimensions (mm)							
			L	øD	ød	N	A	H(WAF)	T	øB
K3-03SM	Rc 3/8	90	(56)	(24)	22.5	19	25.5	Hex.21	R 3/8	12

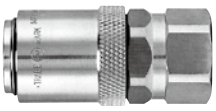
Plug PF type (Female thread / High flow type)

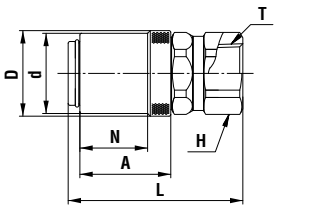




Model	Application	Mass (g)	Dimensions (mm)				
			L	H(WAF)	C	T	øB
K3-03PF	R 3/8	30	33	Hex.21	17.5	Rc 3/8	9.5

Socket SF type (Female thread / High flow type)





Model	Application	Mass (g)	Dimensions (mm)						
			L	øD	ød	N	A	T	H(WAF)
K3-03SF	R 3/8	87	(49)	(24)	22.5	19	25.5	Rc 3/8	Hex.21

Notes: Also available without socket valve (Made-to-order item), identified by product code TS (e.g. K3-03SH without valve is K3-03TSH). Also available are Cuplas with sleeve stopper (Made-to-order item).

For Low Pressure

Flow Meter

Flow meter with special valve for mold cooling line

Working pressure: 0.5 MPa {5 kgf/cm²}

Applicable fluids: Water

For stable and accurate coolant flow rate.

- Graduated scale enables easy visual check of coolant flow rate regardless of operator.
- Built-in flow rate adjustment valve enables desired setting of mold conditions for each machine.
- Easy resumption of previously set molding conditions to cut lead times.
- 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.

Specifications

Body material		Body: Brass Graduated tube: Polycarbonate
Size (Thread)		Both ends Rc 3/8 female thread
Working pressure	MPa	0.5
	kgf/cm²	5
	bar	5
	PSI	72.5
Max. flow rate	L/min	18 L/min (0 to 18 L/min adjustable)

Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-20°C to +60°C	Standard material

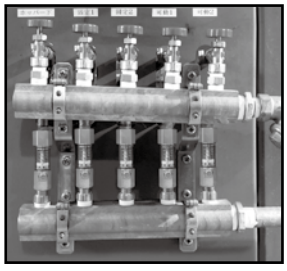
• Use within the temperature range of +10°C to +60°C due to plastic float material.

Max. Tightening Torque

Nm {kgf•cm}

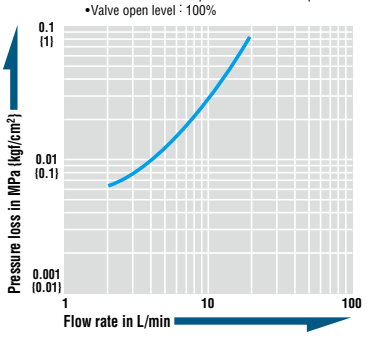
Torque	11 {112}

Application



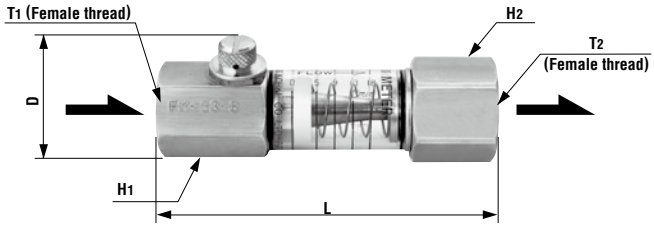
Pressure - Flow Characteristics

[Test conditions] •Fluid : Water •Temperature : Room temperature •Valve open level : 100%



Models and Dimensions / Flow Direction

WAF : WAF stands for width across flats.



Fluid must flow in the direction of the arrows.

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

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

For Low Pressure

Lever Lock Cupla

Metal Body / Plastic Body

For bulk flow, low pressure applications

Working pressure: 0.7 to 1.8 — 0.7 to 1.8 MPa {7 to 18 kgf/cm²}

Working pressure: 0.2 to 0.5 — 0.2 to 0.5 MPa {2 to 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 | Air | Powder | Steam

Note: Depending on the temperature of steam/hot water, the heat may damage seal materials.
Please contact one of our distributors.

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

- This Cupla complies with diversified applications in liquid or gas transportation.
- End-face seal structure enables no bumps or hollows on the internal fluid passage, and ensures smooth fluid transportation.
- A special lip packing (except sizes 3/4 and 1", silicone rubber, and FEP-covered rubber) employed reduces the load to the lever for easy operation.
- 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 (only for made-to-order metal body product).

Metal body *Plastic body*

(Aluminum alloy, Copper alloy, and Stainless steel)

Specifications (Metal Body)

Body material (Material symbol)		Aluminum alloy (AL), Copper alloy (BR)				Stainless steel (SUS)		
Size (Thread and hose)		3/4" to 2"	2 1/2"	3"	4"	3/4" to 2"	2 1/2" to 3"	4"
Working pressure	MPa	1.8	1.1	0.9	0.7	1.8	1.6	1.1
	kgf/cm²	18	11	9	7	18	16	11
	bar	18	11	9	7	18	16	11
	PSI	261	160	131	102	261	232	160

Seal material Working temperature range	Seal material	Mark	Working temperature range
	Nitrile rubber	NBR (SG)	-20°C to +80°C

Optional seal material Working temperature range	Seal material	Mark	Working temperature range
	Silicone rubber	SI	-40°C to +150°C
	Fluoro rubber	FKM (X-100)	-20°C to +180°C
	Ethylene-propylene rubber	EPDM (EPT)	-40°C to +150°C
	FEP-covered silicon rubber*	—	+5°C to +50°C

*Made-to-order item (Working pressure : 0.2 MPa {2 kgf/cm²})

Specifications (Plastic Body)

Body material (Material symbol)		Polypropylene (PP)	
Size (Thread and hose)		3/4", 1", 1 1/2"	2", 3"
Working pressure*	MPa	0.5	0.2
	kgf/cm²	5	2
	bar	5	2
	PSI	72.5	29

Seal material Working temperature range	Seal material	Mark	Working temperature range
	Nitrile rubber	NBR (SG)	+5°C to +50°C

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

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

Max. Tightening Torque — N·m {kgf·cm}

Size (Thread)		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 steel	90 {918}	120 {1224}	220 {2244}	260 {2652}	350 {3570}	480 {4896}	520 {5304}	590 {6018}

Flow Direction

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

Interchangeability

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

Suitability for Vacuum (Metal Body) — 53.0 kPa {400 mmHg}

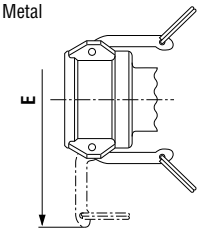
Socket only	Plug only	When connected
—	—	Operational

Suitability for Vacuum (Plastic Body)

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

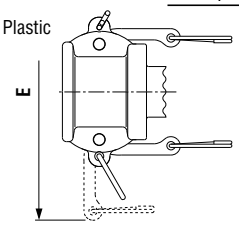
Dimensions with Lever Fully Opened

Metal



Size	Dimensions E (mm) Body material AL	BR	SUS
3/4"	(122.5)	(122.5)	(111)
1"	(132)	(132)	(125)
1 1/4"	(183)	(183)	(179)
1 1/2"	(191)	(191)	(187)
2"	(201)	(201)	(196)
2 1/2"	(213)	(209)	(209)
3"	(249)	(249)	(251)
4"	(280)	(278)	(277)

Plastic

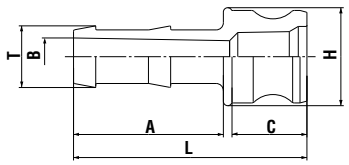


Size	Dimensions E (mm)
3/4"	(115)
1"	(126)
1 1/2"	(187)
2"	(195)
3"	(249)

Models and Dimensions

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

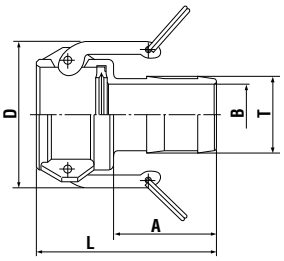
Plug LE type (Hose barb)



Material	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				L	A	C	øH	øT	øB
Aluminum alloy	LE-6TPH	3/4"	65	81	52	26	34	21.4	11
	LE-8TPH	1"	100	95	58	34	40	27.4	17.5
	LE-10TPH	1 1/4"	140	102	58	40	48	34.1	23.5
	LE-12TPH	1 1/2"	190	107	61	42	58	40.5	29
	LE-16TPH	2"	290	122	70	48	69	53.2	40
	LE-20TPH	2 1/2"	390	134.5	80	50	81	66.7	50
	LE-24TPH	3"	545	167	101	61.5	97	79	68
	LE-32TPH	4"	850	176	109	57	129	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	34.1	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	162	99.5	56.5	102	78	68
	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	48	34	25.5
	LE-12TPH	1 1/2"	530	114	61	40	60	40	33
	LE-16TPH	2"	790	131	73	45	70	53	44
	LE-20TPH	2 1/2"	1195	137	80.5	50.5	83	67	56
	LE-24TPH	3"	1755	162	99.5	56.5	102	78	68
	LE-32TPH	4"	2595	174	109	59	130	105	94

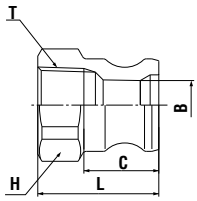
Socket LC type (Hose barb)

Model LC-6TSH made of aluminum alloy and copper alloy has no rings.



Material	Model	Application (Hose)	Mass (g)	Dimensions (mm)				
				L	A	D	øT	øB
Aluminum alloy	LC-6TSH	3/4"	140	85	52	(60.5)	21.4	(11)
	LC-8TSH	1"	190	99	58	(61)	27.4	(17.4)
	LC-10TSH	1 1/4"	320	104	58	(82)	34.1	(23.4)
	LC-12TSH	1 1/2"	350	108.5	61	(90)	40.5	(29.2)
	LC-16TSH	2"	430	122.5	70	(100)	53.2	41.4
	LC-20TSH	2 1/2"	560	136.5	80	(112)	66.7	54.1
	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	(60.5)	21.4	13
	LC-8TSH	1"	420	99	58	(61)	27.4	19.5
	LC-10TSH	1 1/4"	700	104	58	(82)	34.1	23.4
	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

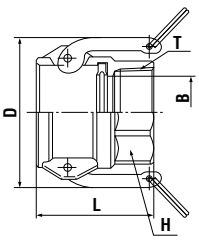
Plug LA type (Female thread)



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

Socket LD type (Female thread)

Model LD-6TSF made of aluminum alloy and copper alloy has no rings.



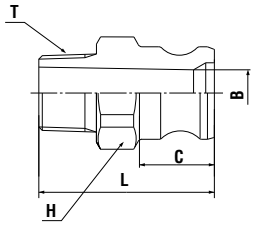
Material	Model	Application (Thread)	Mass (g)	Dimensions (mm) Oct. stands for octagon. Dod.stands for dodecagon.				
				L	D	H(WAF)	øB	T
Aluminum alloy	LD-6TSF	3/4"	130	53	(62.4)	Hex.36	21	Rc 3/4
	LD-8TSF	1"	190	64.5	(61)	Hex.41	26	Rc 1
	LD-10TSF	1 1/4"	330	72.5	(82)	Hex.50	34	Rc 1 1/4
	LD-12TSF	1 1/2"	360	70.5	(90)	Hex.60	39	Rc 1 1/2
	LD-16TSF	2"	420	79.5	(100)	Oct.70	49	Rc 2
	LD-20TSF	2 1/2"	550	88.5	(112)	Oct.85	59	Rc 2 1/2
	LD-24TSF	3"	800	89	(140)	Dod.99	75	Rc 3
	LD-32TSF	4"	1140	93	(165)	Dod.131	94	Rc 4
Copper alloy	LD-6TSF	3/4"	310	53	(60.5)	Hex.36	21	Rc 3/4
	LD-8TSF	1"	430	64.5	(61)	Hex.41	26	Rc 1
	LD-10TSF	1 1/4"	730	72.5	(82)	Hex.50	34	Rc 1 1/4
	LD-12TSF	1 1/2"	770	70.5	(90)	Oct.60	39	Rc 1 1/2
	LD-16TSF	2"	990	79.5	(100)	Oct.70	49	Rc 2
	LD-20TSF	2 1/2"	1290	81.5	(113)	Dod.84	61	Rc 2 1/2
	LD-24TSF	3"	1560	87	(139)	Oct.96	77	Rc 3
	LD-32TSF	4"	3590	91	(165)	Dod.126	96	Rc 4
Stainless steel	LD-6TSF	3/4"	225	52	(55)	Oct.32	19	Rc 3/4
	LD-8TSF	1"	350	60	(63)	Oct.41	24	Rc 1
	LD-10TSF	1 1/4"	600	68	(85)	Oct.50	30	Rc 1 1/4
	LD-12TSF	1 1/2"	715	72	(87)	Oct.58	37.5	Rc 1 1/2
	LD-16TSF	2"	940	78.5	(100)	Oct.69	50	Rc 2
	LD-20TSF	2 1/2"	1050	82	(113)	Dod.83	61	Rc 2 1/2
	LD-24TSF	3"	1605	84	(140)	Dod.97	77	Rc 3
	LD-32TSF	4"	2575	94	(167)	Dod.125	97	Rc 4

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

Models and Dimensions

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

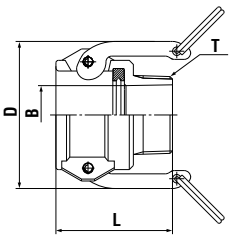
Plug LF type (Male thread)



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

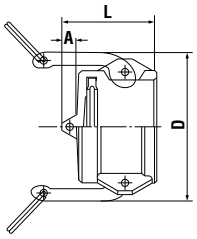
Socket LB type (Male thread)

Model LB-6TSM made of aluminum alloy has no rings.



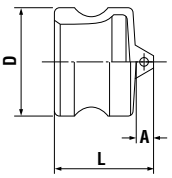
Material	Model	Application (Thread)	Mass (g)	Dimensions (mm)			
				L	D	øB	T
Aluminum alloy	LB-6TSM	3/4"	110	53	(60.5)	17.2	R 3/4
	LB-8TSM	1"	170	65	(61)	23.6	R 1
	LB-10TSM	1 1/4"	310	72	(82)	29.5	R 1 1/4
	LB-12TSM	1 1/2"	340	71.5	(90)	36	R 1 1/2
	LB-16TSM	2"	400	79.5	(100)	45.9	R 2
	LB-20TSM	2 1/2"	530	88.5	(112)	57.7	R 2 1/2
	LB-24TSM	3"	715	90	(139)	76	R 3
	LB-32TSM	4"	920	92	(165)	99	R 4
Copper alloy (Made-to-order item)	LB-6TSM	3/4"	260	52	(53)	19.5	R 3/4
	LB-8TSM	1"	355	63	(62)	26	R 1
	LB-10TSM	1 1/4"	620	71	(84)	28	R 1 1/4
	LB-12TSM	1 1/2"	700	71	(91)	36	R 1 1/2
	LB-16TSM	2"	950	81	(100)	51	R 2
	LB-20TSM	2 1/2"	1250	86	(113)	63	R 2 1/2
	LB-24TSM	3"	1780	92	(139)	78	R 3
	LB-32TSM	4"	2540	98	(168)	101	R 4
Stainless steel (Available on request)	LB-6TSM	3/4"	210	52.5	(55)	20	R 3/4
	LB-8TSM	1"	300	63	(63)	25.5	R 1
	LB-10TSM	1 1/4"	520	70.5	(85)	34	R 1 1/4
	LB-12TSM	1 1/2"	580	71.5	(87)	38	R 1 1/2
	LB-16TSM	2"	780	78.5	(101)	50.5	R 2
	LB-20TSM	2 1/2"	980	84	(113)	66	R 2 1/2
	LB-24TSM	3"	1490	92	(139)	78.5	R 3
	LB-32TSM	4"	2080	92	(167)	103.5	R 4

Plug L-PD type (Plug cap)



Material	Model	Size	Mass (g)	Dimensions (mm)		
				L	A	D
Aluminum alloy	L-6PD	3/4"	100	46	12	(54)
	L-8PD	1"	145	54	11.5	(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	61	13	(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	11	(85)
	L-12PD	1 1/2"	545	63	15	(87)
	L-16PD	2"	720	65	11	(101)
	L-20PD	2 1/2"	945	71	15	(113)
	L-24PD	3"	1420	72	12	(139)
	L-32PD	4"	2055	77	14	(167)

Socket L-SD type (Socket cap)

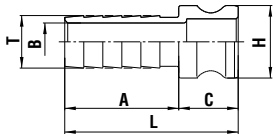


Material	Model	Size	Mass (g)	Dimensions (mm)		
				L	A	øD
Aluminum alloy	L-6SD	3/4"	35	32	8	32
	L-8SD	1"	45	44	10	36.7
	L-10SD	1 1/4"	70	57	14	45.5
	L-12SD	1 1/2"	90	54	15	53.4
	L-16SD	2"	140	62	13	63
	L-20SD	2 1/2"	210	69	20	75.8
	L-24SD	3"	290	71	15	91.5
	L-32SD	4"	960	74	16	119.4
Copper alloy	L-6SD	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	53.4
	L-16SD	2"	420	61	13	63
	L-20SD	2 1/2"	630	69	19	75.7
	L-24SD	3"	860	71	15	91.5
	L-32SD	4"	1780	74.5	16	119.4
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	59.5	12.5	63
	L-20SD	2 1/2"	710	64	14	76
	L-24SD	3"	930	68	14	92
	L-32SD	4"	1275	68	14	120

Models and Dimensions

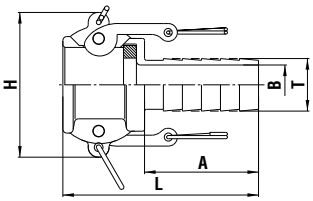
Designs and specifications are subject to change for improvement without notice. / **WAF** : WAF stands for width across flats.

Plug LE type (Hose barb)



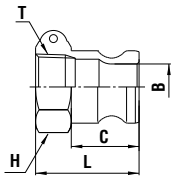
Material	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				L	A	C	øH	øT	øB
Plastic	LE-6TPH	3/4"	16	74.5	51.5	(23)	32.2	20.7	14.3
	LE-8TPH	1"	29	87.5	57.5	(30)	36.6	26.5	19
	LE-12TPH	1 1/2"	73	103	61	(42)	53.5	40	30
	LE-16TPH	2"	122	119	71	(48)	63	52.5	40.5
	LE-24TPH	3"	221	152.5	108	(44.5)	91	80	65

Socket LC type (Hose barb)



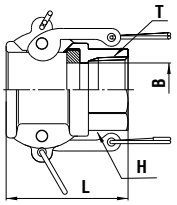
Material	Model	Application (Hose)	Mass (g)	Dimensions (mm)				
				L	A	H	øT	øB
Plastic	LC-6TSH	3/4"	64	83	52	63.5	20.2	14
	LC-8TSH	1"	104	97.5	56.5	73	26.2	20
	LC-12TSH	1 1/2"	242	109.5	60.5	95	39	29.5
	LC-16TSH	2"	269	123.5	70.5	105.5	52	41
	LC-24TSH	3"	527	161	102	137.5	77.5	65

Plug LA type (Female thread)



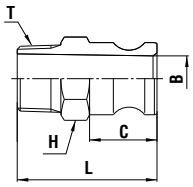
Material	Model	Application (Thread)	Mass (g)	Dimensions (mm)				
				L	C	H(WAF)	øB	T
Plastic	LA-6TPF	3/4"	19	42	26	Hex.34	21.4	Rc 3/4
	LA-8TPF	1"	27	59	34	Hex.43	22	Rc 1
	LA-12TPF	1 1/2"	65	67	42	Ribbed 65	36.6	Rc 1 1/2
	LA-16TPF	2"	102	73	47	Ribbed 74	42	Rc 2
	LA-24TPF	3"	211	90	52.5	Ribbed 108	72	Rc 3

Socket LD type (Female thread)



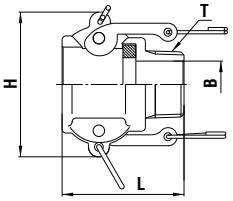
Material	Model	Application (Thread)	Mass (g)	Dimensions (mm)			
				L	H(WAF)	øB	T
Plastic	LD-6TSF	3/4"	65	49.5	Hex.32	21.5	Rc 3/4
	LD-8TSF	1"	98	61.0	Hex.41	27	Rc 1
	LD-12TSF	1 1/2"	260	78	Ribbed 68	39	Rc 1 1/2
	LD-16TSF	2"	285	83.5	Ribbed 80	51	Rc 2
	LD-24TSF	3"	444	88.5	Ribbed 109	77.5	Rc 3

Plug LF type (Male thread)



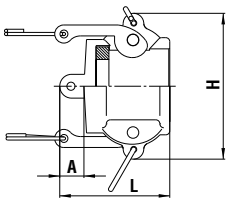
Material	Model	Application (Thread)	Mass (g)	Dimensions (mm)				
				L	C	H(WAF)	øB	T
Plastic	LF-6TPM	3/4"	23	60	26	Hex.32	19	R 3/4
	LF-8TPM	1"	19	71	34	Hex.37	23	R 1
	LF-12TPM	1 1/2"	72	77	42	Ribbed 63	32	R 1 1/2
	LF-16TPM	2"	105	84.5	48	Ribbed 74	44.5	R 2
	LF-24TPM	3"	210	102	51	Ribbed 100	72	R 3

Socket LB type (Male thread)



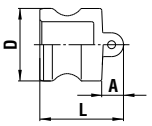
Material	Model	Application (Thread)	Mass (g)	Dimensions (mm)			
				L	H	øB	T
Plastic	LB-6TSM	3/4"	58	51	63.5	19	R 3/4
	LB-8TSM	1"	88	63	(62)	26	R 1
	LB-12TSM	1 1/2"	227	71	101	36	R 1 1/2
	LB-16TSM	2"	251	84	108	48.5	R 2
	LB-24TSM	3"	397	91	(136)	75	R 3

Plug L-PD type (Plug cap)



Material	Model	Size	Mass (g)	Dimensions (mm)		
				L	A	H
Plastic	L-6PD	3/4"	60	45	12	65.5
	L-8PD	1"	94	55	12	73
	L-12PD	1 1/2"	214	65	15	101
	L-16PD	2"	219	69	14	106
	L-24PD	3"	408	77	17.5	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	32.2
	L-8SD	1"	18	42.2	11	36.6
	L-12SD	1 1/2"	46	53	14	53.5
	L-16SD	2"	68	64	16	63
	L-24SD	3"	102	65	18	91

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

For Medium Pressure

TSP Cupla

For medium pressure general applications

Working pressure

1.5 to 7.5

1.5 to 7.5 MPa
{15 to 76 kgf/cm²}

Valve structure

Straight through

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

Applicable fluids

Water | Hydraulic oil | Chemicals | Air | Gas | Steam

Note: Depending on the temperature of steam/hot water, the heat may damage seal materials. Please contact one of our distributors.

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

- Valveless construction drastically saves pressure loss and achieves high flow rate.
- Suitable for high viscosity fluids (such as grease).
- Available in various standard body materials, sizes and end configurations to cope with diversified applications and operating situations.
- No hose clamp required! Simple and secure connection to braided hose.

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

For connection to braided hoses

Specifications

Body material		Brass				Stainless steel, Steel (Nickel-plated)			
Size (Thread and hose)		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	5.0	3.0	2.0	1.5	7.5	4.5	3.0	2.0
	kgf/cm²	51	31	20	15	76	46	31	20
	bar	50	30	20	15	75	45	30	20
	PSI	725	435	290	218	1090	653	435	290

Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard material
	Fluoro rubber	FKM (X-100)	−20°C to +180°C	
	Ethylene-propylene rubber	EPDM (EPT)	−40°C to +150°C	

- SUS316 is available as option.
- Working pressure and working temperature range of TSP Cupla for braided hoses depend upon the specifications of braided hoses to be used.
- Seal material for braided hoses is nitrile rubber.

Max. Tightening Torque — Nm {kgf•cm}

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

- Tighten the nut for braided hoses until it is flush against the hose barb base.

Flow Direction

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

Interchangeability

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

Min. Cross-Sectional Area — (mm²)

Model / End configurations	1TSP	2TSP	3TSP	4TSP	6TSP	8TSP	10TSP	12TSP	16TSP
H type (Hose barb)	7.0 (ø3)	19.6 (ø5)	38.4 (ø7)	78.5 (ø10)	176 (ø15)	283 (ø19)	530 (ø26)	804 (ø32)	1256 (ø40)
M type / F type (Male thread / Female thread)	15.9 (ø4.5)	33.1 (ø6.5)	78.5 (ø10)	132 (ø13)	226 (ø17)	452 (ø24)	804 (ø32)	1134 (ø38)	1885 (ø49)

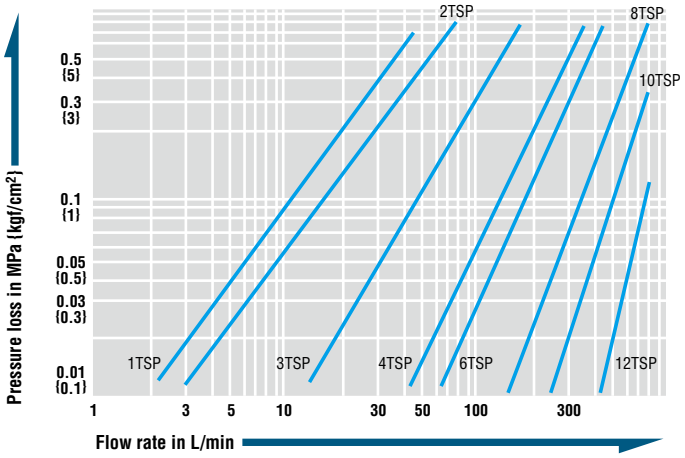
Model / End configurations	2TSN-60 2TPN-60	3TSN-90 3TPN-90	4TSN-120 4TPN-120	4TSN-150 4TPN-150	6TSN-190 6TPN-190	8TSN-250 8TPN-250
N type (For braided hose connection)	23.7 (ø5.5)	56.7 (ø8.5)	95.0 (ø11)	132 (ø13)	226 (ø17)	415 (ø23)

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

Socket only	Plug only	When connected
—	—	Operational

Flow Rate – Pressure Loss Characteristics

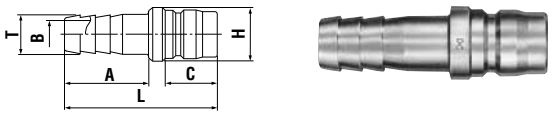
[Test conditions] •Fluid : Hydraulic oil •Temperature : 30°C ± 10°C
•Fluid viscosity : 32 x 10⁻⁶ m²/s •Density : 0.87 x 10³ kg/m³



Models and Dimensions

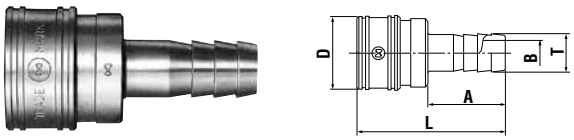
WAF : WAF stands for width across flats.

Plug TPH type (Hose barb)



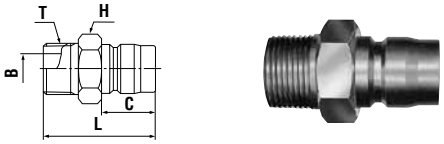
Model	Application (Hose)	Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	L	øH	A	C	øT	øB
1TPH	1/8"	12 *1	13	12	41	12	20	15.5	6.5	3
2TPH	1/4"	21	23	21	53	14	29	18	8	5
3TPH	3/8"	38	41	38	60	18	32	21	11	7
4TPH	1/2"	71	77	71	70	22	39	24	15	10
6TPH	3/4"	134	146	135	84	28	48	28	21	15
8TPH	1"	327	356	329	105	40	57	36	27	19
10TPH	1 1/4"	495	530	500	121	48	70	39	34.5	26
12TPH	1 1/2"	665	715	660	132	55	75	45	41	32
16TPH	2"	1,330	1,430	1,345	142	70	80	51	54	40

Socket TSH type (Hose barb)



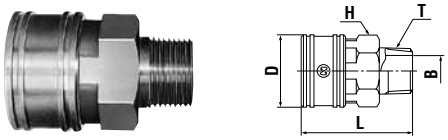
Model	Application (Hose)	Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	L	øD	A	øT	øB
1TSH	1/8"	24 *1	26	24	40	17.5	20	6.5	3
2TSH	1/4"	63	69	64	55	24	29	8	5
3TSH	3/8"	95	104	96	62	28	32	11	7
4TSH	1/2"	176	192	177	74	35	39	15	10
6TSH	3/4"	348	379	350	90	45	48	21	15
8TSH	1"	570	605	570	102	58	57	27	19
10TSH	1 1/4"	840	910	850	117	69	70	34.5	26
12TSH	1 1/2"	1,060	1,140	1,070	128	75	75	41	32
16TSH	2"	2,095	2,251	2,100	141	98	80	54	40

Plug TPM type (Male thread)



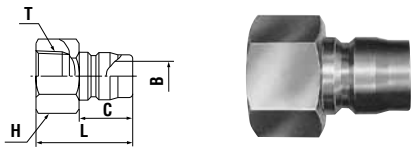
Model	Application	Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	L	H(WAF)	C	T	øB
1TPM	Rc 1/8	16 *1	17	17	32	Hex.12	15.5	R 1/8	4.5
2TPM	Rc 1/4	30	33	30	38	Hex.17	18	R 1/4	6.5
3TPM	Rc 3/8	38	42	38	43	Hex.17	21	R 3/8	10
4TPM	Rc 1/2	81	88	81	52	Hex.22	24	R 1/2	13
6TPM	Rc 3/4	164	179	165	59	Hex.32	28	R 3/4	17
8TPM	Rc 1	273	297	274	73	Hex.41	36	R 1	25
10TPM	Rc 1 1/4	520	560	530	83	Hex.50	39	R 1 1/4	32
12TPM	Rc 1 1/2	655	705	665	93	Hex.54 *2	45	R 1 1/2	38
16TPM	Rc 2	1,240	1,345	1,250	102	75 x ø80	51	R 2	50

Socket TSM type (Male thread)



Model	Application	Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	L	øD	H(WAF)	T	øB
1TSM	Rc 1/8	25 *1	27	26	30	17.5	Hex.14	R 1/8	4.5
2TSM	Rc 1/4	66	72	67	42	24	Hex.19	R 1/4	6.5
3TSM	Rc 3/8	99	108	100	46	28	Hex.23	R 3/8	10
4TSM	Rc 1/2	178	194	179	56	35	Hex.29	R 1/2	13
6TSM	Rc 3/4	343	374	346	65	45	Hex.38	R 3/4	18
8TSM	Rc 1	629	665	633	76	58	Hex.50	R 1	24
10TSM	Rc 1 1/4	950	1,010	955	86	69	54 x ø64	R 1 1/4	32
12TSM	Rc 1 1/2	1,180	1,275	1,190	95	75	58 x ø70	R 1 1/2	38
16TSM	Rc 2	2,040	2,190	2,060	108	98	77 x ø82	R 2	49

Plug TPF type (Female thread)

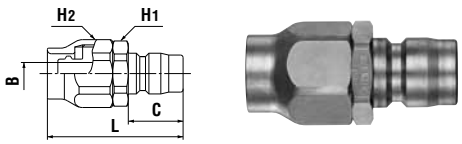


Model	Application	Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	L	H(WAF)	C	T	øB
1TPF	R 1/8	14 *1	15	14	26	Hex.14	15.5	Rc 1/8	4.5
2TPF	R 1/4	28	31	29	34	Hex.17	18	Rc 1/4	6.5
3TPF	R 3/8	43	47	43	38	Hex.21	21	Rc 3/8	10
4TPF	R 1/2	103	113	104	45	Hex.29	24	Rc 1/2	13
6TPF	R 3/4	166	181	167	51	Hex.35	28	Rc 3/4	17
8TPF	R 1	321	350	323	60	Hex.41	36	Rc 1	26
10TPF	R 1 1/4	567	615	573	64	Hex.54 *3	39	Rc 1 1/4	32
12TPF	R 1 1/2	703	763	630	75	Hex.58 *4	45	Rc 1 1/2	38
16TPF	R 2	1,226	1,374	1,190	83	77 x ø82	51	Rc 2	50

Socket TSF type (Female thread)

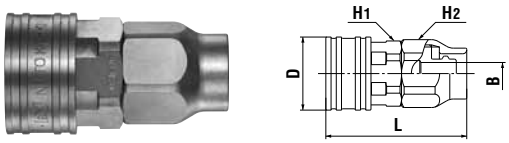
Model	Application	Mass (g)			Dimensions (mm)			
		Steel	Brass	Stainless steel	L	øD	H(WAF)	T
1TSF	R 1/8	25 *1	27	25	27	17.5	Hex.14	Rc 1/8
2TSF	R 1/4	57	62	57	32	24	Hex.19	Rc 1/4
3TSF	R 3/8	83	90	83	35	28	Hex.23	Rc 3/8
4TSF	R 1/2	153	167	154	42	35	Hex.29	Rc 1/2
6TSF	R 3/4	288	314	289	48	45	Hex.38	Rc 3/4
8TSF	R 1	575	607	575	59	58	Hex.50	Rc 1
10TSF	R 1 1/4	821	888	825	64	69	54 x ø64	Rc 1 1/4
12TSF	R 1 1/2	1,003	1,064	1,005	71	75	58 x ø70	Rc 1 1/2
16TSF	R 2	1,765	1,880	1,770	80	98	77 x ø82	Rc 2

Plug TPN type (For braided hose connection)



Model	Application (Hose) *5		Mass (g)		Dimensions (mm)				
	Size (mm)	Hose wall thickness (mm)	Brass	Stainless steel	L	H1(WAF)	H2(WAF)	C	øB
2TPN-60	ø6 x ø11	2.5±0.25	60	55	47	Hex.19	Hex.19	18	5.5
3TPN-90	ø9 x ø15	3±0.3	93	87	52	Hex.23	Hex.24	21	8.5
4TPN-120	ø12 x ø18		140	130	60	Hex.27	Hex.27	24	11
4TPN-150	ø15 x ø22	3.5±0.35	182	170	68	Hex.30	Hex.30	24	13
6TPN-190	ø19 x ø26		261	245	76	Hex.35	Hex.35	28	17
8TPN-250	ø25 x ø33	4±0.4	461	427	96	Hex.41	Hex.41	36	23

Socket TSN type (For braided hose connection)



Model	Application (Hose) *5		Mass (g)		Dimensions (mm)				
	Size (mm)	Hose wall thickness (mm)	Brass	Stainless steel	L	øD	H1(WAF)	H2(WAF)	øB
2TSN-60	ø6 x ø11	2.5±0.25	91	84	49	24	Hex.19	Hex.19	5.5
3TSN-90	ø9 x ø15	3±0.3	139	129	54	28	Hex.23	Hex.24	8.5
4TSN-120	ø12 x ø18		222	206	62	35	Hex.29	Hex.27	11
4TSN-150	ø15 x ø22	3.5±0.35	255	237	70	35	Hex.30	Hex.30	13
6TSN-190	ø19 x ø26		435	408	81	45	Hex.38	Hex.35	17
8TSN-250	ø25 x ø33	4±0.4	677	633	93	58	Hex.50	Hex.41	23

*1 : 1TSP steel is a made-to-order item. *2 : Stainless steel: 54 x ø60 *3 : Stainless steel: 54 x ø59 *4 : Stainless steel: 58 x ø65 *5 : Braided hoses for TPN type and TSN type should be made of soft PVC and woven by reinforcement thread.

• Hydrocarbon type grease is applied to the threaded part of stainless steel nut for TPN type and TSN type to prevent galling.

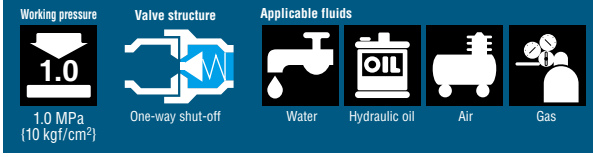
Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.

For Low Pressure

TSP Cupla

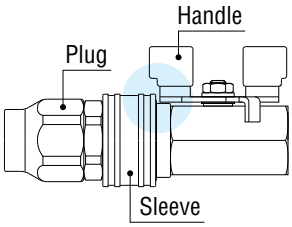
Socket with Ball Valve

For low pressure general applications

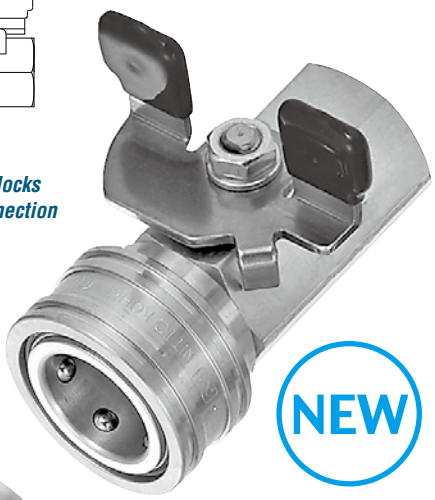


One-piece design of TSP Cupla socket and ball valve. Sleeve stopper mechanism prevent accidental disconnection during connection. (when the valve is open.)

- **Socket valve can be opened and shut off while socket and plug are connected.**
- **Ball valve design provides for high flow rate.**
- **A high viscosity fluid such as grease can be applied.**



The handle of the ball valve locks the sleeve to prevent disconnection of the plug during use.



NEW

Interchangeable with standard TSP Cupla plug in the same size.

Specifications

Model		BV-2TSF	BV-3TSF	BV-4TSF	BV-6TSF	BV-8TSF
Size (Thread)		1/4"	3/8"	1/2"	3/4"	1"
Body material		Brass				
Working pressure	MPa	1.0				
	kgf/cm²	10				
	bar	10				
	PSI	145				

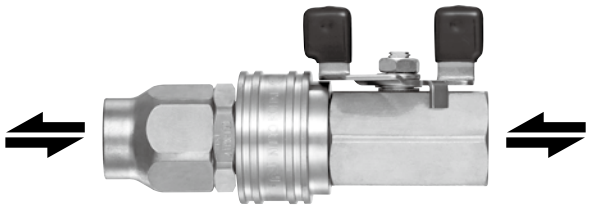
Seal material Working temperature range		Seal material	Mark	Working temperature range
	Cupla Part	Fluoro rubber	FKM	−5°C to +120°C
	Ball Valve Part	Fluoropolymer resin	–	

Max. Tightening Torque — Nm {kgf•cm}

Model	BV-2TSF	BV-3TSF	BV-4TSF	BV-6TSF	BV-8TSF
Torque	9 {92}	12 {122}	30 {306}	50 {510}	65 {663}

Flow Direction

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



Interchangeability

Can be connected with the plug for TSP Cupla in the same size.

Min. Cross-Sectional Area — (mm²)

Model	BV-2TSF	BV-3TSF	BV-4TSF	BV-6TSF	BV-8TSF
Min. cross-sectional area	19.6	44.1	63.6	122	201

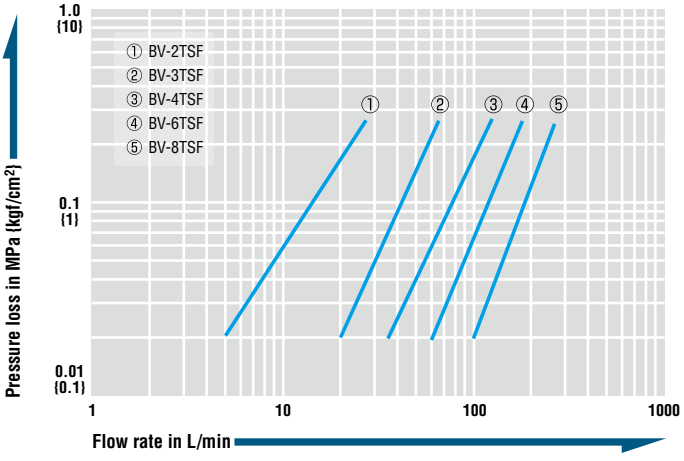
• Value of BV type only. The minimum cross-sectional area may vary depending upon the end configuration of the plug.

Suitability for Vacuum

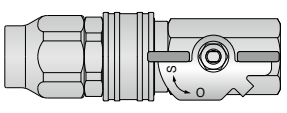
Not suitable for vacuum application in either connected or disconnected condition.

Flow Rate – Pressure Loss Characteristics

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

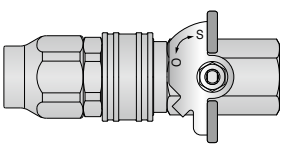


Ball Valve Open



Sleeve is locked.

Ball Valve Shut

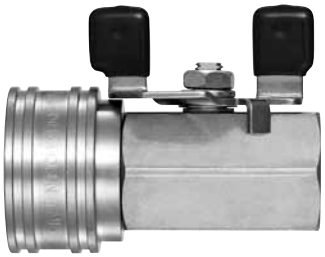


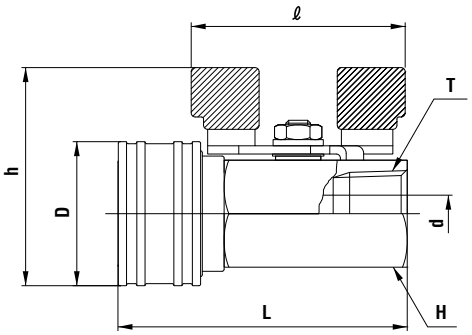
Sleeve is free.

Models and Dimensions

WAF : WAF stands for width across flats.

Socket BV-TSF type (Female thread)



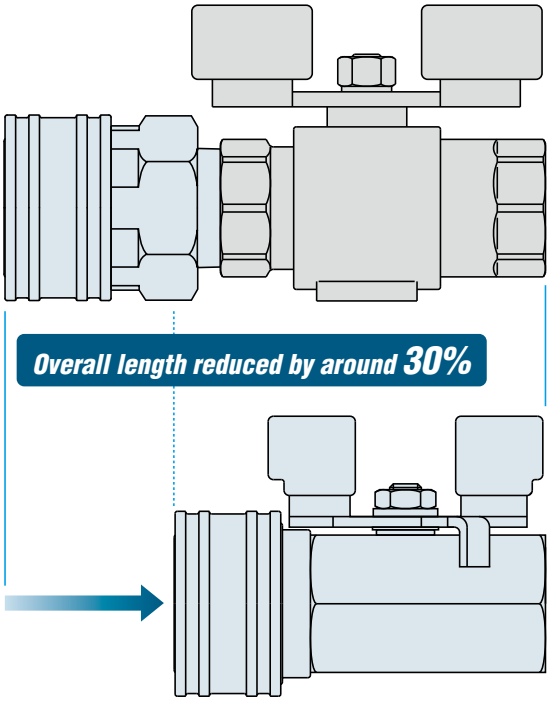


Model	Application	Mass (g)	Dimensions (mm)						
			L	h	øD	H(WAF)	T	ød	ℓ
BV-2TSF	R 1/4	104	(52.5)	(43)	24	Hex.17	Rc 1/4	5	(38.5)
BV-3TSF	R 3/8	163	(60.5)	(47.5)	28	Hex.21	Rc 3/8	7.5	(44)
BV-4TSF	R 1/2	270	(70.5)	(53)	35	Hex.26	Rc 1/2	9	(52)
BV-6TSF	R 3/4	491	(83)	(66)	45	Hex.32	Rc 3/4	12.5	(60.5)
BV-8TSF	R 1	904	(102.5)	(77)	58	Hex.41	Rc 1	16	(74.5)

Application

TSP Cupla Socket with Ball Valve

TSP Cupla Socket + Commercially Available Ball Valve



Overall length reduced by around 30%

Compact and enhanced sealing design

Connection part between a Standard TSP Cupla socket and a commercially available ball valve is eliminated for enhanced sealing and the overall length is reduced by around 30%.

For Medium Pressure

SP Cupla Type A

For medium pressure general applications

Working pressure

1.5 to 7.5

1.5 to 7.5 MPa {15 to 76 kgf/cm²}

Valve structure

Two-way shut-off

Applicable fluids

Water | Hydraulic oil | Chemicals | Air | Gas | Steam

Note: Depending on the temperature of steam/hot water, the heat may damage seal materials. Please contact one of our distributors.

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

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

Specifications

Body material		Brass				Stainless steel, Steel (Nickel-plated)			
Size (Thread)		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	5.0	3.0	2.0	1.5	7.5	4.5	3.0	2.0
	kgf/cm²	51	31	20	15	76	46	31	20
	bar	50	30	20	15	75	45	30	20
	PSI	725	435	290	218	1090	653	435	290

Seal material * Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard material
	Fluoro rubber	FKM (X-100)	−20°C to +180°C	
	Ethylene-propylene rubber	EPDM (EPT)	−40°C to +150°C	

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

Max. Tightening Torque

Nm {kgf•cm}

Size (Thread)		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}	180 {1836}	260 {2652}
	Stainless steel	9 {92}	14 {143}	22 {224}	60 {612}	90 {918}	120 {1224}	260 {2652}	280 {2856}	500 {5100}

Plug with male thread type is only available in brass.

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 10⁻¹ Pa {1 x 10⁻³ mmHg}

Socket only	Plug only	When connected
—	—	Operational

Admixture of Air on Connection

Admixture of air may vary depending upon the usage conditions. (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

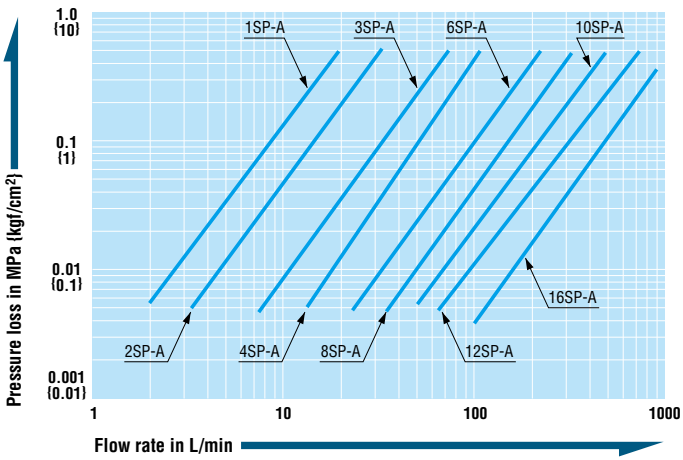
Volume of Spillage per Disconnection

Volume of spillage may vary depending upon the usage conditions. (mL)

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

Flow Rate – Pressure Loss Characteristics

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



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

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

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

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

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

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

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

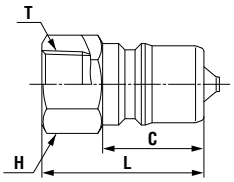
Sleeve stopper (Optional. See the pages of Accessories for details)
A sleeve snap-in stopper securely prevents accidental disconnection.

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

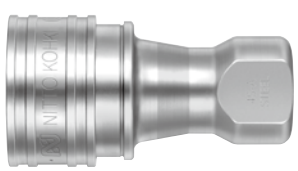
WAF : WAF stands for width across flats.

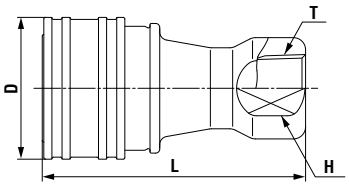
Plug Female thread



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

Socket Female thread

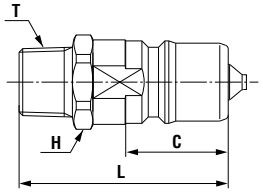




Model	Application	Mass (g)			Dimensions (mm)			
		Steel	Brass	Stainless steel	L	øD	H(WAF)	T
1S-A	R 1/8	73 *1	79	75	48	24	14	Rc 1/8
2S-A	R 1/4	119	128	130	58	28	19	Rc 1/4
3S-A	R 3/8	187	202	193	65	35	21	Rc 3/8
4S-A	R 1/2	368	397	391	72	45	29	Rc 1/2
6S-A	R 3/4	639	686	645	88	55	35	Rc 3/4
8S-A	R 1	951	1024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

• The photos above show steel coupling. • The appearance of stainless steel coupling (SUS304) differs slightly from that shown in the photos above.
*1 1P-A and 1S-A are made-to-order items. *2 Stainless steel: 54 x ø59 *3 Stainless steel: 63 x ø67

Plug Male thread



Model	Application	Mass (g)	Dimensions (mm)			
		Brass	L	C	H(WAF)	T
1P-M-A	Rc 1/8	24	40	19	Hex.14	R 1/8
2P-M-A	Rc 1/4	41	44	22	Hex.17	R 1/4
3P-M-A	Rc 3/8	71	51	25	Hex.21	R 3/8
4P-M-A	Rc 1/2	149	62	28	Hex.27	R 1/2
6P-M-A	Rc 3/4	295	75	36	Hex.35	R 3/4
8P-M-A	Rc 1	406	83	40 *4	Hex.41	R 1

*4 Model 8P-M-A indicates an approximate insertion length because there is no difference in level on the body.

Accessory

Cupla Adapter for Braided Hose Connection

Can be screwed into Cuplas with female threads, 3/8", 1/2", 3/4"

See page 139 for the details.

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

For Medium Pressure

Zerospill Cupla

Low spill type for medium pressure use

Working pressure: 3.5 MPa {35 kgf/cm²}

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

Applicable fluids: Water, Hydraulic oil, Chemicals, Air, Gas

Unique seal design reduces both liquid spillage and air ingress.

- New valve design offers smooth zero-friction movement.
- Push to connect design.
- The variety of body materials, sizes and end configurations has been standardized to comply with wide range of applications.
- Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection.

Specifications

Body material		Brass, Stainless steel (SUS 304)
Applicable fluids		Water, Hydraulic Oil, Air, Gas
Size (Thread)		1/4", 3/8", 1/2", 3/4", 1"
Working pressure	MPa	3.5
	kgf/cm²	35
	bar	35
	PSI	508

Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard material
	Fluoro rubber	FKM (X-100)	−20°C to +180°C	Standard material
	Ethylene-propylene rubber	EPDM (EPT)	−40°C to +150°C	Standard material

Note: Applicable fluids depend on the body material and seal material.
Acceptable working temperature range depends on operating conditions.

Max. Tightening Torque — N·m {kgf·cm}

Size (Thread)		1/4"	3/8"	1/2"	3/4"	1"
Torque	Brass	9 {92}	12 {122}	30 {306}	50 {510}	65 {663}
	Stainless steel	14 {143}	22 {224}	60 {612}	90 {918}	120 {1224}

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 to each other.

Min. Cross-Sectional Area — (mm²)

Model	ZEL-2SP	ZEL-3SP	ZEL-4SP	ZEL-6SP	ZEL-8SP
Min. cross-sectional area	31	60.5	86.5	160.6	188.7

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

Socket only	Plug only	When connected
—	—	Operational

Admixture of Air on Connection — (mL)

Admixture of air may vary depending upon the usage conditions.

Model	ZEL-2SP	ZEL-3SP	ZEL-4SP	ZEL-6SP	ZEL-8SP
Volume of air admixture	0.16	0.21	0.37	1.12	1.52

Volume of Spillage per Disconnection — (mL)

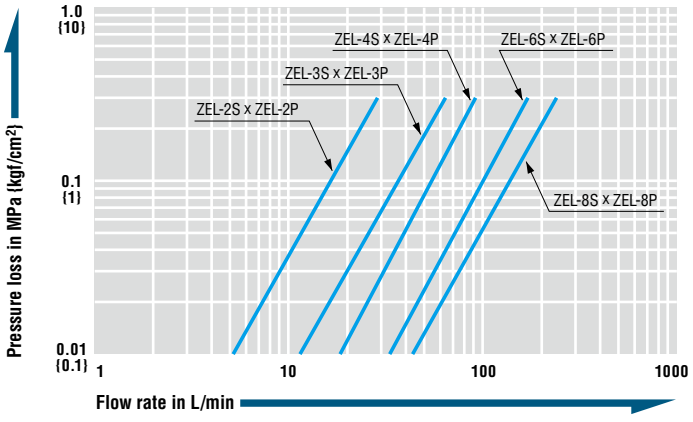
Volume of spillage may vary depending upon the usage conditions.

Model	ZEL-2SP	ZEL-3SP	ZEL-4SP	ZEL-6SP	ZEL-8SP
Volume of spillage	0.06	0.12	0.20	0.43	0.55

• Repeated connections and disconnections of Cuplas or the use of fluids with low viscosity may cause some spillage.

Flow Rate – Pressure Loss Characteristics

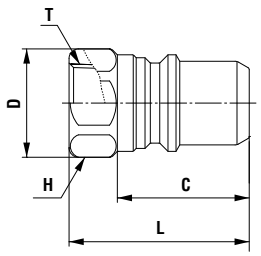
[Test conditions] •Fluid : Water •Temperature : 25°C to 27°C



Models and Dimensions

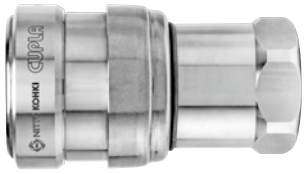
WAF : WAF stands for width across flats.

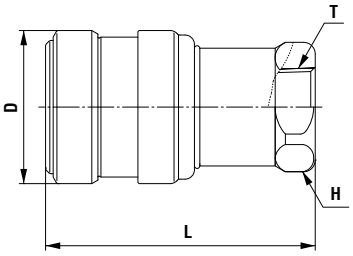
Plug Female thread



Model	Application	Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	L	C	øD	H (WAF)	T
ZEL-2P	R 1/4	34	32	39	26.1	19	Hex.17	Rc 1/4
ZEL-3P	R 3/8	67	63	44.5	32	25	Hex.23	Rc 3/8
ZEL-4P	R 1/2	117	109	52.5	36.8	32	Hex.29	Rc 1/2
ZEL-6P	R 3/4	264	248	68.5	48	39.5	Hex.36	Rc 3/4
ZEL-8P	R 1	359	339	76.5	56	46	Hex.42	Rc 1

Socket Female thread





Model	Application	Mass (g)		Dimensions (mm)			
		Brass	Stainless steel	L	øD	H (WAF)	T
ZEL-2S	R 1/4	133	125	(56)	28	Hex.21	Rc 1/4
ZEL-3S	R 3/8	255	239	(66)	35	Hex.27	Rc 3/8
ZEL-4S	R 1/2	404	382	(76)	42	Hex.32	Rc 1/2
ZEL-6S	R 3/4	829	784	(95.5)	55	Hex.42	Rc 3/4
ZEL-8S	R 1	1406	1326	(114.5)	65	Hex.50	Rc 1

• The photos above show stainless steel model ZEL-8P and ZEL-8S. The profiles of brass couplings are the same as those of the stainless steel couplings.

Main Features

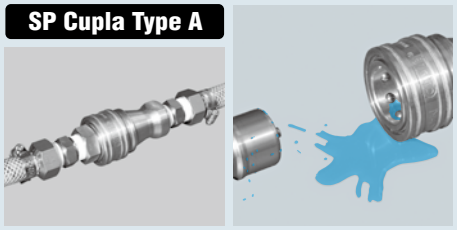
Unique seal design reduces both liquid spillage and air ingress

To compare with Nitto SP Cupla Type A.

Volume of spillage:
about 96% less vs SP Cupla Type A

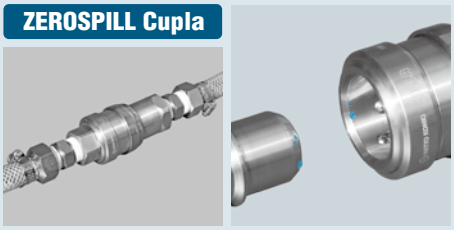
Volume of air ingress:
about 94% less vs SP Cupla Type A

SP Cupla Type A



Connected → Disconnected

ZEROSPILL Cupla



Connected → Disconnected

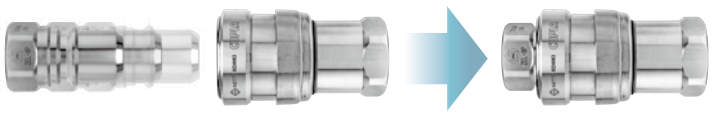
*blue colored water is used to show volume of spillage clearly.

Reliable zero friction valve

New valve design offers smooth zero-friction movement resulting in reduced chance of malfunction caused by deterioration of valve parts.

Push-to-connect design / One-hand easy operation

Just push the plug into the socket for simple and secure connection.
This reduces connection time and improves efficiency.



Just push the plug into the socket → Simple and secure connection

Accessory

Cupla Adapter for Braided Hose Connection

Can be screwed into Cuplas with female threads, 3/8", 1/2", 3/4"

See page 139 for the details.

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

For High Pressure

HSP Cupla

For hydraulic pressure from 14.0 to 20.6 MPa {142 to 210 kgf/cm²}

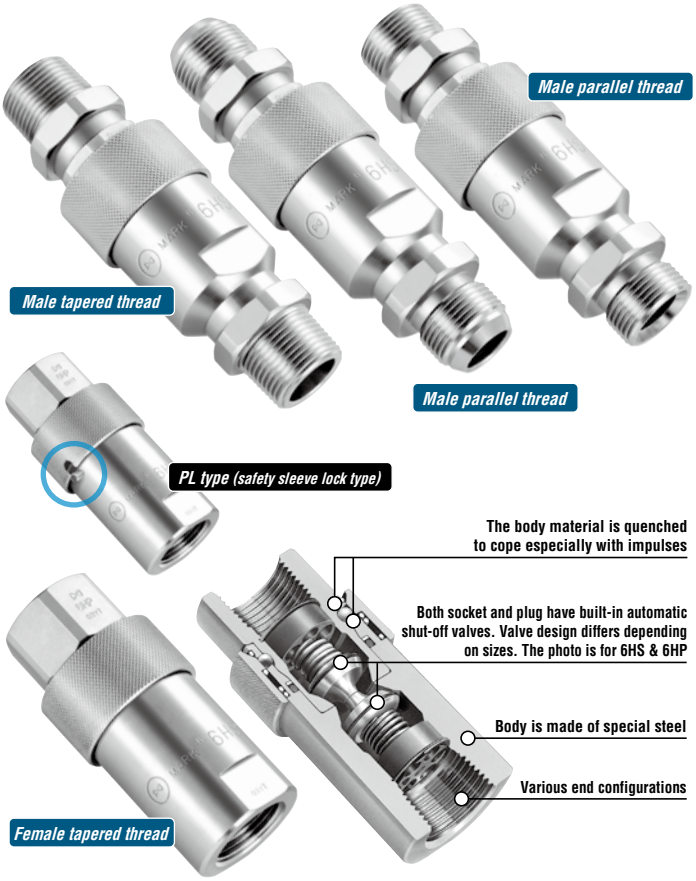
Working pressure: 14.0 to 20.6 MPa {14.0 to 210 kgf/cm²}

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.
- Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection. Easy to handle.
- In addition to conventional female thread type, male thread types (male tapered thread, male parallel thread with 30° flare, and male parallel thread with 30° cone-seat) are newly added. Male thread types are designed especially for direct connection to hydraulic power units effectively.
- Male parallel thread type complies with both metal seal and O-ring seal. (In case of O-ring seal, O-rings available in the market can be used.)
- Optional HSP-DC Cuplas are available for die-casting machine applications with severe pressure variation.
- The overall length of male thread type is shorter than that of female thread type plus conversion nipple available in the market.
- PL type (Safety sleeve lock type) for 2HS to 8HS (except 66HS) with female thread is also available as standard.



Specifications

Body material		Special steel (Nickel-plated)			
Size (Thread)		1/4", 3/8", 1/2", 3/4", 1"		1 1/4", 1 1/2"	2"
Working pressure	MPa	20.6		18.0	14.0
	kgf/cm²	210		183	142
	bar	206		180	140
	PSI	2990		2610	2030
Seal material / Working temperature range		Seal material	Mark	Working temperature range	Remarks
		Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard material
		Fluoro rubber	FKM (X-100)	−20°C to +180°C	Available on request

Max. Tightening Torque

Nm {kgf•cm}

Size (Thread)		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 10⁻¹ Pa {1 x 10⁻³ mmHg}

Socket only	Plug only	When connected
—	—	Operational

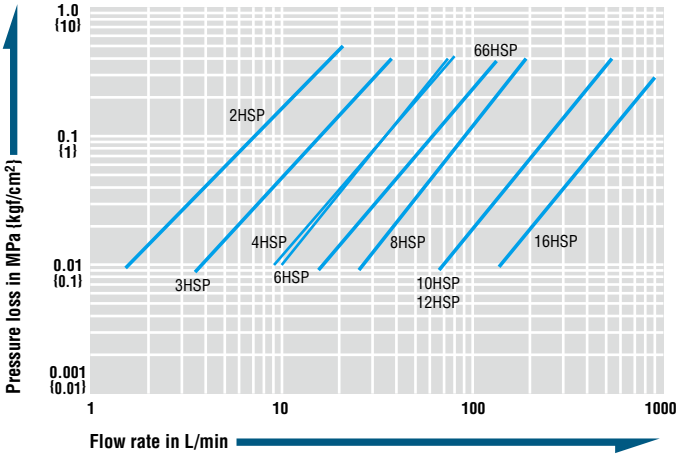
Admixture of Air on Connection

Admixture of air may vary depending upon the usage conditions. (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 10⁻⁶ m²/s •Density : 0.87 x 10³ kg/m³



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

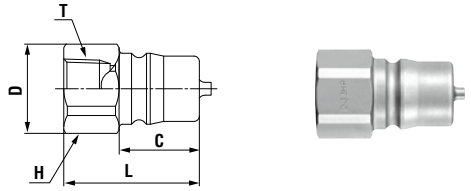
⚠Precautions for use

There is no interchangeability between HSP Cupla and 210 Cupla or 280 Cupla. Do not connect to each other even if sizes are similar.

Models and Dimensions

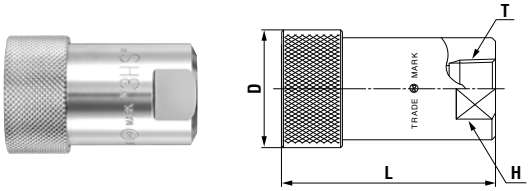
Product appearance may vary by size. / **WAF** : WAF stands for width across flats.

Plug HP type (Female tapered thread)



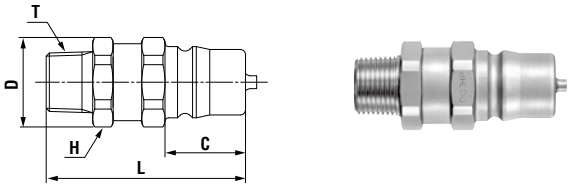
Model	Application	Mass (g)	Dimensions (mm)				
			L	øD	C	H(WAF)	T
2HP	R 1/4	40	32	20.5	17.5	Hex.19	Rc 1/4
3HP	R 3/8	68	38	25	22.5	Hex.23	Rc 3/8
4HP	R 1/2	124	44	32	27.5	Hex.29	Rc 1/2
6HP	R 3/4	148	50	35	27.5	Hex.32	Rc 3/4
66HP	R 3/4	232	51	40	28	35	Rc 3/4
8HP	R 1	361	61	47	36	41	Rc 1
10HP	R 1 1/4	886	80	64	58	58	Rc 1 1/4
12HP	R 1 1/2	810	80	64	58	58	Rc 1 1/2
16HP	R 2	3,307	115	100	83	90	Rc 2

Socket HS type (Female tapered thread)



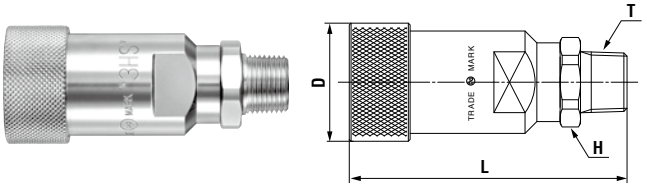
Model	Application	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
2HS	R 1/4	134	49	(27.5)	19	Rc 1/4
3HS	R 3/8	226	60	(33)	23	Rc 3/8
4HS	R 1/2	485	72	(43)	35	Rc 1/2
6HS	R 3/4	460	72	(43)	35	Rc 3/4
66HS	R 3/4	569	78.5	(47)	35	Rc 3/4
8HS	R 1	1,042	93	(58)	46	Rc 1
10HS	R 1 1/4	2,586	138	87	58	Rc 1 1/4
12HS	R 1 1/2	2,510	138	87	58	Rc 1 1/2
16HS	R 2	7,286	198	123	80	Rc 2

Plug HP-R type (Male tapered thread)



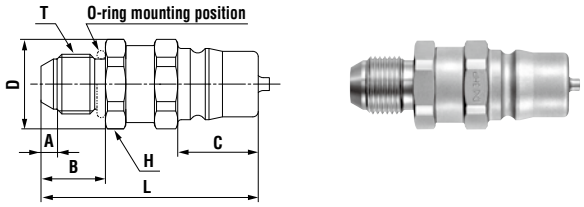
Model	Application	Mass (g)	Dimensions (mm)				
			L	øD	C	H(WAF)	T
2HP-R	Rc 1/4	60	(49)	21	17.5	Hex.19	R 1/4
3HP-R	Rc 3/8	102	(55.5)	25	22.5	Hex.23	R 3/8
4HP-R	Rc 1/2	171	(63)	31	27.5	Hex.29	R 1/2
6HP-R	Rc 3/4	197	(66)	35	27.5	Hex.32	R 3/4

Socket HS-R type (Male tapered thread)



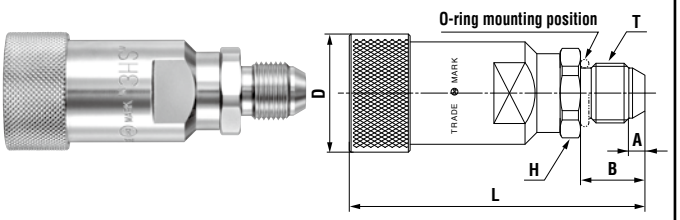
Model	Application	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
2HS-R	Rc 1/4	148	(66)	(27.5)	Hex.19	R 1/4
3HS-R	Rc 3/8	245	(77.5)	(33)	Hex.23	R 3/8
4HS-R	Rc 1/2	466	(90)	(43)	Hex.29	R 1/2
6HS-R	Rc 3/4	493	(93)	(43)	Hex.32	R 3/4

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



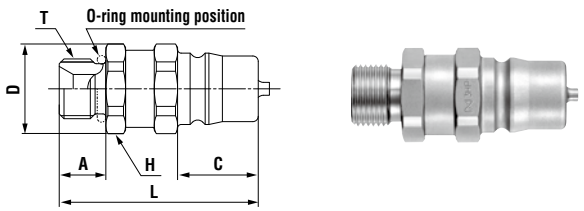
Model	Application*	Mass (g)	O-ring size	Dimensions (mm)						
				L	øD	A	B	C	H(WAF)	T
2HP-GP	G 1/4	62	P-11	(52.5)	21	(4.5)	16	17.5	Hex.19	G 1/4B
3HP-GP	G 3/8	103	P-14	(60.5)	25	(4.5)	18	22.5	Hex.23	G 3/8B
4HP-GP	G 1/2	173	P-18	(66)	31	(5.5)	20	27.5	Hex.29	G 1/2B
6HP-GP	G 3/4	203	P-24	(69)	35	(5.5)	22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

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



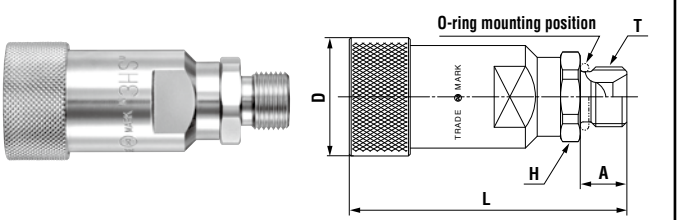
Model	Application*	Mass (g)	O-ring size	Dimensions (mm)					
				L	øD	A	B	H(WAF)	T
2HS-GP	G 1/4	149	P-11	(69.5)	(27.5)	(4.5)	16	Hex.19	G 1/4B
3HS-GP	G 3/8	246	P-14	(82.5)	(33)	(4.5)	18	Hex.23	G 3/8B
4HS-GP	G 1/2	476	P-18	(93)	(43)	(5.5)	20	Hex.29	G 1/2B
6HS-GP	G 3/4	498	P-24	(96)	(43)	(5.5)	22	Hex.32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

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



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

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



Model	Application*	Mass (g)	O-ring size	Dimensions (mm)				
				L	øD	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)	(43)	16.5	Hex.32	G 3/4B

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

• Sleeve stopper design is available for models 2HS to 8HS (except 66HS).

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

For High Pressure

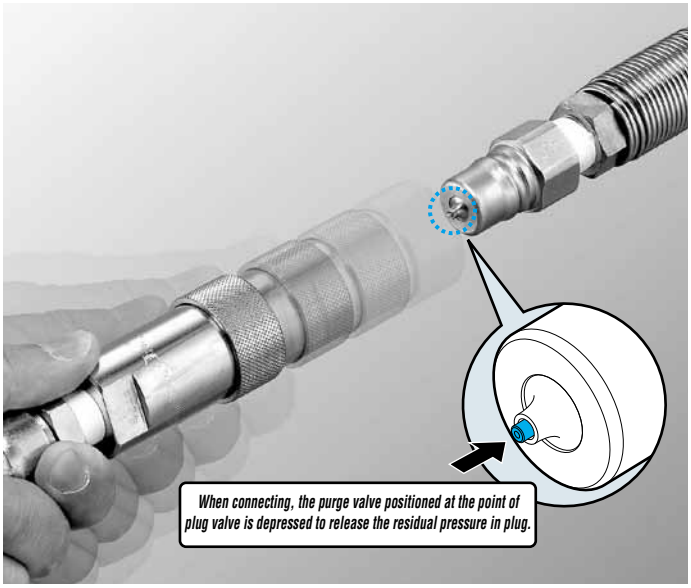
Hyper HSP Cupla

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

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

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

- **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 (Thread)		1/4", 3/8", 1/2", 3/4", 1"			
Working pressure	MPa	20.6			
	kgf/cm²	210			
	bar	206			
	PSI	2990			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks	
	Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard material	

Max. Tightening Torque — N·m {kgf·cm}

Size (Thread)	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 10⁻¹ Pa {1 x 10⁻³ mmHg}

Socket only	Plug only	When connected
—	—	Operational

Admixture of Air on Connection — (mL)

Admixture of air may vary depending upon the usage conditions.

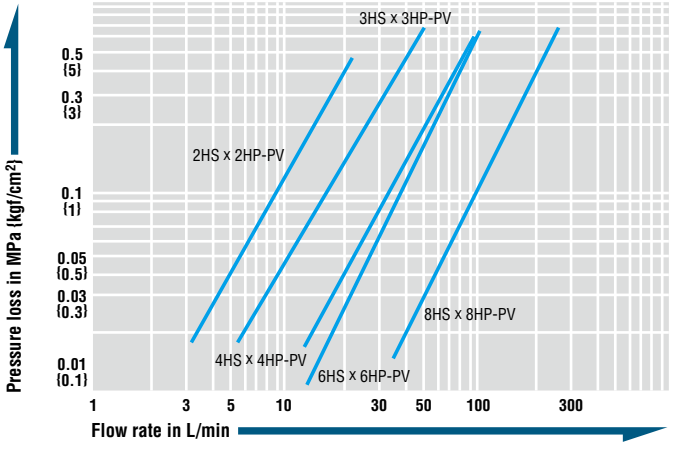
Model	2HP-PV/2HS-PV	3HP-PV/3HS-PV	4HP-PV/4HS-PV	6HP-PV/6HS-PV	8HP-PV/8HS-PV
Volume of air	0.7	1.9	3.5	3.5	12.4

Connection Load under Residual Pressure (For reference) — (N)

Residual pressure / Model	2HP-PV/2HS-PV	3HP-PV/3HS-PV	4HP-PV/4HS-PV	6HP-PV/6HS-PV	8HP-PV/8HS-PV
at 5.0 MPa	50	85	85	85	100
at 10.0 MPa	70	85	85	85	130
at 15.0 MPa	100	100	100	100	170

Flow Rate – Pressure Loss Characteristics

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

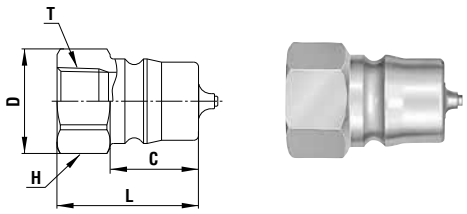


Note: Either socket or plug of Hyper HSP Cupla must be used on the line where the residual pressure remains. The counterpart of Hyper HSP must be either plug or socket of standard HSP Cupla.

Models and Dimensions

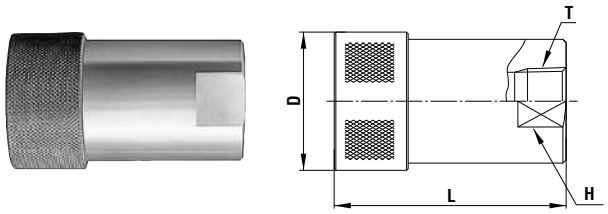
WAF : WAF stands for width across flats.

Plug HP type (Female thread)



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

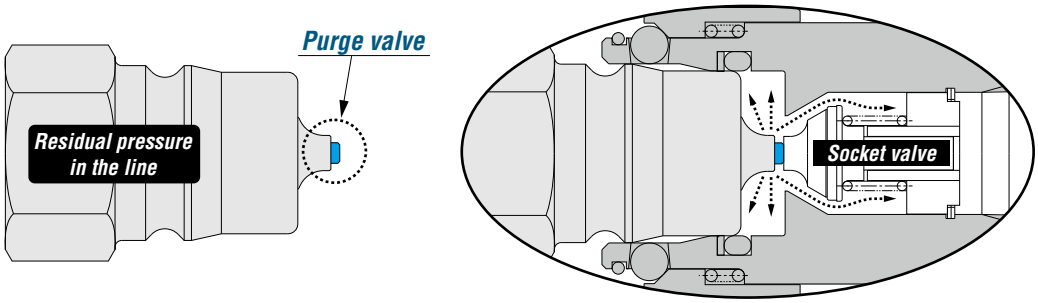
Socket HS type (Female thread)



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

Residual Pressure Release (or purge) Mechanism

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



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

For High Pressure

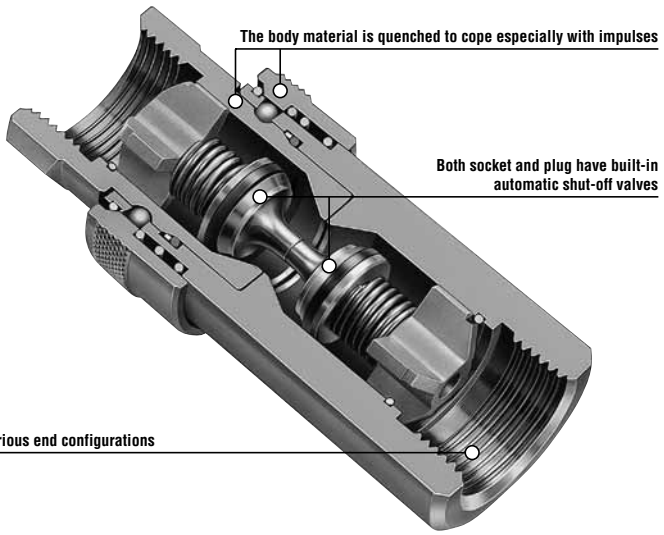
210 Cupla

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

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

Standard hydraulic Cuplas for general purposes with a working pressure up to 20.6 MPa. Low pressure loss, suitable for hydraulic equipment.

- General purpose hydraulic Cuplas with a working pressure of 20.6 MPa {210 kgf/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 (Thread)		1/4", 3/8", 1/2", 3/4", 1"			
Working pressure	MPa	20.6			
	kgf/cm²	210			
	bar	206			
	PSI	2990			
Seal material / Working temperature range		Seal material	Mark	Working temperature range	Remarks
		Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard material
		Fluoro rubber	FKM (X-100)	−20°C to +180°C	Available on request

Max. Tightening Torque — Nm {kgf•cm}

Size (Thread)	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 — 1.3 Pa {1 x 10⁻² mmHg}

Socket only	Plug only	When connected
—	—	Operational

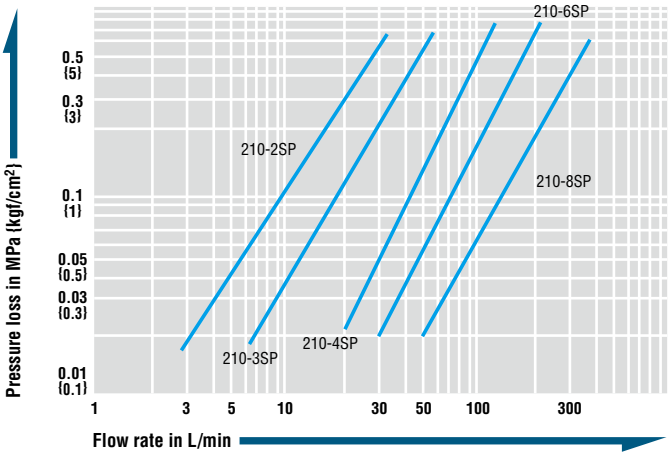
Admixture of Air on Connection — (mL)

Admixture of air may vary depending upon the usage conditions.

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



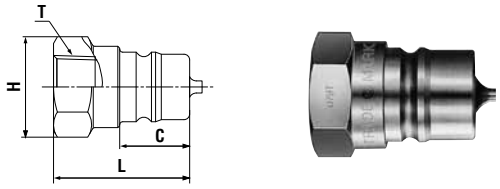
⚠Precautions for use

There is no interchangeability between 210 Cupla and HSP Cupla or 280 Cupla.
Do not connect each other even if some sizes are approximate.

Models and Dimensions

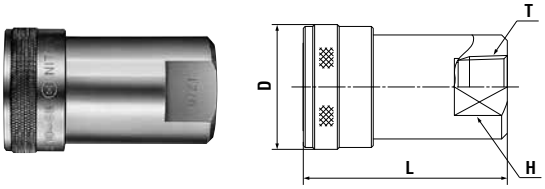
WAF : WAF stands for width across flats.

Plug Female thread



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

Socket Female thread



Model	Application	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
210-2S	R 1/4	158	50.5	(30)	22	Rc 1/4
210-3S	R 3/8	193	54	(33)	23	Rc 3/8
210-4S	R 1/2	330	65	(39)	29	Rc 1/2
210-6S	R 3/4	566	78.5	(48)	35	Rc 3/4
210-8S	R 1	861	95	(55)	41	Rc 1

Application Example

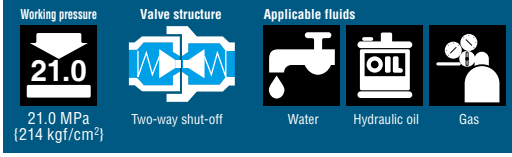

Hydraulic control equipment


Construction machinery

For High Pressure

HSU Cupla

Stainless steel Cupla for high pressure up to 21.0 MPa {214 kgf/cm²}



The flow volume is increased by between 14 to 44% while at the same time the coupled length is reduced by at least 10% compared with the S210 Cupla.

- Body material is excellent corrosion resistant stainless steel (SUS304). Suitable for use in tough/harsh environments such as offshore applications.
- Sleeve stopper mechanism can be engaged by rotating sleeve after connection.
- Despite having a stainless steel body, the working pressure, 21.0 MPa, of HSU Cupla is comparable to that of special steel body Cuplas such as HSP Cupla series.
- Both socket and plug have built-in automatic shut-off valves that prevent fluid outflow on disconnection.
- Hydrogenated nitrile rubber (HNBR) is used as a seal material for wide variety of liquids.

Specifications

Body material		Stainless steel (SUS304)		
Size (Thread)		1/4", 3/8", 1/2", 3/4", 1"		
Working pressure	MPa	21.0		
	kgf/cm²	214		
	bar	210		
	PSI	3045.8		
Seal material Working temperature range		Seal material	Mark	Working temperature range
		Hydrogenated nitrile rubber *	HNBR	−20°C to +120°C

• The seal materials used in HSU Cupla are not suitable for Freon gas.

Max. Tightening Torque N m {kgf•cm}

Size (Thread)	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 size socket and plug cannot be connected to each other.

Min. Cross-Sectional Area (mm²)

Model	HSU-2SP	HSU-3SP	HSU-4SP	HSU-6SP	HSU-8SP
Min. cross-sectional area	27.1	48.2	84.2	143.6	221.2

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

Socket only	Plug only	When connected
—	—	Operational

Admixture of Air on Connection Admixture of air may vary depending upon the usage conditions. (mL)

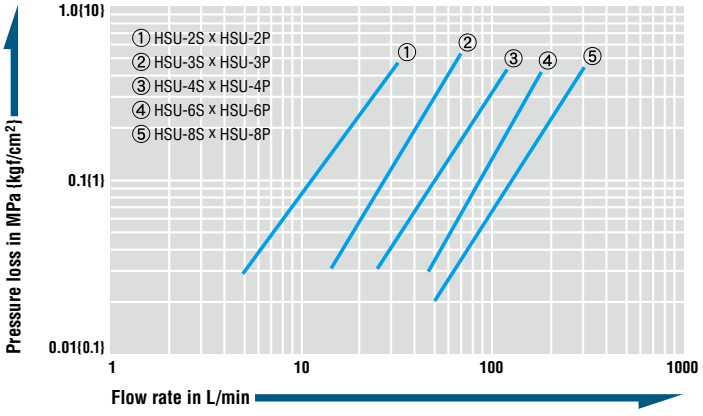
Model	HSU-2SP	HSU-3SP	HSU-4SP	HSU-6SP	HSU-8SP
Volume of air admixture	0.7	1.5	3.6	6.3	10.9

Volume of Spillage per Disconnection Volume of spillage may vary depending upon the usage conditions. (mL)

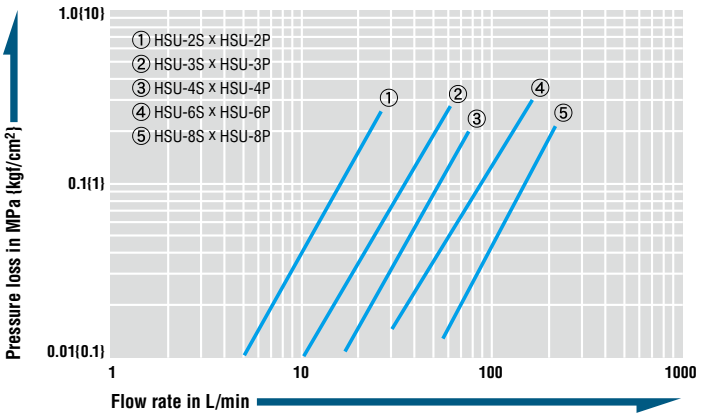
Model	HSU-2SP	HSU-3SP	HSU-4SP	HSU-6SP	HSU-8SP
Volume of spillage	0.6	1.7	3.0	6.8	11.2

Flow Rate – Pressure Loss Characteristics (Hydraulic oil / Water)

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



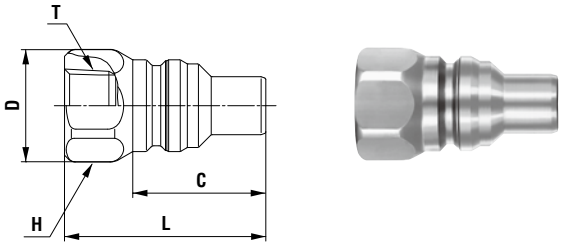
[Test conditions] •Fluid : Water •Temperature : 18°C



Models and Dimensions

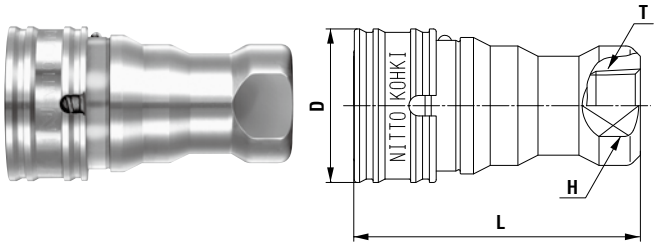
WAF : WAF stands for width across flats.

Plug Female thread



Model	Application	Mass (g)	Dimensions (mm)				
			L	C	øD	H (WAF)	T
HSU-2P	R 1/4	49	45.5	27.5	21	Hex.19	Rc 1/4
HSU-3P	R 3/8	86	51.5	32	26.5	Hex.24	Rc 3/8
HSU-4P	R 1/2	152	59	39	33	Hex.30	Rc 1/2
HSU-6P	R 3/4	295	74	51.5	42	Hex.38	Rc 3/4
HSU-8P	R 1	481	83	58	51	Hex.46	Rc 1

Socket Female thread

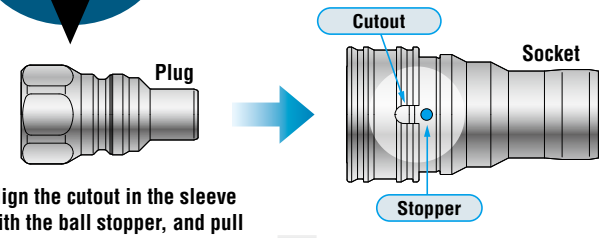


Model	Application	Mass (g)	Dimensions (mm)			
			L	øD	H (WAF)	T
HSU-2S	R 1/4	142	63	28	19	Rc 1/4
HSU-3S	R 3/8	255	71.5	35	24	Rc 3/8
HSU-4S	R 1/2	479	84	45	30	Rc 1/2
HSU-6S	R 3/4	953	106	55	38	Rc 3/4
HSU-8S	R 1	1432	118	65	46	Rc 1

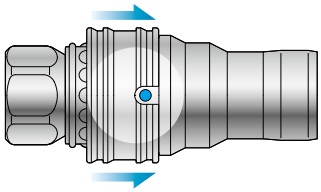
Sleeve Stopper Mechanism

Easy to operate sleeve stopper mechanism enhances operator safety.

At connection



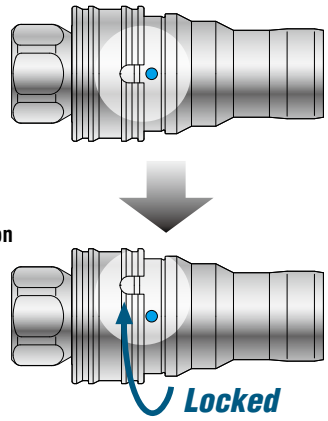
Align the cutout in the sleeve with the ball stopper, and pull the sleeve to connect the plug.



Sleeve stopper mechanism can be engaged by rotating sleeve after connection.

Locking the sleeve

Without alignment of the cutout with the ball stopper disconnection cannot be made.



Accidental disconnection is prevented.

The stopper is marked with blue for visual understanding.

For High Pressure

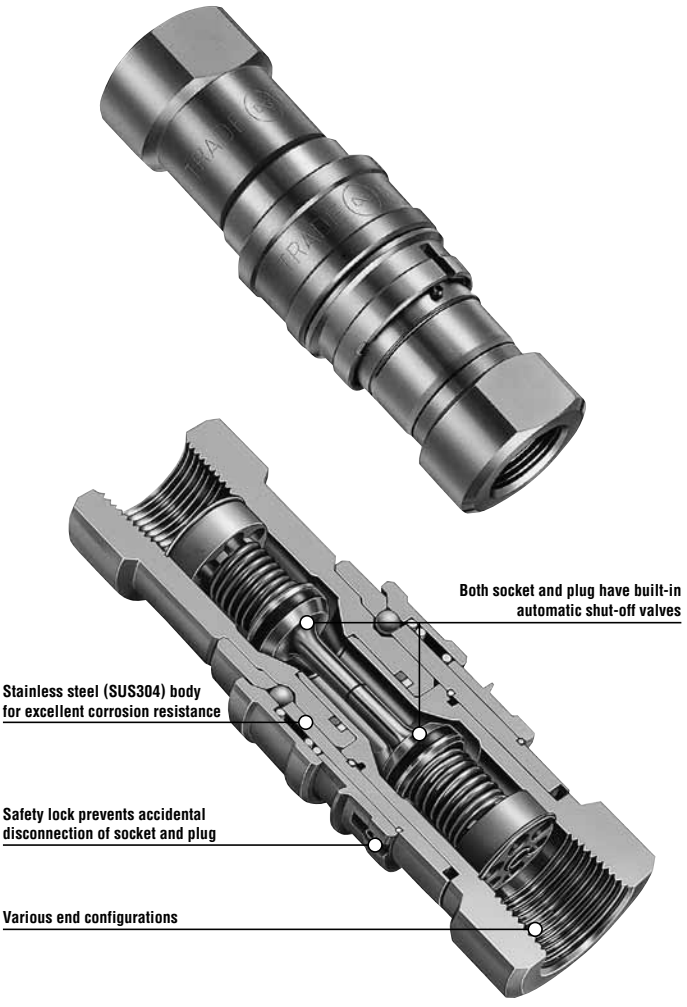
S210 Cupla

Stainless steel Cupla for high pressure up to 20.6 MPa {210 kgf/cm²}

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

Stainless steel for excellent corrosion resistance!
The unique "inner seal mechanism" accepts a working pressure up to 20.6 MPa.

- 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 20.6 MPa {210 kgf/cm²}, the same as special steel's.
- Safety lock (accidental disconnection prevention mechanism) ensures tight and secured connection under vibration or impacts.
- Both socket and plug have built-in automatic shut-off valves that prevent fluid outflow on disconnection. Easy to handle.



Specifications

Body material		Stainless steel (SUS304)			
Size (Thread)		1/4", 3/8", 1/2", 3/4", 1"			
Working pressure	MPa	20.6			
	kgf/cm²	210			
	bar	206			
	PSI	2990			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks	
	Fluoro rubber	FKM (X-100)	−20°C to +180°C	Standard material	
	Nitrile rubber	NBR (SG)	−20°C to +80°C	Made-to-order item	

• The product comes with a dust cap.

Max. Tightening Torque — Nm {kgf•cm}

Size (Thread)	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	24	47	84	153	233

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

Socket only	Plug only	When connected
—	—	Operational

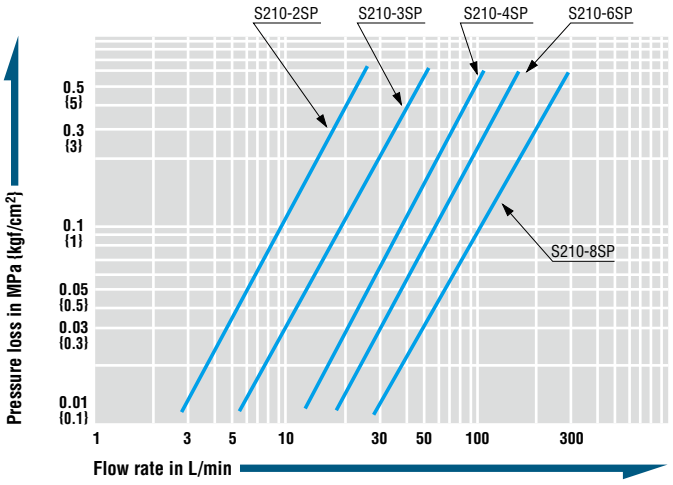
Admixture of Air on Connection — (mL)

Admixture of air may vary depending upon the usage conditions.

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

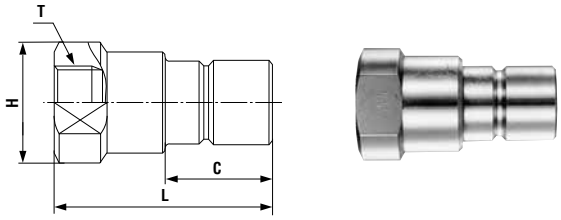
[Test conditions] •Fluid : Hydraulic oil •Temperature : 30°C ± 5°C
•Fluid viscosity : 32 x 10⁻⁶ m²/s •Density : 0.87 x 10³ kg/m³



Models and Dimensions

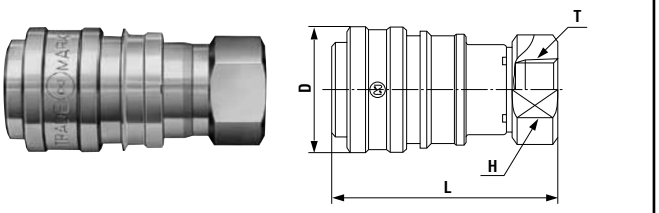
WAF : WAF stands for width across flats.

Plug Female thread



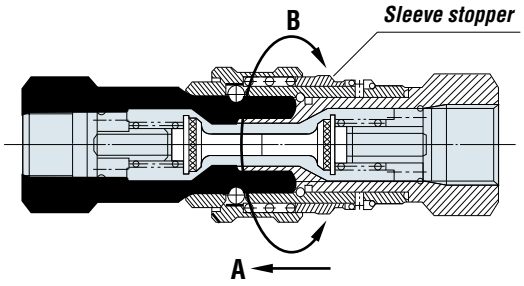
Model	Application	Mass (g)	Dimensions (mm)			
			L	C	H(WAF)	T
S210-2P	R 1/4	74	50.5	20	19 x ø22	Rc 1/4
S210-3P	R 3/8	127	59	24	24 x ø28	Rc 3/8
S210-4P	R 1/2	239	70.5	28	30 x ø35	Rc 1/2
S210-6P	R 3/4	446	81.5	35.5	38 x ø44	Rc 3/4
S210-8P	R 1	939	100	47.5	50 x ø58	Rc 1

Socket Female thread



Model	Application	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
S210-2S	R 1/4	137	(59)	27	19	Rc 1/4
S210-3S	R 3/8	226	(68.5)	32	24	Rc 3/8
S210-4S	R 1/2	406	(81)	39.7	30	Rc 1/2
S210-6S	R 3/4	710	(97.5)	48	38	Rc 3/4
S210-8S	R 1	1,381	(118)	62	50	Rc 1

Construction of and How to Use Safety Lock (Accidental Disconnection Prevention Mechanism)



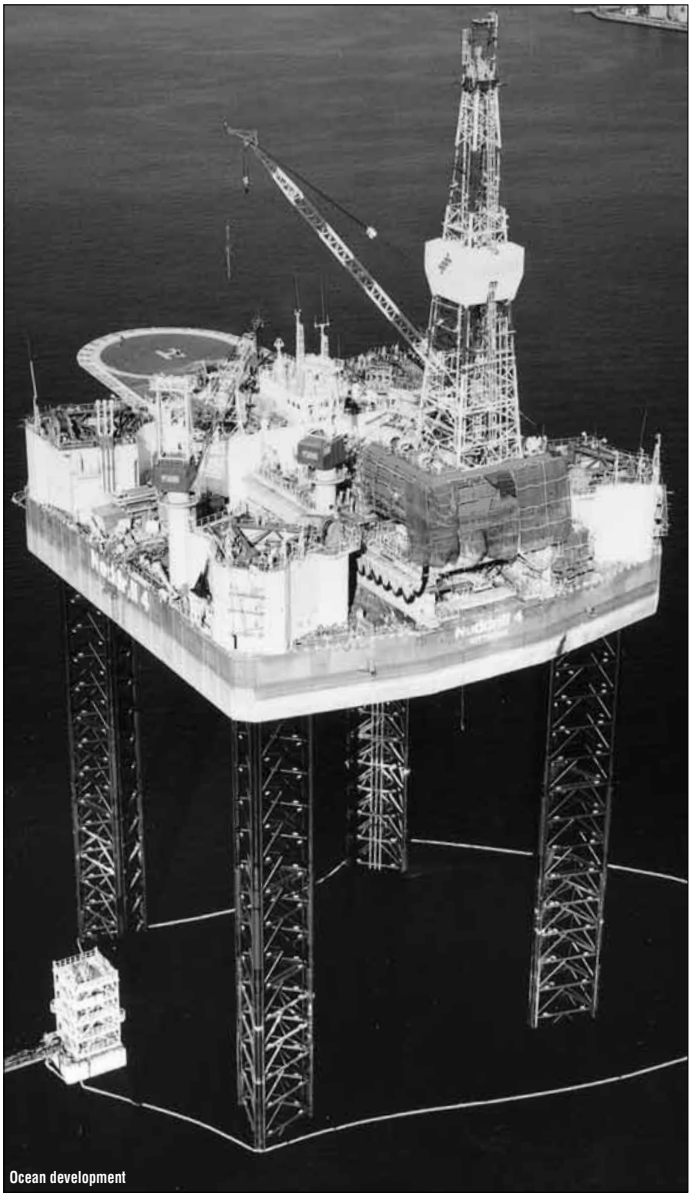
To lock the sleeve

Push the sleeve stopper towards A and turn 90˚ clockwise or counterclockwise 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.

Application Example



Ocean development

For High Pressure

280 Cupla

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

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

Valve structure: Two-way shut-off

Applicable fluids: Hydraulic oil

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

- Complys with international standard ISO 7241-1A.
- General purpose hydraulic Cuplas with the working pressure up to 27.5 to 31.5 MPa {281 to 321 kgf/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. Easy to handle.
- Special steel body material is adopted for its excellent strength and additional quenching treatment is done to withstand hydro pressure impacts.

Specifications

Body material		Special steel (Bright chromate conversion coating : silver)		
Size (Thread)		1/4", 3/8"	1/2", 3/4", 1"	
Working pressure	MPa	31.5	27.5	
	kgf/cm²	321	281	
	bar	315	275	
	PSI	4570	3990	
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard material

Max. Tightening Torque — Nm {kgf•cm}

Size (Thread)	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 — 1.3 Pa {1 x 10⁻² mmHg}

Socket only	Plug only	When connected
—	—	Operational

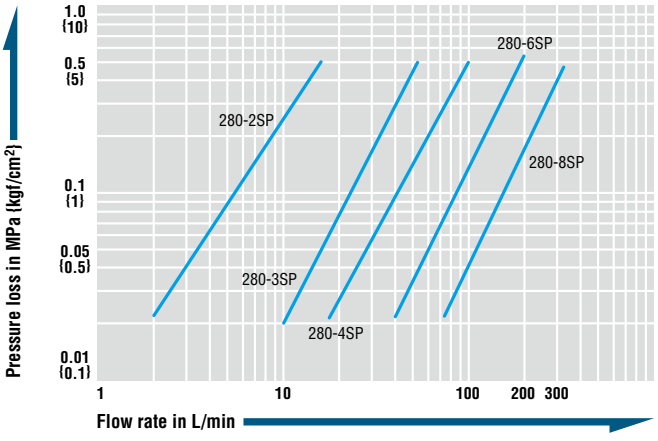
Admixture of Air on Connection — (mL)

Admixture of air may vary depending upon the usage conditions.

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^{-6} m^2/s •Density : 0.87 x 10^3 kg/m^3



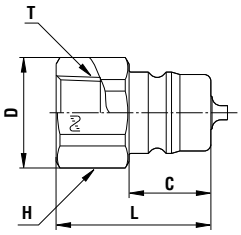
⚠Precautions for use

**There is no interchangeability between 280 Cupla and HSP Cupla or 210 Cupla.
Do not connect each other even if some sizes are approximate.**

Models and Dimensions

WAF : WAF stands for width across flats.

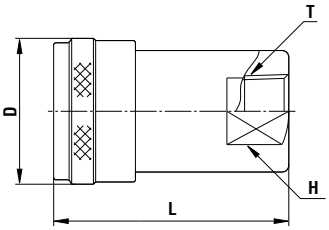
Plug Female thread



Model	Application	Mass (g)	Dimensions (mm)				
			L	øD	C	H(WAF)	T
280-2P	R 1/4	35	31.5	20.5	15	Hex.19	Rc 1/4
280-3P	R 3/8	59	35	25	18.5	Hex.23	Rc 3/8
280-4P	R 1/2	115	44	32	24.5	Hex.29	Rc 1/2
280-6P	R 3/4	178	52.5	35	28	Hex.32	Rc 3/4
280-8P	R 1	331	63.5	44	35	41	Rc 1

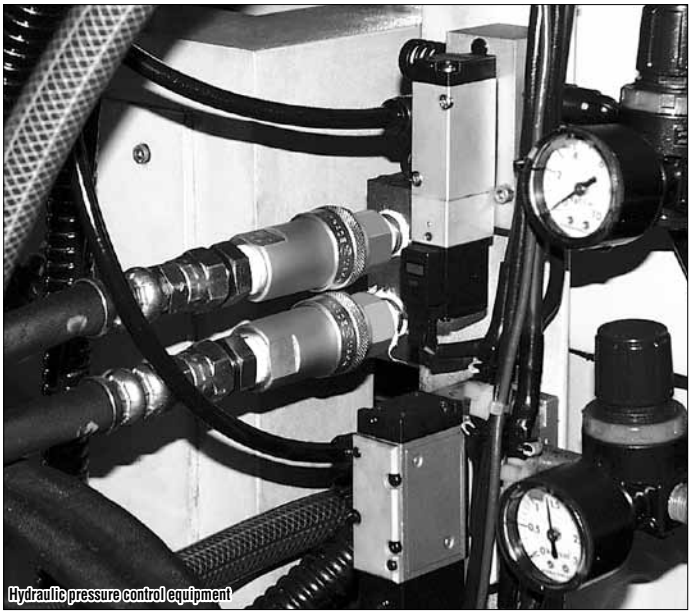
* Internal structural design of 280-6S and 280-8S is partly different from the above drawing.

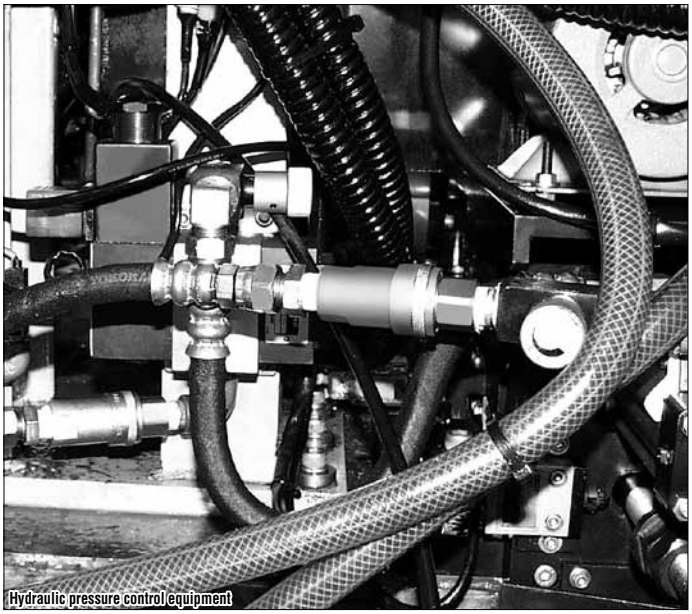
Socket Female thread



Model	Application	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
280-2S	R 1/4	110	46	(27)	19	Rc 1/4
280-3S	R 3/8	185	53	(33)	23	Rc 3/8
280-4S	R 1/2	335	66.5	(39)	29	Rc 1/2
280-6S	R 3/4	571	81	(48)	35	Rc 3/4
280-8S	R 1	871	98	(55)	41	Rc 1

Application Example


Hydraulic pressure control equipment


Hydraulic pressure control equipment

For High Pressure

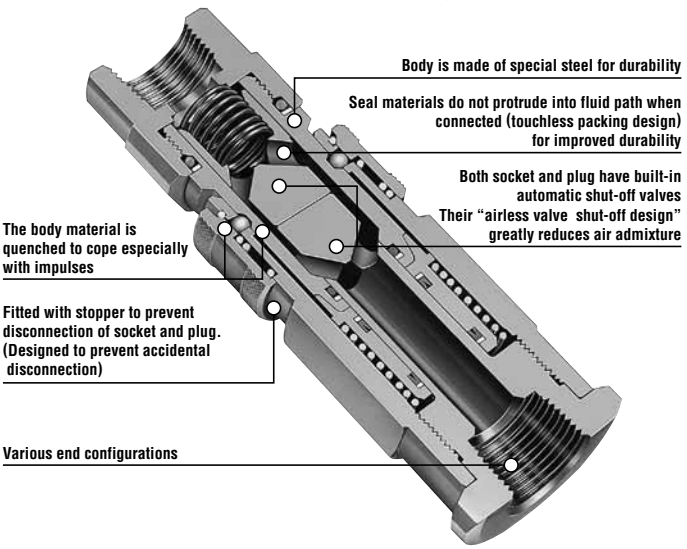
350 Cupla

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

Working pressure: 34.5 MPa {352 kgf/cm²}
Valve structure: Two-way shut-off (Non-Spill)
Applicable fluids: Hydraulic oil

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

- Locking mechanism to prevent accidental disconnection ensures tight connection even under vibration or impact.
- Both socket and plug have built-in automatic shut-off valves to prevent fluid spill out when disconnected. Easy to handle.



Specifications

Body material		Special steel (Nickel-plated)		
Size (Thread)		1/4", 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2"		
Working pressure	MPa	34.5		
	kgf/cm²	352		
	bar	345		
	PSI	5000		
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Fluoro rubber	FKM (X-100)	−20°C to +180°C	Standard material
	Nitrile rubber	NBR (SG)	−20°C to +80°C	Made-to-order item

Max. Tightening Torque

Nm {kgf•cm}

Size (Thread)	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	34.2	34.2	73.0	149.6	227.0	452.4	452.4	907.9

Suitability for Vacuum

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

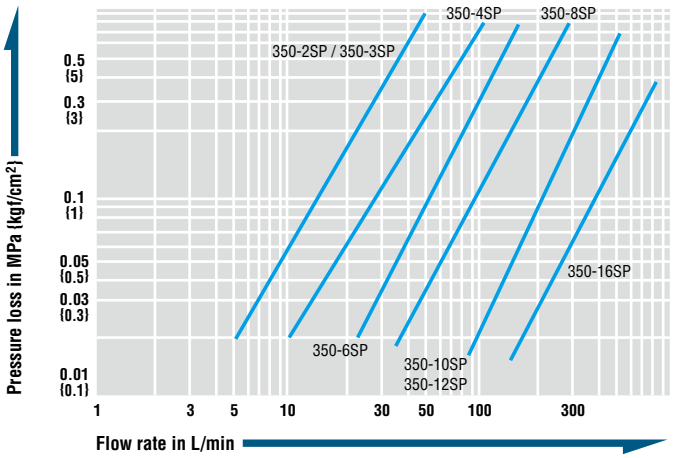
Admixture of Air on Connection

Admixture of air may vary depending upon the usage conditions. (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} m^2/s •Density : 0.87 x 10^3 kg/m^3



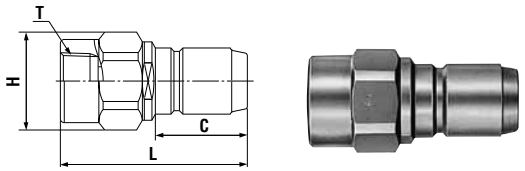
⚠Precautions for use

Do not connect / disconnect Cuplas when pressure is applied or remaining.

Models and Dimensions

Product appearance may vary by size. / **WAF** : WAF stands for width across flats.

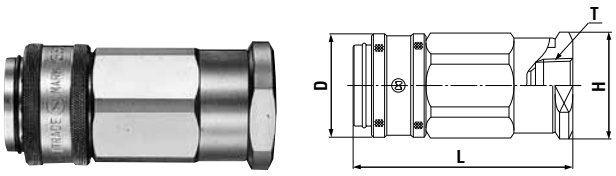
Plug Female thread



Model	Application	Mass (g)	Dimensions (mm)			
			L	C	H(WAF)	T
350-2P	R 1/4	170	(72)	36	Hex.27 x ø29	Rc 1/4
350-3P	R 3/8	167	(72)	36	Hex.27 x ø29	Rc 3/8
350-4P	R 1/2	245	85	40.5	Hex.27 x ø30	Rc 1/2
350-6P	R 3/4	473	(90)	44.5	Hex.41 x ø45	Rc 3/4
350-8P	R 1	1,035	(119)	57	Hex.50 x ø55	Rc 1
350-10P	R 1 1/4	2,700	(144)	75	Hex.70 x ø78	Rc 1 1/4
350-12P	R 1 1/2	2,600	(144)	75	Hex.70 x ø78	Rc 1 1/2
350-16P*	R 2	7,500	(198)	85.5	90 x ø105	Rc 2

* Available on request
• G thread is available on request.

Socket Female thread



Model	Application	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
350-2S	R 1/4	360	(82)	(34)	Hex.30	Rc 1/4
350-3S	R 3/8	353	(82)	(34)	Hex.30	Rc 3/8
350-4S	R 1/2	545	(93.5)	(41)	Hex.36	Rc 1/2
350-6S	R 3/4	976	(105.5)	(49)	46 x ø52	Rc 3/4
350-8S	R 1	1,740	(129)	(63)	55 x ø62	Rc 1
350-10S	R 1 1/4	5,600	(180)	89	Hex.80 x ø90	Rc 1 1/4
350-12S	R 1 1/2	5,500	(180)	89	Hex.80 x ø90	Rc 1 1/2
350-16S*	R 2	14,500	(239)	117	105	Rc 2

* Available on request
• G thread is available on request.

Application Example

Hydraulic unit

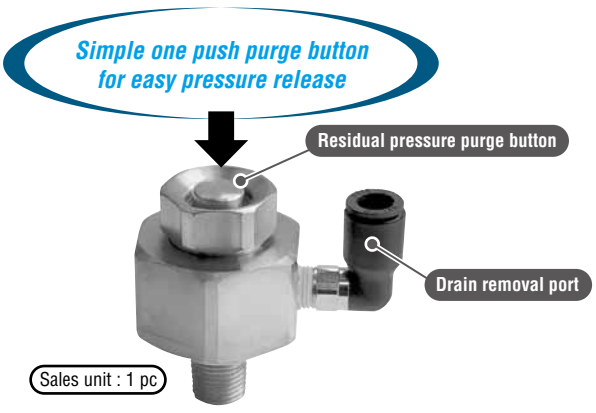
Optional Accessory

Purge Adapter

Metal Purge Adapter for hydraulic lines (Semi-standard)

• Can be attached to hydraulic lines to purge residual pressure effectively.

Model	**PAD-2** (Part No.CB19855)
Applicable fluid	Hydraulic oil
Material	Steel (With autocatalytic nickel-phosphorus coating)
Working pressure	35.0 MPa, 357 kgf/cm^2, 350 bar, 5080 PSI
Seal material	Nitrile rubber (NBR)
Working temperature range	−5°C to +80



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.

For High Pressure

Flat Face Cupla F35

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

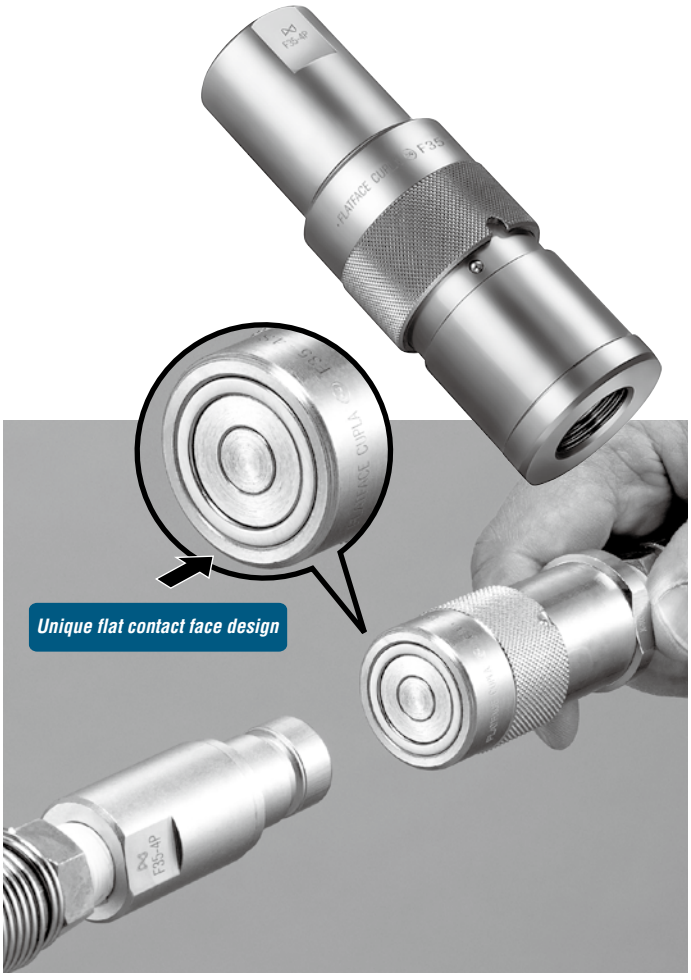
Working pressure: 35.0 MPa {357 kgf/cm²}

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

Applicable fluids: Hydraulic oil

Flat contact face design reduces spill upon disconnection by less than half compared with that of conventional design.

- Flat contact face design makes it easy to clean dust and foreign matters adhered on the surface of coupling so as to prevent them from entering inside and thus causing faulty operation of connection or disconnection.
- Flat contact face design minimizes air admixture during connection to keep the possible malfunction of equipment caused by the air bubbles in the hydraulic line at minimum level.
- Push-to-connect operation.
- Sleeve stopper mechanism is engaged by rotating sleeve after connection. It prevents accidental disconnection even when vibration or impact is applied to the Cupla.
- The special design reduces pressure loss considerably, and especially suited to hydraulic applications in which big flow is needed. Both socket and plug have built-in automatic shut-off valves that prevent fluid spill out on disconnection.



Specifications

Body material		Special steel (Nickel-plated)			
Size (Thread)		1/4", 3/8", 1/2", 3/4", 1"			
Working pressure	MPa	35.0			
	kgf/cm²	357			
	bar	350			
	PSI	5080			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks	
	Fluoro rubber	FKM (X-100)	−20°C to +180°C	Standard material	
	Nitrile rubber	NBR (SG)	−20°C to +80°C	Made-to-order item	

Max. Tightening Torque — N·m {kgf·cm}

Size (Thread)	1/4"	3/8"	1/2"	3/4"	1"
Torque	28 {286}	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	F35-2SP	F35-3SP	F35-4SP	F35-6SP	F35-8SP
Min. cross-sectional area	34.2	34.2	73.0	149.6	227.0

Suitability for Vacuum

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

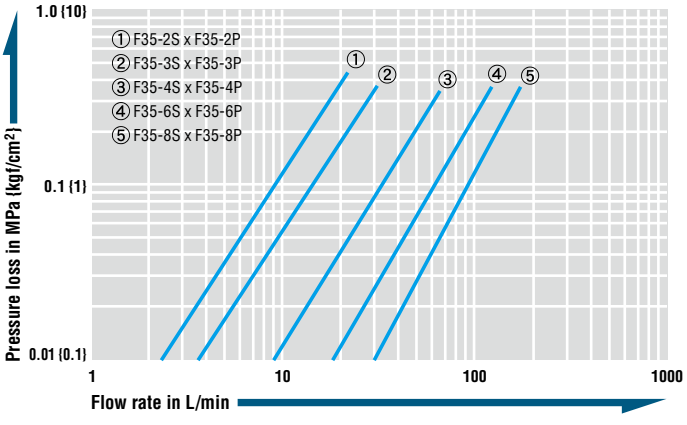
Admixture of Air on Connection — (mL)

Model	F35-2SP	F35-3SP	F35-4SP	F35-6SP	F35-8SP
Volume of air	0.1	0.1	0.2	0.3	0.4

*Spillage volume of liquid on each disconnection depends on usage conditions.

Flow Rate – Pressure Loss Characteristics

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



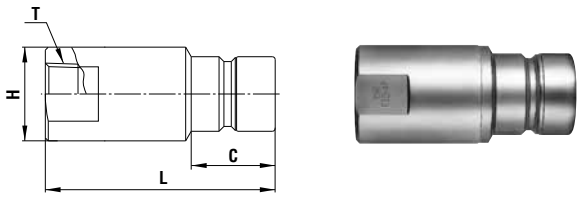
⚠ Precautions for use

Do not connect / disconnect Cuplas when pressure is applied or remaining.

Models and Dimensions

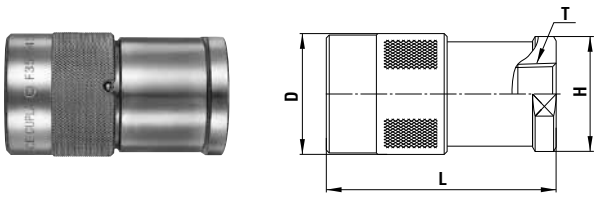
WAF : WAF stands for width across flats.

Plug Female thread



Model	Application	Mass (g)	Dimensions (mm)			
			L	C	H(WAF)	T
F35-2P	R 1/4	106	58	18.8	19 x ø21.5	Rc 1/4
F35-3P	R 3/8	190	67.5	24	24 x ø27	Rc 3/8
F35-4P	R 1/2	290	78	28.5	27 x ø31.7	Rc 1/2
F35-6P	R 3/4	460	84.5	31	36 x ø40	Rc 3/4
F35-8P	R 1	1000	108	39	46 x ø50	Rc 1

Socket Female thread



Model	Application	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
F35-2S	R 1/4	182	(57.5)	(28)	26 x ø28.5	Rc 1/4
F35-3S	R 3/8	320	(70)	(34)	30 x ø33	Rc 3/8
F35-4S	R 1/2	490	(78)	(41)	36 x ø39	Rc 1/2
F35-6S	R 3/4	815	(85)	(49)	46 x ø50	Rc 3/4
F35-8S	R 1	1520	(104)	(63)	55 x ø62	Rc 1

Application Example

Snow plow

For High Pressure

Flat Face Cupla FF

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

Working pressure: 35.0 MPa {357 kgf/cm²}
Valve structure: Two-way shut-off (Non-Spill)
Applicable fluids: Hydraulic oil

Compared with Nitto's conventional 35 MPa Cuplas, the flow volume is increased 1.5 to 2 times.

***Increase ratio of each flow volume depends on the Cupla size.**

- "Airless valve shut-off" design minimizes spillage volume on disconnection and admixture volume of air on connection.
- Best suited for hydraulic lines with drastic high pressure pulsation such as in die-casting machines.
- Sleeve stopper design preventing accidental disconnection under vibration or impacts enhances workability and safety.
- Sizes are Rc 3/8, Rc 1/2, Rc 3/4, and Rc 1.
  *Only the same size of socket and plug can be connected.

Offset concave flat face enables quick and smooth connection

Unique flat face design

Concaved offset for the flat face on socket guides plug for quick and smooth centering and connection, but still easy to wipe off dirt and dusts.

Hexagon nut for easy mount

Specifications

Body material		Special steel (Autocatalytic nickel-phosphorus coating)			
Size (Thread)		3/8", 1/2", 3/4", 1"			
Working pressure	MPa	35.0			
	kgf/cm²	357			
	bar	350			
	PSI	5080			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks	
	Nitrile rubber	NBR	−20°C to +80°C	Standard material	

Max. Tightening Torque N m {kgf•cm}

Size (Thread)	3/8"	1/2"	3/4"	1"
Torque	40 {408}	80 {816}	150 {1530}	250 {2550}

Flow Direction

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

Interchangeability

Different size socket and plug cannot be connected each other.

Min. Cross-Sectional Area (mm²)

Model	FF-3S x FF-3P	FF-4S x FF-4P	FF-6S x FF-6P	FF-8S x FF-8P
Min. cross-sectional area	51	106	215	332

Suitability for Vacuum

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

Admixture of Air on Connection (mL)

Model	FF-3S x FF-3P	FF-4S x FF-4P	FF-6S x FF-6P	FF-8S x FF-8P
Volume of air admixture	0.018	0.029	0.033	0.080

*Admixture volume of air on each connection depends on usage conditions.

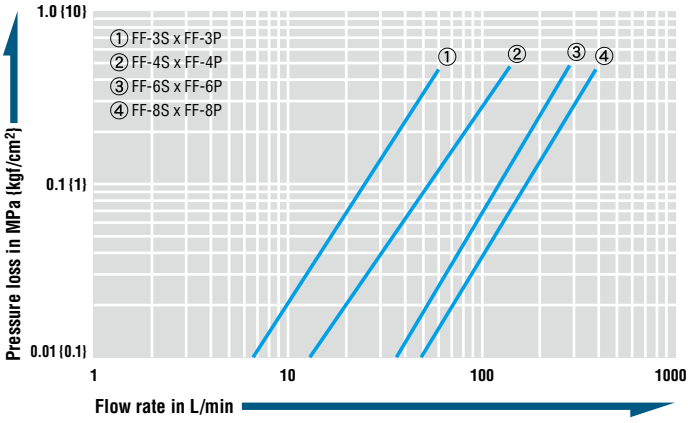
Volume of Spillage per Disconnection (mL)

Model	FF-3S x FF-3P	FF-4S x FF-4P	FF-6S x FF-6P	FF-8S x FF-8P
Volume of spillage	0.009	0.023	0.031	0.110

*Spillage volume of liquid on each disconnection depends on usage conditions.

Flow Rate – Pressure Loss Characteristics

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



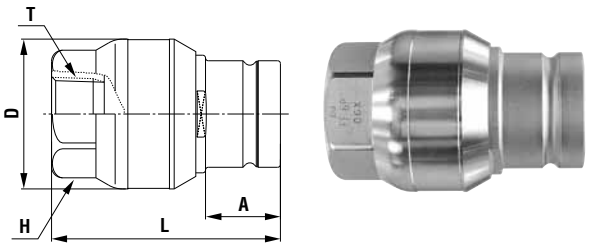
⚠Precautions for use

Do not connect / disconnect Cuplas when pressure is applied or remaining.

Models and Dimensions

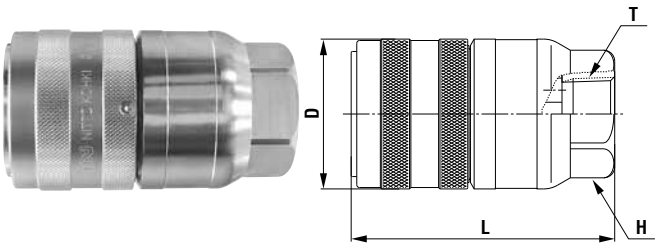
WAF : WAF stands for width across flats.

Plug Female thread



Model	Application	Mass (g)	Dimensions (mm)				
			L	øD	A	H (WAF)	T
FF-3P	R 3/8	252	(66)	34	20.5	Hex.29	Rc 3/8
FF-4P	R 1/2	409	(74)	42	22.8	Hex.32	Rc 1/2
FF-6P	R 3/4	709	(82.5)	54	27	Hex.41	Rc 3/4
FF-8P	R 1	1314	(96.5)	66	29.5	Hex.54	Rc 1

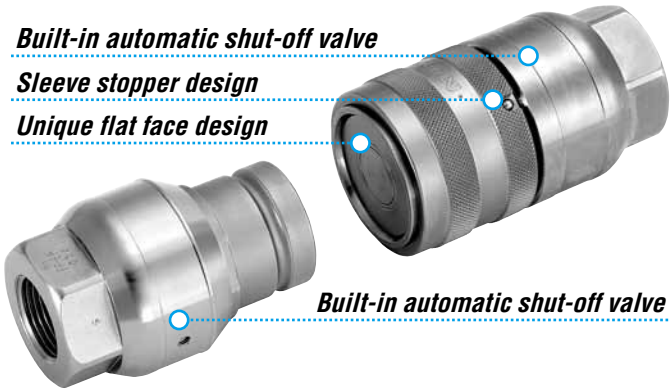
Socket Female thread



Model	Application	Mass (g)	Dimensions (mm)			
			L	øD	H (WAF)	T
FF-3S	R 3/8	345	(71)	(35.5)	Hex.29	Rc 3/8
FF-4S	R 1/2	608	(84)	(44)	Hex.32	Rc 1/2
FF-6S	R 3/4	1053	(95)	(54)	Hex.41	Rc 3/4
FF-8S	R 1	1865	(109.5)	(66)	Hex.54	Rc 1

Applications

- *Hydraulic piping for die-casting machines*
- *Casting machines*
- *Electric furnaces*
- *Molding presses*
- *Forging press*
- *Powdery alloy presses*
- *Extrusion molding machines*
- *Machine tools*
- *Iron manufacturing blast furnaces*
- *Continuous casting machines*
- *Rolling mills*
- *Pipe forging machines*
- *Furnace opening / closing machines*
- *Glass molding machines, etc.*



For High Pressure

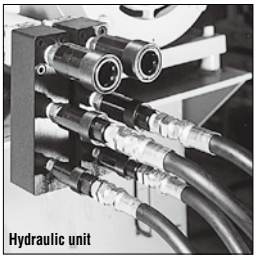
450B Cupla

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

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

Metal-touch valve system with superior durability! Sleeve stopper mechanism gives secure connection.

- Cupla for higher working pressure up to 44.1 MPa {450 kgf/cm²}.
- Mechanism to prevent accidental disconnection ensures tight connection even under vibration or impact when connected.
- Both socket and plug have metal-touch automatic shut-off valves that prevent fluid spill out on disconnection.


Hydraulic unit

Admixture of Air on Connection
Admixture of air may vary depending upon the usage conditions. (mL)

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

Specifications

Body material		Special steel (Nickel-plated)		
Size (Thread)		3/8", 1/2"		
Working pressure	MPa	44.1		
	kgf/cm²	450		
	bar	441		
	PSI	6400		
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard material
	Fluoro rubber	FKM (X-100)	−20°C to +180°C	Made-to-order item
Stand-alone leakage rate on either socket or plug	0.1 mL/min at 0.3 MPa {3 kgf/cm²}			

Max. Tightening Torque
Nm {kgf·cm}

Size (Thread)	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 interchangeable.

Min. Cross-Sectional Area
(mm²)

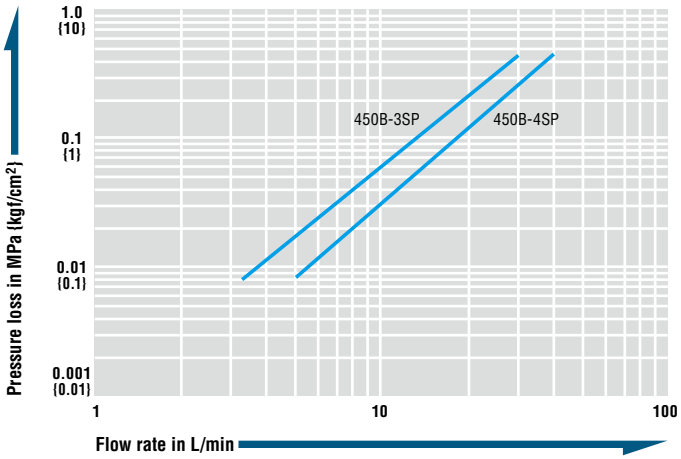
Model	450B-3SP	450B-4SP
Min. cross-sectional area	37	66

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

Socket only	Plug only	When connected
—	—	Operational

Flow Rate – Pressure Loss Characteristics

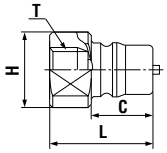
[Test conditions] •Fluid : Hydraulic oil •Temperature : 25°C ± 5°C
•Fluid viscosity : 32 x 10⁻⁶ m²/s •Density : 0.87 x 10³ kg/m³



Models and Dimensions

WAF : WAF stands for width across flats.

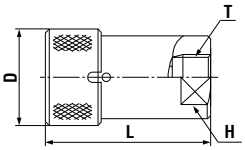
Plug Female thread



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

* Made-to-order item

Socket Female thread



Model	Application	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
450B-3S	R 3/8	285	59.5	(36)	24	Rc 3/8
450B-4S*	R 1/2	–	85	(46)	36	Rc 1/2

* Made-to-order item

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

For High Pressure

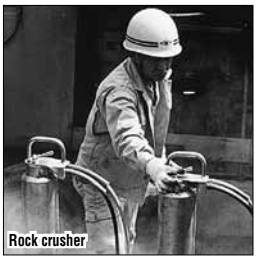
700R Cupla

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

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

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

- 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.


Rock crusher

Admixture of Air on Connection
Admixture of air may vary depending upon the usage conditions. (mL)

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

Specifications

Body material		Special steel (Nickel-plated)			
Size (Thread)		3/8", 1/2"			
Working pressure	MPa	68.6			
	kgf/cm²	700			
	bar	686			
	PSI	9950			
Seal material Working temperature range		Seal material	Mark	Working temperature range	Remarks
		Nitrile rubber	NBR (SG)	−20°C to +80°C	Standard material
		Fluoro rubber	FKM (X-100)	−20°C to +180°C	Made-to-order item
Stand-alone leakage rate on either socket or plug		For 700R-3SP, 0.05 mL/min at 0.2 MPa {2 kgf/cm²} For 700R-4SP, 0.05 mL/min at 0.3 MPa {3 kgf/cm²}			

Max. Tightening Torque
Nm {kgf•cm}

Size (Thread)	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 interchangeable.

Min. Cross-Sectional Area
(mm²)

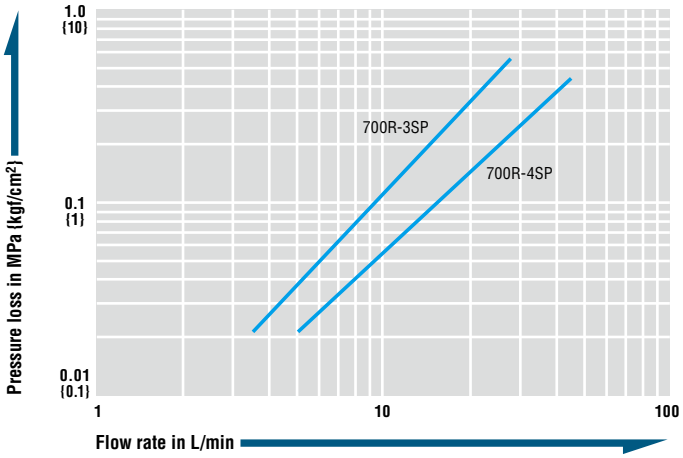
Model	700R-3SP	700R-4SP
Min. cross-sectional area	34	55

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

Socket only	Plug only	When connected
—	—	Operational

Flow Rate – Pressure Loss Characteristics

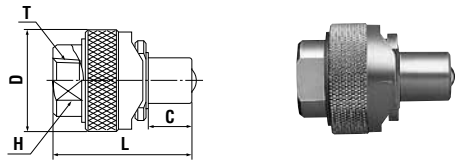
[Test conditions] •Fluid : Hydraulic oil •Temperature : 30°C ±5°C
•Fluid viscosity : 32 x 10⁻⁶ m²/s •Density : 0.87 x 10³ kg/m³



Models and Dimensions

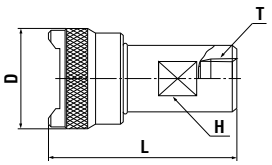
WAF : WAF stands for width across flats.

Plug Female thread



Model	Application	Mass (g)	Dimensions (mm)				
			L	C	øD	H(WAF)	T
700R-3P	R 3/8	210	54	18	39.5	24	Rc 3/8
700R-4P	R 1/2	418	70	22	50	27	Rc 1/2

Socket Female thread



Model	Application	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
700R-3S	R 3/8	270	(73)	39.5	22	Rc 3/8
700R-4S	R 1/2	562	(91)	50	27	Rc 1/2

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

For Multi-Port Connection (Manual)

Multi Cupla

MAM Type

Multiple air port system

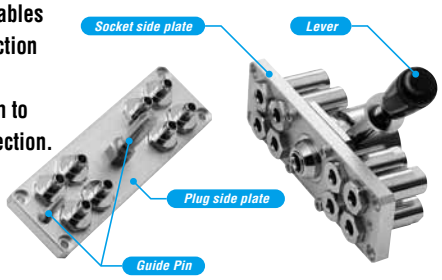
Working pressure: 0.7 MPa {7 kgf/cm²}

Valve structure: One-way shut-off

Applicable fluid: Air

Simultaneously connects several ports securely in one operation! Greatly cuts cycle time in multiple ports replacement.

- Handles several ports at once.
- Simple action with lever enables easy connection / disconnection manually.
- Comes with lock mechanism to prevent accidental disconnection.
- Valve on socket side only.



Specifications

Body material		Cupla : Brass (Chrome-plated) Plate : Aluminum alloy (4, 8, 12 ports) / Plate : Steel (16 ports) Locking unit : Steel and others		
Size (Thread)		Rc 1/8		
Working pressure	MPa	0.7		
	kgf/cm²	7		
	bar	7		
	PSI	102		
Seal material Working temperature range		Seal material	Mark	Working temperature range
		Nitrile rubber	NBR (SG)	−20°C to +60°C

Max. Tightening Torque — Nm {kgf•cm}

Torque	5 {51}

Interchangeability

No connection is possible between plates with different number of ports.

Min. Cross-Sectional Area — (mm²)

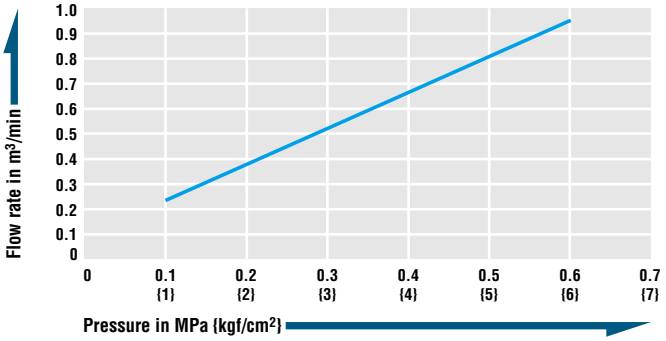
Per port	15.9

Suitability for Vacuum

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

Pressure - Flow Characteristics — Per port with Cupla

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



Models and Dimensions

WAF : WAF stands for width across flats.

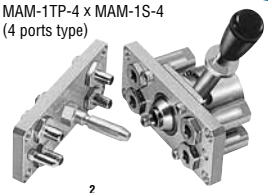
Model MAM-1TP-4 x MAM-1S-4 (4 ports type)

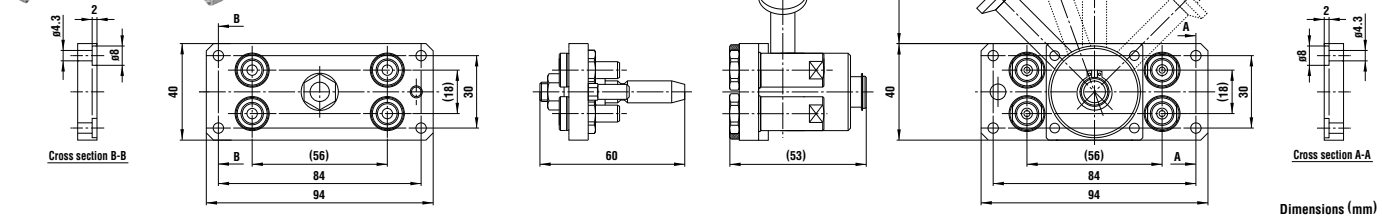
Application: R 1/8 Mass: 150 g (Plug), 500 g (Socket)

Plug: Model MAM-1TP-4

Socket: Model MAM-1S-4

MAM-1TP-4 x MAM-1S-4 (4 ports type)





Dimensions (mm)

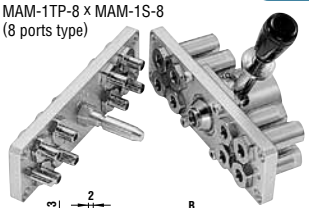
Model MAM-1TP-8 x MAM-1S-8 (8 ports type)

Application: R 1/8 Mass: 250 g (Plug), 650 g (Socket)

Plug: Model MAM-1TP-8

Socket: Model MAM-1S-8

MAM-1TP-8 x MAM-1S-8 (8 ports type)

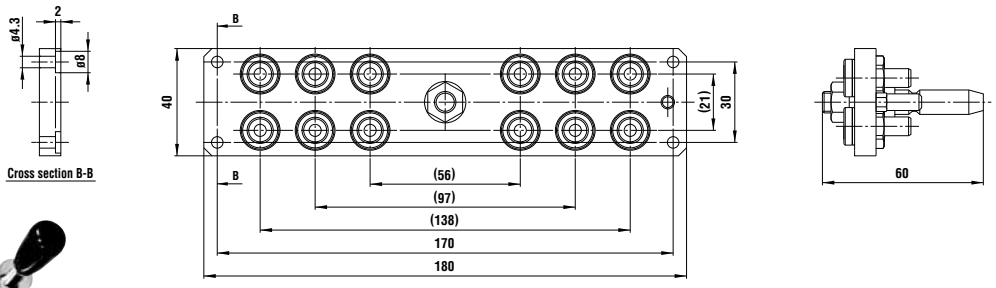


Dimensions (mm)

Model MAM-1TP-12 x MAM-1S-12 (12 ports type)

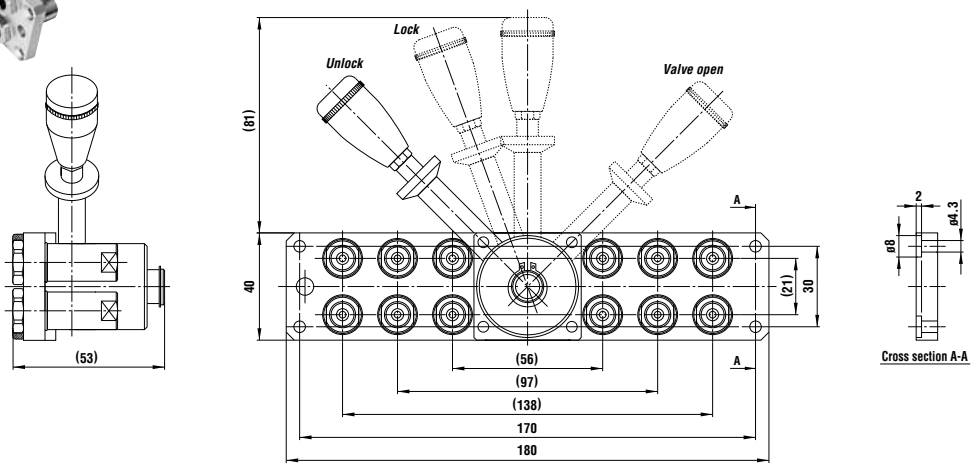
Application: R 1/8 **Mass: 350 g (Plug), 800 g (Socket)**

Plug: Model **MAM-1TP-12**



MAM-1TP-12 x MAM-1S-12
(12 ports type)

Socket: Model **MAM-1S-12**

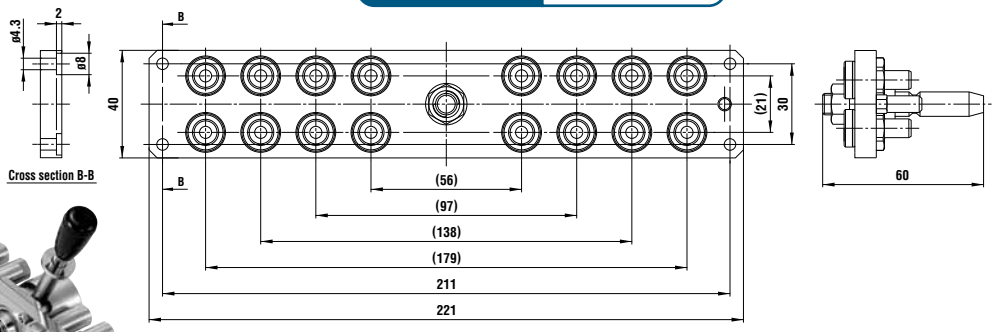


Dimensions (mm)

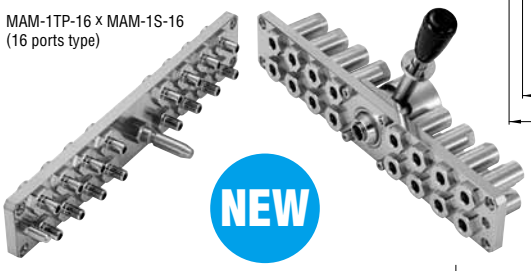
Model MAM-1TP-16 x MAM-1S-16 (16 ports type)

Application: R 1/8 **Mass: 680 g (Plug), 1180 g (Socket)**

Plug: Model **MAM-1TP-16**

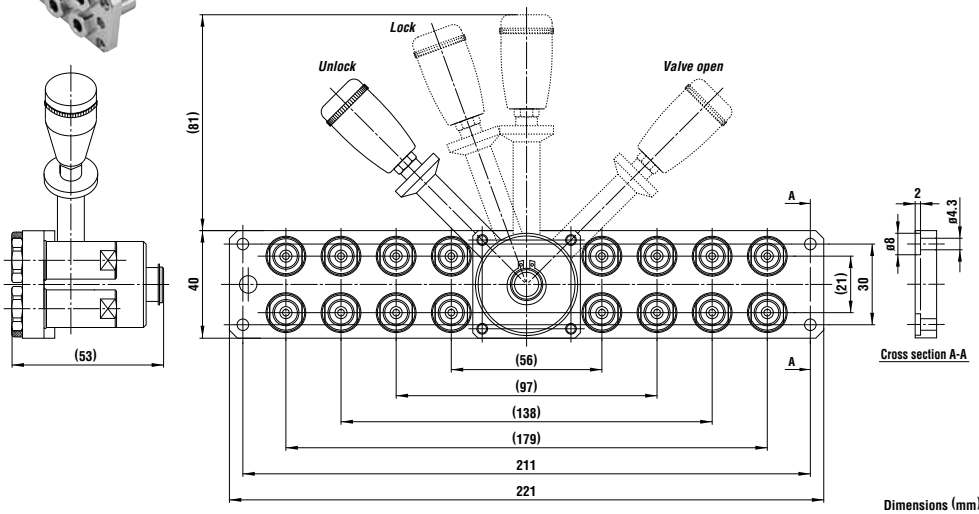


MAM-1TP-16 x MAM-1S-16
(16 ports type)



NEW

Socket: Model **MAM-1S-16**



Dimensions (mm)

For Multi-Port Connection (Manual)

Multi Cupla

MAM-B Type

Multiple port system

Working pressure: 1.0 MPa {10 kgf/cm²}

Valve structure: Two-way shut-off

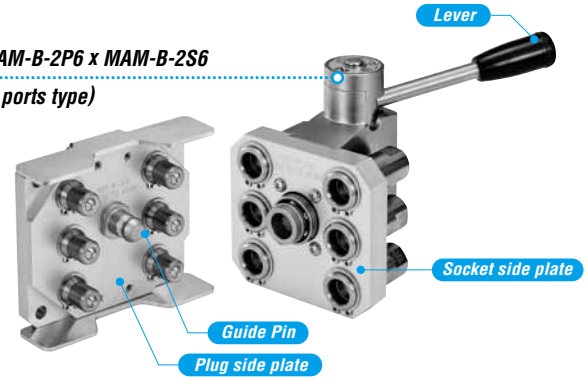
Applicable fluid: Air, Water

Simultaneously connects several ports securely in one operation. Greatly reduces changeover time in multiple ports replacement.

- Handles several ports at once.
- Simple manual lever action completes easy connection / disconnection.
- Two-stage lever operation prevents Cupla from accidental dropping due to sudden detachment.
- Comes with lock mechanism to prevent accidental disconnection.
- Large flow equivalent to that of SP Cupla Type A.
- Two kinds of plates are available for each size.
- Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection.
- Self-aligned valve design provides safety sealing of individual socket or plug when disconnected.

MAM-B-2P6 x MAM-B-2S6

(6 ports type)

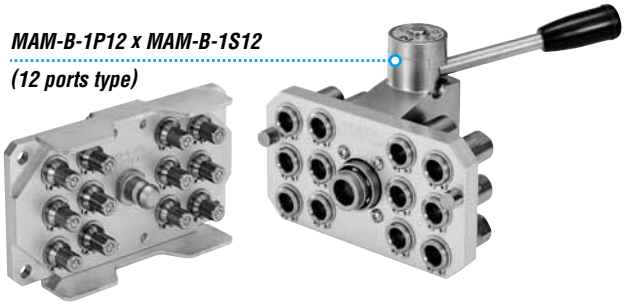


MAM-B-1P8 x MAM-B-1S8

(8 ports type)

MAM-B-1P12 x MAM-B-1S12

(12 ports type)



Specifications

Model					
	Plug	MAM-B-1P8	MAM-B-1P12	MAM-B-2P6	MAM-B-2P8
	Socket	MAM-B-1S8	MAM-B-1S12	MAM-B-2S6	MAM-B-2S8
Number of ports		8	12	6	8
Size (Thread)		1/8"		1/4"	
Body material		Cupla: Brass (Nickel-plated) Plate: Aluminum alloy Locking unit: Steel (Autocatalytic nickel-phosphorus coating)			
Working pressure	MPa	1.0			
	kgf/cm²	10			
	bar	10			
	PSI	145			
Ambient temperature range		0°C to +60°C			

Sealing material Working temperature range	Sealing material	Mark	Working temperature range	Remarks
	Fluoro rubber	FKM (X-100)	−20°C to +180°C	Standard material

Max. Tightening Torque — Nm {kgf•cm}

Size (Thread)	1/8"	1/4"
Torque	5 {51}	9 {92}

Interchangeability

No connection is possible between plates with different number of ports.

Min. Cross-Sectional Area per Port — (mm²)

Model	1SP type	2SP type
Min. cross-sectional area	14	26

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

Socket only	Plug only	When connected
—	—	Operational

Admixture of Air on Connection per Port — (mL)

Admixture of air may vary depending upon the usage conditions.

Model	1SP type	2SP type
Volume of air	0.6	1.1

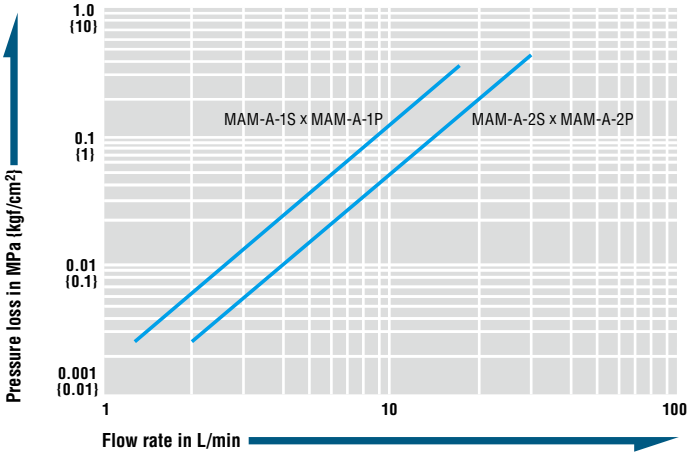
Volume of Spillage on Disconnection per Port — (mL)

Volume of spillage may vary depending upon the usage conditions.

Model	1SP type	2SP type
Volume of spillage	0.4	0.8

Flow Rate - Pressure Loss Characteristics — Per port of Cupla

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



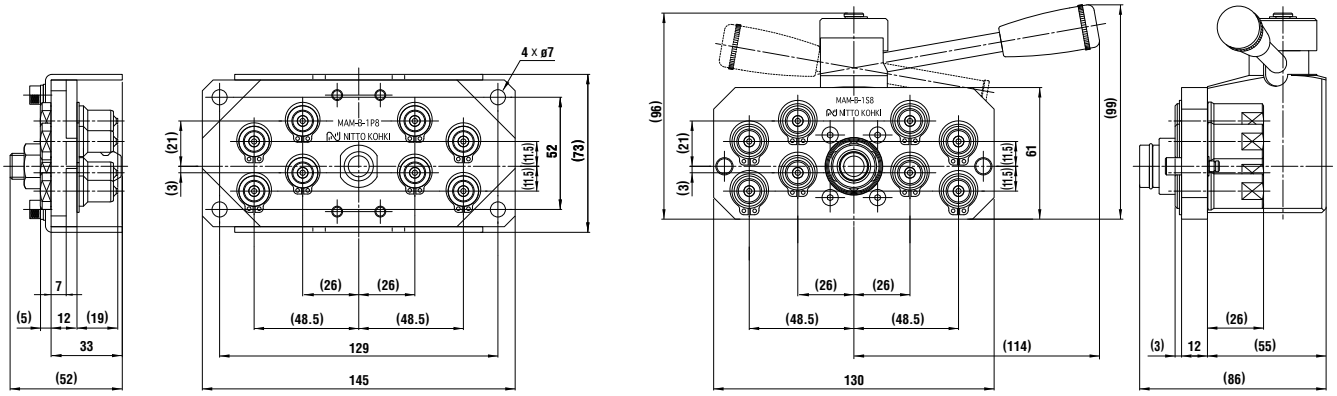
Models and Dimensions

WAF : WAF stands for width across flats.

Model MAM-B-1P8 x MAM-B-1S8 (8 ports type)

• Application: R 1/8 Mass: 660 g (Plug), 1210 g (Socket)

Plug: Model MAM-B-1P8 **Socket: Model** MAM-B-1S8

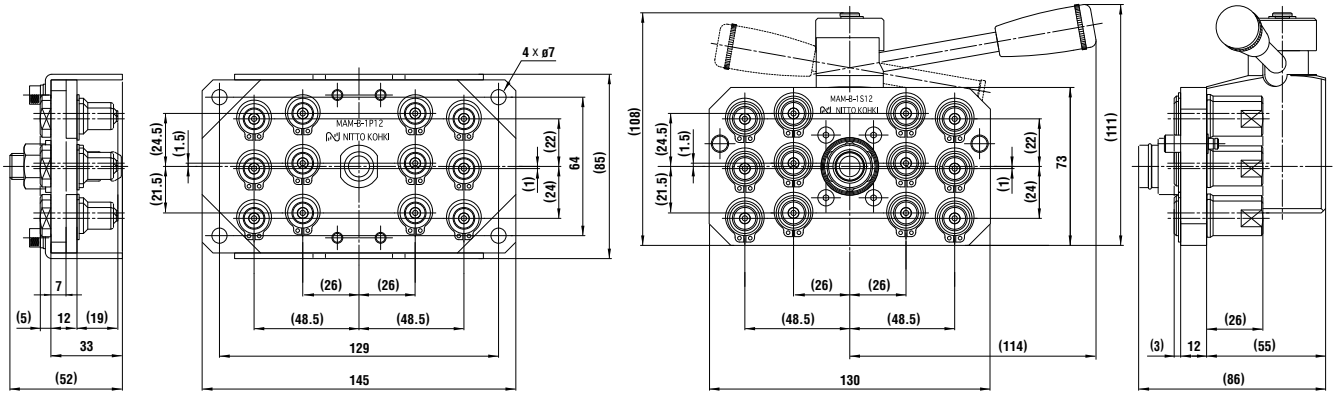


Dimensions (mm)

Model MAM-B-1P12 x MAM-B-1S12 (12 ports type)

• Application: R 1/8 Mass: 790 g (Plug), 1430 g (Socket)

Plug: Model MAM-B-1P12 **Socket: Model** MAM-B-1S12

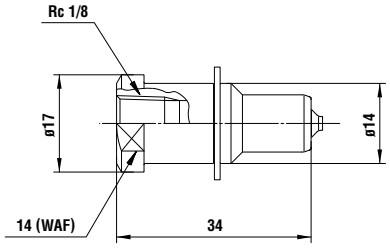


Dimensions (mm)

Plug Model MAM-A-1P (Individual Cupla)

• Application: R 1/8 Mass: 25 g

• Can be mounted on model MAM-B-1P8 and MAM-B-1P12.

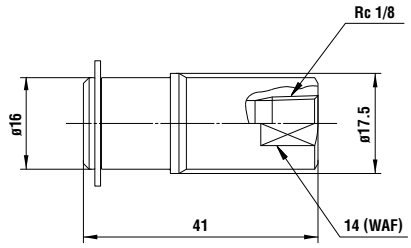


Dimensions (mm)

Socket Model MAM-A-1S (Individual Cupla)

• Application: R 1/8 Mass: 49 g

• Can be mounted on model MAM-B-1S8 and MAM-B-1S12.



Dimensions (mm)

Made-to-order Multi Cuplas are available on request, such as a combination of different sizes on the flange plate.

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

Models and Dimensions

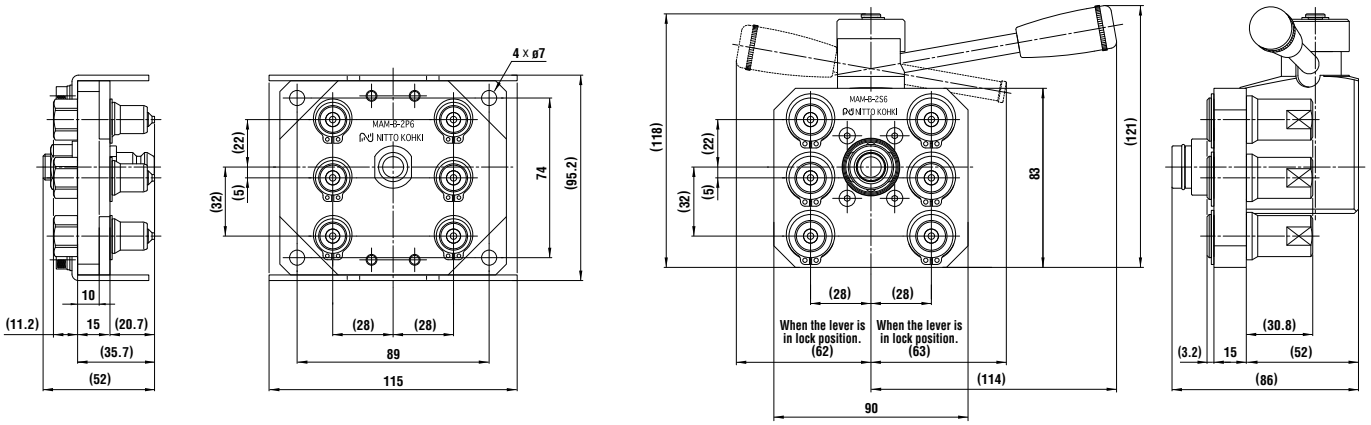
WAF : WAF stands for width across flats.

Model MAM-B-2P6 x MAM-B-2S6 (6 ports type)

• Application: R 1/4 Mass: 740 g (Plug), 1280 g (Socket)

Plug: Model MAM-B-2P6

Socket: Model MAM-B-2S6



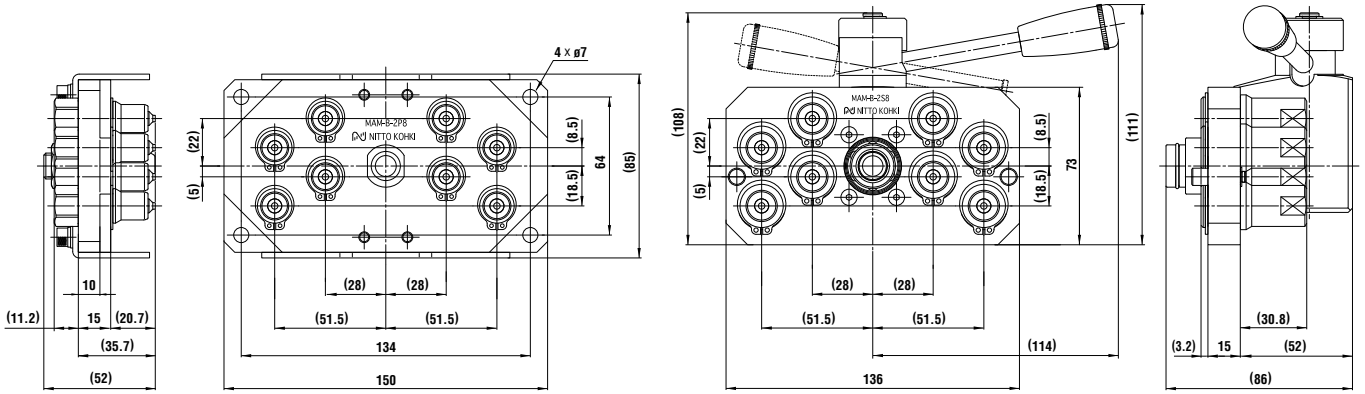
Dimensions (mm)

Model MAM-B-2P8 x MAM-B-2S8 (8 ports type)

• Application: R 1/4 Mass: 920 g (Plug), 1550 g (Socket)

Plug: Model MAM-B-2P8

Socket: Model MAM-B-2S8

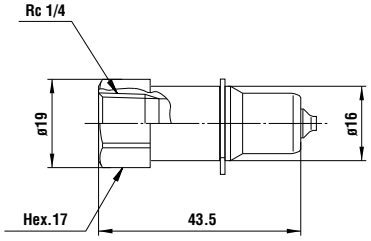


Dimensions (mm)

Plug Model MAM-A-2P (Individual Cupla)

• Application: R 1/4 Mass: 40 g

• Can be mounted on model MAM-B-2P6 and MAM-B-2P8.

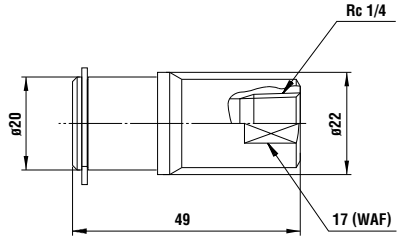


Dimensions (mm)

Socket Model MAM-A-2S (Individual Cupla)

• Application: R 1/4 Mass: 82 g

• Can be mounted on model MAM-B-2S6 and MAM-B-2S8.

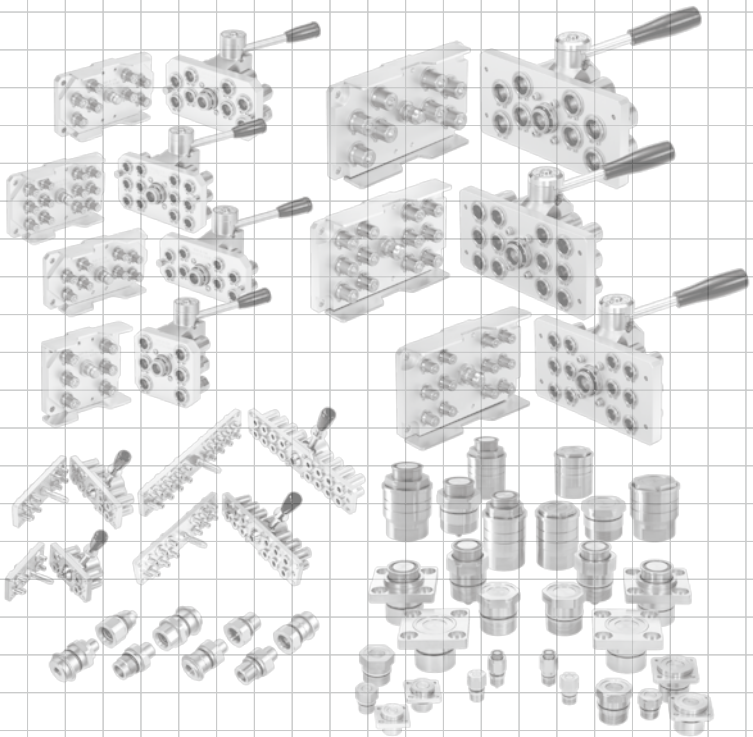


Dimensions (mm)

Made-to-order Multi Cuplas are available on request, such as a combination of different sizes on the flange plate.

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

MULTI CUPLA SERIES



For Multi-Port Connection (Manual)

Multi Cupla

MAM-A Type

Multiple port system

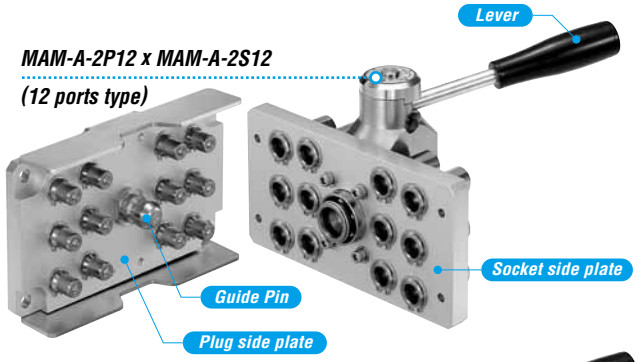
Working pressure: 1.0 MPa {10 kgf/cm²}

Valve structure: Two-way shut-off

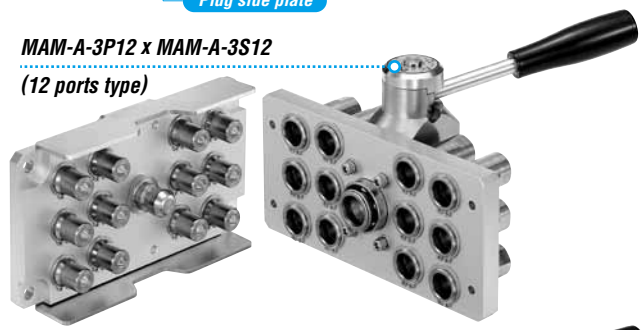
Applicable fluid: Air, Water

Simultaneously connects several ports securely in one operation! Greatly reduces changeover time in multiple ports replacement.

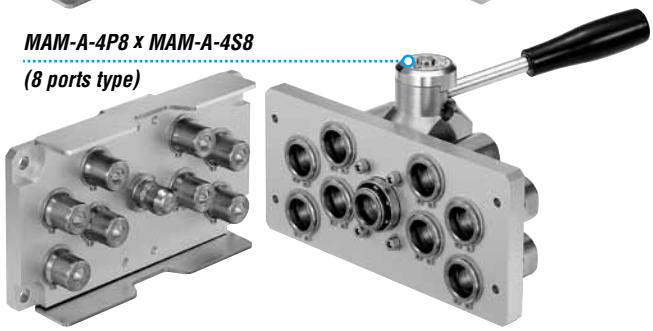
- Handles several ports at once.
- Simple manual lever action completes easy connection / disconnection.
- Two-stage lever operation prevents Cupla from accidental dropping due to sudden detachment.
- Comes with lock mechanism to prevent accidental disconnection.
- Large flow equivalent to that of SP Cupla Type A.
- Two kinds of plates are available for each size.
- Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection.
- Self-aligned valve design provides safety sealing of individual socket or plug when disconnected.



MAM-A-2P12 x MAM-A-2S12
(12 ports type)



MAM-A-3P12 x MAM-A-3S12
(12 ports type)



MAM-A-4P8 x MAM-A-4S8
(8 ports type)

Specifications

Model	Plug	MAM-A-2P6	MAM-A-2P12	MAM-A-3P6	MAM-A-3P12	MAM-A-4P4	MAM-A-4P8
	Socket	MAM-A-2S6	MAM-A-2S12	MAM-A-3S6	MAM-A-3S12	MAM-A-4S4	MAM-A-4S8
Number of ports		6	12	6	12	4	8
Size (Thread)		1/4"		3/8"		1/2"	
Body material		Cupla: Brass (Nickel-plated) Plate: Aluminum alloy Locking unit: Steel (Autocatalytic nickel-phosphorus coating)					
Working pressure	MPa	1.0					
	kgf/cm²	10					
	bar	10					
	PSI	145					
Ambient temperature range		0°C to +60°C					

Sealing material Working temperature range	Sealing material	Mark	Working temperature range	Remarks
	Fluoro rubber	FKM (X-100)	−20°C to +180°C	Standard material

Max. Tightening Torque — Nm {kgf•cm}

Size (Thread)	1/4"	3/8"	1/2"
Torque	9 {92}	12 {122}	30 {306}

Interchangeability

No connection is possible between plates with different number of ports.

Min. Cross-Sectional Area per Port — (mm²)

Model	2SP type	3SP type	4SP type
Min. cross-sectional area	26	51	73

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

Socket only	Plug only	When connected
—	—	Operational

Admixture of Air on Connection per Port — (mL)

Admixture of air may vary depending upon the usage conditions.

Model	2SP type	3SP type	4SP type
Volume of air	1.1	2.7	3.9

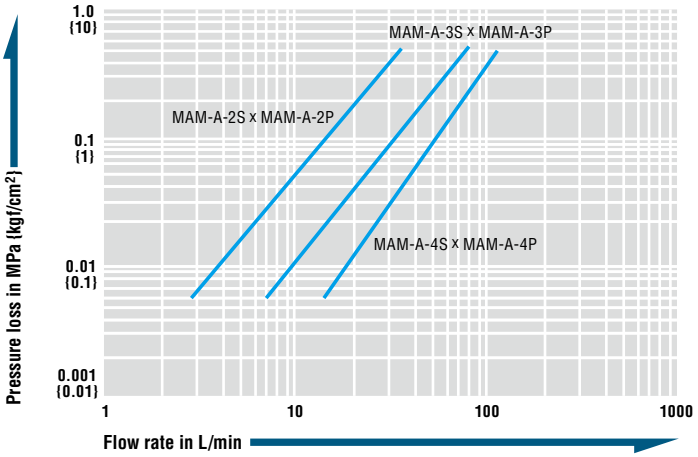
Volume of Spillage on Disconnection per Port — (mL)

Volume of spillage may vary depending upon the usage conditions.

Model	2SP type	3SP type	4SP type
Volume of spillage	0.8	2.1	3.4

Flow Rate - Pressure Loss Characteristics — Per port of Cupla

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



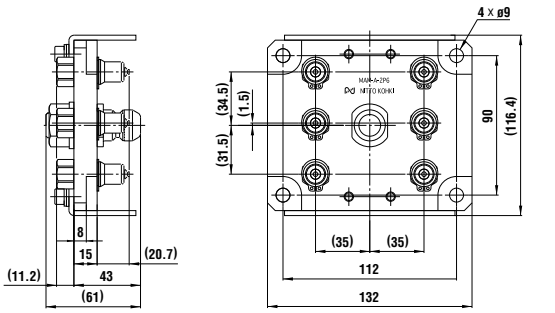
Models and Dimensions

WAF : WAF stands for width across flats.

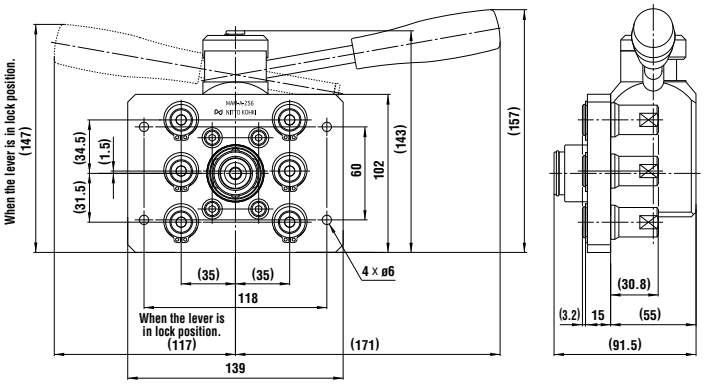
Model MAM-A-2P6 x MAM-A-2S6 (6 ports type)

• Application: R 1/4 Mass: 1100 g (Plug), 2150 g (Socket)

Plug: Model MAM-A-2P6



Socket: Model MAM-A-2S6

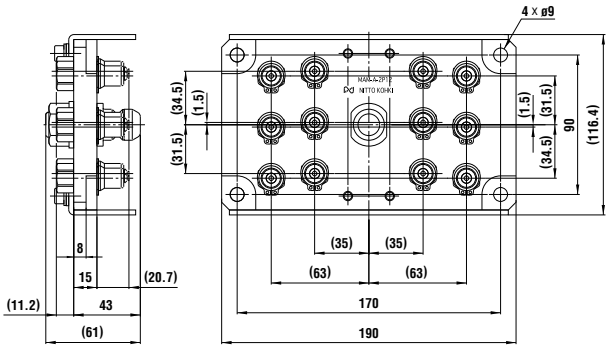


Dimensions (mm)

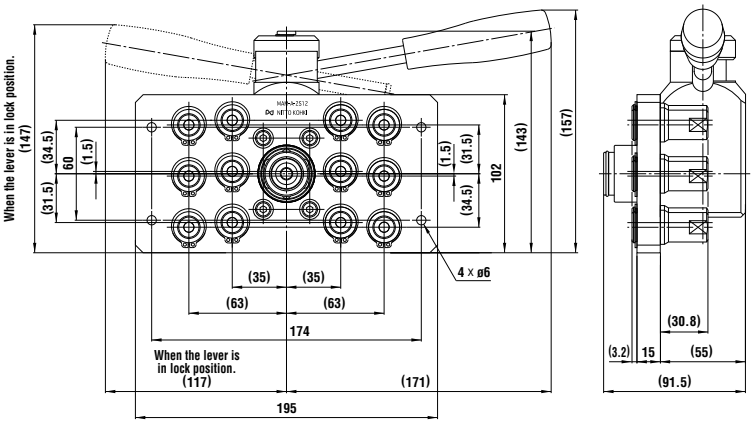
Model MAM-A-2P12 x MAM-A-2S12 (12 ports type)

• Application: R 1/4 Mass: 1650 g (Plug), 2800 g (Socket)

Plug: Model MAM-A-2P12



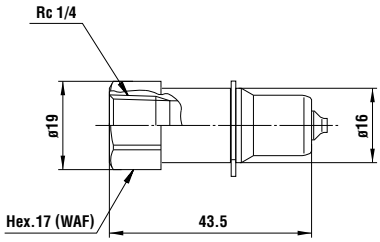
Socket: Model MAM-A-2S12



Dimensions (mm)

Plug Model MAM-A-2P (Individual Cupla)

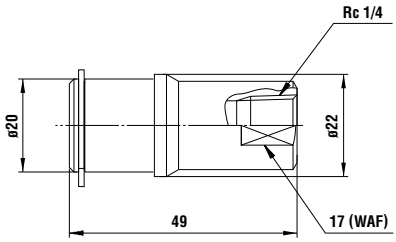
• Application: R 1/4 Mass: 40 g



Dimensions (mm)

Socket Model MAM-A-2S (Individual Cupla)

• Application: R 1/4 Mass: 82 g



Dimensions (mm)

Made-to-order Multi Cuplas are available on request, such as a combination of different sizes on the flange plate.

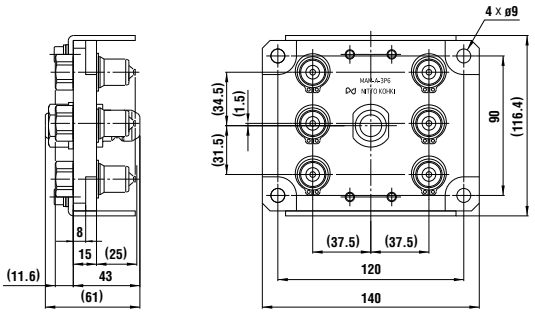
Models and Dimensions

WAF : WAF stands for width across flats.

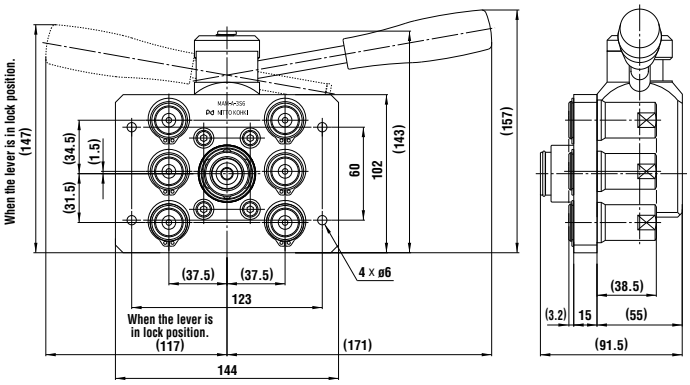
Model MAM-A-3P6 X MAM-A-3S6 (6 ports type)

• **Application: R 3/8** **Mass: 1250 g (Plug), 2400 g (Socket)**

Plug: Model **MAM-A-3P6**



Socket: Model **MAM-A-3S6**

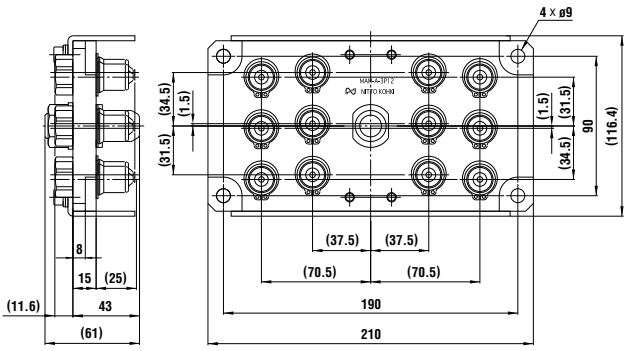


Dimensions (mm)

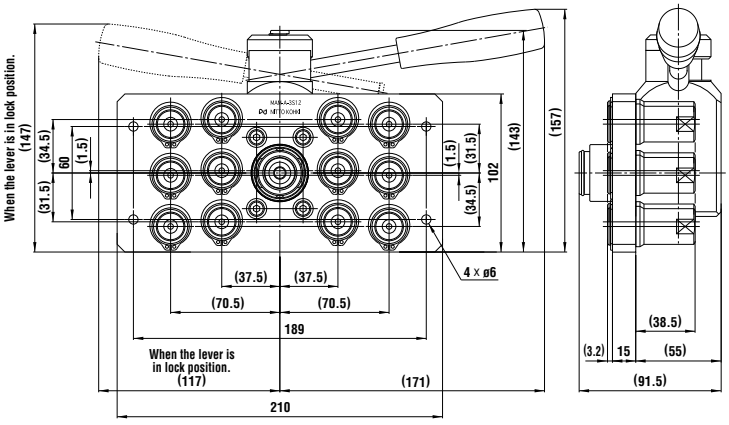
Model MAM-A-3P12 X MAM-A-3S12 (12 ports type)

• **Application: R 3/8** **Mass: 1950 g (Plug), 3300 g (Socket)**

Plug: Model **MAM-A-3P12**



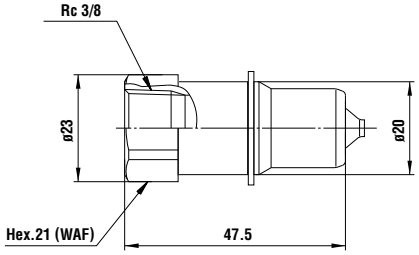
Socket: Model **MAM-A-3S12**



Dimensions (mm)

Plug Model MAM-A-3P (Individual Cupla)

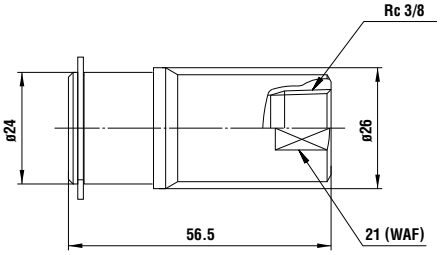
• **Application: R 3/8** **Mass: 62 g**



Dimensions (mm)

Socket Model MAM-A-3S (Individual Cupla)

• **Application: R 3/8** **Mass: 122 g**



Dimensions (mm)

Made-to-order Multi Cuplas are available on request, such as a combination of different sizes on the flange plate.

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

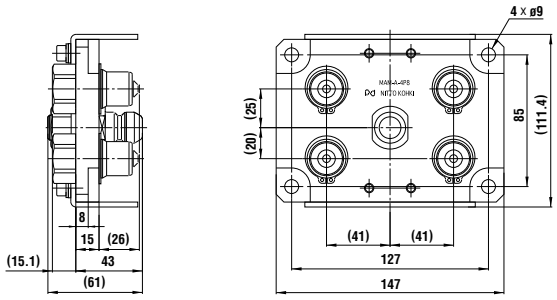
Models and Dimensions

WAF : WAF stands for width across flats.

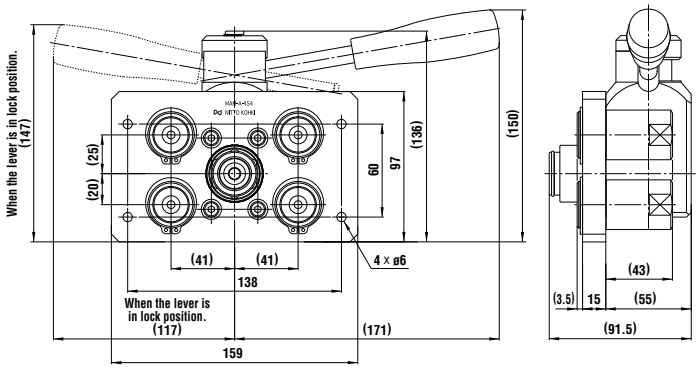
Model MAM-A-4P4 x MAM-A-4S4 (4 ports type)

• Application: R 1/2 Mass: 1400 g (Plug), 2700 g (Socket)

Plug: Model MAM-A-4P4



Socket: Model MAM-A-4S4

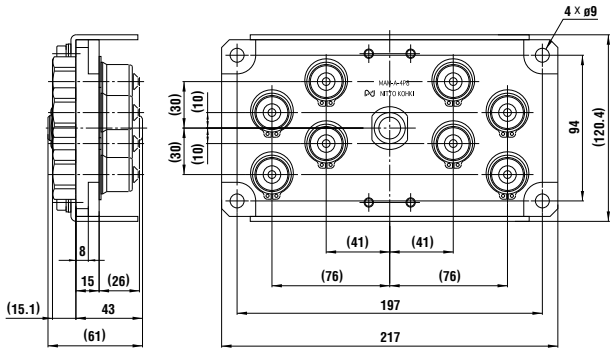


Dimensions (mm)

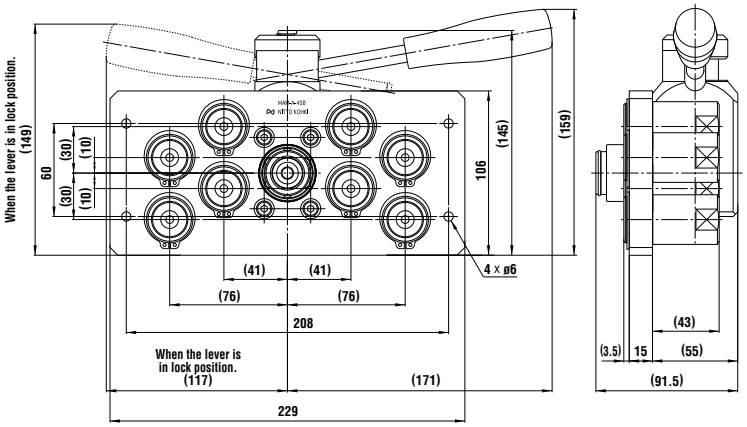
Model MAM-A-4P8 x MAM-A-4S8 (8 ports type)

• Application: R 1/2 Mass: 2300 g (Plug), 4000 g (Socket)

Plug: Model MAM-A-4P8



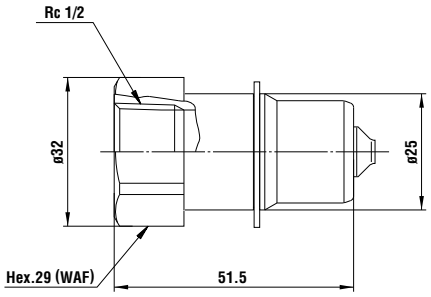
Socket: Model MAM-A-4S8



Dimensions (mm)

Plug Model MAM-A-4P (Individual Cupla)

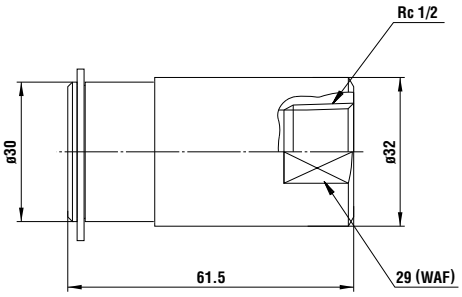
• Application: R 1/2 Mass: 127 g



Dimensions (mm)

Socket Model MAM-A-4S (Individual Cupla)

• Application: R 1/2 Mass: 256 g



Dimensions (mm)

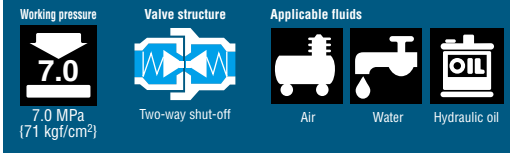
Made-to-order Multi Cuplas are available on request, such as a combination of different sizes on the flange plate.

For Multi-Port Connection (Automatic)

Multi Cupla

MAS Type / MAT Type

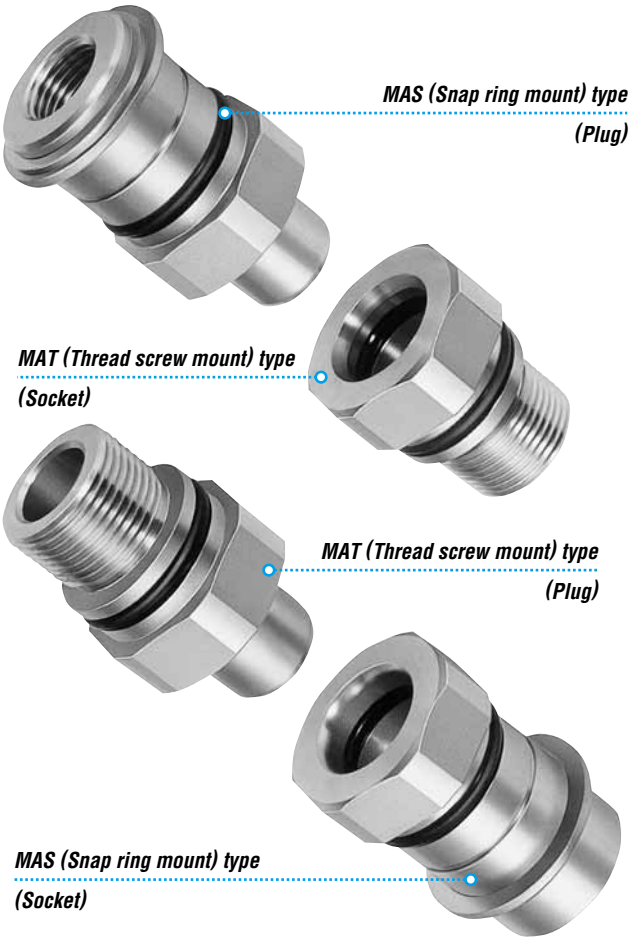
7.0 MPa {71 kgf/cm²} general purpose type



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

- Ideal for automated hydraulic or pneumatic cylinder operated systems that need to connect and disconnect several lines simultaneously.
- Automatic shut-off valves in both sockets and plugs ensure no outflow of fluid on disconnection.
- Body materials other than stainless steel are available, which can be ordered with or without valves (made-to-order products).
- Snap ring and screw thread-in types to mount on the base plate are standardized.
- MAS type can accept axial eccentricity between socket and plug. The allowance of eccentricity is within the radius range of 0.3mm.

* Cupla connection or disconnection with fluid under dynamic pressure cannot be made.



Specifications

Body material		Stainless steel (Autocatalytic nickel-phosphorus coating)		
Working pressure	MPa	7.0		
	kgf/cm²	71		
	bar	70		
	PSI	1020		
Sealing material Working temperature range		Sealing material	Mark	Working temperature range
		Fluoro rubber	FKM (X-100)	−20°C to +180°C

Max. Tightening Torque — Nm {kgf•cm}

Size (Thread)	1/4"	3/8"	1/2"	3/4"	1"
Torque (MAS type)	14 {143}	22 {224}	60 {612}	90 {918}	120 {1224}

Size (Thread)	M20	M24	M30	M39	M45
Torque (MAT type)	50 {510}	50 {510}	50 {510}	70 {714}	80 {816}

Interchangeability

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

Min. Cross-Sectional Area — (mm²)

Model	2SP	3SP	4SP	6SP	8SP
Min. cross-sectional area	23	41	76	145	224

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

Socket only	Plug only	When connected
—	—	Operational

Admixture of Air on Connection — Admixture of air may vary depending upon the usage conditions. (mL)

Model	2SP	3SP	4SP	6SP	8SP
Volume of air	1.1	2.4	3.2	10.5	17.0

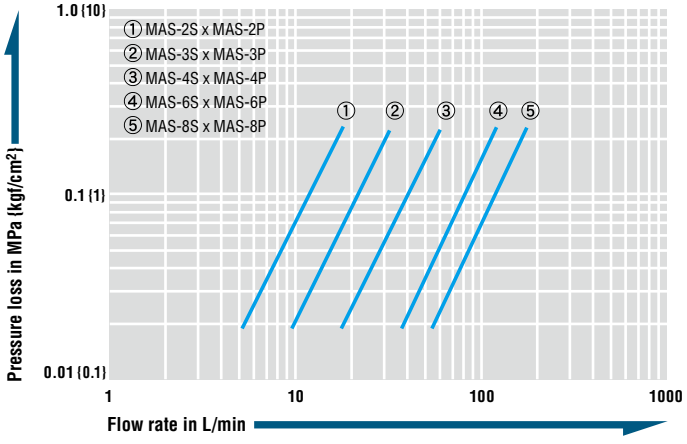
Load Required to Maintain Connection When Line Is Pressurized

Model	2SP	3SP	4SP	6SP	8SP
Maximum acceptable load N {kgf}	3200 {327}	5200 {531}	9000 {919}	13900 {1419}	20200 {2062}
Minimum load required to maintain connection N {kgf} *	Px185+45 {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}

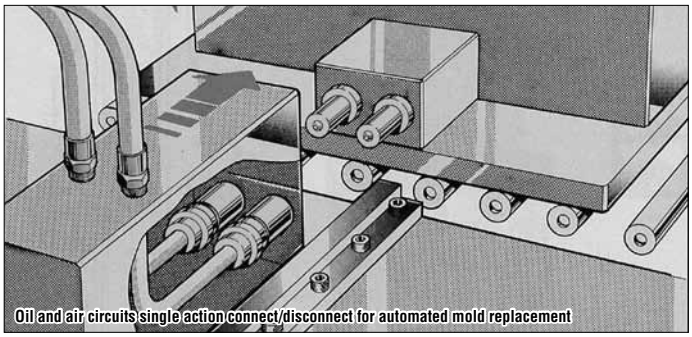
* Assign the actual value of pressure [P (MPa), p (kgf/cm²)] to the above formula to calculate the load. Maintain the connection with the minimum load or more, but not more than the maximum acceptable load.

Flow Rate - Pressure Loss Characteristics

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



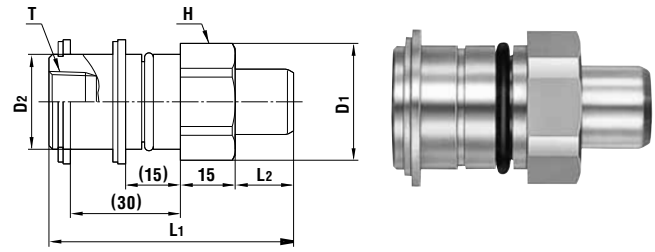
Application Example


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

Models and Dimensions

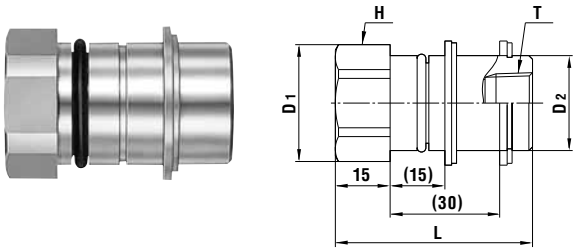
WAF : WAF stands for width across flats.

Plug MAS type (Snap ring mount type)



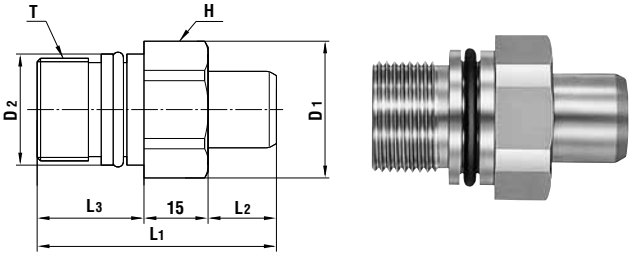
Model	Application	Mass (g)	Dimensions (mm)					
			L1	L2	øD1	øD2	H(WAF)	T
MAS-2P	R 1/4	150	65	14	28	21.9	Hex.26	Rc 1/4
MAS-3P	R 3/8	203	67	16	35	25.9	Hex.32	Rc 3/8
MAS-4P	R 1/2	412	73	20	44	35.9	Hex.41	Rc 1/2
MAS-6P	R 3/4	579	76.5	23.5	50	41.9	Hex.46	Rc 3/4
MAS-8P	R 1	720	78	24	58	47.9	Hex.54	Rc 1

Socket MAS type (Snap ring mount type)



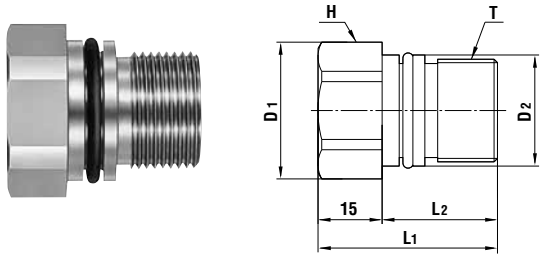
Model	Application	Mass (g)	Dimensions (mm)				
			L	øD1	øD2	H(WAF)	T
MAS-2S	R 1/4	126	51.5	28	21.9	Hex.26	Rc 1/4
MAS-3S	R 3/8	171	55	35	25.9	Hex.32	Rc 3/8
MAS-4S	R 1/2	406	65	44	35.9	Hex.41	Rc 1/2
MAS-6S	R 3/4	604	76	50	41.9	Hex.46	Rc 3/4
MAS-8S	R 1	825	87	58	47.9	Hex.54	Rc 1

Plug MAT type (Thread screw mount type)



Model	Application	Mass (g)	Dimensions (mm)						
			L1	L2	L3	øD1	øD2	H(WAF)	T
MAT-2P	See the diagram below.	121	53	14	(24)	28	21.9	Hex.26	M20x1.5
MAT-3P		164	56	16	(25)	32	25.9	Hex.29	M24x1.5
MAT-4P		332	67	20	(32)	44	35.9	Hex.41	M30x2
MAT-6P		453	73	23.5	(34.5)	50	41.9	Hex.46	M39x2
MAT-8P		571	76	24	(37)	54	47.9	Hex.50	M45x2

Socket MAT type (Thread screw mount type)

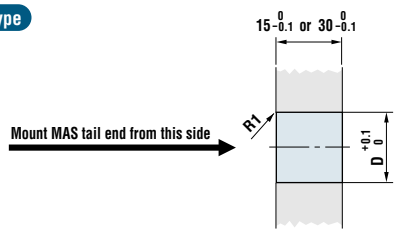


Model	Application	Mass (g)	Dimensions (mm)					
			L1	L2	øD1	øD2	H(WAF)	T
MAT-2S	See the diagram below.	95	39	(24)	28	21.9	Hex.26	M20x1.5
MAT-3S		124	42	(27)	32	25.9	Hex.29	M24x1.5
MAT-4S		246	48	(33)	44	35.9	Hex.41	M30x2
MAT-6S		382	58	(43)	50	41.9	Hex.46	M39x2
MAT-8S		506	66	(51)	54	47.9	Hex.50	M45x2

• MAT type must be coupled with MAS type.

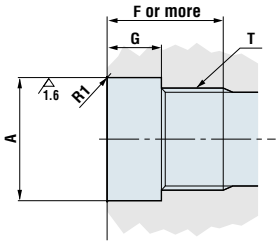
Tail End Configuration

MAS Type

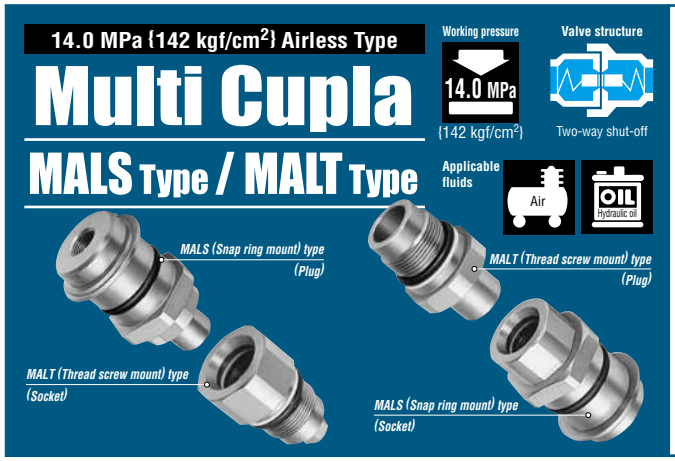


Model	Diameter (mm)
	øD
MAS-2S / MAS-2P	23
MAS-3S / MAS-3P	27
MAS-4S / MAS-4P	37
MAS-6S / MAS-6P	43
MAS-8S / MAS-8P	49

MAT Type



Model	Diameter (mm)				
	øA	G	F		T
			Pulg	Socket	
MAT-2S / MAT-2P	22 +0.06 0	13	25		M20 x 1.5
MAT-3S / MAT-3P	26 +0.06 0	13	26	28	M24 x 1.5
MAT-4S / MAT-4P	36 +0.08 0	16	34	35	M30 x 2
MAT-6S / MAT-6P	42 +0.08 0	17	36.5	45	M39 x 2
MAT-8S / MAT-8P	48 +0.08 0	17	39	53	M45 x 2



Minimal air admixture during Cupla connection

- **Special valve structure allows minimal air admixture in fluid lines during Cupla connection.**
- **Liquid bleeding on Cuplas disconnection is very little, which makes it best for frequent connection/ disconnection applications.**
- **Snap ring and thread screw mount types to mount on the base plate are standard.**
- **MALS type can accept axial eccentricity of socket and plug, or allow a plate hole position tolerance of ±0.3mm because of the O-ring around the body.**

Specifications

Body material	Steel (Autocatalytic nickel-phosphorus coating)		
Working pressure	14.0 MPa, 142 kgf/cm², 140 bar, 2030 PSI		
Sealing material Working temperature range	Sealing material	Mark	Working temperature range
	Fluoro rubber	FKM (X-100)	-20°C to +180°C

Please check with us for details on these products.

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

For Multi-Port Connection (Automatic)

Multi Cupla

MALC-SP Type for Medium Pressure Use

Low spill type for medium pressure use

Working pressure: 1.5 to 7.0 MPa {15 to 71 kgf/cm²}
Valve structure: Two-way shut-off (Non-Spill)
Applicable fluids: Water, Hydraulic oil, Air

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

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

Specifications

Body material		Socket body: Stainless steel (Autocatalitic nickel-phosphorus coating)		
Model	Thread screw mount	MALC-1SP	MALC-2 to 8SP	MALC-12SP
	Flange	–	MALC-2 to 8SP-FL	–
	Snap ring	–	MALC-8SP-10F	MALC-12SP(-F/-16F)
Working pressure *	MPa	7.0 (2.0)	5.0 (2.0)	1.5 (2.0)
	kgf/cm²	71 (20)	51 (20)	15 (20)
	bar	70 (20)	50 (20)	15 (20)
	PSI	1020 (290)	725 (290)	218 (290)
Sealing material Working temperature range		Sealing material	Mark	Working temperature range
		Fluoro rubber	FKM (X-100)	−20°C to +180°C

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

Max. Tightening Torque — N·m {kgf·cm}

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

Interchangeability

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

Min. Cross-Sectional Area — (mm²)

Model	1SP	2SP(-FL)	3SP(-FL)	4SP(-FL)	6SP(-FL)	8SP(-FL/-10F)	12SP(-F/-16F)
Min. cross-sectional area	26	49.5	87	153	227	347	795

Suitability for Vacuum

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

Admixture of Air on Connection — Admixture of air may vary depending upon the usage conditions. (mL)

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

Volume of Spillage per Disconnection — Volume of spillage may vary depending upon the usage conditions. (mL)

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

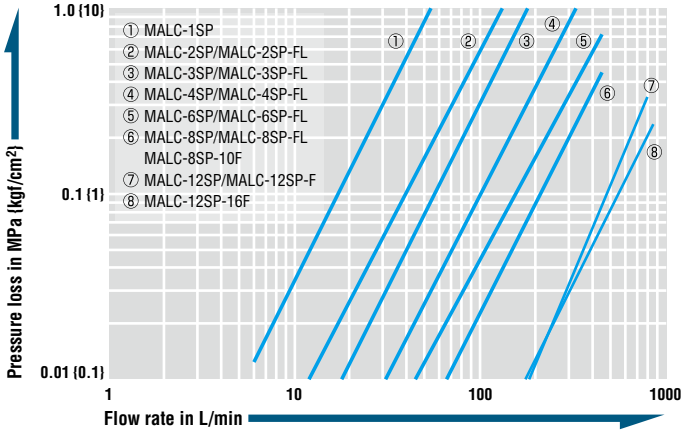
Load Required to Maintain Connection When Line Is Pressurized

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

* Assign the actual value of pressure [P (MPa), p (kgf/cm²)] to the above formula to calculate the load. Maintain the connection with the minimum load or more, but not more than the maximum acceptable load.

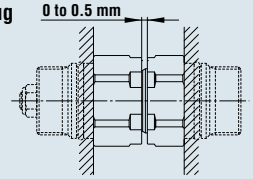
Flow Rate - Pressure Loss Characteristics

[Test conditions] •Fluid : Water •Temperature : 19°C to 25°C



Acceptable distance between socket and plug

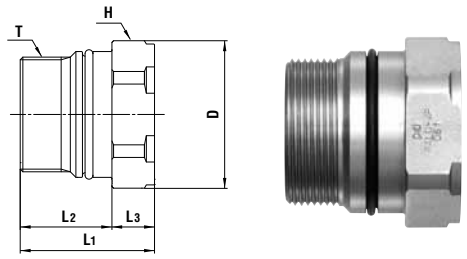
Plug and socket must be used in contact with each other.
Maximum 0.5 mm distance between socket and plug is acceptable.



Models and Dimensions

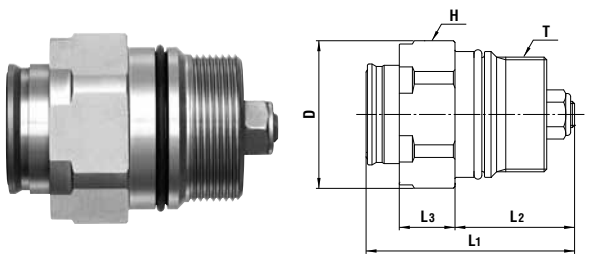
WAF : WAF stands for width across flats.

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



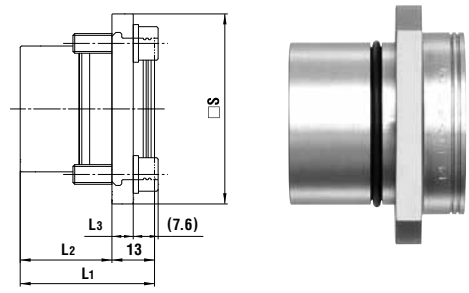
Model	Application	Mass (g)	Dimensions (mm)					
			L1	L2	L3	øD	H(WAF)	T
MALC-1P	See P113	40	32	(18)	14	21	Hex.19	M16 x 1
MALC-2P	See P113	75	33	(20)	13	28	Hex.26	M20 x 1.5
MALC-3P	See P113	95	33	(20)	13	32	Hex.29	M24 x 1.5
MALC-4P	See P113	248	41	(28)	13	45	Hex.41	M35 x 1.5
MALC-6P	See P113	369	50.5	(37.5)	13	50	Hex.46	M40 x 2
MALC-8P	See P113	399	53	(41)	12	54	Hex.50	M45 x 2
MALC-12P	See P113	724	57	(45)	12	74	Hex.67	M62 x 2

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



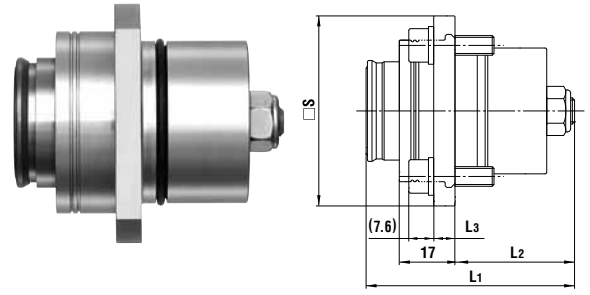
Model	Application	Mass (g)	Dimensions (mm)					
			L1	L2	L3	øD	H(WAF)	T
MALC-1S	See P113	53	(45)	(23)	16	21	Hex.19	M16 x 1
MALC-2S	See P113	95	(49)	(26)	17	28	Hex.26	M20 x 1.5
MALC-3S	See P113	120	(51)	(26)	17	32	Hex.29	M24 x 1.5
MALC-4S	See P113	306	(64)	(36.5)	17	45	Hex.41	M35 x 1.5
MALC-6S	See P113	471	(78.5)	(47.5)	17	50	Hex.46	M40 x 2
MALC-8S	See P113	590	(86)	(53)	18	54	Hex.50	M45 x 2
MALC-12S	See P113	1176	(98)	(60)	18	74	Hex.67	M62 x 2

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



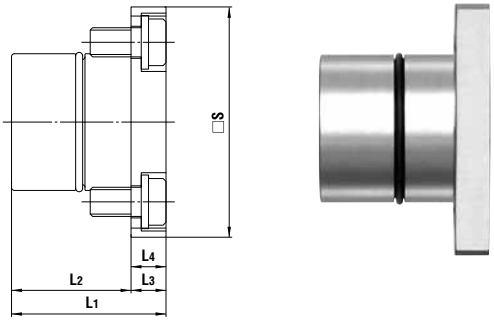
Model	Application	Mass (g)	Dimensions (mm)			
			L1	L2	L3	□S
MALC-2P-FL	See P113	146	30	(17)	6	40
MALC-3P-FL	See P113	180	33	(20)	6	45
MALC-4P-FL	See P113	390	41	(28)	6.5	58
MALC-6P-FL	See P113	553	50.5	(37.5)	6.5	64

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



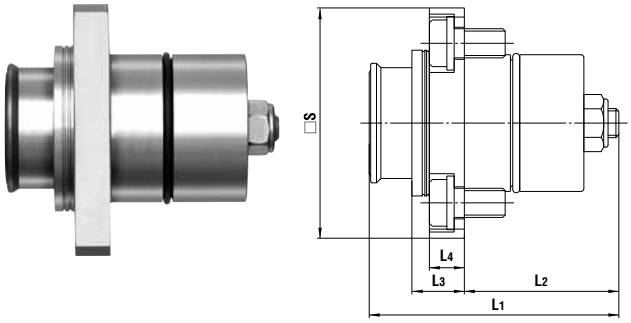
Model	Application	Mass (g)	Dimensions (mm)			
			L1	L2	L3	□S
MALC-2S-FL	See P113	173	(49)	(26)	6	40
MALC-3S-FL	See P113	208	(51)	(26)	6	45
MALC-4S-FL	See P113	449	(64)	(36.5)	6.5	58
MALC-6S-FL	See P113	663	(78.5)	(47.5)	6.5	64

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



Model	Application	Mass (g)	Dimensions (mm)				
			L1	L2	L3	L4	□S
MALC-8P-FL	See P113	796	53	(41)	12	12	79

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

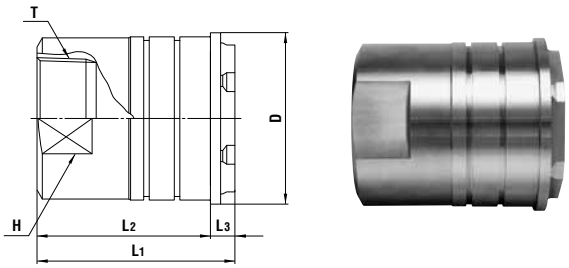


Model	Application	Mass (g)	Dimensions (mm)				
			L1	L2	L3	L4	□S
MALC-8S-FL	See P113	978	(86)	(53)	18	12	79

Models and Dimensions

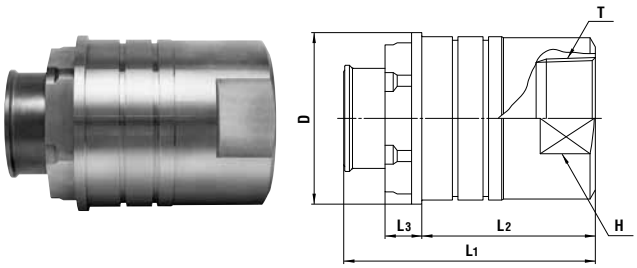
WAF : WAF stands for width across flats.

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



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

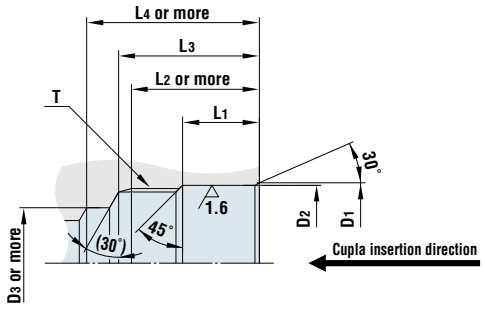
Socket MALC-8 / 12S type (With snap ring)



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

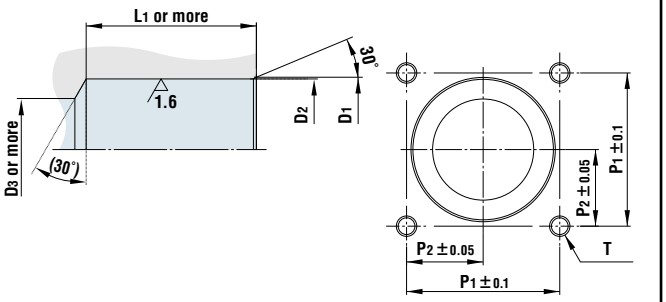
Dimensions of End Configurations

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



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

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



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

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

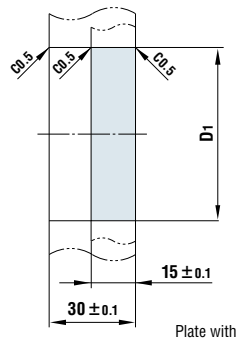


Plate with 15 mm or 30 mm thickness can be mounted.

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

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

MULTI CUPLA SERIES

For Multi-Port Connection (Automatic)

Multi Cupla

MALC-HSP Type for High Pressure Use

Low spill type for high pressure use

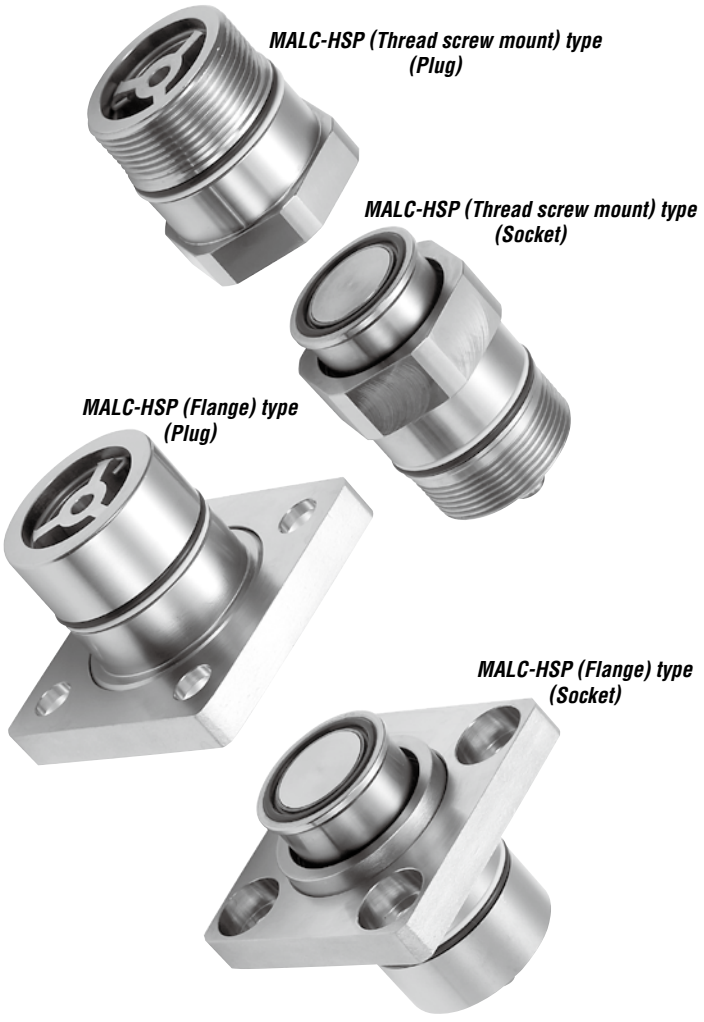
Working pressure: 21.0 to 25.0 MPa (214 to 255 kgf/cm²)

Valve structure: Two-way shut-off

Applicable fluids: Hydraulic oil

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

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



Specifications

Body material			Special steel (Autocatalytic nickel-phosphorus coating)	
Model	Thread screw mount		MALC-1HSP	MALC-2 to 8HSP
	Flange		–	MALC-2 to 8HSP-FL
Working pressure		MPa	25.0 (Either socket or plug only:8.0)	21.0 (Either socket or plug only:8.0)
		kgf/cm²	255 (Either socket or plug only:81)	214 (Either socket or plug only:81)
		bar	250 (Either socket or plug only:80)	210 (Either socket or plug only:80)
		PSI	3630 (Either socket or plug only:1160)	3050 (Either socket or plug only:1160)

Sealing material / Working temperature range	Sealing material	Mark	Working temperature range
	Fluoro rubber	FKM (X-100)	-20°C to +180°C

Max. Tightening Torque — N·m {kgf·cm}

Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Thread screw mount	30 {306}	50 {510}	53 {540}	65 {663}	80 {816}	95 {969}
Flange	–	9 {91}				30 {306}

Interchangeability

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

Min. Cross-Sectional Area — (mm²)

Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Min. cross-sectional area	26	49.5	87	153	227	347

Suitability for Vacuum

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

Admixture of Air on Connection — (mL)

Admixture of air may vary depending upon the usage conditions.

Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Volume of air	0.08	0.14	0.26	0.55	0.95	0.85

Volume of Spillage per Disconnection — (mL)

Volume of spillage may vary depending upon the usage conditions.

Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Volume of spillage	0.08	0.14	0.26	0.55	0.95	0.85

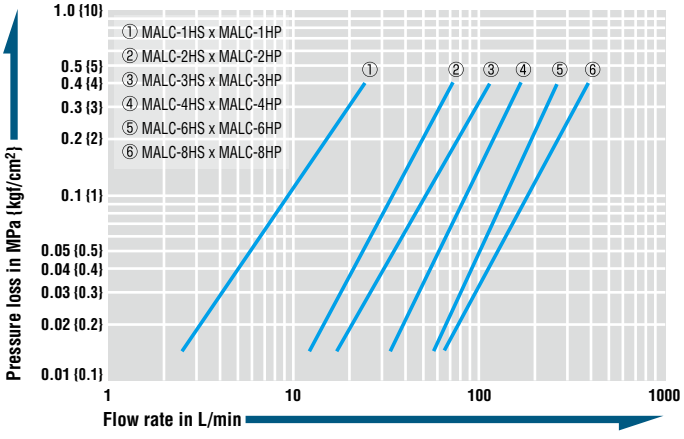
Load Required to Maintain Connection When Line Is Pressurized

Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Maximum acceptable load N {kgf}	9300 {948}	16500 {1683}	22000 {2244}	40500 {4130}	55000 {5609}	64500 {6577}
Minimum load required to maintain connection N {kgf} *	Px170+85 {px1.7+8.5}	Px345+180 {px3.45+18}	Px460+190 {px4.6+19}	Px855+260 {px8.55+26}	Px1160+260 {px11.6+26}	Px1360+310 {px13.6+31}

* Assign the actual value of pressure [P (MPa), p (kgf/cm²)] to the above formula to calculate the load. Maintain the connection with the minimum load or more, but not more than the maximum acceptable load.

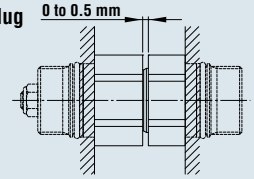
Flow Rate - Pressure Loss Characteristics

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



Acceptable distance between Socket and Plug

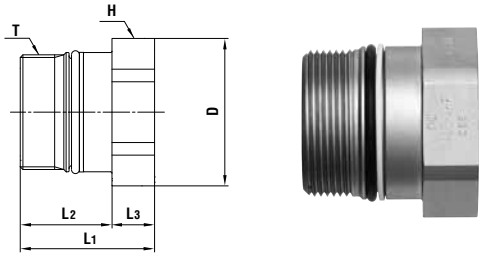
Plug and socket must be used in contact with each other.
Maximum 0.5 mm distance between socket and plug is acceptable.



Models and Dimensions

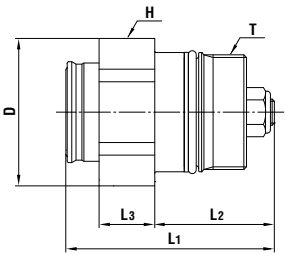
WAF : WAF stands for width across flats.

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



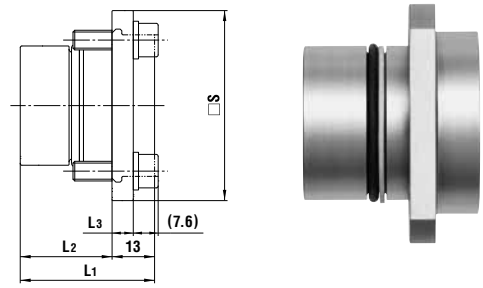
Model	Application	Mass (g)	Dimensions (mm)					
			L1	L2	L3	øD	H(WAF)	T
MALC-1HP	See P117	39	32	(18)	14	21	Hex.19	M16 x 1
MALC-2HP	See P117	73	33	(20)	13	28	Hex.26	M20 x 1.5
MALC-3HP	See P117	96	33	(20)	13	32	Hex.29	M24 x 1.5
MALC-4HP	See P117	250	41	(28)	13	45	Hex.41	M35 x 1.5
MALC-6HP	See P117	357	50.5	(37.5)	13	50	Hex.46	M40 x 2
MALC-8HP	See P117	391	53	(41)	12	54	Hex.50	M45 x 2

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



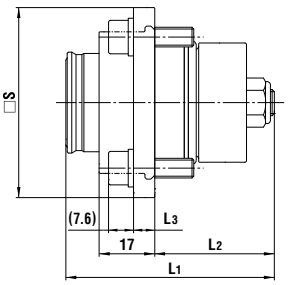
Model	Application	Mass (g)	Dimensions (mm)					
			L1	L2	L3	øD	H(WAF)	T
MALC-1HS	See P117	51	(45)	(23)	16	21	Hex.19	M16 x 1
MALC-2HS	See P117	89	(49)	(26)	17	28	Hex.26	M20 x 1.5
MALC-3HS	See P117	117	(51)	(26)	17	32	Hex.29	M24 x 1.5
MALC-4HS	See P117	290	(64)	(36.5)	17	45	Hex.41	M35 x 1.5
MALC-6HS	See P117	447	(78.5)	(47.5)	17	50	Hex.46	M40 x 2
MALC-8HS	See P117	579	(86)	(53)	18	54	Hex.50	M45 x 2

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



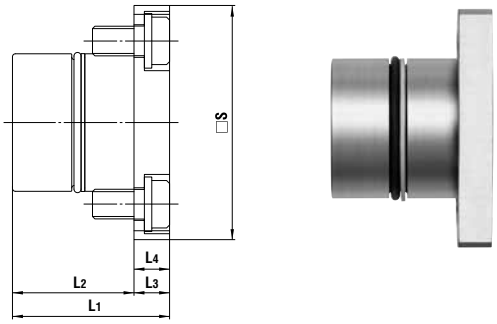
Model	Application	Mass (g)	Dimensions (mm)			
			L1	L2	L3	□S
MALC-2HP-FL	See P117	142	30	(17)	6	40
MALC-3HP-FL	See P117	179	33	(20)	6	45
MALC-4HP-FL	See P117	367	41	(28)	6.5	58
MALC-6HP-FL	See P117	514	50.5	(37.5)	6.5	64

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



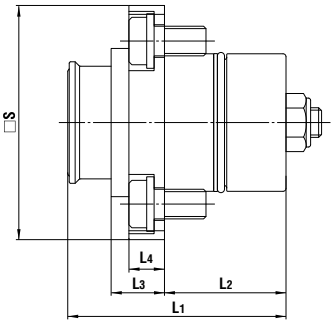
Model	Application	Mass (g)	Dimensions (mm)			
			L1	L2	L3	□S
MALC-2HS-FL	See P117	163	(49)	(26)	6	40
MALC-3HS-FL	See P117	200	(51)	(26)	6	45
MALC-4HS-FL	See P117	418	(64)	(36.5)	6.5	58
MALC-6HS-FL	See P117	611	(78.5)	(47.5)	6.5	64

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



Model	Application	Mass (g)	Dimensions (mm)				
			L1	L2	L3	L4	□S
MALC-8HP-FL	See P117	786	53	(41)	12	12	79

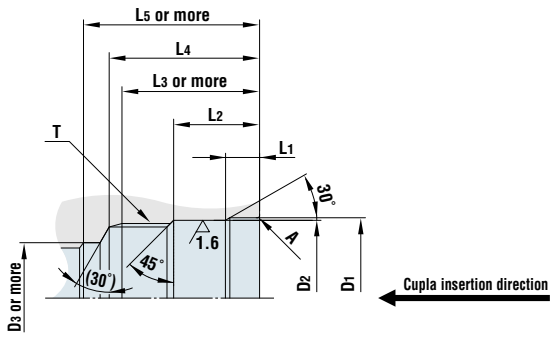
Socket MALC-8HS-FL type (With flange)



Model	Application	Mass (g)	Dimensions (mm)				
			L1	L2	L3	L4	□S
MALC-8HS-FL	See P117	964	(86)	(53)	18	12	79

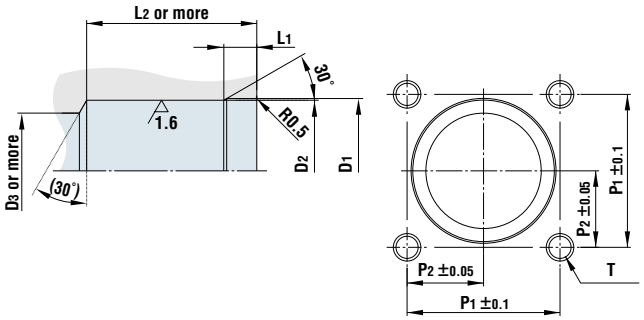
Dimensions of End Configurations

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



Model	Dimensions (mm)									
	øD1	øD2	øD3	L1	L2	L3	L4	L5	T	A
MALC-1HS MALC-1HP	$17.8^{+0.1}_{0}$	$16.8^{+0.06}_{0}$	13	$3.5^{+0.2}_{0}$	11	20	22	25	M16 x 1	C0.2
MALC-2HS MALC-2HP	$23^{+0.1}_{0}$	$22^{+0.06}_{0}$	16	$2.8^{+0.2}_{0}$	11	22	25	28	M20 x 1.5	R0.5
MALC-3HS MALC-3HP	$27.1^{+0.1}_{0}$	$26^{+0.08}_{0}$	18	$2.8^{+0.2}_{0}$	11	22	25	29	M24 x 1.5	R0.5
MALC-4HS MALC-4HP	$37.7^{+0.3}_{0}$	$36.5^{+0.08}_{0}$	26	$6^{\pm0.2}$	18	30	33	40.5	M35 x 1.5	R0.5
MALC-6HS MALC-6HP	$42.5^{+0.3}_{0}$	$41.5^{+0.08}_{0}$	30	$6^{\pm0.2}$	23	40	44	51.5	M40 x 2	R0.5
MALC-8HS MALC-8HP	$47.5^{+0.3}_{0}$	$46.5^{+0.08}_{0}$	35	$10.5^{\pm0.2}$	27	43	47	55	M45 x 2	R0.5

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



Model	Dimensions (mm)							
	øD1	øD2	øD3	L1	L2	P1	P2	T
MALC-2HS-FL	$23^{+0.1}_{0}$	$22^{+0.06}_{0}$	16	$2.8^{+0.2}_{0}$	28	28	14	4 x M6 Thread depth 17 mm or more
MALC-2HP-FL					19			
MALC-3HS-FL	$27.1^{+0.1}_{0}$	$26^{+0.08}_{0}$	18	$2.8^{+0.2}_{0}$	28	31	15.5	
MALC-3HP-FL					22			
MALC-4HS-FL	$37.7^{+0.3}_{0}$	$36.5^{+0.08}_{0}$	26	$6^{\pm0.2}$	39	40	20	
MALC-4HP-FL					30.5			
MALC-6HS-FL	$42.5^{+0.3}_{0}$	$41.5^{+0.08}_{0}$	30	$6^{\pm0.2}$	50	45	22.5	
MALC-6HP-FL					40			
MALC-8HS-FL	$47.5^{+0.3}_{0}$	$46.5^{+0.08}_{0}$	35	$10.5^{\pm0.2}$	53	55	27.5	4 x M10 Thread depth 15 mm or more
MALC-8HP-FL					43			

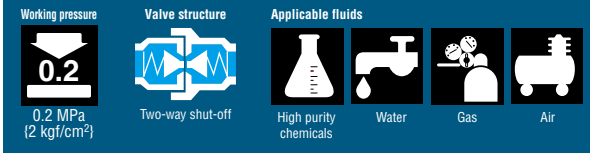
MULTI CUPLA SERIES

For High Purity Chemicals

Semicon Cupla

SP Type

For semiconductor manufacturing production installation



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

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


Stainless steel containers

Specifications

Body material		Electropolished stainless steel (SUS304)
Size (Thread)		1/8", 1/4", 3/8", 1/2", 3/4", 1" 1/8-27NPT, 1/4-18NPT, 19/32-18UNS
Working pressure	MPa	0.2
	kgf/cm²	2
	bar	2
	PSI	29

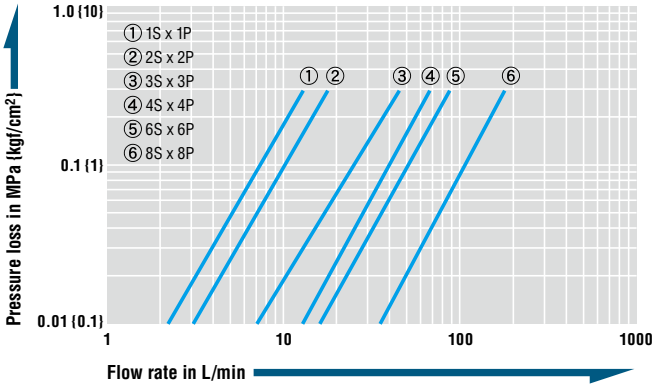
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Fluoro rubber	FKM (X-100)	0°C to +50°C	Standard material
	Ethylene-propylene rubber	EPDM (EPTS)	0°C to +50°C	Standard material
	Perfluoroelastomer	P	0°C to +50°C	Standard material
	Kalrez	KL	0°C to +50°C	Standard material

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



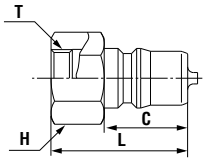
Interchangeability

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

Models and Dimensions

WAF : WAF stands for width across flats.

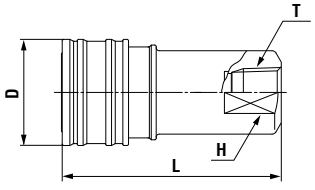
Plug Female thread



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

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

Socket Female thread



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

For High Purity Chemicals

Semicon Cupla

SCS Type

For semiconductor manufacturing equipment

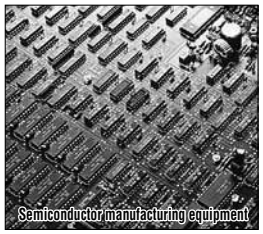
Working pressure: 0.2 MPa {2 kgf/cm²}

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.
- All components are cleaned, assembled, inspected, and then packed in a clean room.
- Grease is not applied to the seal material.
- Plug comes with a dust cap.



Specifications

Body material		Electropolished stainless steel (SUS304)			
Size (Thread)		1/8", 1/4", 3/8", 1/2", 3/4", 1" 1/8-27NPT, 1/4-18NPT, 19/32-18UNS			
Working pressure	MPa	0.2			
	kgf/cm²	2			
	bar	2			
	PSI	29			
Seal material Working temperature range	Socket O-ring	Seal material	Mark	Working temperature range	Remarks
		Perfluoroelastomer	P	0°C to +50°C	Standard material
	Valve	Fluoropolymer resin (Socket: PFA, Plug: PTFE except 1P and 2P of PFA)			

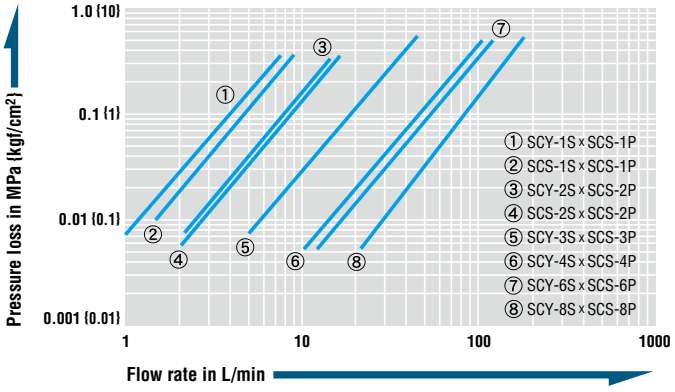
*If you need a seal material other than perfluoroelastomer, please consult with us.

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 : 21°C to 32°C



Interchangeability Check List (SCS Type, SCY Type)

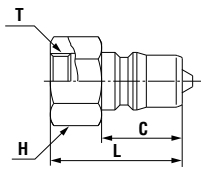
● indicates connection capability except for made-to-order products.

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

Models and Dimensions

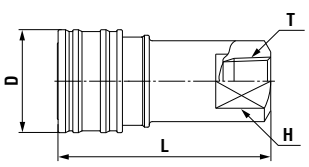
WAF : WAF stands for width across flats.

Plug Female thread



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

Socket Female thread



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

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

For High Purity Chemicals

Semicon Cupla

SCY Type

For semiconductor manufacturing equipment

Working pressure: 0.2 MPa (2 kgf/cm²)

Valve structure: Two-way shut-off

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

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

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

Specifications

Body material		Electropolished stainless steel (SUS304)			
Size (Thread)		1/8", 1/4", 3/8", 1/2", 3/4", 1" 1/8-27NPT, 1/4-18NPT			
Working pressure	MPa	0.2			
	kgf/cm²	2			
	bar	2			
	PSI	29			
Seal material Working temperature range	Socket packing seal	Seal material	Mark	Working temperature range	Remarks
		Perfluoroelastomer Fluoropolymer resin	P PTFE (TF)	0°C to +50°C	Standard material
	Valve	Fluoropolymer resin (PTFE except 1P and 2P of PFA)			

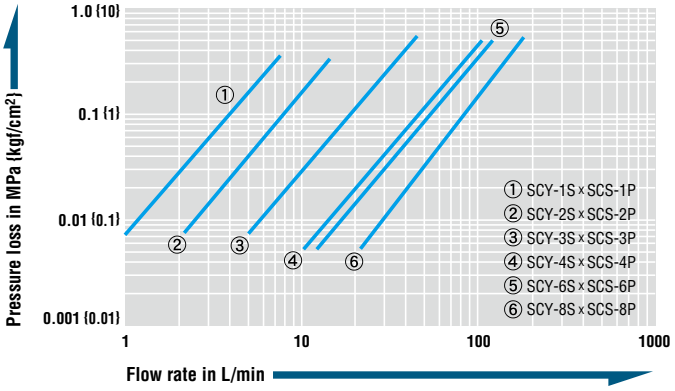
*If you need a seal material other than perfluoroelastomer, please consult with us.

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 : 21°C to 32°C



Interchangeability

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

Interchangeability Check List (SCS Type, SCY Type)

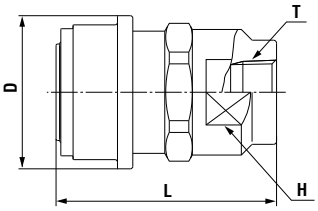
● indicates connection capability except for made-to-order products.

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

Models and Dimensions

WAF : WAF stands for width across flats.

Socket Female thread



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

For High Purity Chemicals

Semicon Cupla

SCT 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

Polytetrafluoroethylene (PTFE) is utilised for the body.

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

Specifications

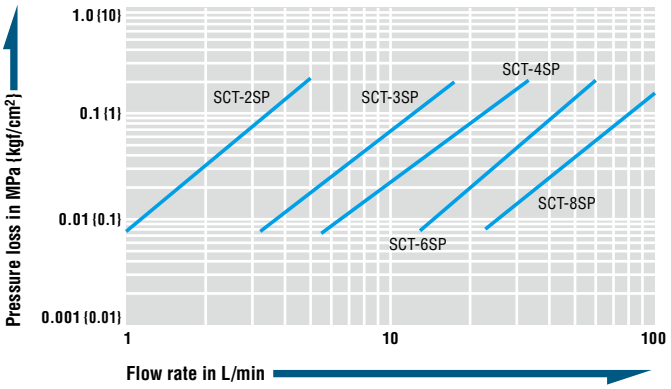
Body material		Polytetrafluoroethylene (PTFE)			
Size (Thread)		1/4", 3/8", 1/2", 3/4", 1" 1/4-18NPT, 3/8-18NPT, 1/2-14NPT, 3/4-14NPT, 1-11.5NPT			
Working pressure	MPa	0.2			
	kgf/cm²	2			
	bar	2			
	PSI	29			
Seal material / Working temperature range	Socket O-ring	Seal material	Mark	Working temperature range	Remarks
		FEP-covered fluoro rubber	—	+5℃ to +50℃	Standard material
	Valve	Fluoropolymer resin			

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 : 23℃ ± 3℃



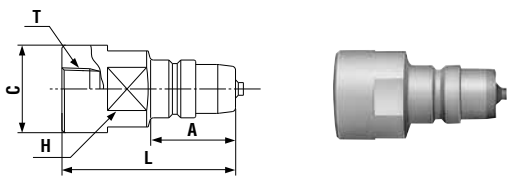
Interchangeability

Different sizes are not interchangeable.

Models and Dimensions

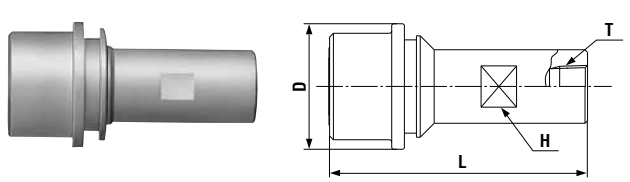
WAF : WAF stands for width across flats.

Plug Female thread



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

Socket Female thread



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

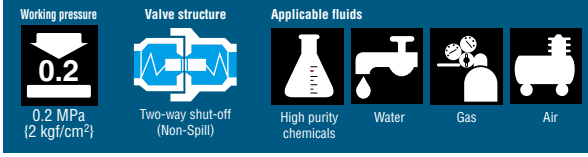
* Available end configurations are female ISO Rc thread and female NPT thread.
* Plug or socket with female ISO Rc end configuration has V-groove on the body as identification. (In case of female NPT thread, no V-groove on either plug or socket body).
* Please inquire for other end configurations other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

For High Purity Chemicals

Semicon Cupla

SCAL Type

For semiconductor manufacturing equipment



Body is polytetrafluoroethylene (PTFE).

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

Specifications

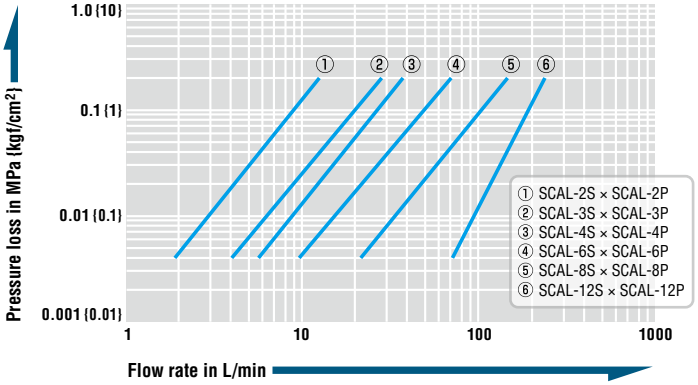
Body material		Polytetrafluoroethylene (PTFE)			
Size (Thread)		1/4", 3/8", 1/2", 3/4", 1" 1/4-18NPT, 3/8-18NPT, 1/2-14NPT, 3/4-14NPT, 1-11.5NPT			
Working pressure	MPa	0.2			
	kgf/cm²	2			
	bar	2			
	PSI	29			
Seal material Working temperature range	Socket O-ring	Seal material	Mark	Working temperature range	Remarks
		Perfluoroelastomer	P	+5°C to +50°C	Standard material
	Valve	Fluoropolymer resin (PFA)			

Min. Cross-Sectional Area (mm²)

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

Flow Rate – Pressure Loss Characteristics

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



Volume of Spillage per Disconnection Volume of spillage may vary depending upon the usage conditions. (mL)

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

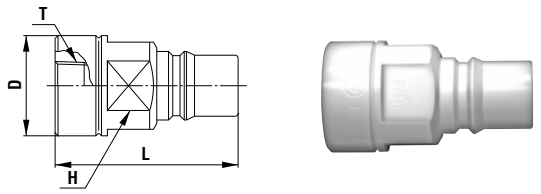
Interchangeability

Different sizes are not interchangeable.

Models and Dimensions

WAF : WAF stands for width across flats.

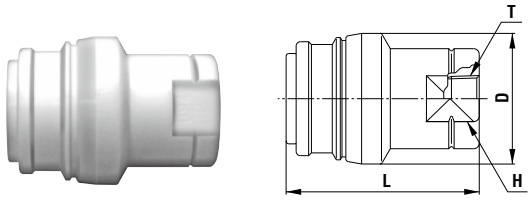
Plug Female thread



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

*Made-to-order item

Socket Female thread



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

*Made-to-order item

- Plug comes with a cap made of high density polyethylene (HDPE).
- Outer appearance of NPT thread type differs slightly from that of the above.
- Please contact us about end configurations other than female thread such as flange and male thread.
- Excessive tightening will damage the threaded part and result in leakage.
- Note: A very small amount of gas can permeate polytetrafluoroethylene (PTFE) bellows in the socket.

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. Fluoropolymer resin (PFA) body is injection molded.

- All parts made of fluoropolymer resin. O-rings in particular are FEP-covered fluororubber 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.
- All components are cleaned, assembled, inspected, and then packed in a clean room.

Please read "How to attach a tube to the socket" described on the page of "Maintenance of Cuplas" at the end of this book.

Specifications

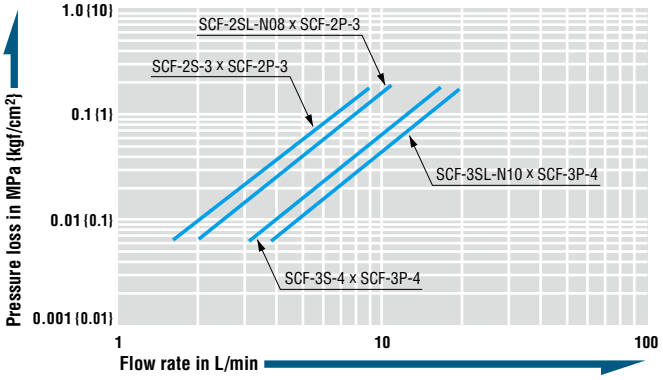
Body material		Fluoropolymer resin (PFA)			
Size	Thread	3/8", 1/2" / M26, M32			
	Tube barb	ø6 x ø8, ø8 x ø10			
Working pressure	MPa	0.2			
	kgf/cm²	2			
	bar	2			
	PSI	29			
Seal material	Socket O-ring	Seal material	Mark	Working temperature range	Remarks
Working temperature range		FEP-covered fluoro rubber	–	+5°C to +50°C	Standard material
	Valve	Fluoropolymer resin (PFA)			

Min. Cross-Sectional Area (mm²)

Model	SCF-2SP	SCF-3SP
Min. cross-sectional ar	23.8	44.2

Flow Rate – Pressure Loss Characteristics

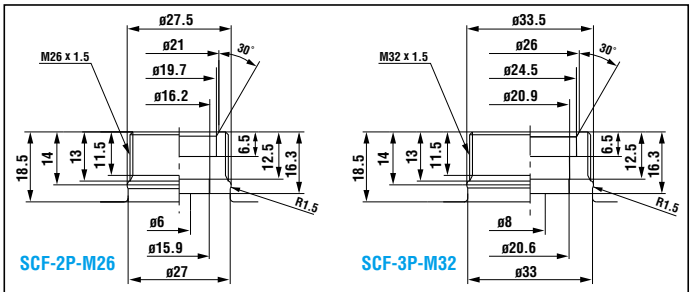
[Test conditions] •Fluid : Water •Temperature : 21°C to 23°C



Interchangeability

Different sizes are not interchangeable.

Reference diagram The thread dimensions of container side for the plug.

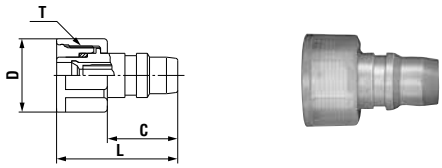


For tolerance and other specific dimensions, consult us.

Models and Dimensions

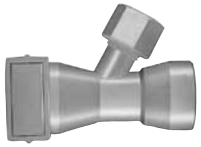
WAF : WAF stands for width across flats.

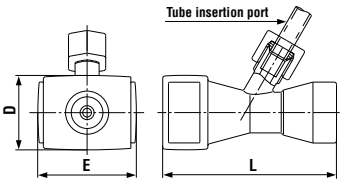
Plug Female thread



Model	Container capacity	Mass (g)	Dimensions (mm)			
			L	D(WAF)	C	T(Female thread)
SCF-2P-M26	For 10L to 20L	33	(53.7)	Hex.30 x ø32.5	(31.2)	M26 x 1.5
SCF-3P-M32	For 10L to 20L	50	(57.7)	Hex.36 x ø39	(35.2)	M32 x 1.5

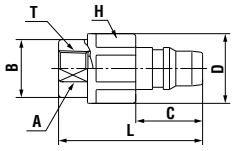
Socket For tube connection





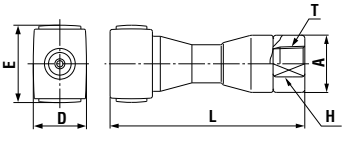
Model	Container capacity	Mass (g)	Dimensions (mm)			
			L	D	E	Applicable tube
SCF-2SL-N08	For 10L to 20L	76	77	34	(45)	ø6 x ø8
SCF-3SL-N10	For 10L to 20L	116	85	39	(51)	ø8 x ø10

Plug Straight type (Female thread)



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

Socket Straight type (Female thread)



Model	Mass (g)	Dimensions (mm)					
		L	øA	H(WAF)	D	E	T(Female thread)
SCF-2S-3	83	(92)	27	24	34	(45)	Rc 3/8
SCF-3S-4	124	(102.5)	33	30	39	(51)	Rc 1/2

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

For Paint

Paint Cupla

Piping for painting equipment

Working pressure: 1.0 MPa {10 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 system enables easy connection and disconnection of paint spray gun and paint hose even by gloved hands.
- Full-open gate valve mechanism prevents paint precipitate buildup.
- Adoption of special resin seal that has resistance against solvents made it possible to feature superior durability, long stable capability, and easy cleaning of paint spray gun after the job.
- Connection and disconnection can be made even if paint sticks to the socket sleeve.
- Small and lightweight design (80 g per set) reduces the weight to be held by hand of operators.
- Built-in sleeve lock mechanism prevents accidental disconnection of Cuplas, ensuring safe operation.
- Wide variety of end configurations (standard thread: G 3/8) are available in response to various paint spray guns.

Flow Direction

Fluid must run from socket to plug.

Specifications

Body material		Socket: Aluminum Plug: Stainless steel			
Size (Thread)		3/8", 3/8NPS			
Working pressure	MPa	1.0			
	kgf/cm²	10			
	bar	10			
	PSI	145			
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks	
	Fluoro-resin	PFA	0°C to +50°C	Standard material	

Tightening Torque Range

Nm {kgf•cm}

Torque	15 {153}

Interchangeability

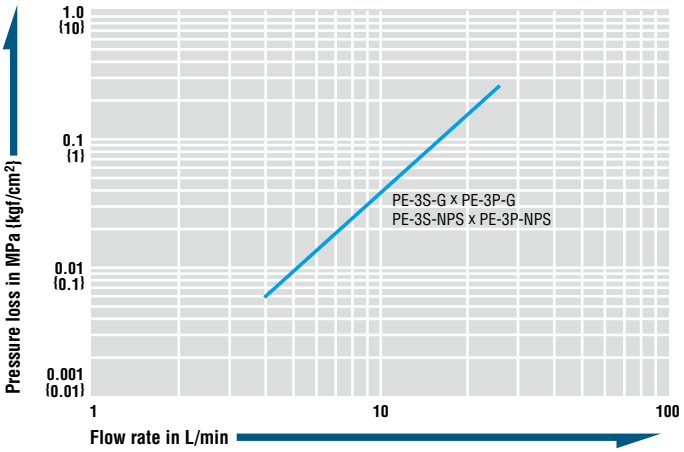
Only the same size of paint Cuplas can be connected each other.

Suitability for Vacuum

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

Flow Rate – Pressure Loss Characteristics

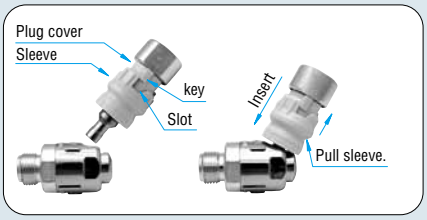
[Test conditions] •Fluid viscosity : 8 x 10⁻⁷ m²/s (Equivalent to water) •Temperature : 30°C ± 5°C



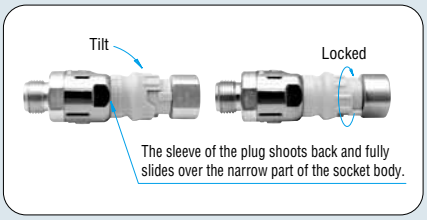
Connection and Disconnection

Connection

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



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



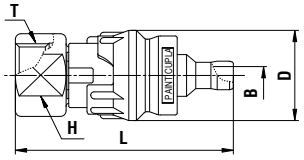
Disconnection

Disconnect in the reverse order of connection.

Models and Dimensions

WAF : WAF stands for width across flats.

Plug PE-3P type (Female thread)

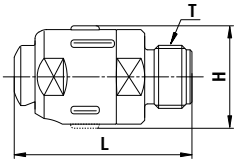


NPS end configuration has an identification groove on the Cupla.

Model	Application	Mass (g)	Dimensions (mm)				
			L	øD	øB	H(WAF)	T
PE-3P-G	G 3/8	31	(58)	24	4.5	19 x ø22	G 3/8
PE-3P-NPS	3/8 NPS	31	(58)	24	4.5	19 x ø22	3/8 NPS

Socket PE-3S type (Male thread)

NPS end configuration has an identification groove on the Cupla.



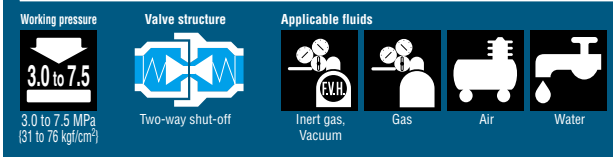
Model	Application	Mass (g)	Dimensions (mm)		
			L	H(WAF)	T
PE-3S-G	G 3/8	48	(47)	23 x ø27	G 3/8
PE-3S-NPS	3/8 NPS	48	(47)	23 x ø27	3/8 NPS

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

For Inert Gas and Vacuum

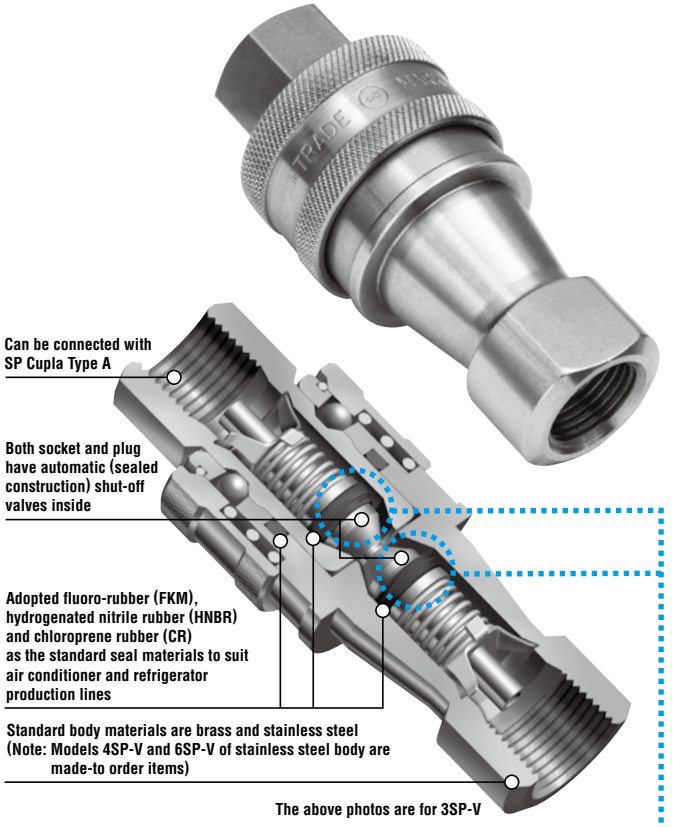
SP-V Cupla

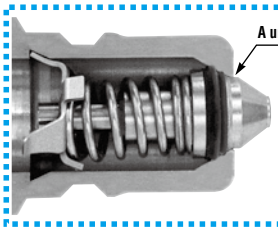
For vacuum



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 Type A.





Both socket and plug have unique vacuum resistant automatic shut-off valves inside. The valve has excellent vacuum resistance even after disconnection.

Specifications

Body material		Brass (Standard material)		Stainless steel (Standard material)	Stainless steel (Made-to-order item)
Size (Thread)		1/4", 3/8"	1/2", 3/4"	1/4", 3/8"	1/2", 3/4"
Working pressure	MPa	5.0	3.0	7.5	4.5
	kgf/cm²	51	31	76	46
	bar	50	30	75	45
	PSI	725	435	1090	653

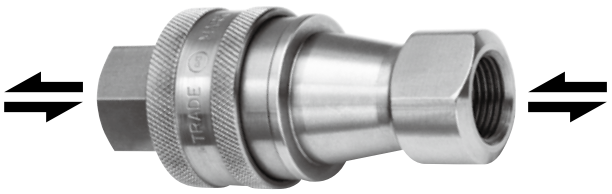
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Chloroprene rubber	CR (C308)	−20°C to +80°C	Standard material
	Fluoro rubber	FKM (X-100)	−20°C to +180°C	Standard material
	Hydrogenated nitrile rubber	HNBR (H708)	−20°C to +120°C	Standard material

Max. Tightening Torque Nm {kgf·cm}

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

Flow Direction

Fluid 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 Cupla Type A 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	18	38	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

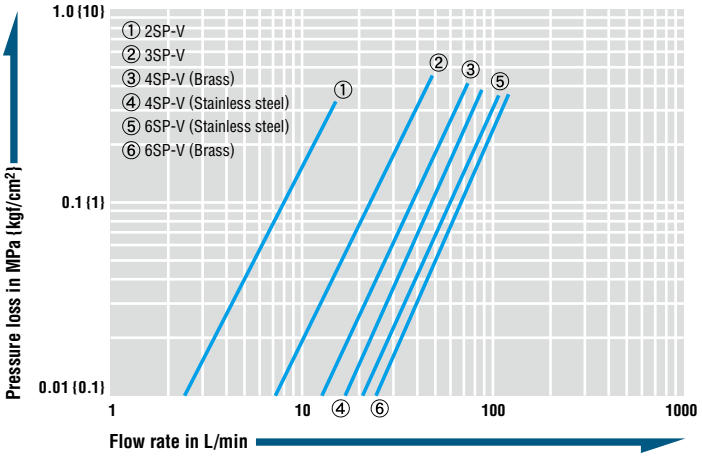
Admixture of Air on Connection (mL)

Admixture of air may vary depending upon the usage conditions.

Model	2SP-V	3SP-V	4SP-V	6SP-V
Volume of air	1.0	2.4	3.2	10.5

Flow Rate – Pressure Loss Characteristics

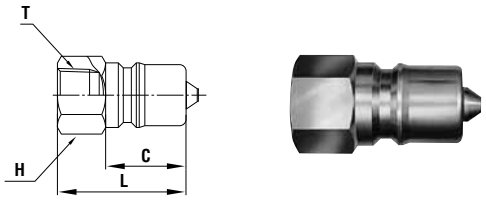
[Test conditions] •Fluid : Water •Temperature: 24°C ± 6°C



Models and Dimensions

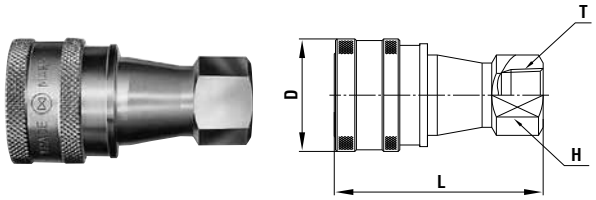
WAF : WAF stands for width across flats.

Plug Female thread



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

Socket Female thread



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

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

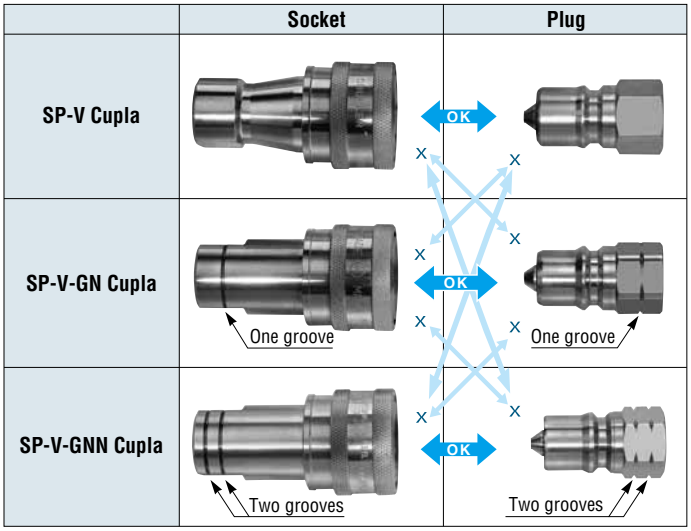
Seal Materials for Refrigerants

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

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

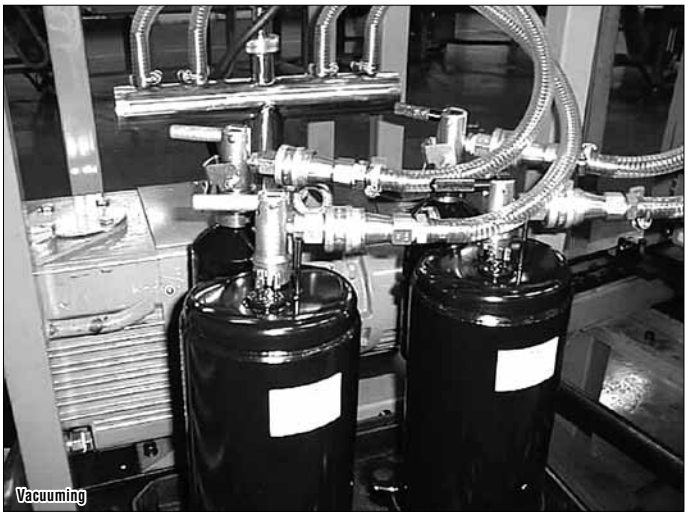
Comparison of External Appearance

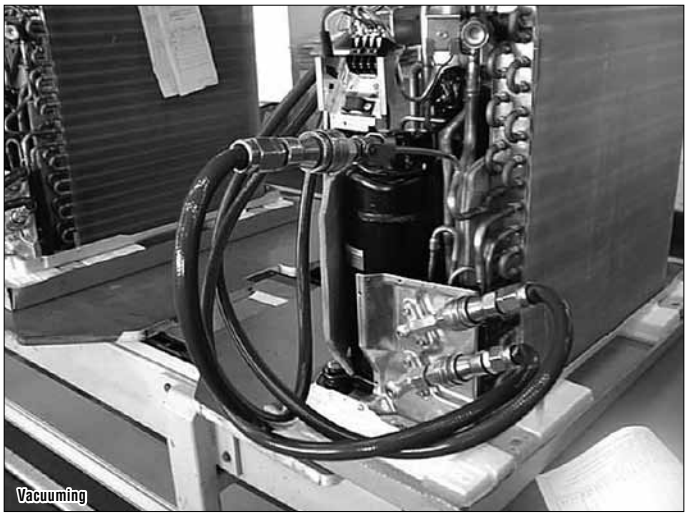
When two different gases are used simultaneously in the production lines, SP-V-GN type and SP-V-GNN type (non-interchangeable with standard SP-V and each others) may be required in order to prevent connections to improper lines by mistakes. They are made-to-order items. For details please contact Nitto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



X indicates incompatibility.

Application Example





For Inert Gas and Vacuum

PCV Pipe Cupla

For connection to copper pipes

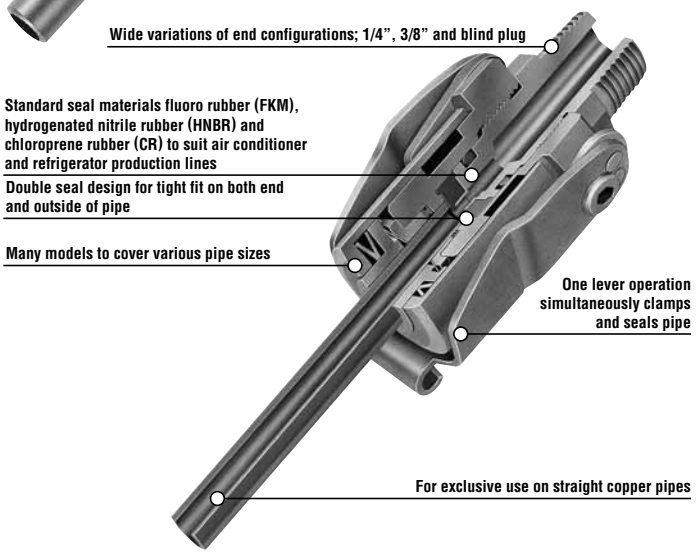
Working pressure: 4.5 MPa {46 kgf/cm²}

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 directly 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 OD		ø4.0	ø4.76 (3/16")	ø5.0	ø6.0	ø6.35 (1/4")	ø8.0 (5/16")	ø9.52 (3/8")	ø10.0	ø12.7 (1/2")	ø15.88 (5/8")
Body material		Brass									
Working pressure	MPa	4.5									
	kgf/cm²	46									
	bar	45									
	PSI	653									

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

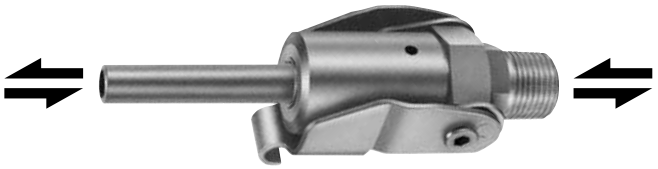
• Hydrogenated nitrile rubber (HNBR) is colored in blue for easy recognition.

Max. Tightening Torque — Nm {kgf•cm}

Size (Thread)	1/4"	3/8"
Torque	9 {92}	12 {122}

Flow Direction

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



Min. Cross-Sectional Area — (mm²)

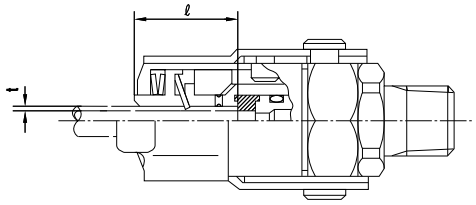
Model	PCV400	PCV470	PCV500	PCV600	PCV630	PCV800
Min. cross-sectional area	3.8	3.8	3.8	9.1	9.1	16.6

Model	PCV950	PCV1000	PCV1270-2	PCV1270-3	PCV1590-2	PCV1590-3
Min. cross-sectional area	16.6	16.6	50.3	73.9	50.3	78.5

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

Cupla only	When connected to a pipe
—	Operational

Insert Length of Pipe into Cupla and Essential Thickness of Pipe Wall (mm)

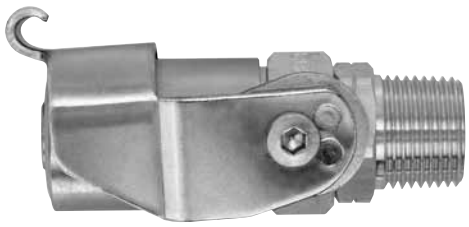


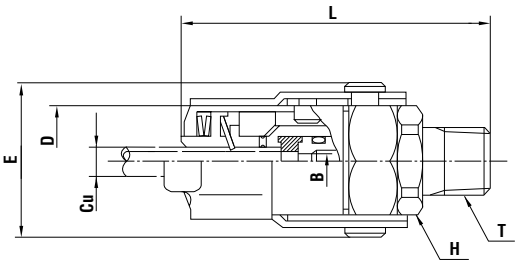
Items with asterisk (*) are made-to-order products.

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

Models and Dimensions

WAF : WAF stands for width across flats.

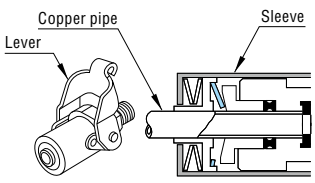
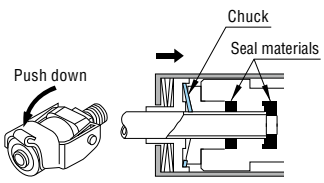




Model	Pipe OD (Cu)	Model	Size (T)	Mass (g)	Dimensions (mm)				
					L	H(WAF)	øB	øD	E
PCV400*	ø4.0	PCV400-2	R 1/4	155	(59)	Hex.17	2.2	22.2	(32.5)
		PCV400-3	R 3/8	155	(60)	Hex.19			
PCV470	ø4.76 (3/16")	PCV470-2	R 1/4	155	(60)	Hex.17	2.2	22.2	(32.5)
		PCV470-3	R 3/8	160	(61)	Hex.19			
		PCV470-0	Blind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

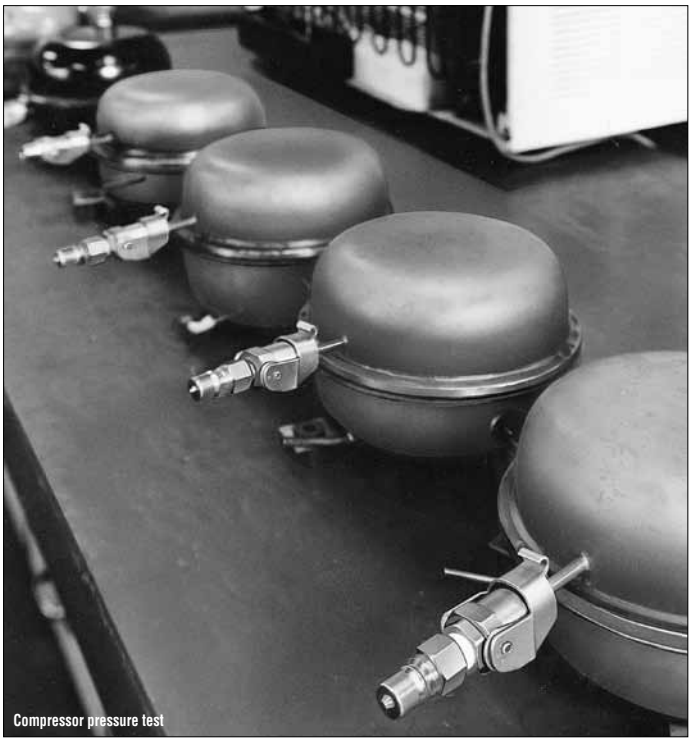
• For mass with a plug, add (brass body) 2P-V : 39 g, 3P-V : 67 g, (stainless steel body) 2P-V : 34 g, or 3P-V : 59 g * Available on request

Clamping Mechanism

Before clamping	After clamping
	

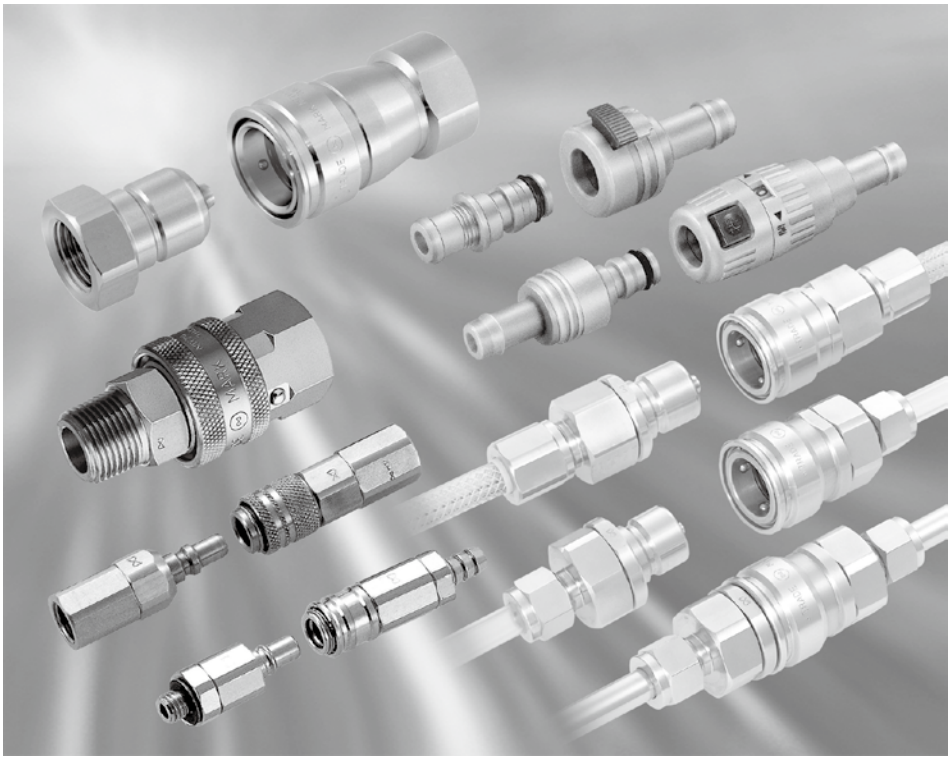
When the lever is pushed down, the sleeve moves in the direction of the arrow, and at the same time actuates the chucks to grip the copper pipe firmly and provide a tight seal.

Application Example



Compressor pressure test

Semi-Standard Cupla Series
Index

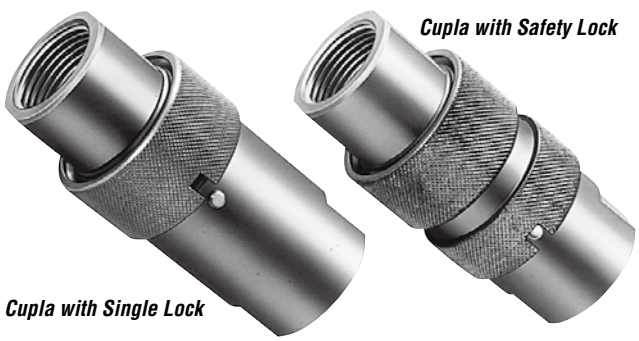


Cupla with Single Lock
Cupla with Safety Lock

Accidental disconnection prevention mechanism

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

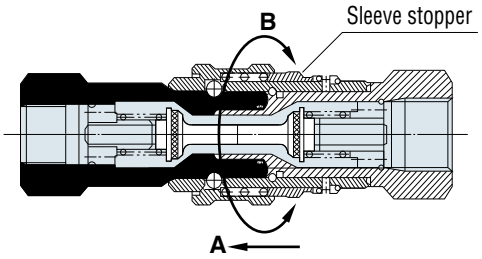
- **Cupla with Single Lock**
  The sleeve is provided with a cutout and the body of the socket has a projecting lock pin or ball. After connecting the Cuplas, simply turn the sleeve to lock the back and forth movement of the sleeve.
- **Cupla with Safety Lock**
  A sleeve stopper Lock Ring is provided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



Cupla with Safety Lock

Cupla with Single Lock

Construction of and How to Use Safety Lock (Accidental Disconnection Prevention Mechanism)



● 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.

Cuplas with Single Lock / Safety Lock

Cuplas with Single Lock

- **Hi Cupla (Brass) / • Mold Cupla**
- **SP Cupla Type A / • TSP Cupla**
- **HSP Cupla / • 210 Cupla**

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

The following Cuplas come with single lock as standard feature.

- **Hi Cupla BL**
- **Lock Cupla 200**
- **HSU Cupla**
- **350 Cupla**
- **Flat Face Cupla F35**
- **Flat Face Cupla FF**
- **450B Cupla**

Cuplas with Safety Lock

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

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

The following Cupla comes with safety lock as standard feature.

- **S210 Cupla**

Two-way Shut-off Type Small Size Cuplas

For temperature controllers

Working pressure: 1.0 MPa {10 kgf/cm²}, 1.5 MPa {15 kgf/cm²} | Valve structure: Two-way shut-off | Applicable fluids: Water, Gas, Air

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

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

Specifications

Body material		MYU Cupla		Little Cupla
		Stainless steel, Brass (Nickel-plated)		Stainless steel
Size (Thread)		Please check with us.		
Working pressure	MPa	1.0		1.5
	kgf/cm²	10		15
	bar	10		15
	PSI	145		218

Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +80°C	Available on request
	Ethylene-propylene rubber	EPDM (EPT)	−40°C to +150°C	
	Fluoro rubber	FKM (X-100)	−20°C to +180°C	

Two-way Shut-off Type Small Size Cupla Series

Please check with us about the end configurations and sizes.

MYU Cupla / MYU type — Min. Cross-Sectional Area: 4.9 mm² (ø2.5)

OD 10 mm

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

OD 14 mm

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 (Thread)		1/4", 3/8", 1/2"			
Working pressure	MPa	9.0			
	kgf/cm²	92			
	bar	90			
	PSI	1310			

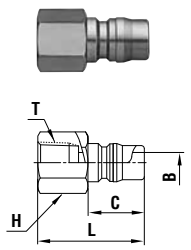
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	−20°C to +80°C	Available on request
	Ethylene-propylene rubber	EPDM (EPT)	−40°C to +150°C	

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

Models and Dimensions

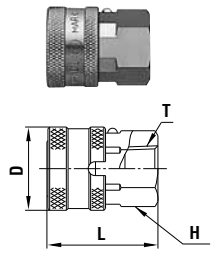
WAF : WAF stands for width across flats.

Plug TPF type (Female thread)



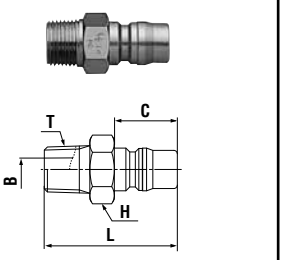
Model	Application	Dimensions (mm)				
		L	H(WAF)	C	T	øB
2TPF-HP	R 1/4	34	Hex.17	18	Rc 1/4	6.5
3TPF-HP	R 3/8	38	Hex.21	21	Rc 3/8	10
4TPF-HP	R 1/2	47.5	Hex.29	26.5	Rc 1/2	13

Socket TSF type (Female thread)



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

⚠Precautions for use

⚠Warning

Do not connect with standard TSP Cupla (Page 71 to 74).

High Flow Cupla

For Medium Pressure

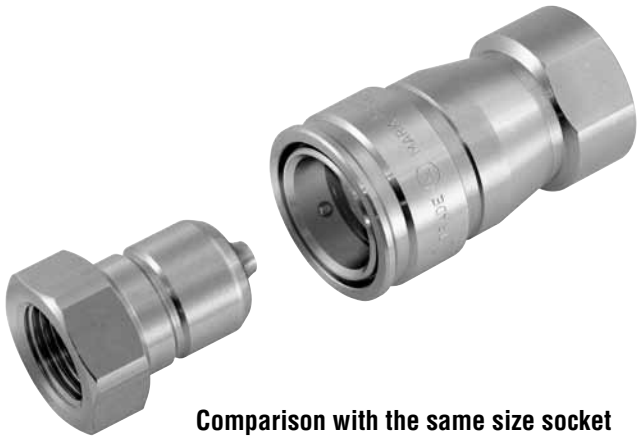
Working pressure: 1.0 MPa {10 kgf/cm²}

Valve structure: Two-way shut-off

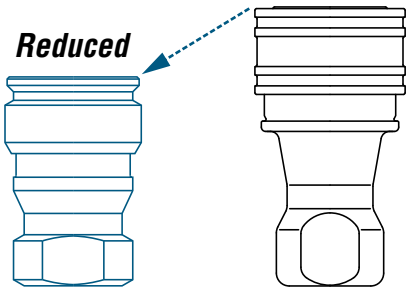
Applicable fluids: Water, Cooling water

Drastically increases flow volume while minimising pressure drop.

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



Comparison with the same size socket



High Flow Cupla HFL-4S

SP Cupla Type A 4S-A

Specifications

Body material		Stainless steel, Brass	
Size (Thread)		1/4", 3/8", 1/2"	
Working pressure	MPa	1.0	
	kgf/cm²	10	
	bar	10	
	PSI	145	
Seal material / Working temperature range	Seal material	Mark	Working temperature range
	Ethylene-propylene rubber	EPDM	−40°C to +150°C
	Fluoro rubber	FKM	−20°C to +180°C

• Standard seal material is fluoro rubber for brass body.

Max. Tightening Torque — Nm {kgf•cm}

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

Flow Direction

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

Interchangeability

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

Min. Cross-Sectional Area — (mm²)

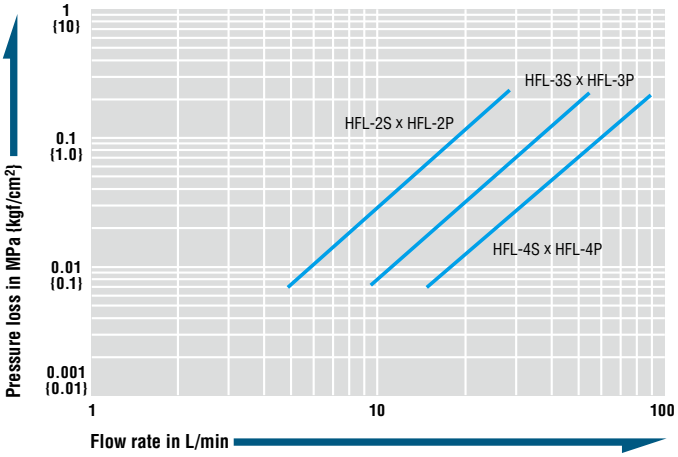
Model	HFL-2P / HFL-2S	HFL-3P / HFL-3S	HFL-4P / HFL-4S
Min. Cross-Sectional Area	32	53	91

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

Socket only	Plug only	When connected
—	—	Operational

Flow Rate – Pressure Loss Characteristics

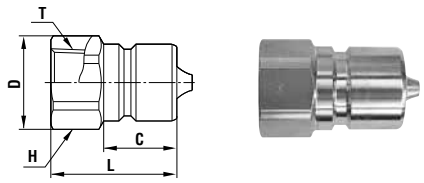
[Test conditions] •Fluid : Water •Temperature: 20°C ± 5°C



Models and Dimensions

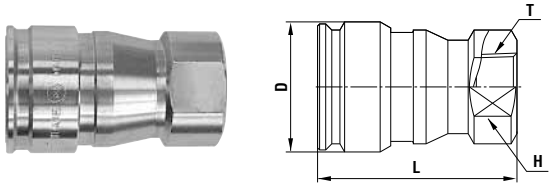
WAF : WAF stands for width across flats.

Plug Female thread



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

Socket Female thread



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

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

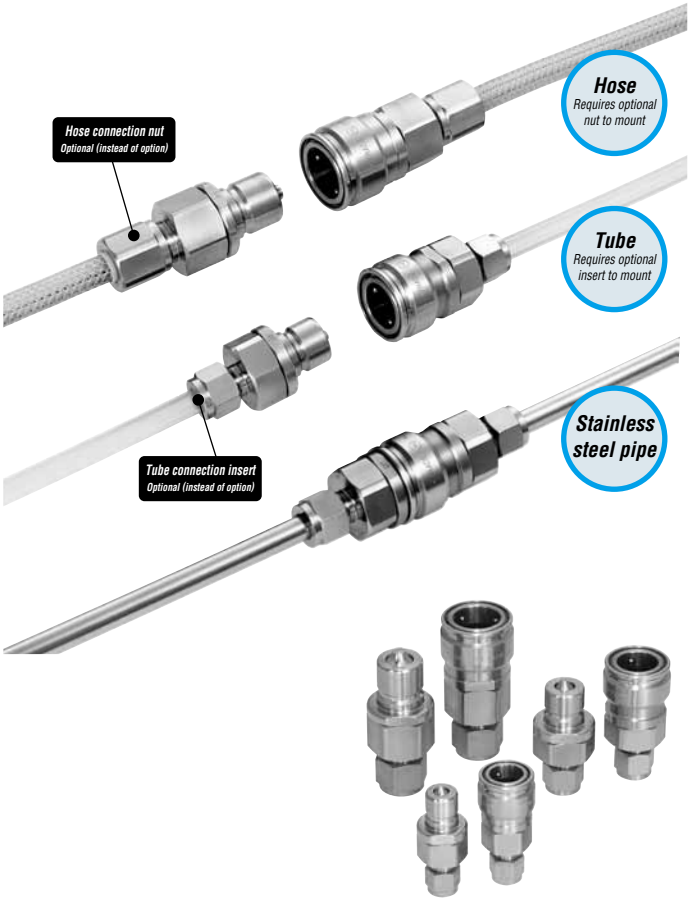
High Flow Cupla BI Type

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

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

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

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



Specifications

Body material		Stainless steel		
Applicable pipe size		1/4", 3/8", 1/2" (See the below list for hose and tube size.)		
Working pressure	MPa	1.0		
	kgf/cm²	10		
	bar	10		
	PSI	145		
Seal material Working temperature range	Seal material	Mark	Working temperature range	Remarks
	Ethylene-propylene rubber	EPDM	−40°C to +150°C	Standard material
	Fluoro rubber	FKM	−20°C to +180°C	Made-to-order item

Flow Direction

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

Interchangeability

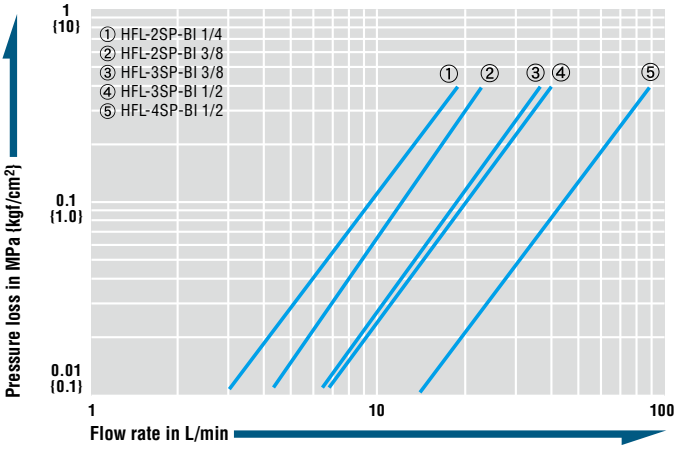
Different sizes are not connectable.

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

Socket only	Plug only	When connected
—	—	Operational

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

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



Stainless steel pipe, hose, and tube size

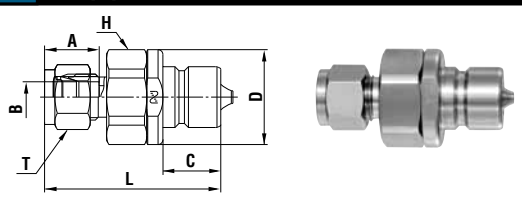
Model	Stainless steel pipe	Hose connection nut (Optional)		Tube connection insert (Optional)				
	Pipe dia. Inch (mm)	Model	Hose size (ID x OD)	Type of insert	Tube dimensions (ID x OD)	Insert dimensions E (mm)	L (mm)	A (mm)	D (mm)
HFL-2SP-BI 1/4	1/4 (ø6.35)	–	–	DTI 4-2	ø3.18 x ø6.35	2.3	11.9	6.35	3.18
		–	–	DTI 4-2.5	ø3.97 x ø6.35	2.7	11.9	6.35	3.97
		–	–	DTI 4-2.75	ø4.32 x ø6.35	2.7	11.9	6.35	4.32
		–	–	DTI 4-3	ø4.76 x ø6.35	3.5	11.9	6.35	4.76
HFL-2SP-BI 3/8	3/8 (ø9.53)	–	–	DTI 6-3	ø4.76 x ø9.53	3.0	14.3	9.53	4.76
		–	–	DTI 6-4	ø6.35 x ø9.53	4.8	14.3	9.53	6.35
HFL-3SP-BI 3/8	3/8 (ø9.53)	–	–	DTI 6-3	ø4.76 x ø9.53	3.0	14.3	9.53	4.76
		–	–	DTI 6-4	ø6.35 x ø9.53	4.8	14.3	9.53	6.35
HFL-3SP-BI 1/2	1/2 (ø12.7)	E1-6 x 11	ø6 x ø11	DTI 8-4	ø6.35 x ø12.7	4.8	19.1	12.7	6.35
		E1-8 x 13.5	ø8 x ø13.5	DTI 8-6	ø9.53 x ø12.7	7.9	19.1	12.7	9.53
HFL-4SP-BI 1/2	1/2 (ø12.7)	E1-6 x 11	ø6 x ø11	DTI 8-4	ø6.35 x ø12.7	4.8	19.1	12.7	6.35
		E1-8 x 13.5	ø8 x ø13.5	DTI 8-6	ø9.53 x ø12.7	7.9	19.1	12.7	9.53

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

Models and Dimensions

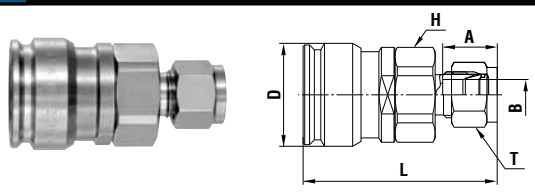
WAF : WAF stands for width across flats.

Plug For pipe connection



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

Socket For pipe connection



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

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

Plastic Cupla
BC Type Valveless

For low pressure air piping

Working pressure: 0.07 MPa {0.7 kgf/cm²}
Valve structure: Straight through
Applicable fluid: Air

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

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

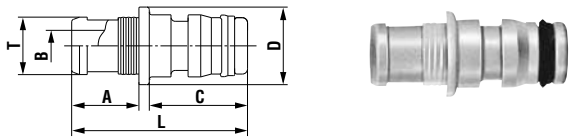
Specifications

Body material		Plastic			
Size		1/4", 3/8" hose			
Working pressure	MPa	0.07			
	kgf/cm²	0.7			
	bar	0.7			
	PSI	10.2			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks	
	Nitrile rubber	NBR (SG)	−20°C to +50°C	Standard material	

Models and Dimensions

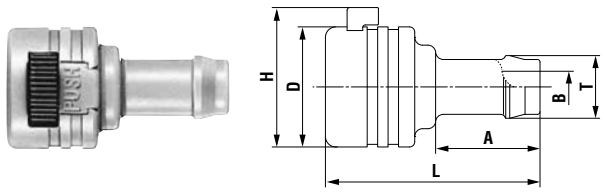
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



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

Socket SH type (Hose barb)



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

Plastic Cupla
BCC Type with Flow Controller

For low pressure air piping

Working pressure: 0.07 MPa {0.7 kgf/cm²}
Valve structure: One-way shut-off
Applicable fluid: Air

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

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

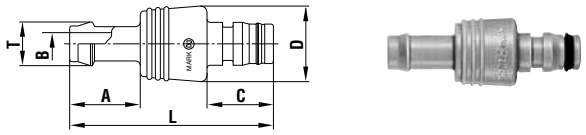
Specifications

Body material		Plastic			
Size		3/8" hose			
Working pressure	MPa	0.07			
	kgf/cm²	0.7			
	bar	0.7			
	PSI	10.2			
Seal material / Working temperature range	Seal material	Mark	Working temperature range	Remarks	
	Nitrile rubber	NBR (SG)	−20°C to +50°C	Standard material	

Models and Dimensions

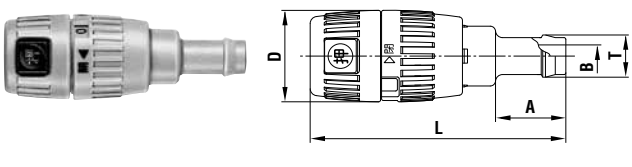
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



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

Socket SH type (Hose barb)

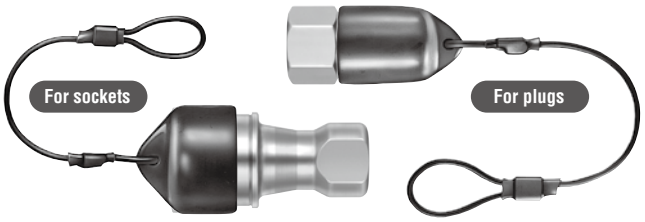


Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	øD	A	øT	øB
BCC-3SH	3/8"	25	(73)	26	20	12	6

Accessories for Cuplas

Dip Mold Cap

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



- PVC Dust Caps produced by dip molding are available for Hi Cuplas, SP Cuplas Type A, TSP Cuplas, and Hydraulic Cuplas. Dust Caps prevent dust from getting inside the fluid line and protects the sealability and life of the O-ring.

	Part number	Cap for Hi Cupla	Sales unit
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 Type A	Sales unit
Socket	CA96462	For 1S-A	1
	CA96463	For 2S-A	1
	CA96464	For 3S-A	1
	CA96465	For 4S-A	1
	CA96466	For 6S-A	1
	CA96467	For 8S-A	1
	CA96468	For 10S-A	1
	CA96449	For 12S-A	1
	CA96470	For 16S-A	1
Plug	CA96453	For 1P-A	1
	CA96454	For 2P-A	1
	CA96455	For 3P-A	1
	CA96456	For 4P-A	1
	CA96457	For 6P-A	1
	CA96458	For 8P-A	1
	CA96459	For 10P-A	1
	CA96460	For 12P-A	1
	CA96461	For 16P-A	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 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

	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

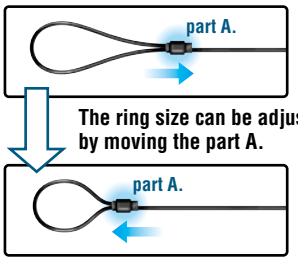
	Part number	Cap for 280 Cupla	Sales unit
Socket	CB17082	For 280-2S	1
	CA96476	For 280-3S	1
	CA81555	For 280-4S	1
	CA96478	For 280-6S	1
	CA96466	For 280-8S	1
Plug	CA96453	For 280-2P	1
	CA96455	For 280-3P	1
	CA82643	For 280-4P	1
	CA96471	For 280-6P	1
	CA96551	For 280-8P	1

	Part number	Cap for F35/350 Cupla	Sales unit
Socket	CB28313	For F35-2S	1
	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	CA96454	For F35-2P	1
	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 Zerospill Cupla	Sales unit
Socket	CA96463	For ZEL-2S	1
	CA96464	For ZEL-3S	1
	CB28786	For ZEL-4S	1
	CA96466	For ZEL-6S	1
	CA96467	For ZEL-8S	1
Plug	CA96454	For ZEL-2P	1
	CB28790	For ZEL-3P	1
	CA96456	For ZEL-4P	1
	CA96457	For ZEL-6P	1
	CA96472	For ZEL-8P	1

	Part number	Cap for HSU Cupla	Sales unit
Socket	CA96463	For HSU-2S	1
	CA96464	For HSU-3S	1
	CA96465	For HSU-4S	1
	CA96466	For HSU-6S	1
	CA96467	For HSU-8S	1
Plug	CB60672	For HSU-2P	1
	CB60673	For HSU-3P	1
	CB60674	For HSU-4P	1
	CB60675	For HSU-6P	1
	CB60676	For HSU-8P	1

Size-adjustable Ring for Dip Mold Cap



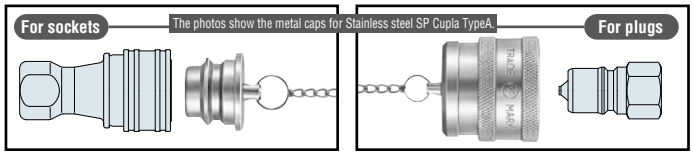
The ring size can be adjusted by moving the part A.

Safety Cap

Metal caps for Hi Cupla Series, SP Cupla Type A, TSP Cupla and Hydraulic Cupla

(Semi-standard)

- Metal Cap equipped with dust-proof and leak prevention function.
- Caps with metal material corresponding to that of Cupla body are available.



Model		Applicable Cuplas	Sales unit
Model name of Safety Cap is stated in the following manner. **Model= Cupla Model (normal Cupla) + SD (safety cap)**	**Example:"2S-A-SD" identifies a safety cap for SP Cupla Type A Model 2S-A.**	Sockets and plugs for Hi Cupla, SP Cupla Type A, TSP Cupla, HSP Cupla, 210 Cupla, S210 Cupla, 350 Cupla, 450B Cupla and SP-V Cupla	1 pc.

When ordering, please indicate Model Name or part number. Semi standard items: As these items are not always in stock, delivery time is subject to confirmation.

Sleeve Cover

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

- Easier sliding operation is achieved by attaching an additional plastic cover over the socket sleeve of Hi Cupla Series.
- Plastic covers reduce the risk of damage if the Cupla strikes other components or products.
- Sleeve covers in various colors allow for easier identification of various air lines.

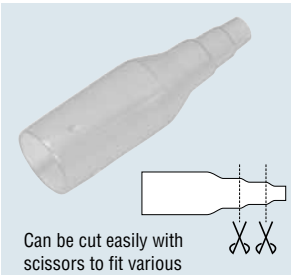
The sleeve cover cannot be used together with the dust cap or dip mold cap.

Part number	Model	Color	Applicable Cuplas	Sales unit	Material
CB23588	SLC-HI-R	Red	For Hi Cupla Series Sockets Note: Sleeve covers cannot be attached to sockets for the Full-Blow Cupla, 400/600/800 Hi Cupla, Hi Cupla Ace, Stainless Hi Cupla and Brass Hi Cupla.	5	Thermoplastic elastomer (TPE)
CB23590	SLC-HI-B	Blue		5	
CB23589	SLC-HI-Y	Yellow		5	
CB23591	SLC-HI-W	White		5	
CB23587	SLC-HI-K	Black		5	

Protection Cover

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

- For Nut Cupla and Full-Blow Cupla Nut Type.
- Protection cover wraps up the whole Cupla to absorb impacts and to reduce the risk of damage if the Cupla accidentally strikes other components or products.
- Protection covers can be cut to fit the hose diameter which the Cupla is connected to.
- Can be attached to either the socket or the plug, and can be used as a dust cap.



Part number	Model	Applicable Cuplas	Sales unit	Material
CB23784	SOC-HI	Can be attached to Nut Cupla socket or plug (SN type & PN type) and the Full-Blow Cupla socket (SN Type).	1	Polyvinyl chloride (PVC)

Dust Cap

Plastic Cap for Hi Cupla Series

- Dust caps prevent dust from getting inside Cuplas.

See page 136 for the details of Dip Mold Cap and Safety Cap for Hi Cupla.

Part number	Model	Applicable Cuplas	Sales unit	Material
CQ12434	20S-D	Sockets for 20/30/40 type Hi Cupla Series Note: Dust caps cannot be attached to the sockets for Full- Blow Cupla, 400/600/800 type of Hi Cupla and Hi Cupla Ace.	1	Polyvinyl chloride (PVC)

Accessories for Air Lines

Air Lines for Hi Cupla Series

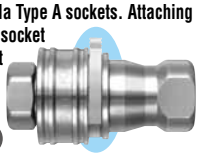
- Connects directly to 20/30/40 type Hi Cupla sockets.
- Convenient to control drainage and pressure in air lines.

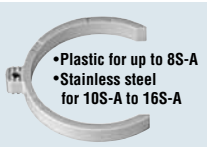
Part number	Model	Cuplas that accessories can be mounted on	Sales unit	Description
CB23625	DC-30PF	Hi Cupla sockets	1	Drain Cock
CB11253	PG-10P	Hi Cupla sockets	1	Pressure Gauge

Sleeve Stopper

Sleeve Stopper for SP Cupla Type A

- Sleeve stopper exclusively for SP Cupla Type A sockets. Attaching the sleeve stopper after connection of socket and plug locks the sleeve of the socket and prevents unexpected disconnection.





	Part number	Stopper for SP Cupla type A socket	Applicable Cuplas	Sales unit	Material
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.

Accessories for O-ring Maintenance

Jigs & grease for replacement of O-rings for SP Cupla Type A, Zerospill Cupla and HSP Cupla

- **Quality of seal materials plays an important role in maintaining the performance of a Cupla. O-rings or seal materials of SP Cupla Type A, TSP Cupla ,Zerosupill Cupla and HSP Cupla are designed to be replaceable. Please be certain to choose the correct and genuine Nitto kohki O-ring in order to maintain the performance of Cuplas.**

Jig for O-ring replacement

- **Model: PMJ-1 (Small)** (Part.No.CB23687)
  - Sales unit: 1 pc.
- **Model: PMJ-2 (Large)** (Part.No.CB23688)
  - Sales unit: 1 pc.

5mL container

Grease for Cupla

- GRE-HC1 (Hydrocarbon grease) for NBR, FKM O-ring or packing (Part.No.CB28531)
- Sales unit: 1 pc.

5mL container

Grease for Cupla

- GRE-M1 (Mineral grease) for NBR, FKM O-ring or packing (Part.No.CB23701)
- Sales unit: 1 pc.

5mL container

Grease for Cupla

- GRE-S1 (Silicone grease) for NBR, FKM, and EPDM O-ring or packing (Part.No.CB23702)
- Sales unit: 1 pc.

O-ring for SP Cupla Type A	Part number NBR	FKM	EPDM	Sales unit
For 1S-A	CP01314	CP00907	CP03270	1
For 2S-A	CP00927	CP00928	CP03333	1
For 3S-A	CP00955	CP00956	CP03276	1
For 4S-A	CP00978	CP00979	CP03283	1
For 6S-A	CP01003	CP01004	CP03292	1
For 8S-A	CP01029	CP01030	CP03298	1
For 10S-A	CP00398	CP01053	CP07179	1
For 12S-A	CP01076	CP01077	CP03902	1
For 16S-A	CP01099	CP01100	CP06953	1

O-ring for TSP Cupla	Part number 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	CQ33388	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

O-ring for Zerosupill Cupla	Part number NBR	FKM	EPDM	Sales unit
For ZEL-2S	CQ40611	CQ40740	CQ40742	1
For ZEL-3S	CQ40628	CQ40744	CQ40746	1
For ZEL-4S	CQ40645	CQ40748	CQ40750	1
For ZEL-6S	CQ40662	CQ40752	CQ40754	1
For ZEL-8S	CQ40679	CQ40756	CQ40758	1

O-ring for HSU Cupla	Part number HNBR	Sales unit
HSU-2S	CQ42490	1
HSU-3S	CQ42496	1
HSU-4S	CQ42502	1
HSU-6S	CQ43482	1
HSU-8S	CQ43489	1

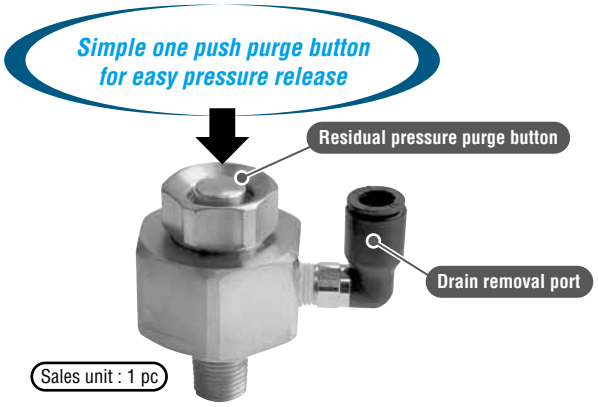
• See page 156 for replacement of the O-ring.

Purge Adapter

Metal Purge Adapter for hydraulic lines (Semi-standard)

- **Can be attached to hydraulic lines to purge residual pressure effectively.**

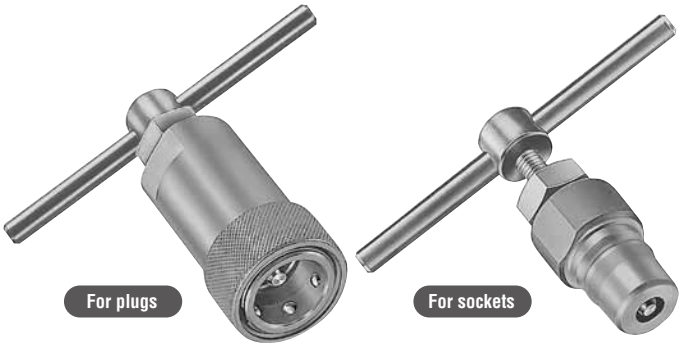
Model	**PAD-2** (Part No.CB19855)
Applicable fluid	Hydraulic oil
Material	Steel (With autocatalytic nickel-phosphorus coating)
Working pressure	35.0 MPa, 357 kgf/cm^2, 350 bar, 5080 PSI
Seal material	Nitrile rubber (NBR)
Working temperature range	−5°C to +80



Residual Pressure Release Jig

Residual Pressure Release Metal Jig for SP Cupla Type A and Hydraulic Cuplas (Semi-standard)

- **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** (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 Type A, HSP Cupla, 210 Cupla, S210 Cupla, 280 Cupla and 350 Cupla	1 pc.

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.

Cupla Adapter for Braided Hose Connection

Mounts on Cupla plug / socket with female thread

- Adapter for Cuplas with female thread such as Zerospill Cupla and SP Cupla Type A.
- No hose clamp is required resulting in reduced risk of injuries to fingers or palms.
- Deterioration of the braided hose at the hose barb part has been eliminated.
- Unique nut construction increases the pulling load of braided hoses.
- Simply push a braided hose onto the hose barb to the end and tighten the nut until it is flush against the hose barb base.
- No inner parts for conventional braided hose fittings are required. Thus incorrect assembling does not occur.

A tool and a hose clamp are not required.

Not Required

Please use braided hoses available in the market.

Application Example

Can be mounted on the plug and socket of Zerospill Cupla.

Benefits without a hose clamp

Two piece design

Specifications

Body material	Brass			
Model	**BH90-3M**	**BH120-4M**	**BH150-4M**	**BH190-6M**
Size (Thread)	3/8"	1/2"	1/2"	3/4"
Braided hose size	ø9 x ø15 mm	ø12 x ø18 mm	ø15 x ø22 mm	ø19 x ø26 mm
Working pressure *1,*2	Depends upon the specifications of braided hoses to be used.			
Working temperature range *2	Depends upon the specifications of braided hoses to be used.			
Applicable fluids *3	Air, Water, Oil			

Max. Tightening Torque

Nm {kgf•cm}

Model	**BH90-3M**	**BH120-4M**	**BH150-4M**	**BH190-6M**
Torque (Taper Pipe Threads) *4,5	12 {122}	30 {306}	30 {306}	50 {510}

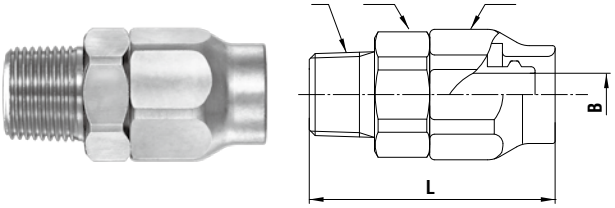
*1 : This shows the normal allowable fluid pressure under continuous use.
*2 : Working pressure and working temperature of Cupla and Adapter for braided hoses depend upon the specifications of braided hoses to be used.
*3 : Use within the specification of the seal material and the braided hose to be used.
*4 : Stress corrosion crack may happen on brass Cupla and Adapter if they are used under corrosive environment. Take note of usage conditions.
*5 : Tighten the nut until it is flush against the hose barb base after pushing a braided hose to the end.

• Braided hoses should be made of soft PVC and woven by reinforcement thread.

Models and Dimensions

WAF : WAF stands for width across flats.

BH-M type (Male thread)



Model	Application (Hose) (mm)	Hose wall thickness (mm)	Mass (g)	Dimensions (mm)				
				L	H1 (WAF)	H2 (WAF)	T	øB
BH90-3M	ø9 x ø15	3±0.3	106	(49)	Hex.23	Hex.24	R 3/8	8.5
BH120-4M	ø12 x ø18	3±0.3	159	(59)	Hex.27	Hex.27	R 1/2	11
BH150-4M	ø15 x ø22	3.5±0.35	210	(67)	Hex.30	Hex.30	R 1/2	13
BH190-6M	ø19 x ø26	3.5±0.35	301	(74)	Hex.35	Hex.35	R 3/4	17

When ordering, please indicate Model Name or part number.

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	Hydrogenated nitrile rubber	Ethylene-propylene rubber	Fluoro rubber	Perfluoro-elastomer	Silicone rubber	Chloroprene rubber
2	2,2-Dimethyl-butane	◎	◎	×	◎	◎	×	△
	2,3-Dimethyl-butane	◎	◎	×	◎	◎	×	△
	2,4-Dimethyl-pentane	◎	◎	×	◎	◎	×	×
	2-Methyl-pentane	◎	◎	×	◎	◎	×	×
3	3-Methyl-pentane	◎	◎	×	◎	◎	×	×
A	Acetaldehyde	△	△	○	×	△	○	△
	Acetic acid	○	○	○	△	◎	△	○
	Acetic anhydride	△	×	○	×	◎	○	○
	Acetone	×	×	◎	×	◎	×	×
	Acetonitrile	△		◎	◎	◎	×	×
	Acetophenone	×	×	◎	×	◎	×	×
	Acetyl chloride	×	×	×	◎	◎	×	×
	Acetylacetone	×	×	◎	×	◎	×	×
	Acetylene	◎	◎	◎	◎	◎	○	○
	Air (50˚C)	◎	◎	◎	◎	◎	◎	◎
	Aluminium bromide	◎	◎	◎	◎	◎	◎	◎
	Aluminium chloride	◎	◎	◎	◎	◎	○	◎
	Aluminium nitrate	◎	◎	◎	◎	◎	○	◎
	Aluminium sulfate	◎	◎	◎	◎	◎	◎	○
	Amine mixture	×	×	○	×	×	○	○
	Ammonia (anhydrous)	○	○	◎	×	○	○	◎
	Ammonia (Liquid) (65˚C)	△			×	◎		△
	Ammonia (Liquid) (Cool)	△		◎	×	◎	○	○
	Ammonia gas (Low temperature)	◎	◎	◎	×	◎	◎	◎
	Ammonium carbonate	×	×	◎	◎	◎	×	◎
	Ammonium chloride	◎	◎	◎	◎	◎	×	◎
	Ammonium hydroxide	×	×	◎	×	×	◎	△
	Ammonium magnesium sulfate	×		×	×		×	×
	Ammonium nitrate (65˚C)	◎	◎	◎			○	◎
	Ammonium phosphate (65˚C)	◎		◎	×	◎	○	◎
	Ammonium sulfate	◎	◎	◎	×	◎	◎	○
	Ammonium sulfite	△	△	◎	△	◎	○	◎
	Ammonium thiosulfate	△	△	◎	△	◎	○	◎
	Amyl acetate	×	×	△	×	◎	×	×
	Amyl alcohol	○	○	◎	○	◎	×	○
	Aniline	×	×	○	△	◎	×	×
	Animal oil (Lard)	◎	◎	○	◎	◎	○	○
	Arsenic trichloride	△		×	×	◎	×	×
	Asphalt	○	○	×	◎	◎	×	×
B	Barium chloride	◎	◎	◎	◎	◎	◎	◎
	Barium hydroxide	◎	◎	◎	◎	◎	◎	◎
	Barium nitrate	△	△	◎	△	◎	○	◎
	Barium sulfate (65˚C)	◎		◎	◎	◎	◎	◎
	Barium sulfide	◎	◎	◎	◎	◎	○	◎
	Beer	◎	◎	◎	◎	◎	◎	◎
	Benzaldehyde	×	×	◎	×	◎	○	×
	Benzene	×	×	×	◎	◎	×	×
	Benzyl alcohol	×	×	○	◎	◎	△	○
	Benzyl chloride	×	×	×	◎	◎	×	×
	Brake oil	△	△	◎	×	◎	△	◎
	Bromine	×	×	×	◎	◎	×	×
	Bromine water	×	×	×	◎	◎	×	×

	Fluids	Seal Material						
		Nitrile rubber	Hydrogenated nitrile rubber	Ethylene-propylene rubber	Fluoro rubber	Perfluoro-elastomer	Silicone rubber	Chloroprene rubber
B	Butadiene	×	×	×	◎	◎	×	×
	Butane	◎	◎	×	◎	◎	×	△
	Butane (liquid)	◎		×	◎		×	○
	Butanol (Butyl alcohol)	◎	◎	○	◎	◎	○	◎
	Butter and butter oil	◎	◎	◎	◎	◎	○	×
	Butyl acetate	×	×	○	×	◎	×	×
	Butyl stearate	○	○	×	◎	◎	×	×
	Butylaldehyde	×	×	○	×	○	×	×
	Butylene	○	○	×	◎	◎	×	△
C	Cadmium cyanide	△	△	◎	△	◎	○	◎
	Calcium acetate	○	○	◎	×	◎	×	○
	Calcium acetate (65˚C)	○		◎	×	◎	×	○
	Calcium carbide					◎		
	Calcium carbonate	◎	◎	◎	◎	◎	◎	◎
	Calcium hydroxide	◎	◎	◎	◎	◎	◎	◎
	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	×	×	×	◎	◎	×	×
	Chromium hydroxide					◎		
	Coconut oil	◎	◎	△	◎	◎	◎	×
	Cod liver oil	◎		◎	◎	◎	○	○
	Coffee	◎		×	×		×	×
	Copper chloride	◎	◎	◎	◎	◎	◎	◎
	Copper cyanide	◎	◎	◎	◎	◎	◎	◎
	Copper sulfate	◎	◎	◎	◎	◎	◎	○
	Corn oil	◎	◎	△	◎	◎	◎	△
	Cotton seed oil	◎	◎	△	◎	◎	◎	△
	Cresol (50˚C)	×	×	×	○	◎	×	×
	Crude oil	○	○	×	◎	◎	×	×
	Cyclohexane	◎	◎	×	◎	◎	×	×
	Cyclohexanol	◎	◎	×	◎	◎	×	×
D	Developer	◎	◎	○	◎	◎	◎	○
	Diacetone alcohol	×	×	◎	×	◎	×	○
	Dibenzyl ether	×	×	○	×	◎	×	×
	Dichlorophenol	○	○	×	◎	◎	×	×
	Diesel oil	◎	◎	×	◎	◎	×	×
	Diethanolamine	△	△	◎	△	◎	○	◎

■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: Contact us when the space is blank.

■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	Hydrogenated nitrile rubber	Ethylene-propylene rubber	Fluoro rubber	Perfluoro-elastomer	Silicone rubber	Chloroprene rubber
D	Diethylene glycol	◎	◎	◎	◎	◎	○	◎
E	Ethanol (Ethyl alcohol)	△	△	◎	△	◎	○	◎
	Ethyl acetate	×		○	×		○	×
	Ethyl benzene	×	×	×	◎	◎	×	×
	Ethyl cellulose	○	○	○	×	◎	○	○
	Ethyl chloride	◎	◎	△	◎	◎	×	×
	Ethylene glycol	◎	◎	◎	◎	◎	◎	◎
	Ethylene trichloride	×	×	△	◎	◎	×	×
F	Ferric sulfate	◎	◎	◎	◎	◎		◎
	Fish oil	○	○	×	◎	◎	◎	×
	Fluorine (Gas)	×		×	×	○	×	×
	Formic aldehyde	△	△	○	×	◎	○	△
	Freon 11	○	×	×	○	○	×	×
	Freon 12	◎	○	△	△	○	×	◎
	Freon 22	×	×	△	×	◎	×	◎
	Fuel oil	◎		×	◎	◎	×	○
	Furfural	×	×	○	×	◎	×	×
G	Gasoline	◎	◎	×	◎	◎	×	×
	Gelatin	◎	◎	◎	◎	◎	◎	◎
	Glucose	◎	◎	◎	◎	◎	◎	◎
	Glycerine (65˚C)	◎	◎	◎	◎	◎	◎	◎
	Grease (Petroleum-based)	◎	◎	×	◎	◎	×	×
H	Helium	◎	◎	◎	◎	◎	◎	◎
	Heptane (n-heptane)	◎	◎	×	◎	◎	×	○
	Hexane (n-hexane)	◎	◎	×	◎	◎	×	○
	Hexylene glycol	△	△	◎	△	◎	○	◎
	Hydraulic oil (Petroleum-based)	◎	◎	×	◎	◎	○	×
	Hydraulic oil (Phosphate ester series)	×	×	○	◎	◎	△	×
	Hydraulic oil (Synthetically-prepared)	○	○	×	◎	◎		×
	Hydraulic oil (Water-glycol series)	◎	◎	◎	○	◎	○	◎
	Hydraulic oil (Water-in-oil emulsion series)	◎	◎	×	◎	◎	△	×
	Hydrobromic acid	×	×	◎	◎	◎	×	×
	Hydrogen	◎	◎	◎	◎	◎	△	◎
	Hydrogen peroxide (30%)	×			◎		◎	×
I	Iron chloride	◎		◎	◎		○	◎
	Iron nitrate (65˚C)	◎		◎	◎		○	◎
	Iron sulfite (100%)	◎		×	×		×	×
	Isoamyl alcohol	×		×	×		×	×
	Isooctane	◎	◎	×	◎	◎	×	○
	Isopropanol	○	○	◎	◎	◎	◎	○
	Isopropyl acetate	×	×	○	×	◎	×	×
	Isopropyl alcohol	○	○	◎	◎	◎	◎	○
	Isopropyl ether	○	○	×	×	◎	×	×
K	Kerosene	◎	◎	×	◎	◎	×	○
L	Lard and lard oil	◎	◎	○	◎	◎	○	○
	Latex	×		×	×		×	×
	Liquefied petroleum gas (LPG)	◎	◎	×	◎	◎	△	×
	Liquors (beet)	◎	◎	◎	◎	◎	◎	◎
	Lubricating oil (SAE 10, 20, 30, 40, 50)	◎	◎	×	◎	◎	×	×
M	Magnesium chloride	◎	◎	◎	◎	◎	◎	◎
	Magnesium hydroxide	○	○	◎	◎	◎	×	○
	Magnesium nitrate	◎		×	×		×	×

	Fluids	Seal Material						
		Nitrile rubber	Hydrogenated nitrile rubber	Ethylene-propylene rubber	Fluoro rubber	Perfluoro-elastomer	Silicone rubber	Chloroprene rubber
M	Magnesium sulfate	◎		◎	◎	◎	◎	◎
	Maleic anhydride	×	×	○	×	◎	×	×
	Mercury	◎	◎	◎	◎	◎	×	◎
	Methanol	×	×	◎	×	◎	◎	◎
	Methyl bromide	○	○	×	◎	◎	×	×
	Methyl butyl ketone	×	×	◎	×	◎	×	×
	Methyl chloride	×	×	△	◎	◎	×	×
	Methyl ethyl ketone (MEK)	×	×	◎	×	◎	×	×
	Methyl isobutyl ketone (MIBK)	×	×	△	×	◎	×	×
	Methyl propyl ketone	×		○	×		×	×
	Methyl salicylate	×	×	○	×	◎	×	△
	Methylene bromide	×		×	◎	◎	×	×
	Methylene chloride	×		×	○	◎	×	×
	Milk	◎	◎	◎	◎	◎	◎	◎
	Mineral oil	◎	◎	×	◎	◎	△	△
	Monobromobenzene	×		×	◎	◎	×	×
	Monochlorobenzene	×	×	×	◎	◎	×	×
	Monoethanolamine (MEA)	×	×	○	×	◎	○	×
N	n-amyl alcohol	×		×	×		×	×
	Naphtha	○	○	×	◎	◎	×	×
	Naphthalene	×	×	×	◎	◎	×	×
	Naphthenic oil	◎		×	◎		×	×
	n-butyl alcohol	×		×	×		×	×
	Nickel acetate	○	○	◎	×	◎	×	○
	Nickel acetate (65˚C)	×		◎	×		×	×
	Nickel ammonium sulfate	△		◎	△	◎	○	◎
	Nickel chloride	◎	◎	◎	◎	◎	◎	◎
	Nickel nitrate	△	△	◎	△	◎	○	◎
	Nickel sulfate	◎	◎	◎	◎	◎	◎	○
	Nitrobenzene	×	×	△	○	◎	×	×
	Nitrogen (gas)	◎	◎	◎	◎	◎	◎	◎
O	Octyl alcohol	○	○	△	◎	◎	○	○
	Oleic acid	△	△	×	○	◎	×	×
	Olive oil	◎	◎	○	◎	◎	△	×
	Ortho-dichlorobenzene	×	×	×	◎	◎	×	×
	Oxygen (gas)	○	○	◎	◎	◎	◎	○
	Ozone	×	△	◎	◎	◎	◎	×
P	Palm oil	×		×	×		×	×
	Paradichlorobenzene	×	×	×	◎	◎	×	×
	Paraffin oil	◎	◎	×	◎	◎	×	×
	Peanut oil	◎		△	◎		◎	○
	Pentane (n-pentane)	◎	◎	×	◎	◎	×	◎
	Phenol	×	×	×	◎	◎	×	×
	Phosphorous oxychloride (dry)	○		◎	◎		○	○
	Phosphorous oxychloride (wet)	○		◎	◎		○	○
	Phosphorus	×		×	×	◎	×	×
	Pine oil	○	○	×	◎	◎	×	×
	Potassium acetate (65˚C)	○	○	◎	×	◎	×	○
	Potassium aluminium sulfate	△	△	◎	△	◎	○	◎
	Potassium bicarbonate	△	△	◎	△	◎	○	◎
	Potassium bichromate	◎		◎	◎	◎	◎	◎
	Potassium carbonate	△	△	◎	△	◎	○	◎

Seal Material Selection Table for Reference

	Fluids	Seal Material						
		Nitrile rubber	Hydrogenated nitrile rubber	Ethylene-propylene rubber	Fluoro rubber	Perfluoro-elastomer	Silicone rubber	Chloroprene rubber
P	Potassium cyanide	◎	◎	◎	◎	◎	◎	◎
	Potassium hydroxide (50%)	○	○	◎	×	◎	△	○
	Potassium hyposulfite	○		◎	◎		◎	◎
	Potassium nitrate	◎	◎	◎	◎	◎	◎	◎
	Potassium nitrite	△	△	◎	△	◎	○	◎
	Potassium phosphate	△	△	◎	△	◎	○	◎
	Potassium silicate	◎	◎	◎	◎	◎	×	◎
	Potassium sulfate	◎	◎	◎	◎	◎	◎	○
	Potassium thiosulfate	△	△	◎	△	◎	○	◎
	Propane	◎	◎	×	◎	◎	×	○
	Propionaldehyde	△	△	◎	△	◎	○	◎
	Propionitrile	◎	◎	×	◎	◎	◎	○
	Propyl acetate	×	×	○	×	◎	×	×
	Propyl alcohol	◎	◎	◎	◎	◎	◎	◎
	Propylene	△	△	×	◎	◎	×	×
	Pyridine	×		○	×	◎	×	×
R	Rosin oil	◎		×	×		×	×
S	Secondary butyl alcohol	○	○	○	◎	◎	○	○
	Soapy water (65℃)	◎	◎	◎	◎	◎	◎	○
	Sodium acetate	○	○	◎	×	◎	×	○
	Sodium aluminate	△	△	◎	△	◎	○	◎
	Sodium bicarbonate	◎	◎	◎	◎	◎	◎	◎
	Sodium bichromate	△	△	◎	△	◎	○	◎
	Sodium carbonate	◎	◎	◎	◎	◎	◎	◎
	Sodium chloride	◎	◎	◎	◎	◎	◎	◎
	Sodium chloride (salt water)	◎	◎	◎	◎	◎	◎	◎
	Sodium cyanide	◎	◎	◎	◎	◎	◎	◎
	Sodium hydroxide	△	△	◎	△	◎	○	◎
	Sodium hypochlorite (1%)	○	○	○	○	◎	○	○
	Sodium hyposulfite	△	△	◎	△	◎	○	◎
	Sodium iodide	△	△	◎	△	◎	○	◎
	Sodium metaphosphate	◎	◎	◎	◎	◎	×	○
	Sodium nitrate	△		◎	△	◎	×	◎
	Sodium nitrite	○	○	◎	×	◎	×	○
	Sodium perborate	○	○	◎	◎	◎	○	○
	Sodium peroxide	○	○	◎	◎	◎	×	○
	Sodium phosphate	◎	◎	◎	◎	◎	×	◎
	Sodium plumbate	△	△	◎	△	◎	○	◎
	Sodium pyrosulfate	◎	◎	◎	◎	◎	◎	○
	Sodium silicate (Water glass)	◎	◎	◎	◎	◎	×	◎
	Sodium sulfate	◎	◎	◎	◎	◎	◎	○
	Sodium sulfide	◎	◎	◎	◎	◎	◎	○
	Sodium sulfite	◎	◎	◎	◎	◎	◎	○
	Spindle oil	◎	◎	×	◎	◎	△	×
	Starch	◎		◎	◎		◎	◎
	Steam (100℃)	×	×	◎	○	◎	×	×
	Styrene monomer	×	×	×	○	◎	×	×
	Sucrose solution	◎	◎	◎	◎	◎	◎	◎
	Sulfur	×	×	◎	◎	◎	○	◎
	Sulfur chloride (dry)	×	×	×	◎	◎	△	×
	Sulfur dioxide	×	×	◎	×	◎	○	×
	Sulfur tetroxide	×		×	◎		×	×

	Fluids	Seal Material						
		Nitrile rubber	Hydrogenated nitrile rubber	Ethylene-propylene rubber	Fluoro rubber	Perfluoro-elastomer	Silicone rubber	Chloroprene rubber
S	Syrup	◎						
T	Tertiary butyl alcohol	○	○	○	◎	◎	○	○
	Tetrachloroethylene	×	×	×	◎	◎	×	×
	Tetraethyl lead	○	○	×	◎	◎	×	×
	Tetralin	×	×	×	◎	◎	△	×
	Titanium terachloride	○		×	◎	◎	×	×
	Toluene (Toluol)	×	×	×	△	◎	×	×
	Triethanolamine	△	△	○	×	◎	×	○
	Triphenyl phosphite	×		◎	×		×	×
	Tung oil	◎	◎	×	◎	◎	×	○
V	Vinyl acetate	×		◎	×	◎	×	○
	Vinyl chloride	○	○	×	◎	◎	◎	×
W	Water	◎	○	◎	◎	◎	◎	◎
	Whisky	◎	◎	◎	◎	◎	◎	◎
	Wine	◎	◎	◎	◎	◎	◎	◎
X	Xylene	×	×	×	◎	◎	×	×
Z	Zinc chloride	◎	◎	◎	◎	◎	◎	◎
	Zinc sulfate	◎	◎	◎	◎	◎	◎	◎

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 body materials that should not be used with certain fluids, please refer to this table when making your selection.

○ **Suitable** △ **Not suitable under certain conditions** × **Unsuitable**

	Fluids	Brass	Stainless Steel	Steel	Aluminum	Polypropylene
A	Acetic acid	×	○		×	△
	Acetic anhydride	×	○		△	○
	Acetone	○	○	○	○	△
	Air	○	○	○	○	○
	Aluminum 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	○	○	○	○	○
	Chlorine		×			×
	Caustic soda		△		×	○
	Chromic acid	×	×		×	×
	Citric acid	△	○		△	○
	Cresol acid	○	○	○	△	○
D	Diesel fuel	○	○	○	○	△
	Dowtherm		○			
	Drinking water	△	○			○
E	Ethanol	○	○	○	○	○
	Ether	○	○	○	○	△
	Ethyl acetate	○	△	△	△	△
	Ethylene chloride					
	Ethylene glycol	○	○	○	○	○
F	Fatty acid	△	○			×
	Ferric chloride	×	×		×	○
	Ferric sulfate	×	△			○
	Formaldehyde 40%	△	○		△	○
	Formic acid	×	○		×	○
	Freon	○	○	○	○	×

	Fluids	Brass	Stainless Steel	Steel	Aluminum	Polypropylene
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 hudroxide		○		×	△
	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.

Unit Conversion Tables

Length

m	cm	in	ft	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 (metric ton)	ltn (long ton)	stn (short ton)
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

Cupla Inquiry Form

If you are unable to find a Cupla that you are looking for, or the type that suits your particular requirements in this catalog, please fill in this form and fax it to our distributor in your country or directly to us. We will select the most suitable Cupla for your applications and contact you directly or through our distributor.

FAX Sheet

To Nitto Kohki Co., Ltd.

Company Name		**Factory / Branch**	
Department / Section		**Full Name**	
Address		**TEL**	
E-mail		**FAX**	

■Cupla Usage Conditions

Application	(Product / Machinery) Name ( )	**Quantity to Be Used**	( ) pieces
Size	( ) Standard or Code to be conformed with, if any ( )	**Location**	Indoors • Outdoors
Product Name	Hi Cupla • Super Cupla • Molding Cupla • SP Cupla Type A • HSP • 350 • TSP • Mini Cupla • Others ( )		
Body Material	( )	**Seal Material**	( )
Surface Treatment	( )	**Connection Disconnection Frequency**	( ) times / day • ( ) times / month
Valve	Socket (with • without) Plug (with • without)		
Fluid	Air • Water • Oil • Steam (Others:)		
Pressure	Maximum ( ) MPa Normal ( ) MPa Minimum ( ) MPa Impulse (with • without)		
Maximum Flow	( ) L/min		
Vacuum	( ) kPa		
Temperature	Maximum ( ) ℃ 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		Drawing No.				
	Body Material		Surface Treatment						

Please make your blank copy of this form to fill in.

Taper Pipe Threads

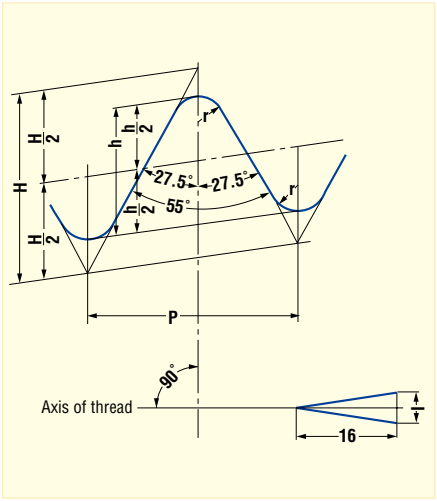
JIS B 0203:1999
ISO 7-1:1994
(BS21)

UDC 621.882.082.2 JIS
Japanese Industrial Standard

This Japanese Industrial Standard specifies taper pipe threads and is applicable to the threads used mainly for pressure-tight joints on the threads for joining pipes, pipe fittings, fluid machinery, etc.

Attached Table: Basic Profiles, Basic Dimensions and Tolerance

Basic Profile Applied for Taper External and Taper Internal Threads

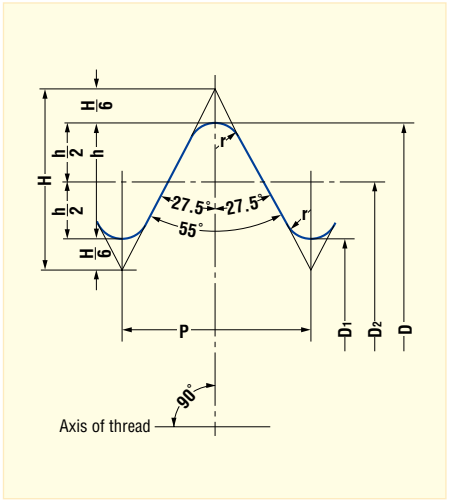


Thick continuous line shows basic profile.

$$P = \frac{25.4}{n}$$

H = 0.960237 P
h = 0.640327 P
r = 0.137278 P

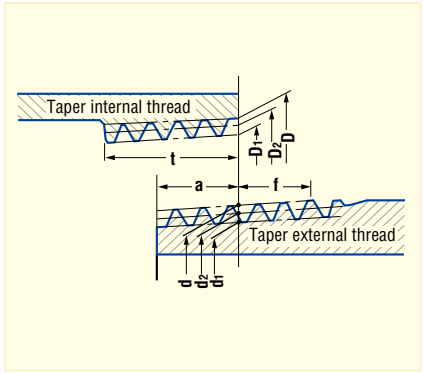
Basic Profile Applied for Parallel Internal Threads



Thick continuous line shows basic profile.

$$P = \frac{25.4}{n}$$

H = 0.960491 P
h = 0.640327 P
r = 0.137329 P



How to symbolize taper pipe threads:

Taper external thread	**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 25.4 mm) *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	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)	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	
	10PM, 20PM, 30PM, 40PM	
	20PF, 30PF, 40PF	
	20PFF	
	60PC, 80PC, 100PC	
	90PN-BH	
Anti-vibration Plug Hose	SHA-3-2R, SHA-3-3R	
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		
90SN-BH		
20SH-BL, 30SH-BL, 40SH-BL		**Hi Cupla BL**
20SM-BL, 30SM-BL, 40SM-BL		
20SF-BL, 30SF-BL, 40SF-BL		
65SN-BL, 80SN-BL, 85SN-BL		
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		
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		
L200-65SNRG, L200-85SNRG		
PV-20SM, PV-30SM, PV-40SM		**Purge Hi Cupla**
RT Type, RE Type		**Rotary Line Cupla**
200T Type, 200L Type, 200S Type		**Line Cupla 200**
FBH-RE Type, FBH-RT Type		**Rotary Full-Blow Line Cupla**
HA-20SH, HA-30SH		**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 (Inlet 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 Ayutthaya, Thailand, having the capability of flexible mass production, are in full operation around the clock and constitute a complete high-grade supply system, from the machining of components to the assembly and testing of finished products, that is forever ready and able to respond to our user's reliance.

Production Facilities Assure Flexible Supply System

TOCHIGI NITTO KOHKI CO., LTD.

Production of Cuplas, Linear-Motor-Driven Piston Pumps and their Applied Products

Tochigi Nitto Kohki factory is accredited under ISO 14001 & 9001.

ISO 14001 JQA-EM4057 ISO 9001 JQA-2025

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 INDUSTRY (THAILAND) CO., LTD.

Production of Cuplas, Air Compressors, and Vacuum Pumps

ISO 14001 & 9001

ISO 14001 JQA-EM6395 ISO 9001 JQA-QM8194

NITTO KOHKI INDUSTRY (THAILAND) CO., LTD. factory is accredited under ISO 14000 and ISO 9001.

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 developement of better Cuplas, Cuplas that suggest new applications.


Headquarters and R & D Laboratory

Quality Control

The careful selection of materials, painstaking pursuit of machining precision, and strict surveillance processes such as severe endurance tests have earned trust for our Cuplas as a global brand.

Production

High-grade, rationalized, and integrated production system extends from the machining of parts to the assembly and testing of completed products. Robots that we make ourselves for our own plants and many other state-of-the-art facilities that cannot be seen elsewhere have marvelous capacity for mass production. And with them all, we aim to be an establishment of a flexible supply system.

Tochigi Nitto Kohki factory is accredited under ISO 14001 & 9001.

Marketing

Meticulous marketing activities include advertising in the general industrial press and specialist papers, national and local exhibitions, training sessions, catalogs, promotion videos, other presentation tools and technical data sheets for new launches, and unique yet dynamic campaigns, etc.

Nitto Kohki's Laborsaving Products

Nitto Kohki is capturing the needs of users by introducing to the world not only “Cuplas” quick connect couplings, but also next-generation laborsaving devices, including various “machine tools and hand tools”, high precision “Delvo” electric screwdrivers, and linear-motor-driven piston “compressors/vacuum pumps”.

Nitto Kohki’s Quality Products

Machines and Tools to Achieve Energy and Labor Savings in Processing Work

Machines and tools are used at various processing sites for such work as cutting, polishing, scaling, drilling and chamfering of steel materials. We have created a product line up of pneumatic, electric and hydraulic machines and tools to match the diversification of processing modes and the conditions of work operations.

High Precision “Delvo” Electric Screwdrivers for Professional Use

NITTO KOHKI "delvo" Electric Screwdrivers are high-quality tools for professional use, with special emphasis on precise control of torque and long life. They apply just the correct amount of torque –with sure, positive control always at your fingertips. They are smooth and shockless in operation, too.

Compressors, Vacuum Pumps and Their Applied Products

MEDO pumps are unique products featuring a linear-motor-driven free piston system. NITTO KOHKI has made available a complete series of air compressors and suction pumps that incorporate this uniquely functional design. These are quite appropriate as air sources or suction power units for various pneumatically operated equipment and apparatus in advanced industries.

Safety Guide

⚠ Safety Precautions

The safety precautions provide instructions for the safe use of Nitto Cuplas to avoid the potential danger of bodily harm or damage to surrounding property. The safety precautions are categorized under the headings Danger, Warning and Caution, in accordance with the degree of potential hazard to the body or surrounding property, if the Cuplas are used incorrectly.
They are all important notes for safety and must be followed as well as in accordance with International standards #1 and other local safety regulations #2.
#1: ISO 4413, Hydraulic Fluid Power – General rules relating to systems ISO 4414, Pneumatic Fluid Power – General rules relating to systems
#2: Industrial Health & Safety law (for example)

⚠ **DANGER**	**Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.**
⚠ **WARNING**	**Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.**
⚠ **CAUTION**	**Indicates a potentially hazardous situation which, if not avoided, may result in personal injury or property damage.**

⚠ DANGER

Stop using the Cupla immediately if there is any anticipated danger of operation or reduced safety.

⚠ WARNING

The enclosed safety precautions are only a guideline. When using Nitto Cuplas, you are requested to pay particular attention to possible hazardous situations for the application which are not stated in the safety precautions.

⚠ Caution When Selecting Cuplas

⚠ DANGER

- Connection to a coupling of another brand may cause imperfect connection or disconnection, reduced air tightness, impaired pressure resistance or durability, reduced flow rate and potentially result in an unexpected accident and therefore must be avoided. Nitto Kohki cannot accept liability for any accident that may result by mixed use with the coupling of another brand. Please be sure to check for our marks on the right hand side of this page, which are always inscribed on Nitto Kohki Cupla products, when you order and purchase.
- Do not use Cuplas under conditions and environments other than specified in the catalog.

⚠ WARNING

- Please consult us prior to use if Cuplas are required for use on machines, equipment or systems (hereafter referred to as “equipment, systems, etc.”) for sustaining or controlling human life or body.
- When Cuplas are used for the purpose of ensuring safety, please consult us beforehand.
- The compatibility of the product with specific equipment, systems, etc. must be determined by the person designing the equipment, systems, etc. or the person who decides its specifications based on necessary analysis and test result. The expected performance and safety assurance of the equipment, systems, etc. will be the responsibility of the person who has determined its compatibility with the product.
- If Cuplas are to be used for the following applications, please consult us:
  - Vehicles, aircraft and associated equipment systems that accommodate people
  - Medical facilities or suction equipment that directly affects human body
  - Equipment that directly comes into contact with and runs food, drugs or medicines, drinking water, atomic energy equipment or equipment that ensures safety.
- Selecting the wrong type of seal material may cause a leak. In making your selection, please check the compatibility of the seal material with the type of fluid and temperature used in the application.
- Please consult us prior to selection or use of Cuplas when they are intended for use with corrosive or flammable gases/liquids and/or in atmospheres of these types of gases and liquids.

Warranty and Disclaimer

Our responsibilities for the defects in our products shall be as follows:

- We shall be responsible for any defects in design, material or workmanship of our products, if it is apparent that such defects are due to reasons solely attributable to us.
- Our responsibilities shall be limited to one of the following, as determined by us:
  (a) repair of any defective products or parts thereof,
  (b) replacement of any defective products or parts thereof; or
  (c) compensation for loss and damages incurred by you, which shall in no case exceed the amount of your purchase price for the defective products.
- We shall in no case be liable for any special, indirect or consequential loss or damages, whether such loss or damages are those arising from work stoppage, impairment of other goods or death or personal injury.

Performance, Dimensions and Its Limitation

Please note the performance charts and outside dimensions in this catalog do not take into account any tolerances found in mass production.
The information is an average, to be a guide for selecting models and to enable technical appraisal by users.

Beware of Imitations

Recently, similar products which invite misidentification or confusion with Nitto Kohki Cuplas have appeared on the market.
Connection with such a similar product to a Nitto Kohki Cupla may cause:

1. Imperfect connection or disconnection
2. Reduced air tightness
3. Impaired pressure resistance or durability
4. Reduced flow rate

and could result in unexpected accidents.
Therefore, connection other than with a Nitto Kohki Cupla must be avoided.
Please be sure to check for our original marks on the right hand side of this page, which are always inscribed on Nitto Kohki Cupla products, when you order and purchase.

Note: Nitto Kohki cannot accept any liability for any accident that may occur as a result of using couplings of another brand in conjunction with our own.

Markings

Safety Guide

The following precautions must be taken when using Cuplas. Please contact Nitto Kohki or the outlet/supplier where you purchased the product with regard to repair procedures, certification on the specification or applications of the products.

⚠ Precautions Relating to the Use of All Cuplas

• Be sure to read the "Instruction Sheet" that comes with the product or "Caution" on the package before use.

Cuplas for Low Pressure (Air)

⚠ Caution

- Only use Cuplas as quick connecting fluid couplings.
- The fluid to be used must be compatible with the body and seal material of Cupla.
- Only use Cuplas with a combination of Nitto Cuplas.
- Do not use Cuplas continuously exceeding the rated working pressure.
- Only use Cuplas within the range of the rated temperature. Otherwise the seal may get damaged or deteriorate and cause leakage.
- Do not apply any excessive impact, bend or tension more than is necessary to connect or disconnect Cuplas. It may cause leakage or damage.
- Do not use Cuplas in a place where dust or metal dust gets in. It may cause malfunction or leakage.
- May cause malfunction or leakage if paint sticks to Cuplas.
- Do not disassemble Cuplas.
- Disconnect the Cupla plug and socket while holding the plug in one hand and the socket in the other.
- After connection, try to pull the Cupla plug and socket apart to check secure connection.
- Selecting the wrong type of seal material may cause leakage. In making your selection, check the compatibility of seal and body material with the type of fluid and temperature. As to the use of any special paint or solvent, make thoroughly sure of the material compatibility.
- In cleaning Cuplas, do so in a manner that will not affect the seal and body material of Cuplas. (Before cleaning, consult us.)
- Do not drop Cuplas. It may reduce the performance of the Cuplas.
- Do not connect Cuplas directly to a vibrating or impact device. It may result in reduced lifetime.
- Do not use Cuplas continuously at the lowest or highest working temperature.
- Do not exceed the recommended maximum torque when screwing in to the male or female thread of a Cupla for installation. It may cause thread damage.
- Do not apply any excessive bending, tension or rotation to Cuplas. It may cause leakage or damage.
- Dirt, scratches or damages on the sealing surface may cause leakage.
- The inclusion of foreign matter in the fluid to be used may cause malfunction. Fluid must be cleaned through filters before reaching to Cuplas.
- Do not strike the tip of an automatic shut-off valve with a hammer or a similar tool. It may cause leakage or malfunction. Consult us for an alternative way of releasing the residual pressure.
- Put a Nitto genuine dust cap on the plug after disconnection when there is a possibility of dirt sticking to the plug seal surface.

Cautions on Handling Cupla Hose

⚠ Caution

- Make sure that there is no twist or bend on the hose before use.
- Do not get the hose scratched or squeezed with stones or a concrete for a long time. It may cause leakage or damage.
- Do not bend the hose excessively near the Cupla.
- Do not use Cupla Hose as a hoist.
- Do not use the hose near fire. It may soften or deform the hose.
- Keep the hose in a shaded, dry and well-ventilated place.
- Do not bend the urethane hose less than the minimum-bending radius of 3 cm.
- Disconnect a Cupla plug and socket while holding the plug in one hand and the socket in the other.
- After connection, try to pull the Cupla plug and socket apart to check secure connection.
- In cleaning Cuplas, do so in a manner that will not affect the seal and body material of Cuplas. (Before cleaning, consult us.)
- Do not drop Cuplas. It may reduce the performance of the Cuplas.
- Do not connect Cuplas directly to a vibrating or impact device. It may result in reduced lifetime.
- Do not use Cuplas continuously at the lowest or highest working temperature.
- Do not apply any excessive bending, tension or rotation to Cuplas. It may cause leakage or damage.
- Dirt, scratches or damages on the sealing surface may cause leakage.
- The inclusion of foreign matter in the fluid to be used may cause malfunction. Fluid must be cleaned through filters before reaching to Cuplas.
- Do not strike the tip of an automatic shut-off valve with a hammer or a similar tool. It may cause leakage or malfunction. Consult us for an alternative way of releasing the residual pressure.

Cupla for Oxygen / Fuel Gas

⚠ Warning

- Fluid must flow from socket to plug.
- Use a thread sealant on the male taper pipe thread to ensure no leakage.
- Do not exceed the recommended maximum torque when screwing in to the male or female thread of a Cupla for installation. It may cause damage.
- The fluid to be used must be compatible with the body and seal materials of Cupla.
- Only use Cuplas with a combination of Nitto Cuplas.
- Do not use Cuplas continuously exceeding the rated working pressure.
- Only use Cuplas within the range of the rated temperature. Otherwise the seal may get damaged or deteriorate and cause leakage.
- Do not apply any excessive impact, bend or tension more than is necessary to connect or disconnect Cuplas. It may cause leakage or damage.
- Do not use Cuplas in a place where dust or metal dust gets in. It may cause malfunction or leakage.
- May cause malfunction or leakage if paint sticks to Cuplas.
- Do not use the Cupla in a place where gas is likely to build up.
- Do not connect or disconnect the Cupla near fire.
- Replace the Cupla with a new one if it caused a backfire.
- Never use any oil when assembling the Cupla to a hose. It may cause spontaneous fire.
- Cut off the hose at least 3 cm from the end when the hose is re-used.
- Do not strike the tip of an automatic shut-off valve with a hammer or a similar tool. It may cause leakage or malfunction. Consult us for an alternative way of releasing the residual pressure.

⚠ Caution

- Only use Cuplas as quick connecting fluid couplings.
- Insert a hose right to the end of the hose barb and secure it tightly with hose clamps.
- Keep Cuplas indoors away from water or moisture.
- Do not use a hose with cracks. It may cause leakage or accidental disconnection.
- Always check for leakage on Cuplas before use. Never use the Cupla with leak. Replace it with a new one.
- Make sure that the valve on the torch is closed before connecting a Cupla to the torch.
- In cleaning Cuplas, do so in a manner that will not affect the seal and body material of Cuplas. (Before cleaning, consult us.)
- Do not drop Cuplas. Dropping may reduce reduce the performance of the Cuplas.
- Do not connect Cuplas directly to a vibrating or impact device. It may result in reduced lifetime.
- Do not use Cuplas continuously at the lowest or highest working temperature.
- Do not apply any excessive bending, tension or rotation to Cuplas. It may cause leakage or damage.
- Dirt, scratches or damages on the sealing surface may cause leakage.
- The inclusion of foreign matter in the fluid to be used may cause malfunction. Fluid must be cleaned through filters before reaching to Cuplas.

Mold Cupla / Flow Meter

⚠ Caution

- The fluid to be used must be compatible with the body and seal material of Cupla.
- Do not use Cuplas continuously exceeding the rated working pressure.
- Only use Cuplas within the range of the rated temperature. Otherwise the seal may get damaged or deteriorate and cause leakage.
- Do not apply any excessive impact, bend or tension more than is necessary to connect or disconnect Cuplas. It may cause leakage or damage.
- Do not use Cuplas in a place where dust or metal dust gets in. It may cause malfunction or leakage.
- May cause malfunction or leakage if paint sticks to Cuplas.
- Do not exceed the recommended maximum torque when screwing in to the male or female thread of a Cupla for installation. It may cause thread damage.
- Do not use a hose with cracks. It may cause leakage or accidental disconnection.
- Do not connect Cuplas directly to a vibrating or impact device. It may result in reduced lifetime.
- The inclusion of foreign matter in the fluid to be used may cause malfunction. Fluid must be cleaned through filters before reaching to Cuplas.
- Do not disassemble Cuplas.
- Disconnect a Cupla plug and socket while holding the plug in one hand and the socket in the other.
- After connection, try to pull the Cupla plug and socket apart to check secure connection.
- Selecting the wrong type of seal material may cause leakage. In making your selection, check the compatibility of seal and body material with the type of fluid and temperature. As to the use of any special paint or solvent, make thoroughly sure of the material compatibility.
- In cleaning Cuplas, do so in a manner that will not affect the seal and body material of Cuplas. (Before cleaning, consult us.)
- Do not drop Cuplas. It may reduce the performance of the Cuplas.
- Do not use Cuplas continuously at the lowest or highest working temperature.
- Do not apply any excessive bending, tension or rotation to Cuplas. It may cause leakage or damage.
- Dirt, scratches or damages on the sealing surface may cause leakage.
- Do not strike the tip of an automatic shut-off valve with a hammer or a similar tool. It may cause leakage or malfunction. Consult us for an alternative way of releasing the residual pressure.

⚠ Precautions Relating to the Use of All Cuplas

• Be sure to read the "Instruction Sheet" that comes with the product or "Caution" on the package before use.

Cupla for Low Pressure (Water, Liquid) and for Medium Pressure

⚠ Warning

- The fluid to be used must be compatible with the body and seal material of Cupla.
- Do not use Cuplas continuously exceeding the rated working pressure.
- Only use Cuplas within the range of the rated temperature. Otherwise the seal may get damaged or deteriorate and cause leakage.
- Do not apply pressure to a Cupla socket or plug while they are disconnected.
- Do not disassemble Cuplas.

⚠ Caution

- Use a thread sealant on the male taper pipe thread to ensure no leakage.
- Do not exceed the recommended maximum torque when screwing in to the male or female thread of a Cupla for installation. It may cause thread damage.
- Only use Cuplas as quick connecting fluid couplings.
- Only use Cuplas with a combination of Nitto Cuplas. (Except Lever Lock Cupla)
- Do not apply any excessive impact, bend or tension more than is necessary to connect or disconnect Cuplas. It may cause leakage or damage.
- Do not use Cuplas in a place where dust or metal dust gets in. It may cause malfunction or leakage.
- May cause malfunction or leakage if paint sticks to Cuplas.
- Install a shut-off valve between the pressure source and Cuplas.
- Do not use Cuplas as a swivel joint.
- Do not connect Cuplas directly to a vibrating or impact device. It may result in reduced lifetime.
- The inclusion of foreign matter in the fluid to be used may cause malfunction. Fluid must be cleaned through filters before reaching to Cuplas.
- Make sure that O-rings and Packing seals are lubricated at all times.
- Do not strike the tip of an automatic shut-off valve with a hammer or a similar tool. It may cause leakage or malfunction. Consult us for an alternative way of releasing the residual pressure.
- Selecting the wrong type of seal material may cause leakage. In making your selection, check the compatibility of seal and body material with the type of fluid and temperature. As to the use of any special paint or solvent, make sure the compatibility thoroughly.
- In cleaning Cuplas, do so in a manner that will not affect the seal and body material of Cuplas. (Before cleaning, consult us.)
- Do not drop Cuplas. It may reduce the performance of the Cuplas.
- Do not use Cuplas continuously at the lowest or highest working temperature.
- Do not apply any excessive bending, tension or rotation to Cuplas. It may cause leakage or damage.
- Dirt, scratches or damages on the sealing surface may cause leakage.
- Put a Nitto genuine dust cap on the plug after disconnection when there is a possibility of dirt sticking to the plug seal surface.

Cuplas for High Pressure

⚠ Warning

- The fluid to be used must be compatible with the body and seal material of Cupla.
- Do not use Cuplas continuously exceeding the rated working pressure.
- Only use Cuplas within the range of the rated temperature. Otherwise the seal may get damaged or deteriorate and cause leakage.
- Do not connect or disconnect Cuplas while they are pressurized or residual pressure remains (Except HSP-PV type).
- Do not apply pressure to a Cupla socket or plug while they are disconnected.
- Do not disassemble Cuplas.

⚠ Caution

- Use a thread sealant on the male taper pipe thread to ensure no leakage.
- Do not exceed the recommended maximum torque when screwing in to the male or female thread of a Cupla for installation. It may cause thread damage.
- Only use Cuplas as quick connecting fluid couplings.
- Only use Cuplas with a combination of Nitto Cuplas.
- Do not apply any excessive impact, bend or tension more than is necessary to connect or disconnect Cuplas. It may cause leakage or damage.
- Do not use Cuplas in a place where dust or metal dust gets in. It may cause malfunction or leakage.
- May cause malfunction or leakage if paint sticks to Cuplas.
- Install a shut-off valve between the pressure source and Cuplas.
- Do not use Cuplas as a swivel joint.
- Do not connect Cuplas directly to a vibrating or impact device. It may result in reduced lifetime.
- Do not use 280 Type Cupla with water-glycol operating oil which could dissolve zinc plating.
- Contact us when using Cuplas for high pressure gases.
- The inclusion of foreign matter in the fluid to be used may cause malfunction. Fluid must be cleaned through filters before reaching to Cuplas.
- Make sure that O-rings and Packing seals are lubricated at all times.
- Do not flow fluid through Cuplas at the speed of more than 8 m/s.
- Do not strike the tip of an automatic shut-off valve with a hammer or a similar tool. It may cause leakage or malfunction. Consult us for an alternative way of releasing the residual pressure.
- Use a seal and body material suitable to the fluid referring to the pages of Seal Material and Body Material Selection Tables at the end of the catalog.
- In cleaning Cuplas, do so in a manner that will not affect the seal and body material of Cuplas. (Before cleaning, consult us.)
- Do not drop Cuplas. It may reduce the performance of the Cuplas.
- Do not use Cuplas continuously at the lowest or highest working temperature.
- Do not apply any excessive bending, tension or rotation to Cuplas. It may cause leakage or damage.
- Dirt, scratches or damages on the sealing surface may cause leakage.
- Put a Nitto genuine dust cap on the plug after disconnection when there is a possibility of dirt sticking to the plug seal surface.

Multi Cupla Series

Overall Multi Cuplas

⚠ Warning

- Do not use Cuplas continuously exceeding the rated working pressure.
- Only use Cuplas within the range of the rated temperature. Otherwise the seal may get damaged or deteriorate and cause leakage.
- Do not disassemble Cuplas.

⚠ Caution

- Do not exceed the recommended maximum torque when screwing in to the male or female thread of a Cupla for installation. It may cause damage.
- Do not apply any excessive impact, bend or tension more than is necessary to connect or disconnect Cuplas. It may cause leakage or damage.
- Do not use Cuplas in a place where dust or metal dust gets in. It may cause malfunction or leakage.
- Only use Cuplas as quick connecting fluid couplings.
- Do not connect Cuplas directly to a vibrating or impact device. It may result in reduced lifetime.
- The inclusion of foreign matter in the fluid to be used may cause malfunction. Fluid must be cleaned through filters before reaching to Cuplas.
- Do not strike the tip of an automatic shut-off valve with a hammer or a similar tool. It may cause leakage or malfunction.
- Do not flow fluid through Cuplas at the speed of more than 8 m/s.
- Install a shut-off valve between the pressure source and Cuplas.
- Only use Cuplas with a combination of Nitto Cuplas.
- Check up on Cuplas periodically. Stop using Cuplas if malfunction is found.
- Selecting the wrong type of seal material may cause leakage. In making your selection, check the compatibility of seal and body material with the type of fluid and temperature. As to the use of any special paint or solvent, make thoroughly sure of the material compatibility.
- In cleaning Cuplas, do so in a manner that will not affect the seal and body material of Cuplas. (Before cleaning, consult us.)
- Do not use Cuplas continuously at the lowest or highest working temperature.
- Do not apply any excessive bending, tension or rotation to Cuplas. It may cause leakage or damage.
- Dirt, scratches or damages on the sealing surface may cause leakage.

MAM Type

⚠ Warning

- Do not drop Multi Cuplas. It may cause deformation of the plate.

⚠ Caution

- Make sure that the lever is in the "connect" position, and securely connect socket and plug.
- Do not force turning the lever. This may cause breakage.
- Install hoses symmetrically from the locking unit when they are connected to the Cuplas in order to distribute the reaction force evenly.
- Use a thread sealant on the male taper pipe thread to ensure no leakage.
- Make sure that O-rings and Packing seals are lubricated at all times.

MAM-A Type / MAM-B Type

⚠ Warning

- Do not connect or disconnect Cuplas while they are pressurized or residual pressure of more than 0.6 MPa remains. It could lead to damage on the Cuplas.
- Do not drop Multi Cuplas. It may cause deformation of the plate.

⚠ Caution

- Make sure that the lever is in the "connect" position, and securely connect socket and plug.
- Do not force turning the lever. This may cause breakage.
- When replacing a Cupla from the plate, carefully remove the C type retaining ring by using a pair of snap ring pliers. Make sure not to expand the C type retaining ring too much. It is recommended that a new C type retaining ring should be used when a Cupla is replaced.
- Install Cuplas symmetrically from the locking unit when they are connected to the plate in order to distribute the reaction force evenly.
- Make sure that O-rings and Packing seals are lubricated at all times.

MAS Type / MAT Type

⚠ Warning

- Do not connect or disconnect sockets and plugs while they are pressurized.
- Match the lateral side of the hexagon shaped body part of the socket to that of the plug when they are connected.
- Do not exceed more than 0.6 mm diameter for the axial eccentricity when a socket and a plug are connected. It may cause leakage or breakage.

⚠ Caution

- Do not connect MAT type each other since there is no allowance for eccentricity.
- Make sure that O-rings and Packing seals are lubricated at all times.
- Do not drop Cuplas. It may reduce the performance of the Cuplas.

MALC-SP Type

⚠ Danger

- Do not apply pressure more than 2 MPa to a Cupla socket or plug while they are disconnected. It may cause the valve to pop out.

⚠ Warning

- Do not exceed more than 2 mm diameter for the axial eccentricity. It may cause leakage or breakage.
- Do not exceed more than 0.5 degree for the angle of inclination during connection or disconnection. It may cause leakage or breakage.

⚠ Caution

- Make sure that O-rings and Packing seals are lubricated at all times.
- Do not drop Cuplas. It may reduce the performance of the Cuplas.

MALC-HSP Type

⚠ Danger

- Do not apply pressure more than 8 MPa to a Cupla socket or plug while they are disconnected. It may cause the valve to pop out.

⚠ Warning

- Do not exceed more than 2 mm diameter for the axial eccentricity. It may cause leakage or breakage.
- Do not exceed more than 0.5 degree for the angle of inclination during connection or disconnection. It may cause leakage or breakage.

⚠ Caution

- Make sure that O-rings and Packing seals are lubricated at all times.
- Do not drop Cuplas. It may reduce the performance of the Cuplas.

Safety Guide

⚠ Precautions Relating to the Use of All Cuplas

• Be sure to read the "Instruction Sheet" that comes with the product or "Caution" on the package before use.

Semicon Cupla Series

⚠ Caution

- Prior to an initial use, the seal material should be tested to confirm the material suitability for the fluid.
- Use a thread sealant on the male taper pipe thread to ensure no leakage.
- The O-ring of a Cupla socket is normally greased to reduce the friction resistance (insertion load) that occurs when a plug is inserted to a socket. The Semicon Cupla, however, are grease-free Cuplas to prevent grease entering into fluid system. To reduce the friction resistance (insertion load) and protect the O-ring, apply the small amount of the fluid to be run or pure water to the O-ring or the part of the plug where the O-ring comes in contact, before using.
- Small amount of fluid will spill out on the disconnection. In order to avoid any unexpected danger, drain the fluid inside the Cupla with compressed air before disconnection.
- Do not use Cuplas as a swivel joint.
- Only use Cuplas as quick connecting fluid couplings.
- Do not apply any excessive impact, bend or tension more than is necessary to connect or disconnect Cuplas. It may cause leakage or damage.
- Do not apply pressure to a Cupla socket or plug while they are disconnected.
- Be sure to mount a proper dust cap while Cuplas are left disconnected.
- Do not disassemble Cuplas.
- Selecting the wrong type of seal material may cause leakage. In making your selection, check the compatibility of seal and body material with the type of fluid and temperature. As to the use of any special paint or solvent, make thoroughly sure of the material compatibility.
- In cleaning Cuplas, do so in a manner that will not affect the seal and body material of Cuplas. (Before cleaning, consult us.)
- Do not drop Cuplas. It may reduce the performance of the Cuplas.
- Do not connect Cuplas directly to a vibrating or impact device. It may result in reduced lifetime.
- Do not use Cuplas continuously at the lowest or highest working temperature.
- Do not apply any excessive bending, tension or rotation to Cuplas. It may cause leakage or damage.
- Dirt, scratches or damages on the sealing surface may cause leakage.
- The inclusion of foreign matter in the fluid to be used may cause malfunction. Fluid must be cleaned through filters before reaching to Cuplas.
- Do not strike the tip of an automatic shut-off valve with a hammer or a similar tool. It may cause leakage or malfunction. Consult us for an alternative way of releasing the residual pressure.

Paint Cupla

⚠ Warning

- Do not use Cuplas continuously exceeding the rated working pressure.
- Only use Cuplas within the range of the rated temperature. Otherwise the seal may get damaged or deteriorate and cause leakage.
- The fluid to be used must be compatible with the body and seal material of Cupla.
- Check the compatibility of the seal and body material with the type of fluid and temperature before use. As to the use of any special paint or solvent, make thoroughly sure of the material compatibility.
- Make sure that a hose containing a ground wire is connected to a ground. Insufficient grounding may lead to fire or dangerous explosion caused by possible sparks of static electricity.
- Wear appropriate clothes and protective equipment such as safety glasses, face guard and gloves at all times. Otherwise it could be potentially hazardous when paint or solvent splashes on to operators.
- Do not disassemble Cuplas.

⚠ Caution

- This Cupla is designed for paints diluted by solvents. Do not use this Cupla for any other application.
- Do not exceed the recommended maximum torque when screwing in to the male or female thread of a Cupla for installation. It may cause damage.
- Do not apply any excessive impact, bend or tension more than is necessary to connect or disconnect Cuplas. It may cause leakage or damage.
- Do not use Cuplas as a swivel joint.
- The inclusion of foreign matter in the fluid to be used may cause malfunction. Fluid must be cleaned through filters before reaching to Cuplas.
- Install a shut-off valve between the pressure source and Cuplas.
- Do not connect other maker's plug to our socket. It could cause leakage or damage on the Cuplas.
- Only use Cuplas with a combination of Nitto Cuplas.
- Be careful with the fluid that will spill out from the plug when disconnected.
- Clean Cuplas each time after use. Otherwise paint will dry out and may cause malfunction, insufficient color mix or poor grounding.
- Check up on Cuplas periodically. Stop using Cuplas if malfunction is found.
- Fluid must flow from socket to plug.
- Do not drop Cuplas. It may reduce the performance of the Cuplas.
- Do not connect Cuplas directly to a vibrating or impact device. It may result in reduced lifetime.
- Do not use Cuplas continuously at the lowest or highest working temperature.
- Do not apply any excessive bending, tension or rotation to Cuplas. This may cause leakage or damage.
- Dirt, scratches or damages on the sealing surface may cause leakage.

Cupla for Inert Gas

⚠ Warning

- Do not use Cuplas continuously exceeding the rated working pressure.
- Only use Cuplas within the range of the rated temperature. Otherwise the seal may get damaged or deteriorate and cause leakage.
- Do not apply any excessive impact, bend or tension more than is necessary to connect or disconnect Cuplas. It may cause leakage or damage.
- Do not connect or disconnect Cuplas while they are pressurized or residual pressure remains
- Do not disassemble Cuplas.

⚠ Caution

- Use a thread sealant on the male taper pipe thread to ensure no leakage.
- The fluid to be used must be compatible with the body and seal material of Cupla.
- Only use Cuplas as quick connecting fluid couplings.
- Only use Cuplas with a combination of Nitto Cuplas.
- Do not use Cuplas in a place where dust or metal dust gets in. It may cause malfunction or leakage.
- May cause malfunction or leakage if paint sticks to Cuplas.
- Install a shut-off valve between the pressure source and Cuplas.
- Do not use Cuplas as a swivel joint.
- Do not connect Cuplas directly to a vibrating or impact device. It may result in reduced lifetime.
- Selecting the wrong type of seal material may cause leakage. In making your selection, check the compatibility of seal and body material with the type of fluid and temperature. As to the use of any special paint or solvent, make thoroughly sure of the material compatibility.
- In cleaning Cuplas, do so in a manner that will not affect the seal and body material of Cuplas.
- Do not drop Cuplas. It may reduce the performance of the Cuplas.
- Do not use Cuplas continuously at the lowest or highest working temperature.
- Do not exceed the recommended maximum torque when screwing in to the male or female thread of a Cupla for installation. It may cause thread damage.
- Do not apply any excessive bending, tension or rotation to Cuplas. It may cause leakage or damage.
- Dirt, scratches or damages on the sealing surface may cause leakage.
- The inclusion of foreign matter in the fluid to be used may cause malfunction. Fluid must be cleaned through filters before reaching to Cuplas.
- Do not strike the tip of an automatic shut-off valve with a hammer or a similar tool. It may cause leakage or malfunction. Consult us for an alternative way of releasing the residual pressure.
- Put a Nitto genuine dust cap on the plug after disconnection when there is a possibility of dirt sticking to the plug seal surface.

Semi-Standard Cupla Series

⚠ Caution

- Only use Cuplas as quick connecting fluid couplings.
- The fluid to be used must be compatible with the body and seal material of Cupla.
- Only use Cuplas with a combination of Nitto Cuplas.
- Do not use Cuplas continuously exceeding the rated working pressure.
- Only use Cuplas within the range of the rated temperature. Otherwise the seal may get damaged or deteriorate and cause leakage.
- Do not exceed the recommended maximum torque when screwing in to the male or female thread of a Cupla for installation. It may cause thread damage.
- Do not apply any excessive impact, bend or tension more than is necessary to connect or disconnect Cuplas. It may cause leakage or damage.
- Do not connect Cuplas directly to a vibrating or impact device. It may result in reduced lifetime.
- Do not use Cuplas in a place where dust or metal dust gets in. It may cause malfunction or leakage.
- May cause malfunction or leakage if paint sticks to Cuplas.
- Do not disassemble Cuplas.
- Selecting the wrong type of seal material may cause leakage. In making your selection, check the compatibility of seal and body material with the type of fluid and temperature. As to the use of any special paint or solvent, make thoroughly sure of the material compatibility.
- In cleaning Cuplas, do so in a manner that will not affect the seal and body material of Cuplas. (Before cleaning, consult us.)
- Do not drop Cuplas. It may reduce the performance of the Cuplas.
- Do not use Cuplas continuously at the lowest or highest working temperature.
- Do not apply any excessive bending, tension or rotation to Cuplas. It may cause leakage or damage.
- The inclusion of foreign matter in the fluid to be used may cause malfunction. Fluid must be cleaned through filters before reaching to Cuplas.
- Do not strike the tip of an automatic shut-off valve with a hammer or a similar tool. It may cause leakage or malfunction.

Maintenance of Cuplas

Cuplas should be inspected periodically to ensure safe operation and to prevent them from a performance drop or malfunction. If there is a malfunction in the Cupla or wear and tear, please replace it with a new one. If you have any concerns, contact Nitto Kohki or the distributor from whom you purchased your Cupla.

O-ring Replacement Procedure

The internal O-ring is a consumable item. If the O-ring in the socket has failure such as wear and tear or deterioration, take the following steps to replace it with a new one. Always use genuine Nitto O-rings.

Accessories for O-ring maintenance

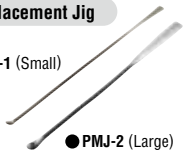
Grease for O-ring

- **GRE-M1** (Mineral oil) for NBR and FKM
- **GRE-SI** (Hydrocarbon oil) for NBR and FKM
- **GRE-HC1** (Silicon oil) for NBR, FKM, and EPDM

5mL container

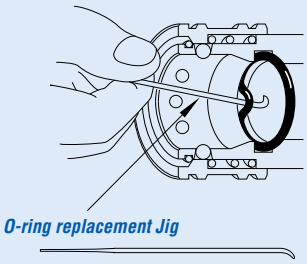
O-ring replacement Jig

- **PMJ-1** (Small)
- **PMJ-2** (Large)



How to Remove the O-ring

❶ Use an optional O-ring replacement Jig to remove the O-ring. Be careful not to damage the groove of O-ring with the jig. Used O-rings with wear and tear or deterioration can be removed easily with the jig.

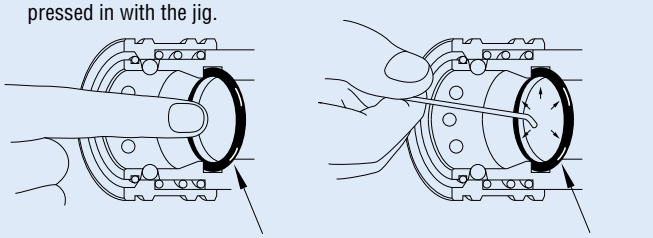


O-ring replacement Jig

❷ After removing the O-ring, wipe the groove clean with a cloth.

How to Install a New O-ring

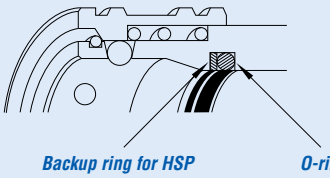
❶ After making sure that no dust or foreign matter exists in the groove of O-ring, push in part of the O-ring and the remaining part can be easily pressed in with the jig.



O-ring

Press the O-ring into place 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

Caution for Storing Cuplas

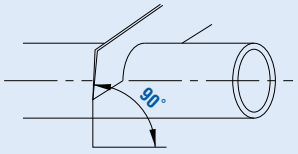
- **Store Cuplas in a place where no dust or foreign matter gets in. If fluid flows while the dust or foreign matter is present inside Cuplas, the dust or foreign matter may go into the equipment connected to the Cupla and may cause malfunction.**
- **Store Cuplas indoors away from water or moisture.**
- **Store Cuplas in a shaded, dry and well-ventilated place.**
- **Do not to drop Cuplas. It will deform or damage Cuplas.**
- **If Cuplas are stored or not being used for a long period of time, check their appearance, function and performance before use.**

Semicon Cupla SCF Type (See page 124)

How to install a tube to the socket

❶ **Cut the tube**

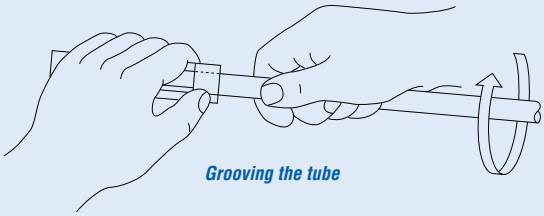
Cut the tube (PFA) as shown below with a box-cutter or a knife.



❷ **Groove the tube**

Insert the tube completely into the special jig (see the below figure.) and keep the jig's cutter blade pressed down while the tube is rotated about one and a half turns. It will give you a complete groove on the tube which is good for a ferrule mount. Special jigs to suit different tube sizes are available as indicated below.

Special jig



Grooving the tube

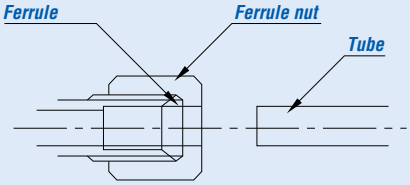
● **Special jigs**

Socket type	Tube size	Jig Model No.
SCF-2SL-N08	ø8 x ø6	T-8
SCF-3SL-N10	ø10 x ø8	T-10

Please contact us for purchasing the jigs.

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, turn it another one and a half turns with a spanner. Be careful not to overtighten.

CUPLA

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