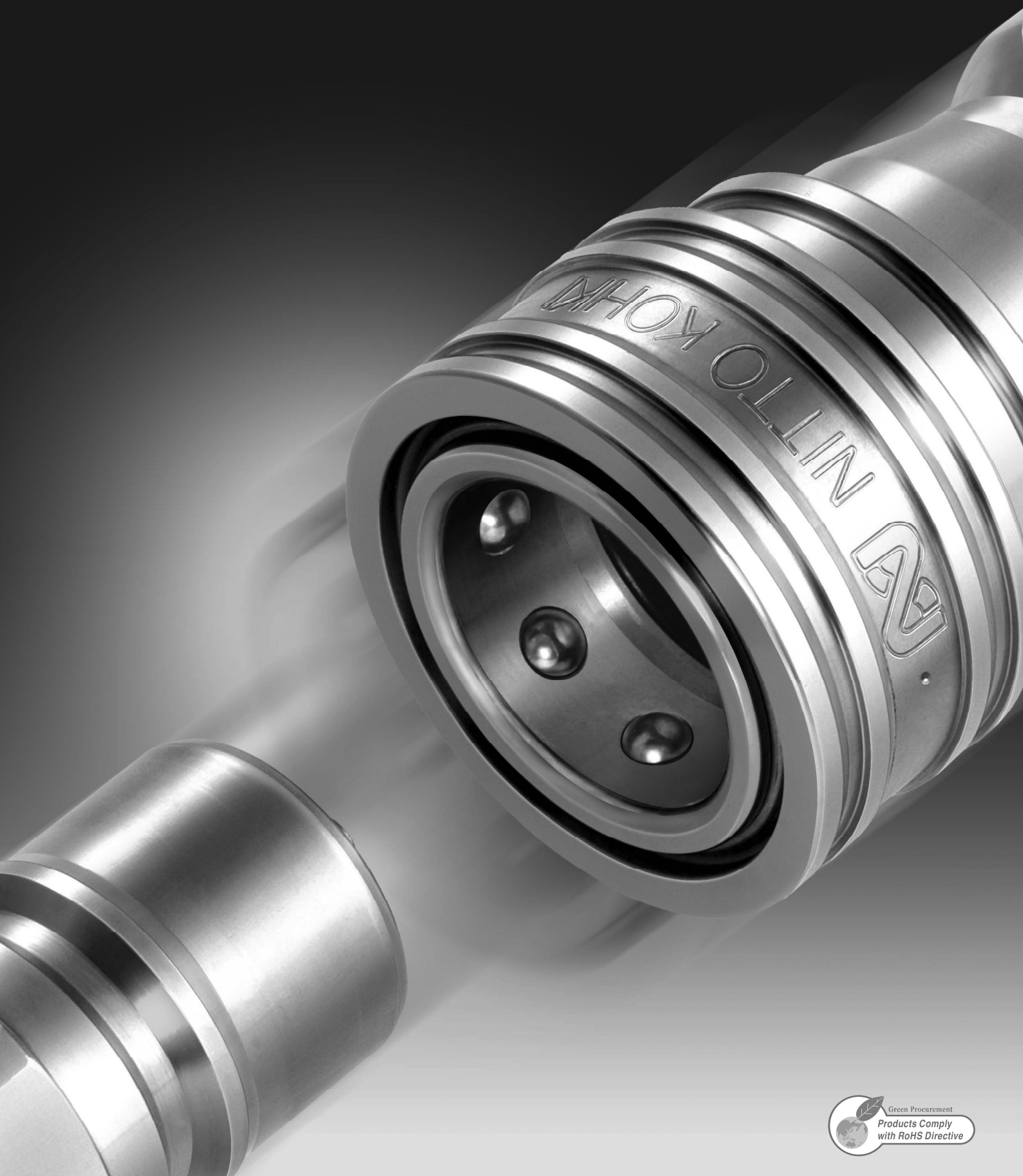
NITTO KOHKI

C01en-21

Quick Connect Couplings

CUPLA

GENERAL CATALOG



Green Procurement
Products Comply with RoHS Directive

CUPLA

Quick Connect Couplings

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.

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 ISO 14001 Certification Award

"CUPLA" 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 H.Q./R&D Lab

ISO 9001 JQA-2025 H.Q./R&D Lab

CUPLA

CUPLA enable flexible and fast 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 25000 different CUPLA variations.

Nitto Kohki's quick connect couplings, "CUPLA" enable speedy connections/disconnections of various pipings, such as air, water, oil and gas.
They are active in various industrial fields, thanks to the experience in development of 25000 different variations.
Wide varieties of body materials such as steel, brass, aluminum, stainless steel and plastic are available to match every customer's needs.

- 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.

Nitto Kohki's Official YouTube channel

YouTube

Watch our products in action. We have various products from Quick Connect Couplings "CUPLA" to Power and Machine Tools, "delvo" Electric Screwdrivers, Linear-motor-driven Free Piston Pumps and also Door Closers.

www.youtube.com/c/NittoKohkiGLOBAL

⚠ Beware of imitations

Recently on the market, there have appeared similar products that invite misidentification or confusion with Nitto Kohki couplings, 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 coupling. CUPLA is 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 CUPLA products, when you order and purchase.

CONTENTS

Environmental activities / Contents ---- 1
New product (COMPACT ZEROSPILL CUPLA, MULTI CUPLA MAM-A-ZEL Type, CUBE CUPLA) ---- 3
Nitto Kohki's environmentally-friendly Manufacturing ---- 4
Select Appropriate CUPLA for the Job ---- 5
Glossary ---- 6
Guide for Selecting "NITTO KOHKI" Standard CUPLA ---- 7
Semi-standard CUPLA Series and CUPLA Accessories ---- 18
Special Made-to-Order CUPLA ---- 19
HI CUPLA Series Interchangeability ---- 21

Standard CUPLA Series

MICRO CUPLA Series ---- 23
SMALL CUPLA ---- 27
COMPACT ZEROSPILL CUPLA ---- NEW 29
COMPACT CUPLA ---- 31
CUBE CUPLA ---- 33
SUPER CUPLA ---- 37
HI CUPLA ---- 39
HI CUPLA BL ---- 41
HI CUPLA 200 ---- 43
HI CUPLA for Connection to Braided Hoses ---- 45
NUT CUPLA ---- 45
NUT CUPLA 200 ---- 45
ROTARY NUT CUPLA ---- 45
LOCK CUPLA 200 ---- 47
HI CUPLA Two Way Type ---- 48
FULL BLOW CUPLA ---- 49
PURGE HI CUPLA PVR Type ---- 51
PURGE HI CUPLA ---- 53
PURGE LINE CUPLA ---- 54
ROTARY LINE CUPLA (RT Type, RE Type) ---- 55
LINE CUPLA (200T Type, 200L Type, 200S Type) ---- 57
ROTARY FULL BLOW LINE CUPLA ---- 59
HI CUPLA ACE ---- 61
ROTARY PLUG ---- 63
TWIST PLUG ---- 64
PURGE PLUG ---- 65
ANTI-VIBRATION PLUG HOSE ---- 66
DUSTER CUPLA ---- 67
NK CUPLA HOSE Series ---- NEW 68
MINI CUPLA ---- 69
LINE CUPLA MINI ---- 70
MINI CUPLA SUPER ---- 71
MOLD CUPLA Series ---- 73
FLOW METER ---- 76
LEVER LOCK CUPLA (Metal Body, Plastic Body) ---- 77
TSP CUPLA Series ---- 81
SP CUPLA Type A ---- 85
HOT WATER CUPLA HW Type ---- 87
ZEROSPILL CUPLA ---- 89
HSP CUPLA ---- 91
HYPER HSP CUPLA ---- 95
210 CUPLA ---- 97
HSU CUPLA ---- 99
S210 CUPLA ---- 101
280 CUPLA ---- 103
350 CUPLA ---- 105
FLAT FACE CUPLA F35 ---- 107
FLAT FACE CUPLA FF ---- 109
450B CUPLA ---- 111
700R CUPLA ---- 112
MULTI CUPLA Series ---- NEW 113
SEMICON CUPLA Series ---- 143
SP-V CUPLA Type A ---- NEW 149
PCV PIPE CUPLA ---- 151
PAINT CUPLA ---- 153
HYGIENIC CUPLA ---- 155

Semi-Standard CUPLA Series

CUPLA with Single Lock ---- 157
CUPLA with Safety Lock ---- 157
Two-way Shut-off Type Small Size CUPLA ---- 158
TSP-HP CUPLA for High Pressure ---- 158
HIGH FLOW CUPLA ---- 159
HIGH FLOW CUPLA BI Type ---- 160
SP CUPLA Type A PV Type ---- 161
PLASTIC CUPLA BC Type ---- 162

Accessories NEW 163 to 168

Seal Material Selection Table for Reference ---- 169
Body Material Selection Table ---- 172
Unit Conversion Tables ---- 173
CUPLA Inquiry Form ---- 174
Taper Pipe Threads ---- 176
Production Facilities That Assure Our Product Quality ---- 177
From Development to Production, Management and Marketing of "CUPLA" ---- 178
Nitto Kohki's Laborsaving Product ---- 179
Safety Guide ---- 180
Maintenance of CUPLA ---- 186

NEW

Small but high flow rate.
For coolant piping of electronic equipment.

Quick connect couplings for coolant piping

COMPACT ZEROSPILL CUPLA

- Compact size saves space.
- High flow rate for efficient cooling.
- Valve structure reduces air inclusion on connection and liquid spillage when disconnecting.

See page 29 to 30 for details.

A new low spillage ZEL CUPLA series added to the MULTI CUPLA product range.

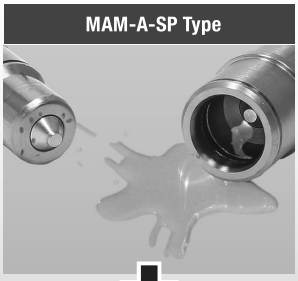
Quick connect couplings for multi-port connection

MULTI CUPLA
MAM-A-ZEL Type

- Customize in accordance with your operating conditions.

Typical spillage
(6 ports of size 1/4")

4.8 mL → 0.36 mL
(May vary. Depends on the application.)



Low spillage

See page 124 to 130 for details.

Popular

Newly designed in colorful 5 colors.

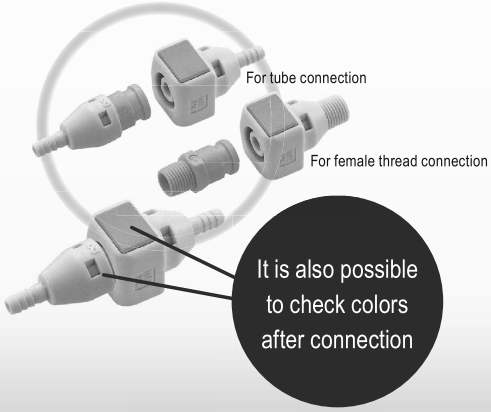
Quick connect couplings for air / water piping

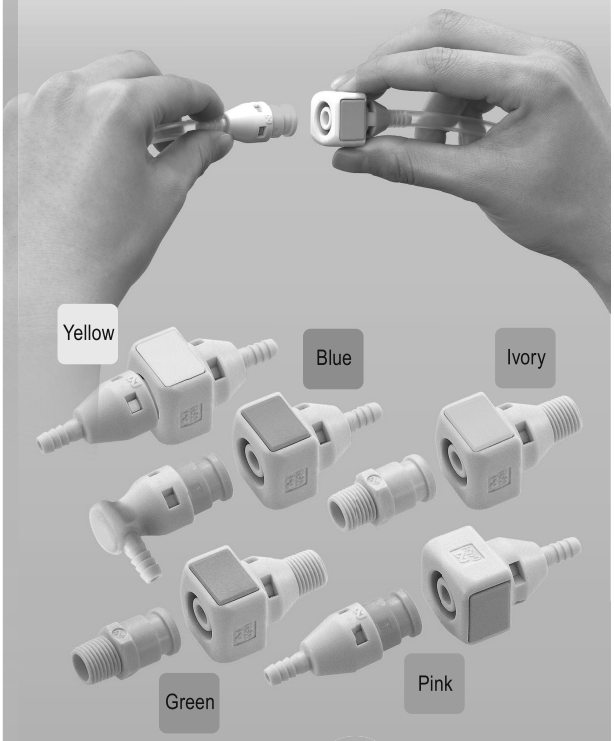
CUBE CUPLA

- An effective outer appearance.
- Prevent piping mistakes by color indication.

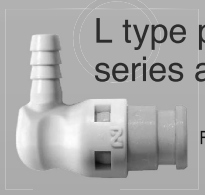
Select from All five colors

Blue | Yellow | Pink | Green | Ivory





L type plug series added



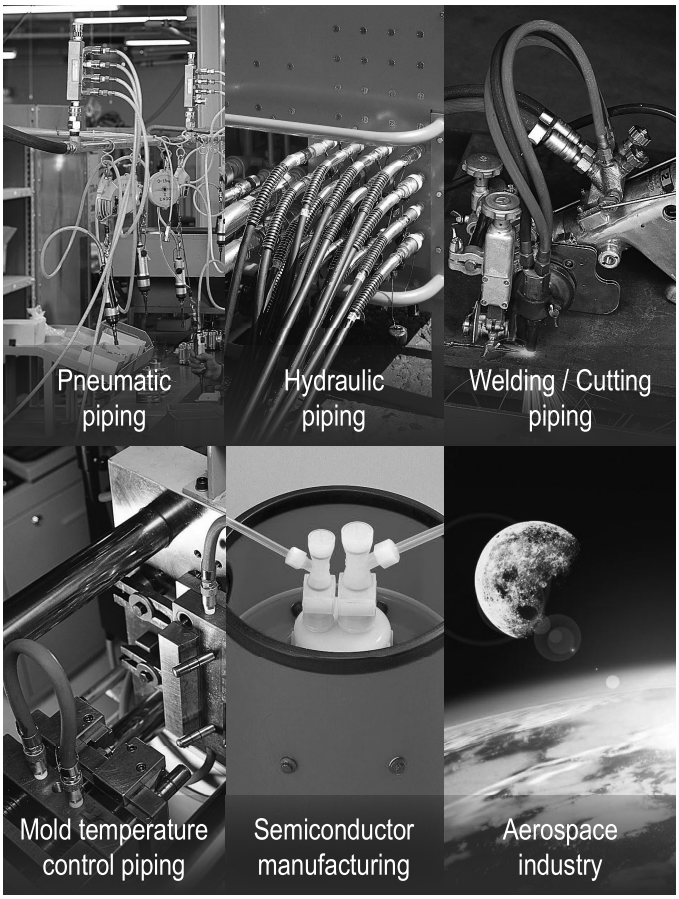
- **Small size**
- **Light weight**
- **Push-to-connect operation**
- **Push button easy disconnection**

See page 33 to 36 for details.

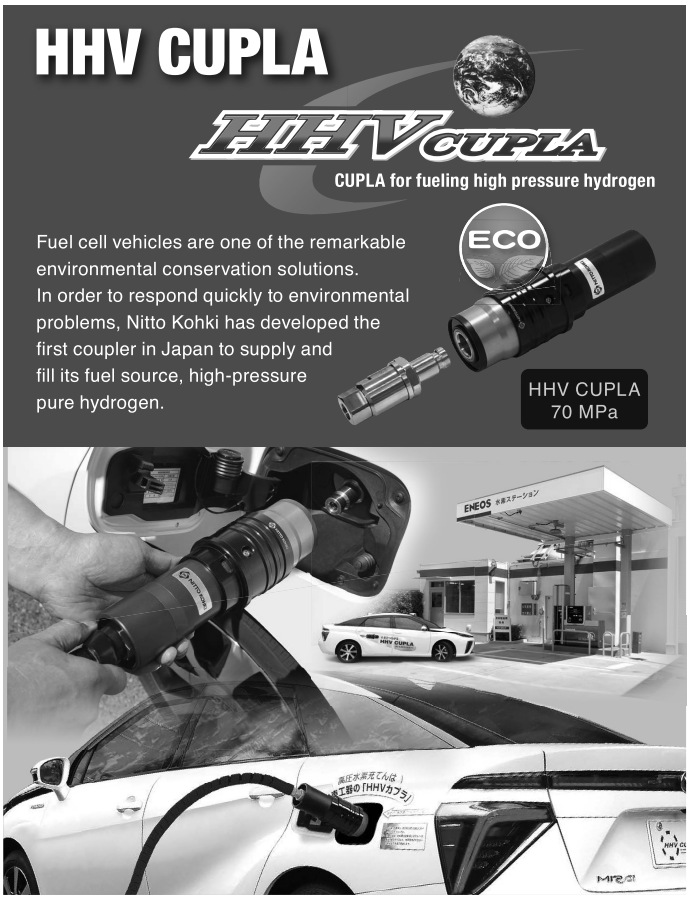
Nitto Kohki's environmentally-friendly Manufacturing

The coexistence of mankind and nature. Each company is now asked for a global level environmental conservation and improvement as important themes. As a part of the environmental improvement activities, we are offering various products such as “couplings”, “machines and tools”, “screwdrivers”, “air compressors and vacuum pumps”, and “door closers” as green procurement products.

"CUPLA" active in the widespread field of the manufacturing industry.



Coupling for fuel cell vehicles.



Nitto Kohki's environmentally-friendly Manufacturing

Green Procurement

Nitto Kohki has made every effort in developing "Environmental Improvement Plans" through the implementation of ISO14001, to execute environmentally conscious business activities on a company-wide basis. As a part of our ongoing commitment to the environment, we are also commited to reduce and/or exclude restricted chemical substances from our products as designated by RoHS directives, laws and regulations of chemical substances. Some products may not be compliant, so please check our corporate website for the latest status.

All couplings except for the following products have been switched to green procurement compliant products.

- LEVER LOCK CUPLA
- All CUPLA products with Tube Fitter
- CUPLA CONNECTING JIG
- PRESSURE GAUGE

Non compliant

Please visit our website for applicable products.

www.nitto-kohki.co.jp/e/

Green Procurement
Products Comply with RoHS Directive

CUPLA

Products using regulated substances and the countermeasures taken

Products (Standard CUPLA)	Major countermeasures
Products using brass material	Low cadmium contained material used (RoHS directive compliant material)
Zinc chrome plated couplings	Hexavalent chromium-free plated (Such as nickel plated)

Note: Color of plating

The color of the zinc chrome plating is yellow, while nickel plating is silver. Some products may look different in appearance when changed.

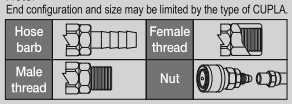
Select Appropriate CUPLA for the Job

Nitto Kohki has the wide range of CUPLA products 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 CUPLA

Fluid and the Temperature	Select 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 CUPLA 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 CUPLA suitable for the actual maximum fluid pressure.	Fluid pressure is also a key to CUPLA selection. Each series of hydraulic CUPLA have different structures to cope with each pressure resistance ranges up to 68.6 MPa (700 kgf/cm^2).
Automatic Shut-off Valve	Select 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 when it is disconnected.
Operating Environment	Select 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, 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 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 CUPLA.



You can search "CUPLA" at our web site. (www.nitto-kohki.co.jp/e/) Please take a visit.
If you cannot find a suitable CUPLA product, please contact us via our web site or enter the above details in the "CUPLA Inquiry Form" at the end of this catalog and send it to us by fax or post.

Symbols

Quick reference symbols:

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

Working pressure

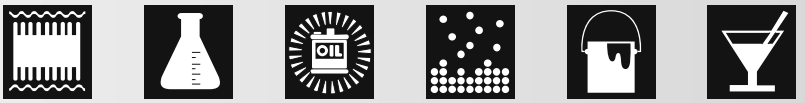
1.0 MPa
{10 kgf/cm^2}

Valve structure

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

Applicable fluids

Air | Water | Hydraulic oil | Steam | Oxygen, Fuel Gas | Gas | Inert gas, Vacuum, Helium



Temperature control refrigerant | High purity chemicals | Heated oil | Powder | Solvent based paint | Food, Drinking water

Glossary

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

International System of Units (SI Units)

Units stated in this catalog are 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 CUPLA indicates its size, whether plug or socket, and the end configuration. Rated pressure is also shown for some hydraulic couplings. Check the following tables to understand the model name implication before making your selection.

200 - 20 S H Model name (in case of HI CUPLA 200)

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 CUPLA 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 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 172 for body material selection table.

Size

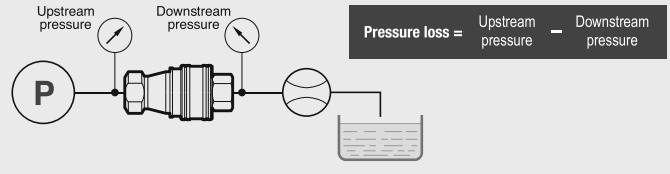
This indicates the nominal size of the pipe thread connection or of the hose to be used.

Working Pressure

The normal allowable fluid pressure under continuous use.
Exceeding the working pressure may cause damage and leakage.

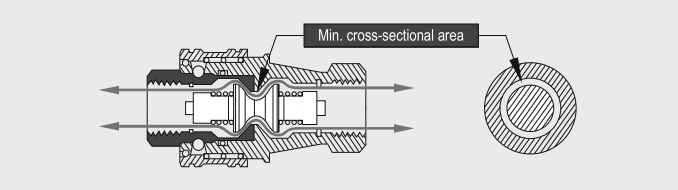
Pressure Loss

This shows the loss of pressure when fluid runs through the coupling set.
They are measured values at our testing facilities. May differ according to the installation/piping method and operating conditions.



Minimum Cross-Sectional Area

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



Seal Material

This shows the material used to seal 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

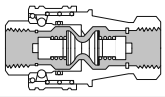
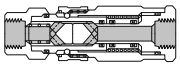
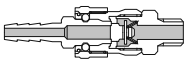
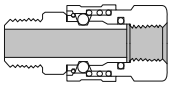
Seal material		Working Temperature Range	Features
Common name	Nitto Kohki symbol		
Nitrile rubber	**NBR**	-20˚C to +80˚C	Standard seal with excellent oil resistance.
Hydrogenated nitrile rubber	**HNBR**	-20˚C to +120˚C	Compared with the standard nitrile rubber, the seal material is more heat and weather resistant.
Fluoro rubber	**FKM**	-20˚C to +180˚C	Excellent for heat, weather, and oil resistance. Applicable to wide range of applications.
Chloroprene rubber	**CR**	-20˚C to +80˚C	Excellent weather resistance. In addition, the seal material can also be used for refrigeration oil and refrigerant applications such as HFC-134a.
Ethylene-propylene rubber	**EPDM**	-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 CUPLA. For details, see the specifications of each CUPLA series. As for the Nitto Kohki symbol for rubber material, fluoro rubber is designated as "FKM" 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 working temperature range of the seal material used in the product.
Continuous use at the minimum or maximum temperature is not recommended. Please contact us for consultation.
The operable temperature range depends on the operating conditions.

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 Reduction)		"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 it has necessary performance required for vacuum applications. (Note that the performance in connected state differs from that of disconnected state.)

Interchangeability

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

Maximum Tightening Torque, Tightening Torque Range

Indicates suitable torque value or range considering of the balance between leakage by loose fit and damage by structural stress when installing CUPLA.

Flow Direction

The design of some couplings may restrict the fluid flow direction to one way only. Check the suggested direction before installing.

Guide for Selecting "NITTO KOHKI" Standard CUPLA

This chart will let you quickly select an appropriate CUPLA product for your application. For technical data, please refer to the detailed information pages of each product, 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 ZEROSPILL CUPLA	COMPACT CUPLA	CUBE CUPLA	SUPER CUPLA	HI CUPLA	HI CUPLA BL
Photo				NEW		Choose from 5 colors			
Body material • Working pressure (MPa)	Brass	1.0	1.0		1.0			1.0	
	Stainless steel	1.0		1.0	1.0			1.5	1.5
	Steel						1.0	1.5	1.5
	Plastic					1.0			
	Others						1.0		
Body surface treatment		Plated (Brass only)	Chrome plated	Nickel plated (Socket only)	—	—	Chrome plated (Steel only)	Chrome plated (Steel only)	Chrome 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)	−10°C to +100°C (EPDM)	−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)
Seal material		NBR, FKM	NBR	EPDM	FKM, EPDM	NBR	NBR	NBR, FKM	NBR
Connection method	Manual				○			○	○
	Push-to-connect	○	○	○		○	○		
Valve structure	Two-way shut-off				○	○			
	Two-way shut-off (Spill Reduction)			○					
	One-way shut-off	○	○			○	○	○	○
	Straight through					○			
Detailed information page		23	27	29	31	33	37	39	41

CUBE CUPLA
Select from All five colors
See page 33 to 36 for details.

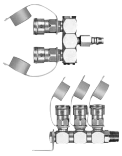
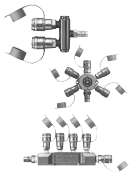
Blue
Yellow
Pink
Green
Ivory

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

Applicable fluid		For Low Pressure (Air)							
Name		HI CUPLA 200	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
Photo									
Body material • Working pressure (MPa)	Brass		1.0						
	Stainless steel								
	Steel	1.5	1.5	1.5	1.5	1.5	1.5		
	Plastic								
	Others							1.5	1.5
Body surface treatment		Chrome plated	Chrome plated (Steel only)	Chrome plated	Chrome plated	Chrome plated	Chrome plated	—	—
Size	1/8"								
	1/4"	○				○	○	○	
	5/16"								
	3/8"	○				○	○	○	
	1/2"	○				○	○	○	○
	3/4"								○
	1"								○
	1 1/4"								
	1 1/2"								
	2"								
	2 1/2"								
	3"								
	4"								
	Others	○	○	○	○	○		○	
Working temperature range		−20˚C 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 +80˚C (NBR)	−20˚C to +60˚C (NBR)	−20˚C to +60˚C (NBR)
Seal material		NBR	NBR	NBR	NBR	NBR	NBR, FKM	NBR	NBR
Connection method	Manual		○	○			○		
	Push-to-connect	○			○	○		○	○
Valve structure	Two-way shut-off								
	Two-way shut-off (Spill Reduction)								
	One-way shut-off	○	○	○	○	○	○	○	○
	Straight through								
Detailed information page		43	45	45	45	47	48	49	51

Guide for Selecting “NITTO KOHKI” Standard CUPLA

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

Applicable fluid		For Low Pressure (Air)							
Name		PURGE HI CUPLA	PURGE LINE CUPLA	ROTARY LINE CUPLA	LINE CUPLA 200T/L/S	ROTARY FULL BLOW LINE CUPLA	HI CUPLA ACE	ROTARY PLUG	TWIST PLUG
Photo									
Body material • Working pressure (MPa)	Brass	1.0	1.0						
	Stainless steel								
	Steel							1.5	1.0
	Plastic						1.0, 1.5		
	Others			1.5	1.5	1.5			
Body surface treatment		Chrome plated	Chrome plated	Chrome plated	Chrome plated	—	—	Nickel plated	Nickel plated
Size	1/8"								○
	1/4"	○		○	○	○	○	○	○
	5/16"								
	3/8"	○					○	○	○
	1/2"	○	○	○	○	○			
	3/4"	○							
	1"								
	1 1/4"								
	1 1/2"								
	2"								
	2 1/2"								
	3"								
	4"								
	Others			○		○	○		
Working temperature range		−20˚C 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)	−20˚C to +60˚C (NBR)	−20˚C to +80˚C (NBR)	−20˚C to +60˚C (NBR)
Seal material		NBR	NBR	NBR	NBR	NBR	NBR	NBR	NBR
Connection method	Manual			○					
	Push-to-connect	○	○		○	○	○		
Valve structure	Two-way shut-off								
	Two-way shut-off (Spill Reduction)								
	One-way shut-off	○	○	○	○	○	○		
	Straight through								
Detailed information page		53	54	55	57	59	61	63	64

Guide for Selecting “NITTO KOHKI” Standard CUPLA

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

Applicable fluid		For Low Pressure (Air)						For Oxygen and Fuel Gas	
Name		PURGE PLUG	ANTI-VIBRATION PLUG HOSE	DUSTER CUPLA	NK CUPLA HOSE with FULL BLOW CUPLA	NK CUPLA HOSE with HI CUPLA ACE	NK CUPLA COIL HOSE with HI CUPLA ACE	MINI CUPLA	MINI CUPLA SUPER
Photo					NEW				
Body material • Working pressure (MPa)	Brass							0.7	0.7
	Stainless steel								
	Steel	1.0							0.7
	Plastic								
	Others		1.5	1.0	1.0	1.0	0.7		
Body surface treatment		Chrome plated	—	Chrome plated	Chrome plated (Plug only)	Chrome plated (Plug only)	Chrome plated (Plug only)	—	Chrome plated
Size	1/8"							○	
	1/4"	○	○	○				○	○
	5/16"							○	○
	3/8"	○	○	○				○	○
	1/2"	○		○					
	3/4"								
	1"								
	1 1/4"								
	1 1/2"								
	2"								
	2 1/2"								
	3"								
	4"								
	Others	○		○	○	○	○	○	○
Working temperature range		−20˚C to +60˚C (NBR)	—	−20˚C to +60˚C (NBR)	−5˚C to +60˚C (NBR)	−5˚C to +60˚C (NBR)	−5˚C to +60˚C (NBR)	−20˚C to +80˚C (NBR)	−20˚C to +80˚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 (Spill Reduction)								
	One-way shut-off			○	○	○	○	○	○
	Straight through								
Detailed information page		65	66	67	68	68	68	69	71

Guide for Selecting “NITTO KOHKI” Standard CUPLA

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

Applicable fluid		For Low Pressure (Water)							
Name		MICRO CUPLA	SMALL CUPLA	COMPACT ZEROSPILL CUPLA	COMPACT CUPLA	CUBE CUPLA	HI CUPLA	HI CUPLA ACE	MOLD CUPLA
Photo				NEW		Choose from 5 colors			
Body material • Working pressure (MPa)	Brass	1.0	1.0		1.0		1.0		1.0
	Stainless steel	1.0		1.0	1.0		1.5		
	Steel								
	Plastic					1.0		1.0, 1.5	
	Others								
Body surface treatment		Plated (Brass only)	Chrome plated	Nickel plated (Socket 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)	−10°C to +100°C (EPDM)	−20°C to +180°C (FKM)	−20°C to +60°C (NBR)	−20°C to +80°C (NBR)	−20°C to +60°C (NBR)	−20°C to +80°C (NBR)
Seal material		NBR, FKM	NBR	EPDM	FKM, EPDM	NBR	NBR, FKM	NBR	NBR, FKM
Connection method	Manual				○		○		
	Push-to-connect	○	○	○		○		○	○
Valve structure	Two-way shut-off				○	○			
	Two-way shut-off (Spill Reduction)			○					
	One-way shut-off	○	○			○	○	○	○
	Straight through					○			○
Detailed information page		23	27	29	31	33	39	61	73

Guide for Selecting "NITTO KOHKI" Standard CUPLA

This chart will let you quickly select an appropriate CUPLA product for your application. For technical data, please refer to the detailed information pages of each product, 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 High Flow Type	FLOW METER	LEVER LOCK CUPLA	TSP CUPLA	TSP CUPLA with Ball Valve	SP CUPLA Type A	HOT WATER CUPLA HW Type	ZEROSPILL CUPLA
Photo									
Body material • Working pressure (MPa)	Brass	1.0			5.0, 3.0, 2.0, 1.5	1.0	5.0, 3.0, 2.0, 1.5	2.0	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)	Nickel plated	—
Size	1/8"				○		○		
	1/4"	○			○	○	○	○	○
	5/16"								
	3/8"	○	○		○	○	○	○	○
	1/2"	○			○	○	○	○	○
	3/4"			○	○	○	○		○
	1"			○	○	○	○		○
	1 1/4"			○	○		○		
	1 1/2"			○	○		○		
	2"			○	○		○		
	2 1/2"			○					
	3"			○					
	4"			○					
	Others				○				
Working temperature range		−20°C 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 +180°C (FKM)	−20°C to +80°C (NBR)
Seal material		NBR, FKM	NBR	NBR, FKM, SI, EPDM	NBR, FKM, EPDM	FKM	NBR, FKM, EPDM	FKM	NBR, FKM, EPDM
Connection method	Manual			○	○	○	○	○	
	Push-to-connect	○							○
Valve structure	Two-way shut-off						○	○	
	Two-way shut-off (Spill Reduction)								○
	One-way shut-off	○				○			
	Straight through	○		○	○				
Detailed information page		75	76	77	81	83	85	87	89

Guide for Selecting “NITTO KOHKI” Standard CUPLA

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

Applicable fluid		For High Pressure							
Name		HSP CUPLA	HYPER HSP CUPLA	210 CUPLA	HSU CUPLA	S210 CUPLA	280 CUPLA	350 CUPLA	FLAT FACE CUPLA F35
Photo									
Body material • Working pressure (MPa)	Brass								
	Stainless steel				21.0	20.6			
	Steel	20.6, 18.0, 14.0	20.6	20.6			31.5, 27.5	34.5	35
	Plastic								
	Others								
Body surface treatment		Nickel plated	Nickel plated	Nickel plated	—	—	Bright chromate conversion coating	Nickel plated	Nickel plated
Size	1/8"								
	1/4"	○	○	○	○	○	○	○	○
	5/16"								
	3/8"	○	○	○	○	○	○	○	○
	1/2"	○	○	○	○	○	○	○	○
	3/4"	○	○	○	○	○	○	○	○
	1"	○	○	○	○	○	○	○	○
	1 1/4"	○						○	
	1 1/2"	○						○	
	2"	○							
	2 1/2"								
	3"								
	4"								
	Others								
Working temperature range		−20˚C 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)
Seal material		NBR, FKM	NBR	NBR, FKM	HNBR	FKM, NBR	NBR	FKM	FKM
Connection method	Manual	○	○	○	○	○	○		
	Push-to-connect							○	○
Valve structure	Two-way shut-off	○	○	○	○	○	○		
	Two-way shut-off (Spill Reduction)							○	○
	One-way shut-off								
	Straight through								
Detailed information page		91	95	97	99	101	103	105	107

Guide for Selecting “NITTO KOHKI” Standard CUPLA

This chart will let you quickly select an appropriate CUPLA product for your application. For technical data, please refer to the detailed information pages of each product, 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)				
Name		FLAT FACE CUPLA FF	450B CUPLA	700R CUPLA	MULTI CUPLA MAM Type	MULTI CUPLA MAM-B Type	MULTI CUPLA MAM-A Type	MULTI CUPLA MAM-A-SP Type	MULTI CUPLA MAM-A-ZEL Type
Photo									NEW
Body material • Working pressure (MPa)	Brass				0.7	1.0	1.0	1.0	1.0
	Stainless steel								
	Steel	35	44.1	68.6					
	Plastic								
	Others								
Body surface treatment		Nickel plated	Nickel plated	Nickel plated	Chrome plated	Nickel plated	Nickel plated	Nickel plated	Nickel plated
Size	1/8"				○	○		○	
	1/4"					○	○	○	○
	5/16"								
	3/8"	○	○	○			○	○	○
	1/2"	○		○			○	○	○
	3/4"	○							
	1"	○							
	1 1/4"								
	1 1/2"								
	2"								
	2 1/2"								
	3"								
	4"								
	Others								
Working temperature range		−20˚C to +80˚C (NBR)	−20˚C to +80˚C (NBR)	−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)
Seal material		NBR	NBR, FKM	NBR, FKM	NBR	FKM	FKM	FKM	FKM
Connection method	Manual		○	○					
	Push-to-connect	○							
Valve structure	Two-way shut-off		○	○		○	○	○	
	Two-way shut-off (Spill Reduction)	○							○
	One-way shut-off				○				
	Straight through								
Detailed information page		109	111	112	113	115	119	123	124

Guide for Selecting “NITTO KOHKI” Standard CUPLA

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

Applicable fluid		For Multi-Port Connection (Manual)		For Multi-Port Connection (Automatic)					For High Purity Chemicals
Name		MULTI CUPLA MAM-B Type Plate	MULTI CUPLA MAM-A Type Plate	MULTI CUPLA MAS Type	MULTI CUPLA MAT Type	MULTI CUPLA MALC-01 Type	MULTI CUPLA MALC-SP Type	MULTI CUPLA MALC-HSP Type	SEMICON CUPLA SP Type
Photo		NEW	NEW						
Body material • Working pressure (MPa)	Brass	—	—			1.0			
	Stainless steel	—	—	7.0	7.0		7.5, 5.0, 1.5		0.2
	Steel	—	—					25.0, 21.0	
	Plastic	—	—						
	Others	—	—						
Body surface treatment		—	—	Nickel plated	Nickel plated	Nickel plated	Nickel plated	Nickel plated	Electropolished
Size	1/8"	○				○	○	○	○
	1/4"	○	○	○	○		○	○	○
	5/16"								
	3/8"		○	○	○		○	○	○
	1/2"		○	○	○		○	○	○
	3/4"			○	○		○	○	○
	1"			○	○		○	○	○
	1 1/4"								
	1 1/2"						○		
	2"								
	2 1/2"								
	3"								
	4"								
	Others					○	○	○	
Working temperature range		—	—	−20°C to +180°C (FKM)	−20°C to +180°C (FKM)	−20°C to +80°C (NBR)	−20°C to +180°C (FKM)	−20°C to +180°C (FKM)	0°C to +50°C (FKM)
Seal material		—	—	FKM	FKM	NBR	FKM	FKM	FKM, EPDM, P, KL
Connection method	Manual								○
	Push-to-connect								
Valve structure	Two-way shut-off	—	—	○	○				○
	Two-way shut-off (Spill Reduction)	—	—				○	○	
	One-way shut-off	—	—			○			
	Straight through	—	—						
Detailed information page		126	128	131	131	133	135	139	143

Guide for Selecting "NITTO KOHKI" Standard CUPLA

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

Applicable fluid		For High Purity Chemicals					For Inert Gas and Vacuum		For Paint
Name		SEMICON CUPLA SCS Type	SEMICON CUPLA SCY Type	SEMICON CUPLA SCT Type	SEMICON CUPLA SCAL Type	SEMICON CUPLA SCF Type	SP-V CUPLA Type A	PCV PIPE CUPLA	PAINT CUPLA
Photo							NEW		
Body material • Working pressure (MPa)	Brass						5.0, 3.0	4.5	
	Stainless steel	0.2	0.2				7.5, 4.5		1.0 (Plug)
	Steel								
	Plastic			0.2	0.2	0.2			
	Others								1.0 (Socket)
Body surface treatment		Electropolished	Electropolished	—	—	—	—	—	—
Size	1/8"	○	○						
	1/4"	○	○	○	○		○	○	
	5/16"								
	3/8"	○	○	○	○	○	○	○	○
	1/2"	○	○	○	○	○	○		
	3/4"	○	○	○	○		○		
	1"	○	○	○					
	1 1/4"								
	1 1/2"								
	2"								
	2 1/2"								
	3"								
	4"								
	Others					○		○	
Working temperature range		0°C to +50°C (P)	0°C to +50°C (P)	+5°C to +50°C (FKM)	+5°C to +50°C (P)	+5°C to +50°C (FKM)	−20°C to +80°C (CR)	−20°C to +80°C (CR)	0°C to +50°C (PFA)
Seal material		P (0-ring for socket)	P, PTFE (Packing seal for socket)	FEP-coated FKM (0-ring for socket)	P (0-ring for socket)	FEP-coated FKM (0-ring for socket)	CR, FKM, HNBR	CR, FKM, HNBR	PFA
Connection method	Manual	○	○	○			○	○	○
	Push-to-connect				○	○			
Valve structure	Two-way shut-off	○	○	○		○	○		
	Two-way shut-off (Spill Reduction)				○				
	One-way shut-off								○
	Straight through							○	
Detailed information page		144	145	146	147	148	149	151	153

Guide for Selecting “NITTO KOHKI” Standard CUPLA

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

Applicable fluid		For Food
Name		HYGIENIC CUPLA Easy Wash Type
Photo		
Body material • Working pressure (MPa)	Brass	
	Stainless steel	1.0
	Steel	
	Plastic	
	Others	
Body surface treatment		Buff finish #400 (liquid contact part)
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		0°C to +110°C (SI)
Seal material		SI, FKM, EPDM
Connection method	Manual	
	Push-to-connect	○
Valve structure	Two-way shut-off	
	Two-way shut-off (Spill Reduction)	
	One-way shut-off	
	Straight through	○
Detailed information page		155

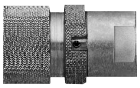
Semi-standard CUPLA Series

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

CUPLA Safety Mechanism

CUPLA with Single Lock (BL/PL) P157
Accidental disconnection prevention mechanism

CUPLA with Safety Lock (SL) P157
Accidental disconnection prevention mechanism



For Temperature Controllers

MYU CUPLA P158
For small bore piping (10 mm OD) for temperature control
Applicable fluid : Water, gas, air

Valve structure: Two-way shut-off

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

LITTLE CUPLA P158
For small bore piping (14 mm OD) for temperature control
Applicable fluid : Water, gas, air

Valve structure: Two-way shut-off

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

HIGH FLOW CUPLA P159
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 P160
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 High Pressure

TSP-HP CUPLA (for High Pressure) P158
High pressure and general purpose type

Valve structure: Straight through

Working pressure : 9.0 MPa {92 kgf/cm²}
Body material : Stainless steel
Application : 1/4" to 1/2"
Seal material : NBR, EPDM

For Medium Pressure

SP CUPLA Type A PV Type P161
Connectable with residual pressure with Purge Valve

Valve structure: Two-way shut-off

Working pressure : 2.0 to 4.5 MPa {20 to 46 kgf/cm²}
Body material : Brass, Stainless steel
Application : Rc 3/4 to Rc 1 1/2
Seal material : NBR

For Low Pressure (air)

PLASTIC CUPLA BC Type P162
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

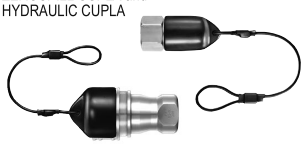
When placing your order

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

Accessories

DIP MOLD DUST CAP P163
DUST CAPS for HI CUPLA, SP CUPLA Type A, TSP CUPLA, ZEROSPILL CUPLA and HYDRAULIC CUPLA



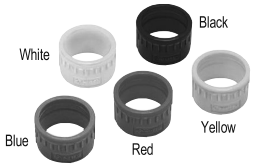
SAFETY CAP P163
Metal caps for HI CUPLA Series, SP CUPLA Type A, TSP CUPLA and HYDRAULIC CUPLA

Semi-standard

DUST CAP P164
DUST CAP Plastic Cap for HI CUPLA Series and FULL BLOW CUPLA

DUST CAP P164
Dedicated polyethylene cap for HYGIENIC CUPLA

SLEEVE COVER P164
Plastic cover for HI CUPLA Series

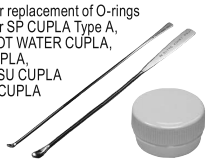


SLEEVE COVER P164
Plastic cover for FULL BLOW CUPLA

PROTECTION COVER P164
Plastic Cover for NUT CUPLA and FULL BLOW CUPLA Nut Type

SLEEVE STOPPER P165
Sleeve Stopper for SP CUPLA Type A

ACCESSORIES FOR O-RING MAINTENANCE P165
Jigs & grease for replacement of O-rings for couplings For SP CUPLA Type A, TSP CUPLA, HOT WATER CUPLA, ZEROSPILL CUPLA, HSP CUPLA, HSU CUPLA and HYGIENIC CUPLA



RESIDUAL PRESSURE RELEASE JIG P166
Residual Pressure Release Jig for SP CUPLA and HYDRAULIC CUPLA

Semi-standard

CUPLA ADAPTER for Braided Hose Connection P166
Mounts on CUPLA plug / socket with female thread

PURGE ADAPTER P167
Residual Pressure Purge Adapter for Hydraulic Lines

CUPLA CONNECTING JIG P168
Connecting Jig for large CUPLA

Special Made-to-Order CUPLA

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

Important notice

Special made-to-order couplings are supplied based upon the specific instructions / specifications detailed by the customer. Once written acceptance of our final drawing / specifications of 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 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 (part Aluminum alloy 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 (part Aluminum alloy 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 (part Aluminum alloy 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 (part Aluminum alloy 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

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 (part 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

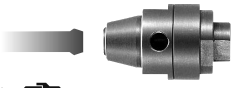
Working pressure : To be defined after consultation.
Body material : Brass (part Stainless steel)
Pipe sizes : To be complied with your requirements.
Seal material : CR, FKM, NBR

PCP CUPLA
For bulged pipes and spool pipes

Valve structure: Straight through

Working pressure : To be defined after consultation.
Body material : POM (Polyacetal), part Stainless steel
Pipe sizes : To be complied with your requirements.
Seal material : CR, FKM, NBR

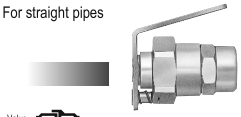
AUTO CUPLA
For copper pipes



Valve structure: Straight through

Working pressure : To be defined after consultation.
Body material : Stainless steel (part Brass)
Pipe sizes : To be complied with your requirements.
Seal material : CR, FKM, NBR

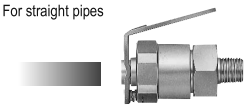
PCBL CUPLA
For straight pipes



Valve structure: Straight through

Working pressure : To be defined after consultation.
Body material : Stainless steel (part 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 (part 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 (part 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 (part 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 (part 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 (part Aluminum alloy)
Pipe sizes : To be complied with your requirements.
Seal material : CR, FKM, NBR

AUTO CUPLA
For copper pipes

Valve structure: Straight through

Working pressure : To be defined after consultation.
Body material : Stainless steel (part Brass)
Pipe sizes : To be complied with your requirements.
Seal material : CR, FKM, NBR

SCREW CUPLA PCS Type
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 (part Stainless steel)
Application : 7/16" to 7/8"
Seal material : CR, NBR, FKM

For Pneumatics and Hydraulics

SCREW CUPLA NCM Type
For connecting pneumatic/hydraulic lines

Valve structure: Straight through

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

For High Purity Chemicals

SEMICON CUPLA SML Type
For semiconductor manufacturing equipment

Valve structure: Two-way shut-off

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

SEMICON CUPLA SCF Straight Type
For semiconductor manufacturing equipment
•see page 148

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

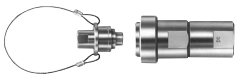
AIRLESS CUPLA
For physical and chemical devices

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

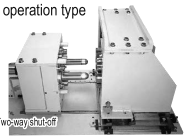


Valve structure: Two-way shut-off

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

Automatic MULTI CUPLA

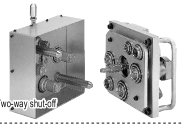
MULTI CUPLA AMCS-FA Type
Full automatic operation type



Valve structure: Two-way shut-off

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

MULTI CUPLA AMCS-SA Type
Semi-automatic type



Valve structure: Two-way shut-off

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

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 CUPLA products in this group are special made-to-order items.

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	
NUT CUPLA	50PN (10PAH), 60PN (20PAH), 65PN	
	80PN (30PAH), 85PN, 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	
ANTI-VIBRATION PLUG HOSE	SHA-3-2R, SHA-3-3R	
NK CUPLA HOSE with HI CUPLA ACE	NKU-605B, NKU-610B, NKU-620B	(65PNG)
	NKU-810B, NKU-820B	(85PNG)
NK CUPLA HOSE with FULL BLOW CUPLA	NKU-605P, NKU-610P	(65PNG)
	NKU-810P	(85PNG)
NK CUPLA COIL HOSE with HI CUPLA ACE	NKC-503B, NKC-505B	(50PNG)
	NKC-603B, NKC-605B	(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 T Type	HA-T Type (Inlet Port)	
ACCESSORIES FOR AIR LINES	DC-30PF, PG-10P	
SUPER CUPLA	02S20P (End Configuration)	

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
RE-PV-30 Type (Outlet Port)		PURGE LINE CUPLA
RT Type (Outlet Port), RE Type (Outlet Port)		ROTARY LINE CUPLA
200T Type (Outlet Port), 200L Type (Outlet Port)		LINE CUPLA 200
200S Type (Outlet Port)		
FBH-RE Type (Outlet Port), FBH-RT Type (Outlet Port)		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 Type (Outlet Port)		
HA-50SNG, HA-65SNG, HA-85SNG		
NKU-605B, NKU-610B, NKU-620B	(HA-65SNG)	NK CUPLA HOSE with HI CUPLA ACE
NKU-810B, NKU-820B	(HA-85SNG)	
NKU-605P, NKU-610P	(FBH-65SNG)	NK CUPLA HOSE with FULL BLOW CUPLA
NKU-810P	(FBH-85SNG)	
NKC-503B, NKC-505B	(HA-50SNG)	NK CUPLA COIL HOSE with HI CUPLA ACE
NKC-603B, NKC-605B	(HA-65SNG)	

Not interchangeable

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)

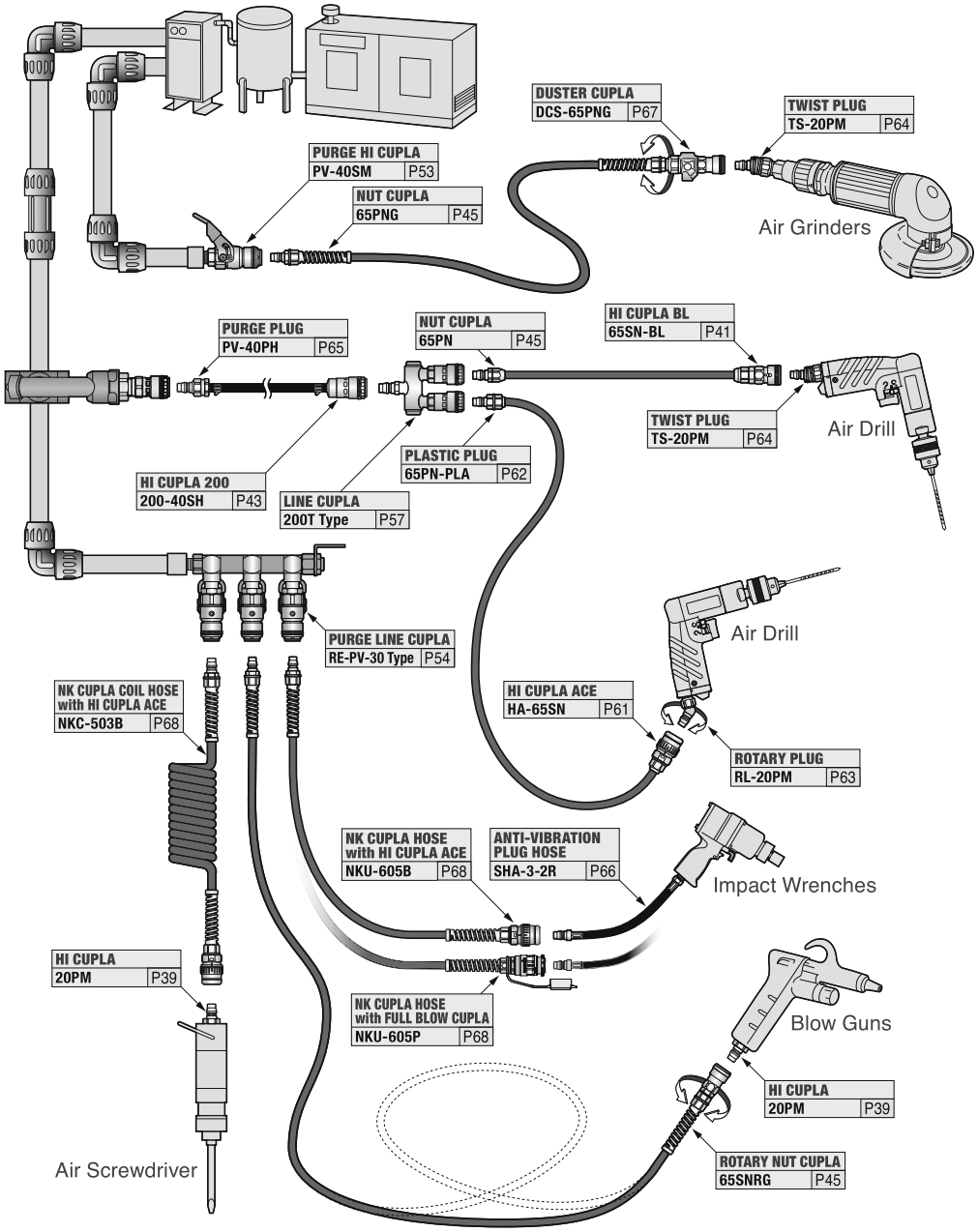
Can be connected with each other

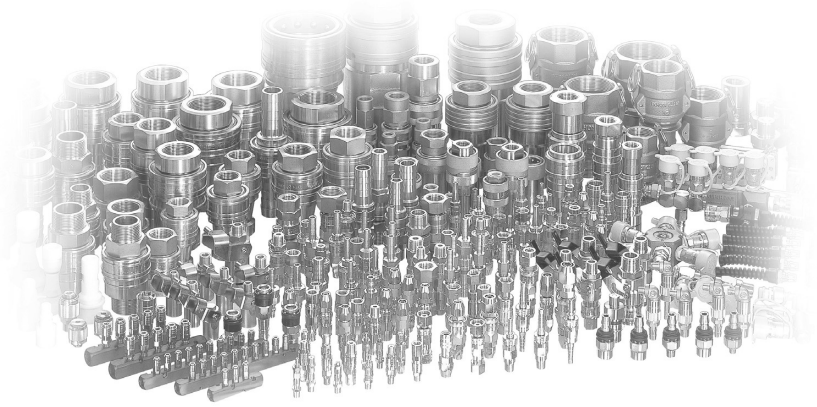
Socket	
Model	Type
400SH, 600SH, 800SH	HI CUPLA
400SM, 600SM, 800SM	
400SF, 600SF, 800SF	
PV-400SM, PV-600SM	PURGE HI CUPLA
PVR-400SH, PVR-600SH, PVR-800SH	PURGE HI CUPLA PVR Type
PVR-400SM, PVR-600SM, PVR-800SM	
PVR-400SF, PVR-600SF, PVR-800SF	

Index

Examples of air line connections using HI CUPLA 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 CUPLA products.





	Product Name	NEW	Page
2	210 CUPLA		97
	280 CUPLA		103
3	350 CUPLA		105
4	450B CUPLA		111
7	700R CUPLA		112
A	ANTI-VIBRATION PLUG HOSE		66
C	COMPACT CUPLA		31
	COMPACT ZEROSPILL CUPLA		29
	CUBE CUPLA		33
D	DUSTER CUPLA		67
F	FLAT FACE CUPLA F35		107
	FLAT FACE CUPLA FF		109
	FLOW METER		76
	FULL BLOW CUPLA		49
H	HI CUPLA		39
	HI CUPLA 200		43
	HI CUPLA ACE		61
	HI CUPLA BL		41
	HI CUPLA for Connection to Braided Hoses		45
	HI CUPLA Two Way Type		48
	HOT WATER CUPLA HW Type		87
	HSP CUPLA		91
	HSU CUPLA		99
	HYGIENIC CUPLA		155
	HYPER HSP CUPLA		95
L	LEVER LOCK CUPLA		77
	LINE CUPLA 200		57
	LOCK CUPLA 200		47
M	MICRO CUPLA		23
	MINI CUPLA		69
	MINI CUPLA SUPER		71
	MOLD CUPLA		73
	MOLD CUPLA High Flow Type		75
	MULTI CUPLA MALC-01 Type		133
	MULTI CUPLA MALC-HSP Type		139
	MULTI CUPLA MALC-SP Type		135
	MULTI CUPLA MAM-A Type		119
	MULTI CUPLA MAM-B Type		115
	MULTI CUPLA MAM Type		113
	MULTI CUPLA MAS Type		131
	MULTI CUPLA MAT Type		131
	MULTI CUPLA MAM-A-SP Type		123
	MULTI CUPLA MAM-A-ZEL Type		124
	MULTI CUPLA MAM-A Type Plate		125
	MULTI CUPLA MAM-B Type Plate		125
N	NK CUPLA COIL HOSE with HI CUPLA ACE		68
	NK CUPLA HOSE with FULL BLOW CUPLA		68
	NK CUPLA HOSE with HI CUPLA ACE		68
	NUT CUPLA		45
	NUT CUPLA 200		45
P	PAINT CUPLA		153
	PCV PIPE CUPLA		151
	PURGE HI CUPLA		53
	PURGE HI CUPLA PVR Type		51
	PURGE LINE CUPLA		54
	PURGE PLUG		65
R	ROTARY FULL BLOW LINE CUPLA		59
	ROTARY LINE CUPLA		55
	ROTARY NUT CUPLA		45
	ROTARY PLUG		63
S	S210 CUPLA		101
	SEMICON CUPLA SCAL Type		147
	SEMICON CUPLA SCF Type		148
	SEMICON CUPLA SP Type		143
	SEMICON CUPLA SCS Type		144
	SEMICON CUPLA SCT Type		146
	SEMICON CUPLA SCY Type		145
	SMALL CUPLA		27
	SP CUPLA Type A		85
	SP-V CUPLA Type A		149
	SUPER CUPLA		37
T	TSP CUPLA		81
	TSP CUPLA with Ball Valve		83
	TWIST PLUG		64
Z	ZEROSPILL CUPLA		89

For Low Pressure

MICRO CUPLA

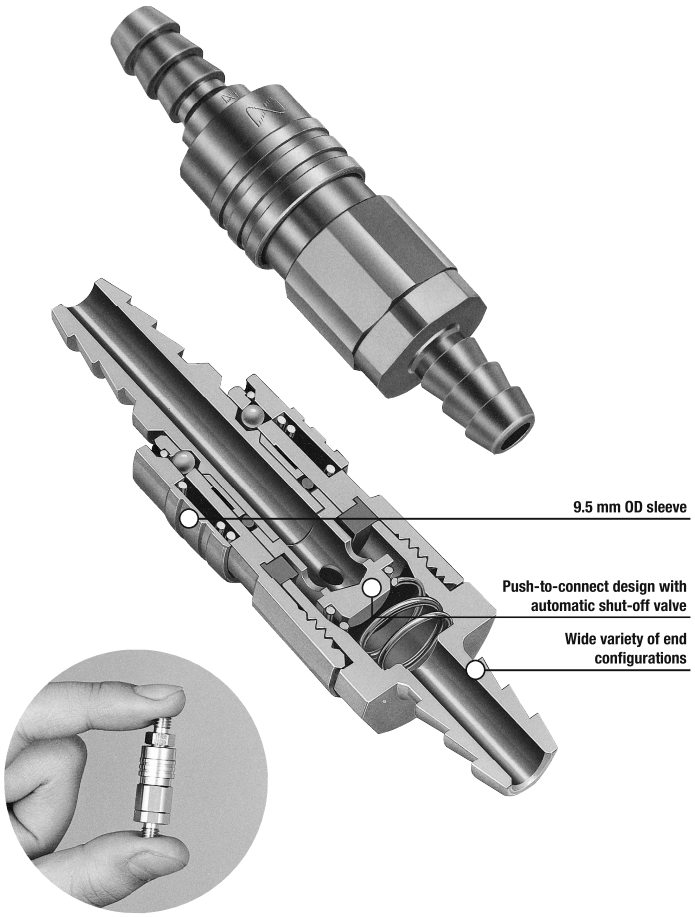
For piping in pneumatic control devices

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.)

Compact, lightweight CUPLA 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 Part : Brass (Plated) , Plastic			
Size	Thread	1/8" , M5×0.8			
	Tube barb (Tube fitter) *1	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			
Pressure unit		MPa	kgf/cm²	bar	PSI
Working pressure		1.0	10	10	145
Seal material Working temperature range *2		Seal material	Mark	Working temperature range	Remarks
		Nitrile rubber	NBR	-20˚C to +80˚C	Standard material
		Fluoro rubber	FKM	-20˚C to +180˚C	Made-to-order item(s)

- Above specifications apply only to CUPLA. Maximum working pressure and working temperature range may vary depending on tube materials you use with and the working temperature.
CUPLA with Tube Fitter has NBR packing material only.

*1: When connecting an extremely soft tube such as soft polyurethane or soft nylon, attach the insert ring specified by the tube manufacturer to the inner diameter of the tube to be connected.

*2: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque — Nm {kgf•cm}

Size (Thread)		M5×0.8	R 1/8
Torque	Brass	1.3 {13}	5 {51}
	Stainless steel		7 {71}

Flow Direction

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

Interchangeability

Sockets and plugs can be connected regardless of end configurations.

Minimum Cross-Sectional Area — (mm²)

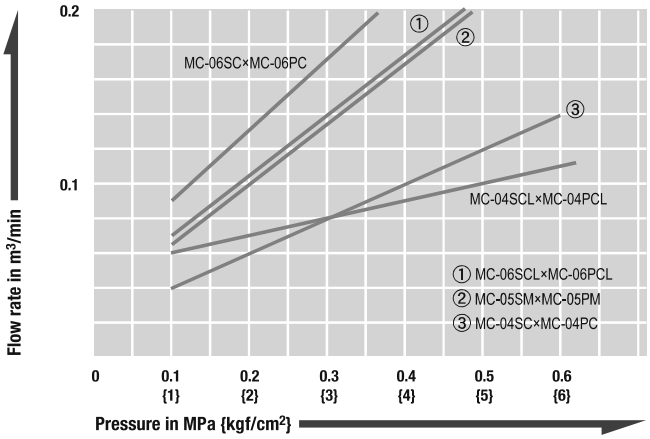
Model	MC-03SP	MC-04SP	MC-05SP	MC-10SP	Tube Fitter Type for 4 mm OD tube	Tube Fitter Type for 6 mm OD tube
Min. cross-sectional area	1.1	4.9	4.9	4.9	4.9	4.9

Suitability for Vacuum — 53.0 kPa {400 mmHg}

Socket only	Plug only	When connected
—	—	Operational

Pressure - Flow Characteristics

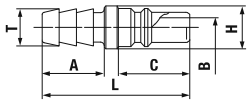
[Test conditions] -Fluid : Air -Temperature : Room temperature
-Tube size : ø4 mm×ø2 mm, ø6 mm×ø4 mm (Micro Cupla with Tube Fitter)



Models and Dimensions

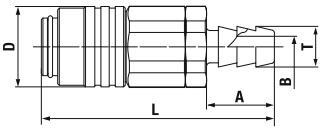
WAF : WAF stands for width across flats.

Plug PH type (Tube barb)



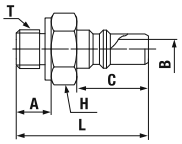
Model	Application (Tube)	Body material・Mass (g)	Dimensions (mm)					
		Brass	L	C	A	øH	øT	øB
MC-03PH	3 mm ID	1.2	19	9.2	8	5.5	3.5	1.2
MC-04PH	4 mm ID	1.4	19	9.2	8	5.5	4.8	2.5

Socket SH type (Tube barb)



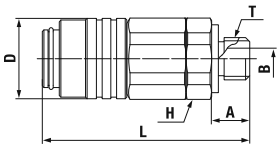
Model	Application (Tube)	Body material・Mass (g)	Dimensions (mm)				
		Brass	L	øD	A	øT	øB
MC-03SH	3 mm ID	7	(27.5)	9.5	8	3.5	1.2
MC-04SH	4 mm ID	7.3	(27.5)	9.5	8	4.8	2.5

Plug PM type (Male thread)



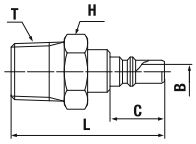
Model	Application (Thread)	Body material・Mass (g)	Dimensions (mm)					
		Brass	L	C	A	H(WAF)	T	øB
MC-05PM	M5×0.8	1.9	17	9.2	4.5	Hex.7	M5×0.8	2.5

Socket SM type (Male thread)



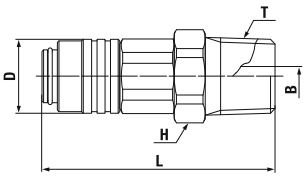
Model	Application (Thread)	Body material・Mass (g)	Dimensions (mm)					
		Brass	L	øD	A	T	H(WAF)	øB
MC-05SM	M5×0.8	7.4	(24.5)	9.5	4.5	M5×0.8	Hex.9	2.5

Plug PM type (Male thread)



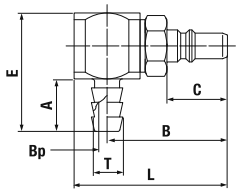
Model	Application (Thread)	Body material・Mass (g)	Dimensions (mm)				
		Brass	L	C	H(WAF)	T	øB
MC-10PM	Rc 1/8	9	26	9.2	Hex.11	R 1/8	2.5

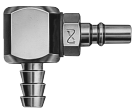
Socket SM type (Male thread)



Model	Application (Thread)	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

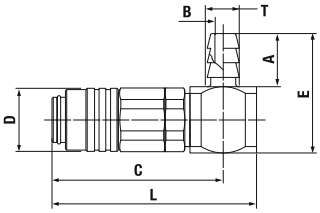
Plug PHL type (Tube barb)





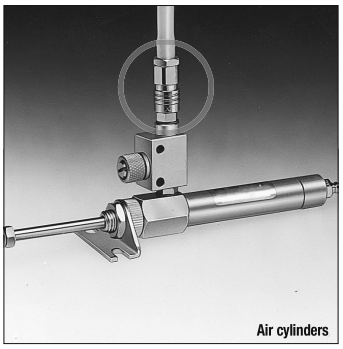
Model	Application (Tube)	Body material・Mass (g)	Dimensions (mm)						
		Brass	L	C	A	B	E	øT	øBp
MC-04PHL	4 mm ID	9.4	(23.3)	9.2	8	(18.3)	18	4.8	2.5

Socket SHL type (Tube barb)



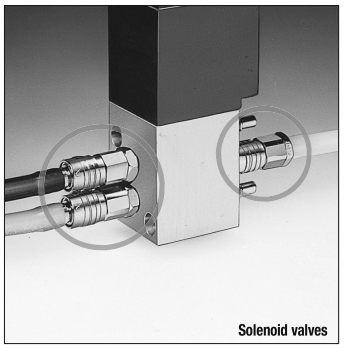
Model	Application (Tube)	Body material・Mass (g)	Dimensions (mm)						
		Brass	L	C	E	A	øD	øT	øB
MC-04SHL	4 mm ID	14.8	(30.8)	(25.8)	18	8	9.5	4.8	2.5

Application Example



Air cylinders

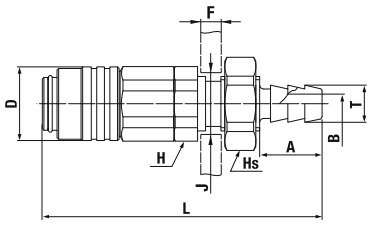
Always fix tubes with hose clamps when using hose barb types.



Solenoid valves

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

Socket SHB type (For panel mounting)



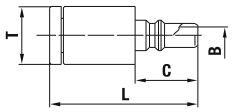
• F and øJ are dimensions of panel.

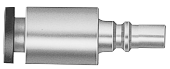
Model	Application (Tube)	Body material・Mass (g)	Dimensions (mm)								
		Brass	L	A	øD	øT	øB	Hs(WAF)	øJ	H(WAF)	F
MC-04SHB	4 mm ID	11.5	(36)	8	9.5	4.8	2.5	Hex.11	$7.1^{+0.3}_{0}$	Hex.9	1.2 to 3.5

Models and Dimensions (MICRO CUPLA with Tube Fitter)

WAF : WAF stands for width across flats.

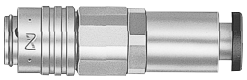
Plug PC type (With Tube Fitter)

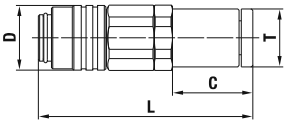




Model	Application (Tube)	Mass (g)	Dimensions (mm)			
			L	C	øT	øB
MC-04PC	4 mm OD	3	(21.7)	9.2	8	2.5
MC-06PC	6 mm OD	5	(25)	9.2	9.8	2.5

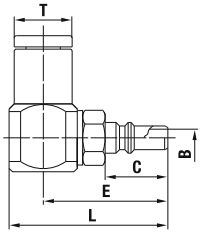
Socket SC type (With Tube Fitter)

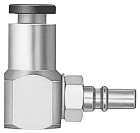




Model	Application (Tube)	Mass (g)	Dimensions (mm)			
			L	øD	C	øT
MC-04SC	4 mm OD	9	(31.5)	9.5	(12)	8
MC-06SC	6 mm OD	11.5	(33.5)	9.5	(13)	9.8

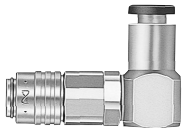
Plug PCL type (With L-shaped Tube Fitter)

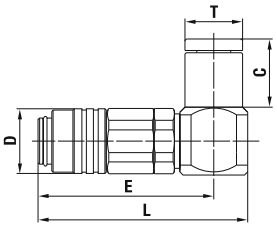




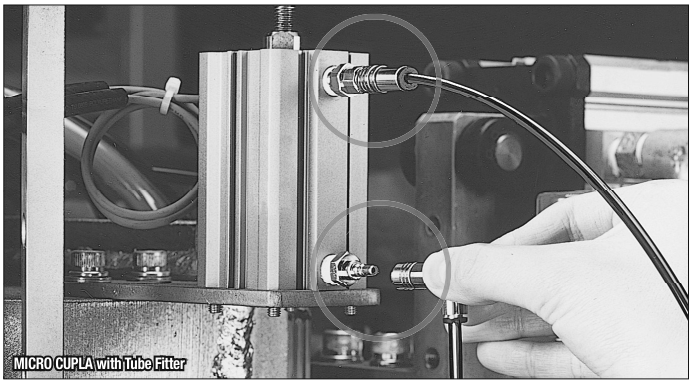
Model	Application (Tube)	Mass (g)	Dimensions (mm)				
			L	C	E	øT	øB
MC-04PCL	4 mm OD	10	(23.3)	9.2	(18.3)	8	2.5
MC-06PCL	6 mm OD	13.5	(24.3)	9.2	(18.8)	9.8	2.5

Socket SCL type (With L-shaped Tube Fitter)

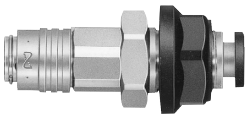


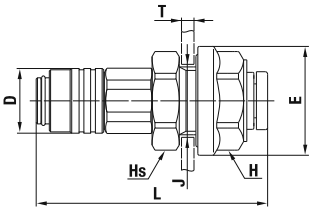


Model	Application (Tube)	Mass (g)	Dimensions (mm)				
			L	E	øD	C	øT
MC-04SCL	4 mm OD	16	(30.8)	(25.8)	9.5	(10)	8
MC-06SCL	6 mm OD	19	(31.8)	(26.3)	9.5	(12.5)	9.8



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	$12.5^{+0.3}_{0}$

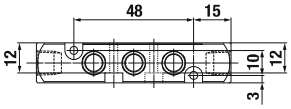
Models and Dimensions (MICRO LINE CUPLA)

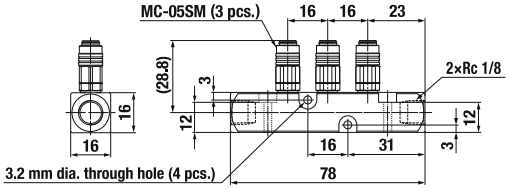
WAF : WAF stands for width across flats.

Socket MC-03 type (MICRO LINE CUPLA with three branch ports)

Mass: 65 g

• The branch body is made of aluminum alloy.



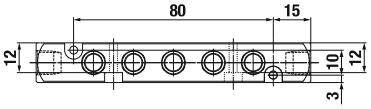


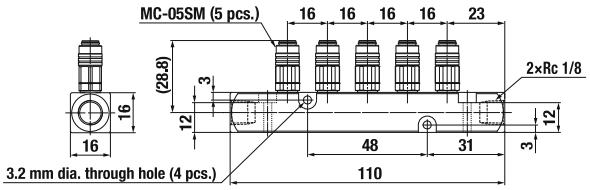
Dimensions (mm)

Socket MC-05 type (MICRO LINE CUPLA with 5 branch ports)

Mass: 101 g

• The branch body is made of aluminum alloy.



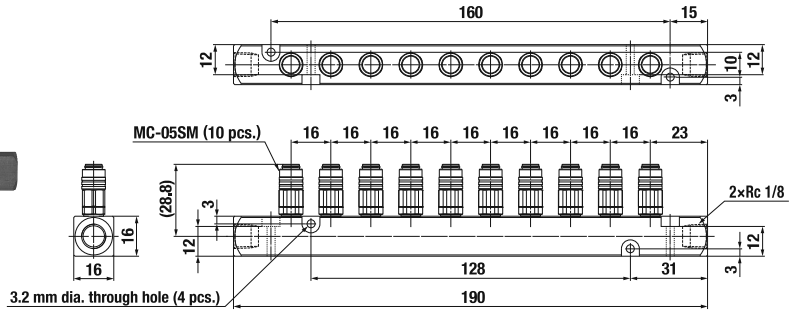


Dimensions (mm)

Socket MC-10 type (MICRO LINE CUPLA with 10 branch ports)

Mass: 187 g

• The branch body is made of aluminum alloy.

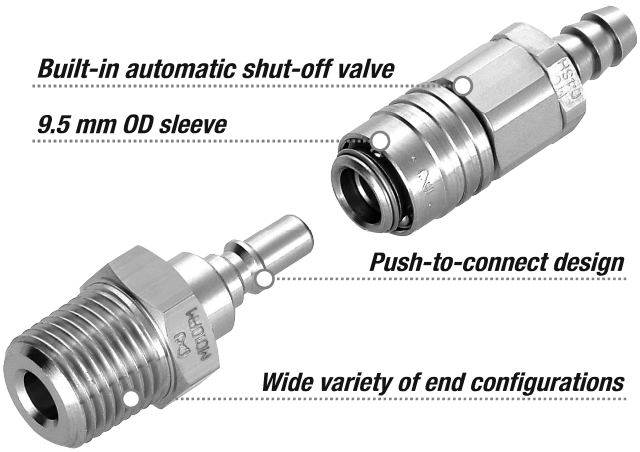


Dimensions (mm)

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

MICRO CUPLA
Stainless Steel Models

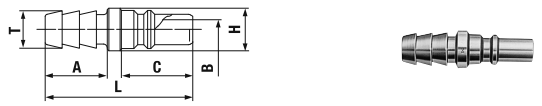
Highly Corrosion-resistant Stainless Steel MICRO CUPLA



Models and Dimensions (Stainless Steel)

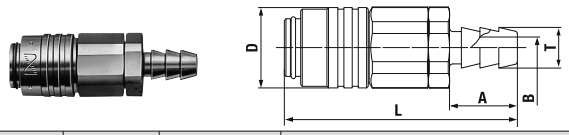
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



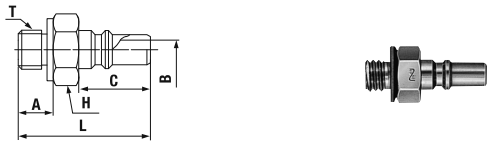
Model	Application (Tube)	Body material・Mass (g)	Dimensions (mm)					
		Stainless steel	L	C	A	øH	øT	øB
MC-04PH	4 mm ID	1.3	19	9.2	8	5.5	4.8	2.5

Socket SH type (Hose barb)



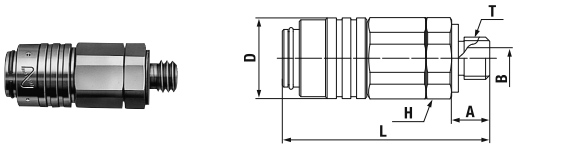
Model	Application (Tube)	Body material・Mass (g)	Dimensions (mm)				
		Stainless steel	L	øD	A	øT	øB
MC-04SH	4 mm ID	6.7	(27.5)	9.5	8	4.8	2.5

Plug PM type (Male thread)



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

Socket SM type (Male thread)

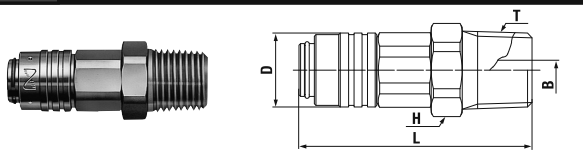


Model	Application (Thread)	Body material・Mass (g)	Dimensions (mm)					
		Stainless steel	L	øD	A	T	H(WAF)	øB
MC-05SM	M5×0.8	6.8	(24.5)	9.5	4.5	M5×0.8	Hex.9	2.5

Plug PM type (Male thread)

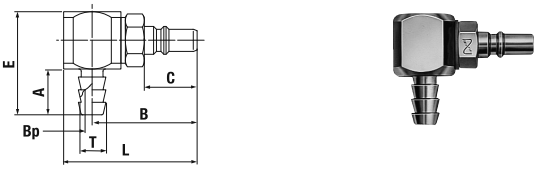
Model	Application (Thread)	Body material・Mass (g)	Dimensions (mm)				
		Stainless steel	L	C	H(WAF)	T	øB
MC-10PM	Rc 1/8	8.1	26	9.2	Hex.11	R 1/8	2.5

Socket SM type (Male thread)



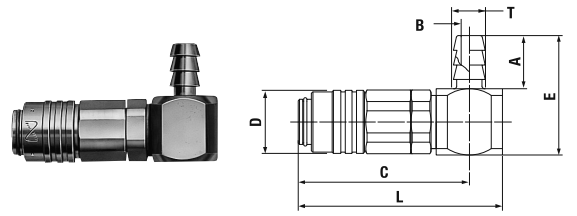
Model	Application (Thread)	Body material・Mass (g)	Dimensions (mm)				
		Stainless steel	L	øD	T	H(WAF)	øB
MC-10SM	Rc 1/8	12.1	(30)	9.5	R 1/8	Hex.11	3

Plug PHL type (Hose barb)



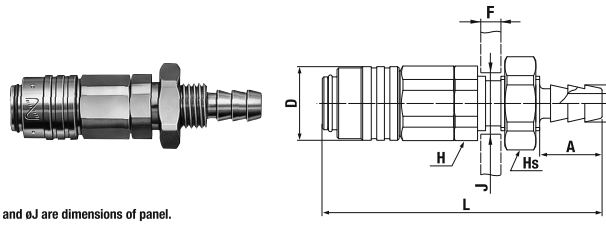
Model	Application (Tube)	Body material・Mass (g)	Dimensions (mm)						
		Stainless steel	L	C	A	B	E	øT	øBp
MC-04PHL	4 mm ID	9	(23.3)	9.2	8	(18.3)	18	4.8	2.5

Socket 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

For Low Pressure

SMALL CUPLA

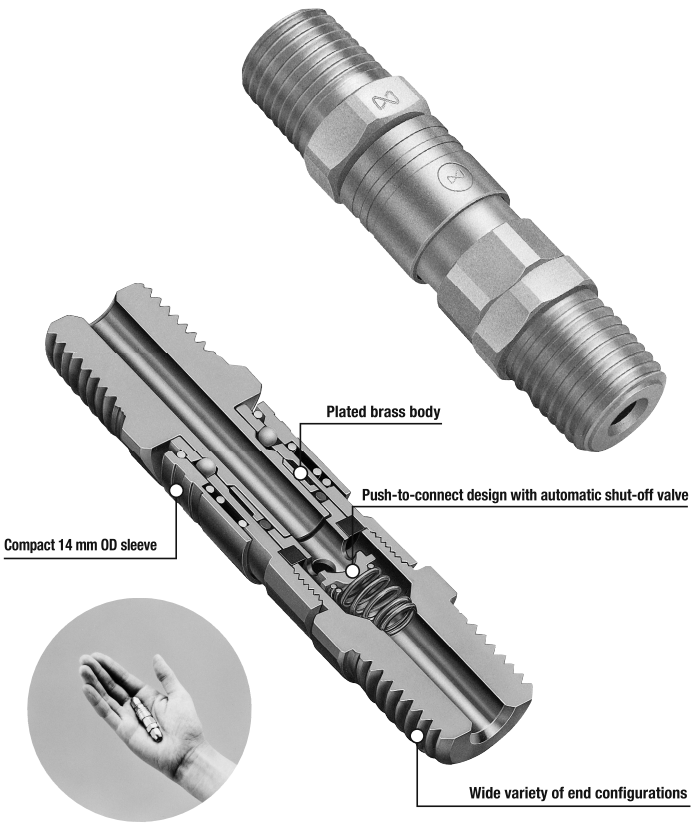
Lightweight and compact for use on air lines and scientific equipment

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.**
- **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 Part : Brass (Nickel plated) , Plastic
Size	Thread	1/8", 1/4"
	Hose barb	Polyamide hose: ø4×ø6, ø4.5×ø6 Urethane hose: ø4×ø6
	Tube barb (Tube fitter) *1	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

Pressure unit	MPa	kgf/cm²	bar	PSI
Working pressure	1.0	10	10	145
Seal material / Working temperature range *2	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR	-20˚C to +80˚C	Standard material

- Above specifications apply only to CUPLA. Maximum working pressure and working temperature range may vary depending on tube materials you use with and the working temperature.

*1: When connecting an extremely soft tube such as soft polyurethane or soft nylon, attach the insert ring specified by the tube manufacturer to the inner diameter of the tube to be connected.

*2: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque — Nm {kgf•cm}

Size (Thread)	1/8"	1/4"	PN, SN Type
Torque	5 {51}	9 {92}	5 {51}

Flow Direction

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

Interchangeability

Sockets and plugs can be connected regardless of end configurations.

Minimum Cross-Sectional Area — (mm²)

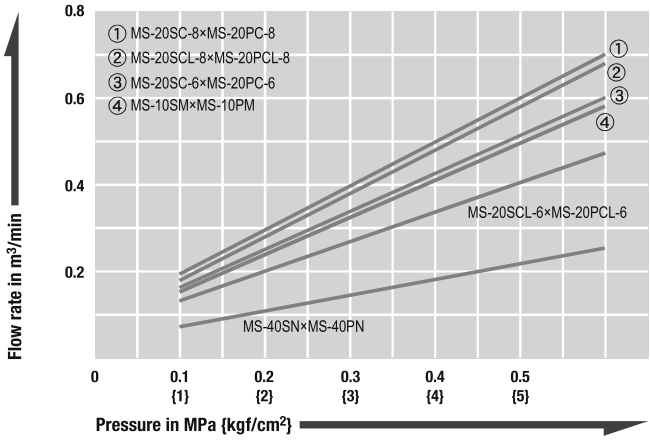
Model	MS-10SM × MS-10PM	MS-20SM × MS-20PM	MS-40SN × MS-40PN	MS-45SN × MS-45PN	Tube Fitter Type for 6 mm OD tube	Tube Fitter Type for 8 mm OD tube
Minimum cross-sectional area	12.5	12.5	4.9	7	12.5	12.5

Suitability for Vacuum — 53.0 kPa {400 mmHg}

Socket only	Plug only	When connected
—	—	Operational

Pressure - Flow Characteristics

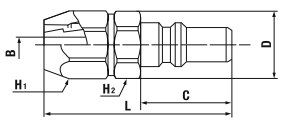
[Test conditions] - Fluid : Air - Temperature : Room temperature
- Tube size : ø6 mm×ø4 mm, ø8 mm×ø6 mm (SMALL CUPLA with Tube Fitter)

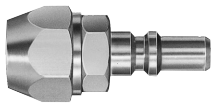


Models and Dimensions

WAF : WAF stands for width across flats.

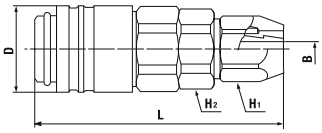
Plug PN type (For connection to hose)





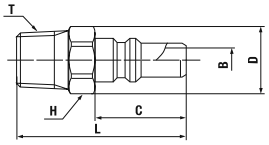
Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			L	C	øD	H1(WAF)	H2(WAF)	øB
MS-40PN	ø4 mm×ø6 mm Polyamide	10.5	(31)	15.2	11	Hex.10	Hex.10	2.5
MS-45PN	ø4.5 mm×ø6 mm Polyamide ø4 mm×ø6 mm Polyurethane	11	(31)	15.2	11	Hex.10	Hex.10	3

Socket SN type (For connection to hose)



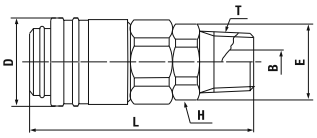
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	H1(WAF)	H2(WAF)	øD	øB
MS-40SN	ø4 mm×ø6 mm Polyamide	26.5	(40.8)	Hex.10	Hex.12	14	2.5
MS-45SN	ø4.5 mm×ø6 mm Polyamide ø4 mm×ø6 mm Polyurethane	27.0	(40.8)	Hex.10	Hex.12	14	3

Plug PM type (Male thread)



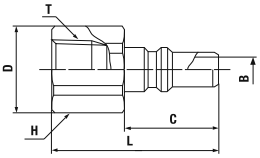
Model	Application (Thread)	Mass (g)	Dimensions (mm)					
			L	øD	C	H(WAF)	T	øB
MS-10PM	Rc 1/8	9	28.5	12	15.2	Hex.11	R 1/8	4
MS-20PM	Rc 1/4	19.5	32.5	15.2	15.2	Hex.14	R 1/4	4

Socket SM type (Male thread)



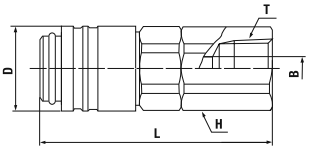
Model	Application (Thread)	Mass (g)	Dimensions (mm)					
			L	H(WAF)	T	øD	øE	øB
MS-10SM	Rc 1/8	24	(36.8)	Hex.12	R 1/8	14	13.2	4
MS-20SM	Rc 1/4	34	(40.8)	Hex.14	R 1/4	14	15.2	4

Plug PF type (Female thread)



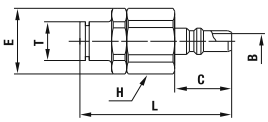
Model	Application (Thread)	Mass (g)	Dimensions (mm)					
			L	øD	C	H(WAF)	T	øB
MS-10PF	R 1/8	11	27	14	15.2	Hex.13	Rc 1/8	4

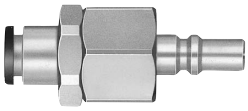
Socket SF type (Female thread)



Model	Application (Thread)	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

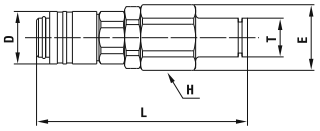
Plug PC type (Tube Fitter)





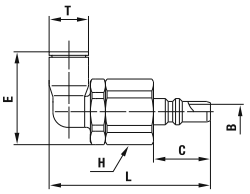
Model	Application (Tube)	Mass (g)	Dimensions (mm)					
			L	C	øE	H(WAF)	øT	øB
MS-20PC-6	6 mm OD	26.5	(40.5)	15.2	17.5	Hex.16	10.3	4
MS-20PC-8	8 mm OD	31	(47.5)	15.2	17.5	Hex.16	13.5	4

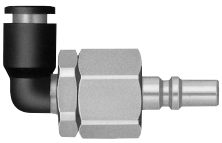
Socket SC type (Tube Fitter)



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

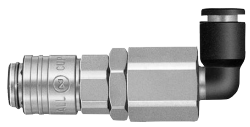
Plug PCL type (L-shaped Tube Fitter)

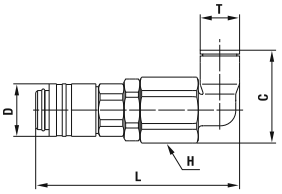




Model	Application (Tube)	Mass (g)	Dimensions (mm)					
			L	C	E	H(WAF)	øT	øB
MS-20PCL-6	6 mm OD	27.5	(43)	15.2	(24.8)	Hex.16	10.5	4
MS-20PCL-8	8 mm OD	32	(46.5)	15.2	(31.8)	Hex.16	13.5	4

Socket SCL type (L-shaped Tube Fitter)

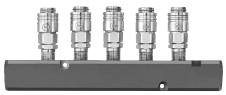


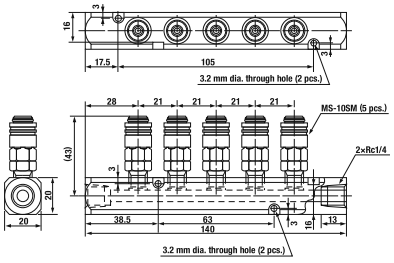


Model	Application (Tube)	Mass (g)	Dimensions (mm)				
			L	øD	C	H(WAF)	øT
MS-20SCL-6	6 mm OD	47.5	(56.8)	14	(24.8)	Hex.16	10.5
MS-20SCL-8	8 mm OD	49.5	(59.8)	14	(31.8)	Hex.16	13.5

Socket MS-5 type (SMALL LINE CUPLA with 5 branch ports)

• The branch body is made of aluminum alloy.

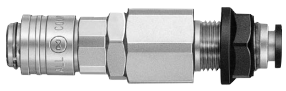


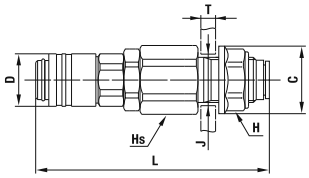


Mass : 238 g

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 ZEROSPILL CUPLA

Small, high flow type for coolant piping

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

For coolant piping of electronic equipment for supercomputers, data centers and other non-spill environments. Small but high flow rate for efficient cooling.

- **Compact size saves space.**
  Outer diameters of 16 mm (CZL-1SM) and 18.5 mm (CZL-2SM)
- **High flow rate for efficient cooling.**
- **Easy operation, push-to-connect function.**
- **Valve structure reduces air inclusion on connection and liquid spillage when disconnecting.**

Specifications

Body material	Stainless Steel (SUS304), Nickel plated on Socket body			
Size (Thread)	1/8", 1/4"			
Pressure unit	**MPa**	**kgf/cm²**	**bar**	**PSI**
Working pressure	1.0	10	10	145
Seal material	**Seal material**	**Mark**	**Working temperature range**	**Remarks**
Working temperature range *1	Ethylene-propylene rubber	EPDM	-10˚C to +100˚C	Standard material

*1: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque — Nm {kgf·cm}

Size (Thread)	**1/8"**	**1/4"**
Torque	9 {92}	14 {143}

Flow Direction

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

Interchangeability

Socket and plug of different sizes cannot be connected.

Minimum Cross-Sectional Area — (mm²)

Model	**CZL-1SM×CZL-1PM**	**CZL-2SM×CZL-2PM**
Min. cross-sectional area	14.9	30.2

Suitability for Vacuum

Please contact us if vacuum is required for your application.

Admixture of Air on Connection — (mL)

May vary depending upon the usage conditions.

Model	**CZL-1SM×CZL-1PM**	**CZL-2SM×CZL-2PM**
Volume of air inclusion	0.02	0.04

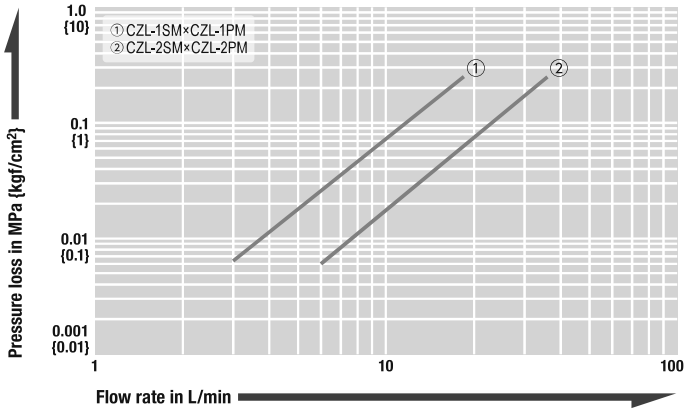
Volume of Spillage per Disconnection — (mL)

May vary depending upon the usage conditions.

Model	**CZL-1SM×CZL-1PM**	**CZL-2SM×CZL-2PM**
Volume of spillage	0.015	0.023

Flow Rate – Pressure Loss Characteristics

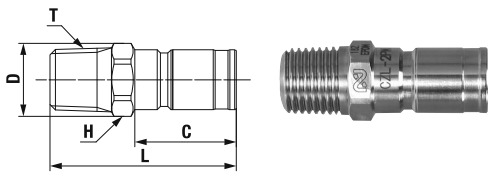
[Test conditions] - Fluid : Water - Temperature : 23˚C±5˚C



Models and Dimensions

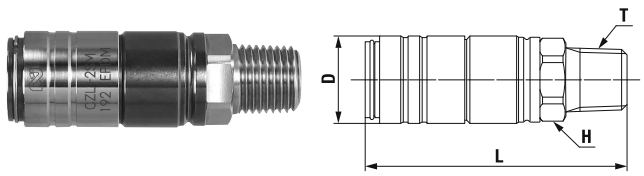
WAF : WAF stands for width across flats.

Plug PM type (Male thread)



Model	Application (Thread)	Mass (g)	Dimensions (mm)				
			L	C	øD	H (WAF)	T
CZL-1PM	Rc 1/8	11	34	20	12	Hex.11	R 1/8
CZL-2PM	Rc 1/4	19	39.5	21.5	15.5	Hex.14	R 1/4

Socket SM type (Male thread)



Model	Application (Thread)	Mass (g)	Dimensions (mm)			
			L	øD	H (WAF)	T
CZL-1SM	Rc 1/8	38	(53)	16	Hex.13	R 1/8
CZL-2SM	Rc 1/4	49	(55.5)	18.5	Hex.16	R 1/4

Applications

Compact

Piping in tight space is possible.
For compact piping.

High flow

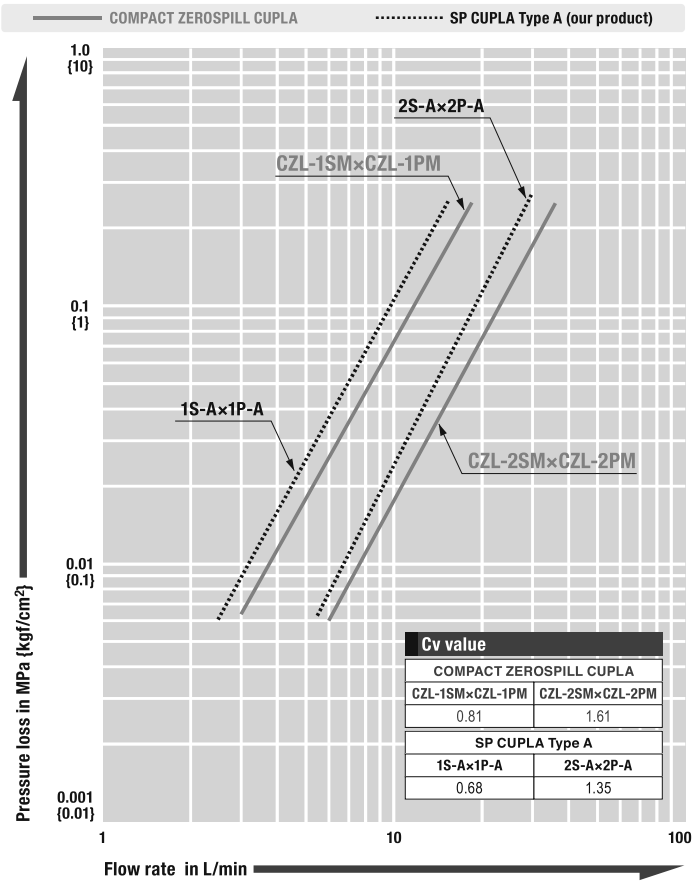
Small but high flow rate.
For efficient cooling.

COMPACT ZEROSPILL CUPLA | CZL-2SM×CZL-2PM

SP CUPLA Type A (our product) | 2S-A×2P-A

Flow Rate - Pressure Loss Characteristics

[Test conditions] - Fluid: Water - Temperature: 23˚C to 26˚C



Cv value

COMPACT ZEROSPILL CUPLA	
CZL-1SM×CZL-1PM	CZL-2SM×CZL-2PM
0.81	1.61
SP CUPLA Type A	
1S-A×1P-A	2S-A×2P-A
0.68	1.35

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 maximum outer diameter 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×ø6, ø6×ø8 Polyolefin tube : ø4×ø6, ø6×ø8 Fluorine contained resin tube : ø4×ø6, ø6×ø8			
Pressure unit		MPa	kgf/cm²	bar	PSI
Working pressure		1.0	10	10	145
Seal material Working temperature range *1		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

- Maximum working pressure and working temperature range of nut type depend on the tube material and its dimensional tolerance.

*1: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque — Nm {kgf•cm}

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

Flow Direction

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

Interchangeability

Sockets and plugs can be connected regardless of end configurations.

Minimum Cross-Sectional Area — (mm²)

Model	CO-1SM×CO-1PM	CO-1SF×CO-1PF	CO-40SN×CO-40PN	CO-60SN×CO-60PN
Minimum cross-sectional area	8.8	8.8	4.9	8.8

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

Socket only	Plug only	When connected
—	—	Operational

Admixture of Air on Connection — (mL)

May vary depending upon the usage conditions.

Volume of air admixture	0.34

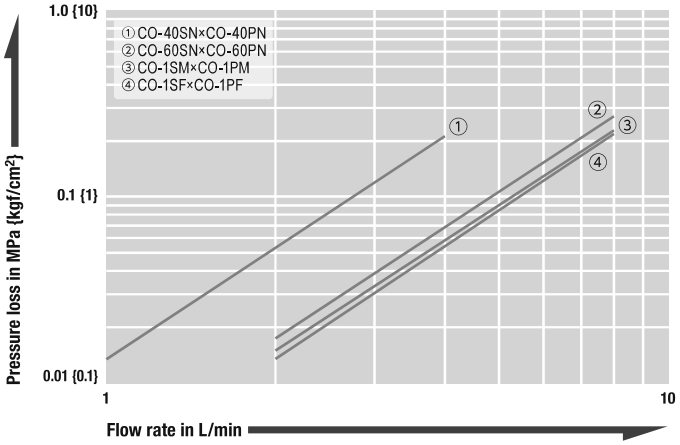
Volume of Spillage per Disconnection — (mL)

May vary depending upon the usage conditions.

Volume of spillage	0.23

Flow Rate – Pressure Loss Characteristics

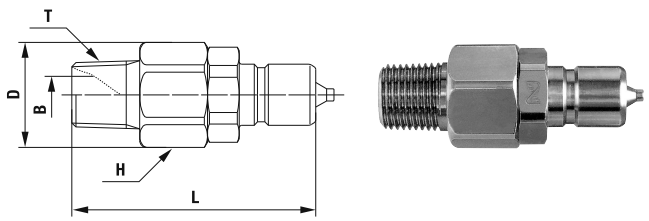
[Test conditions] - Fluid : Water - Temperature : 23˚C±5˚C



Models and Dimensions

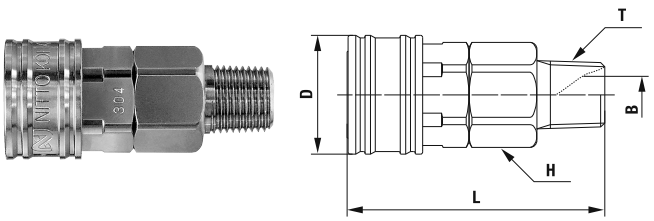
WAF : WAF stands for width across flats.

Plug PM type (Male thread)



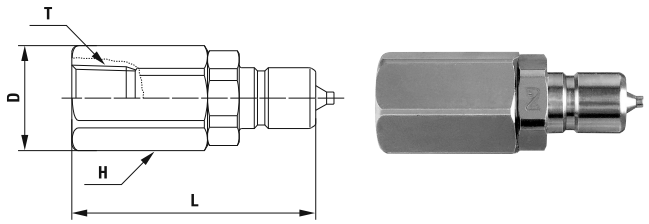
Model	Application (Thread)	Body material, Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	L	øD	H (WAF)	T	øB
CO-1PM	Rc 1/8	20	19	(36)	15.5	Hex.14	R 1/8	5.5

Socket SM type (Male thread)



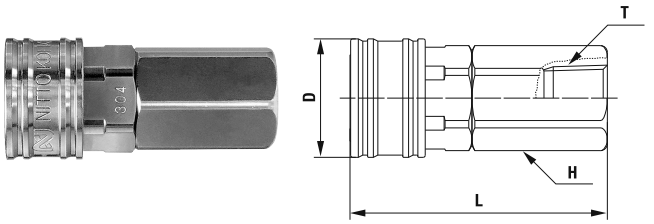
Model	Application (Thread)	Body material, Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	L	øD	H (WAF)	T	øB
CO-1SM	Rc 1/8	34	32	(38)	17.5	Hex.14	R 1/8	5.5

Plug PF type (Female thread)



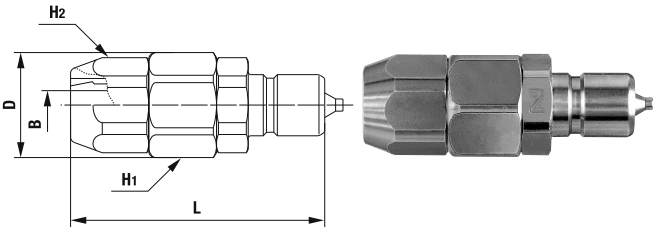
Model	Application (Thread)	Body material, Mass (g)		Dimensions (mm)			
		Brass	Stainless steel	L	øD	H (WAF)	T
CO-1PF	R 1/8	25	23	(36)	15.5	Hex.14	Rc 1/8

Socket SF type (Female thread)



Model	Application (Thread)	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

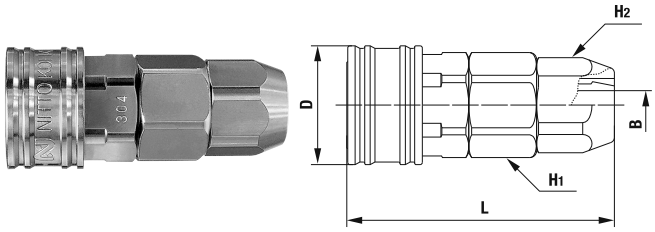
Plug PN type (For connection to tube)



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

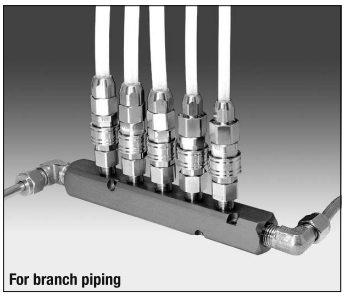
No difference in dimensions of brass and stainless steel CUPLA

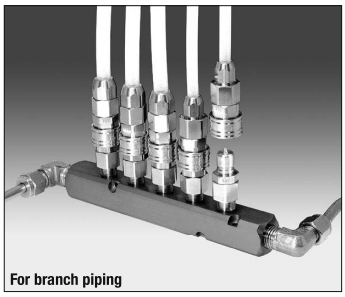
Socket SN type (For connection to tube)

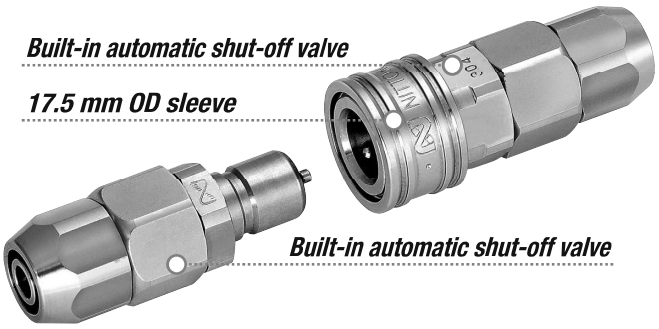


Model	Application (Tube)	Body material, Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	L	øD	H1 (WAF)	H2 (WAF)	øB
CO-40SN	ø4×ø6	38	35	(40.5)	17.5	Hex.14	Hex.10	2.5
CO-60SN	ø6×ø8	40	37	(39.5)	17.5	Hex.14	Hex.13	4.2

Application Example


For branch piping

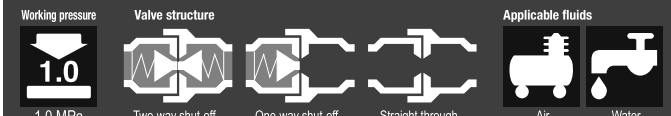

For branch piping



For Low Pressure

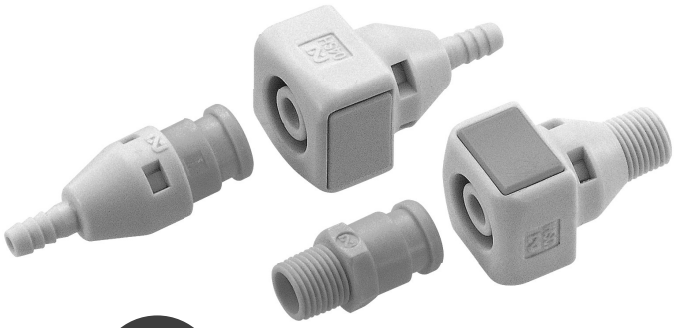
CUBE CUPLA

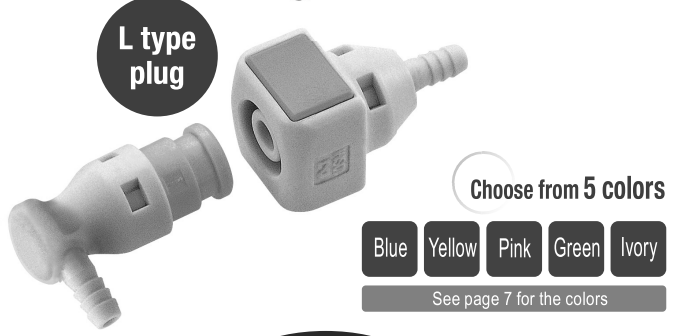
Small and lightweight coupling for air supply lines.



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

- **In all five color variations to prevent piping mistakes.**
- **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.**
- **Two-way shut-off type with valve on both sides and straight through type with low pressure loss are available.**
- **L type plug ideal for piping in narrow spaces are available.**
- **Socket and plug cannot be disconnected unless two buttons on the socket are pressed simultaneously.**

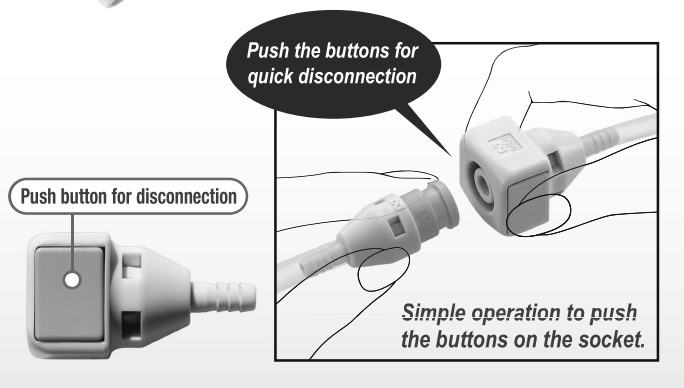




Choose from 5 colors

Blue | Yellow | Pink | Green | Ivory

See page 7 for the colors



Specifications

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

*1: The operable temperature range depends on the operating conditions.

Tightening Torque Range — Nm {kgf•cm}

Size (Thread)	**R 1/8**
Torque	0.9 to 1.1 {9.2 to 11}

Flow Direction

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

Interchangeability

Sockets and plugs can be connected regardless of end configurations.
*Do not use in the combination of valved sockets and valveless plugs.
The valve in the socket will not open and the fluid will not flow.

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

Note: When disconnected, the fluid from the valveless side will flow out. Take care if the fluid is water.

Minimum Cross-Sectional Area (-VL means Valve less type) — (mm²)

Socket / Plug	SPC-04SH	SPC-06SH	SPC-10SM	SPC-04SH -VL	SPC-06SH -VL	SPC-10SM -VL
SPC-04PH/PHB/PHL	5	5	5	5	5	5
SPC-06PH/PHB/PHL	5	8.6	8.6	5	8.6	8.6
SPC-10PM	5	8.6	8.6	5	8.6	8.6
SPC-04PH-VL/PHB-VL/PHL-VL	–	–	–	5	5	5
SPC-06PH-VL/PHB-VL	–	–	–	5	10.2	10.2
SPC-06PHL-VL	–	–	–	5	10.2	12.6
SPC-10PM-VL	–	–	–	5	10.2	16.6

Suitability for Vacuum — 53.0 kPa {400 mmHg}

Socket only	Plug only	When connected
–	–	Operational

Admixture of Air on Connection — (mL)

May vary depending upon the usage conditions.

Volume of air admixture	0.60 (Built-in valve type only)

Volume of Spillage per Disconnection — (mL)

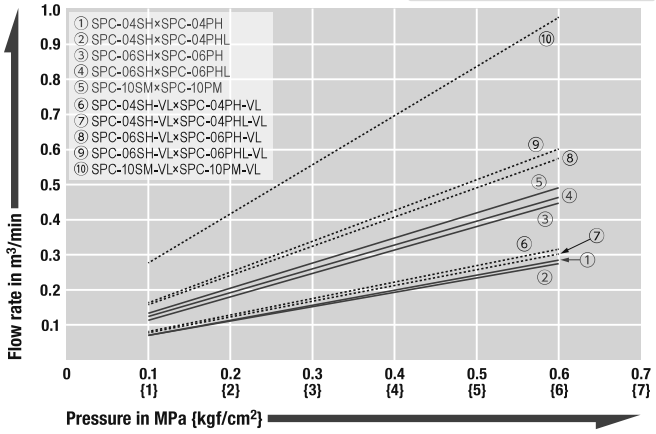
May vary depending upon the usage conditions.

Volume of spillage	0.51 (Built-in valve type only)

Pressure - Flow Characteristics (The fluid flow will not differ by body color)

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

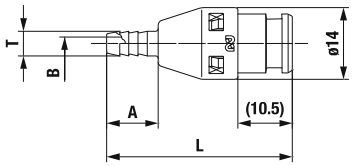
Solid line: Built-in valve type
Dotted line: Valveless type



Models and Dimensions

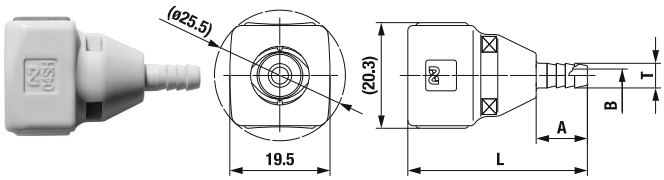
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



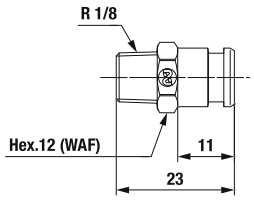
Color	Model	Application (Tube)	Built-in valve	Mass (g)	Dimensions (mm)			
					L	A	øT	øB
Ivory	SPC-04PH-IVR	4 mm ID	With	3.1	(36)	10	4.8	2.5
	SPC-04PH-VL-IVR	4 mm ID	Without	2.6	(36)	10	4.8	2.5
	SPC-06PH-IVR	6 mm ID	With	3.4	(40)	15	7	3.6
	SPC-06PH-VL-IVR	6 mm ID	Without	2.9	(40)	15	7	3.6
Blue	SPC-04PH-BLU	4 mm ID	With	3.1	(36)	10	4.8	2.5
	SPC-04PH-VL-BLU	4 mm ID	Without	2.6	(36)	10	4.8	2.5
	SPC-06PH-BLU	6 mm ID	With	3.4	(40)	15	7	3.6
	SPC-06PH-VL-BLU	6 mm ID	Without	2.9	(40)	15	7	3.6
Yellow	SPC-04PH-YEL	4 mm ID	With	3.1	(36)	10	4.8	2.5
	SPC-04PH-VL-YEL	4 mm ID	Without	2.6	(36)	10	4.8	2.5
	SPC-06PH-YEL	6 mm ID	With	3.4	(40)	15	7	3.6
	SPC-06PH-VL-YEL	6 mm ID	Without	2.9	(40)	15	7	3.6
Pink	SPC-04PH-PNK	4 mm ID	With	3.1	(36)	10	4.8	2.5
	SPC-04PH-VL-PNK	4 mm ID	Without	2.6	(36)	10	4.8	2.5
	SPC-06PH-PNK	6 mm ID	With	3.4	(40)	15	7	3.6
	SPC-06PH-VL-PNK	6 mm ID	Without	2.9	(40)	15	7	3.6
Green	SPC-04PH-GRN	4 mm ID	With	3.1	(36)	10	4.8	2.5
	SPC-04PH-VL-GRN	4 mm ID	Without	2.6	(36)	10	4.8	2.5
	SPC-06PH-GRN	6 mm ID	With	3.4	(40)	15	7	3.6
	SPC-06PH-VL-GRN	6 mm ID	Without	2.9	(40)	15	7	3.6

Socket SH type (Hose barb)



Color	Model	Application (Tube)	Built-in valve	Mass (g)	Dimensions (mm)			
					L	A	øT	øB
Ivory	SPC-04SH-IVR	4 mm ID	With	6.5	35	10	4.8	2.5
	SPC-04SH-VL-IVR	4 mm ID	Without	6.1	35	10	4.8	2.5
	SPC-06SH-IVR	6 mm ID	With	7.0	40	15	7	3.6
	SPC-06SH-VL-IVR	6 mm ID	Without	6.6	40	15	7	3.6
Blue	SPC-04SH-BLU	4 mm ID	With	6.5	35	10	4.8	2.5
	SPC-04SH-VL-BLU	4 mm ID	Without	6.1	35	10	4.8	2.5
	SPC-06SH-BLU	6 mm ID	With	7.0	40	15	7	3.6
	SPC-06SH-VL-BLU	6 mm ID	Without	6.6	40	15	7	3.6
Yellow	SPC-04SH-YEL	4 mm ID	With	6.5	35	10	4.8	2.5
	SPC-04SH-VL-YEL	4 mm ID	Without	6.1	35	10	4.8	2.5
	SPC-06SH-YEL	6 mm ID	With	7.0	40	15	7	3.6
	SPC-06SH-VL-YEL	6 mm ID	Without	6.6	40	15	7	3.6
Pink	SPC-04SH-PNK	4 mm ID	With	6.5	35	10	4.8	2.5
	SPC-04SH-VL-PNK	4 mm ID	Without	6.1	35	10	4.8	2.5
	SPC-06SH-PNK	6 mm ID	With	7.0	40	15	7	3.6
	SPC-06SH-VL-PNK	6 mm ID	Without	6.6	40	15	7	3.6
Green	SPC-04SH-GRN	4 mm ID	With	6.5	35	10	4.8	2.5
	SPC-04SH-VL-GRN	4 mm ID	Without	6.1	35	10	4.8	2.5
	SPC-06SH-GRN	6 mm ID	With	7.0	40	15	7	3.6
	SPC-06SH-VL-GRN	6 mm ID	Without	6.6	40	15	7	3.6

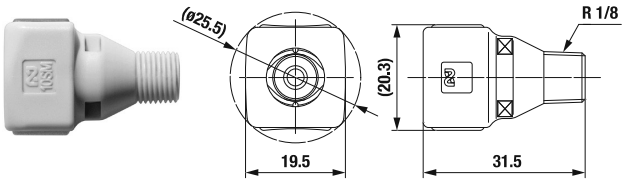
Plug PM type (Male thread)



Dimensions (mm)

Color	Model	Application (Thread)	Built-in valve	Mass (g)
Ivory	SPC-10PM-IVR	Rc 1/8	With	2.0
	SPC-10PM-VL-IVR	Rc 1/8	Without	1.5
Blue	SPC-10PM-BLU	Rc 1/8	With	2.0
	SPC-10PM-VL-BLU	Rc 1/8	Without	1.5
Yellow	SPC-10PM-YEL	Rc 1/8	With	2.0
	SPC-10PM-VL-YEL	Rc 1/8	Without	1.5
Pink	SPC-10PM-PNK	Rc 1/8	With	2.0
	SPC-10PM-VL-PNK	Rc 1/8	Without	1.5
Green	SPC-10PM-GRN	Rc 1/8	With	2.0
	SPC-10PM-VL-GRN	Rc 1/8	Without	1.5

Socket SM type (Male thread)



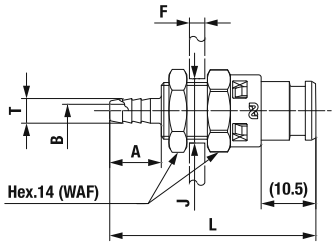
Dimensions (mm)

Color	Model	Application (Thread)	Built-in valve	Mass (g)
Ivory	SPC-10SM-IVR	Rc 1/8	With	6.8
	SPC-10SM-VL-IVR	Rc 1/8	Without	6.4
Blue	SPC-10SM-BLU	Rc 1/8	With	6.8
	SPC-10SM-VL-BLU	Rc 1/8	Without	6.4
Yellow	SPC-10SM-YEL	Rc 1/8	With	6.8
	SPC-10SM-VL-YEL	Rc 1/8	Without	6.4
Pink	SPC-10SM-PNK	Rc 1/8	With	6.8
	SPC-10SM-VL-PNK	Rc 1/8	Without	6.4
Green	SPC-10SM-GRN	Rc 1/8	With	6.8
	SPC-10SM-VL-GRN	Rc 1/8	Without	6.4

Models and Dimensions

WAF : WAF stands for width across flats.

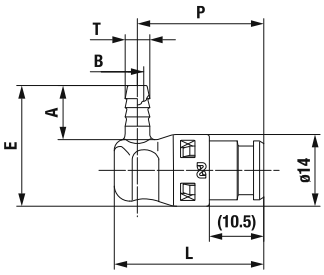
Plug PHB Type (For panel mount)



J: The diameter of the mount hole.
F: Thickness of panel must be 5 mm or less.

Color	Model	Application (Tube)	Built-in valve	Mass (g)	Dimensions (mm)					
					L	A	øT	øB	F	øJ
Ivory	SPC-04PHB-IVR	4 mm ID	With	5.9	(40)	10	4.8	2.5	5 mm or less	$11.1^{+0.3}_{0}$
	SPC-04PHB-VL-IVR	4 mm ID	Without	5.4	(40)	10	4.8	2.5	5 mm or less	$11.1^{+0.3}_{0}$
	SPC-06PHB-IVR	6 mm ID	With	6.2	(45)	15	7	3.6	5 mm or less	$11.1^{+0.3}_{0}$
	SPC-06PHB-VL-IVR	6 mm ID	Without	5.7	(45)	15	7	3.6	5 mm or less	$11.1^{+0.3}_{0}$
Blue	SPC-04PHB-BLU	4 mm ID	With	5.9	(40)	10	4.8	2.5	5 mm or less	$11.1^{+0.3}_{0}$
	SPC-04PHB-VL-BLU	4 mm ID	Without	5.4	(40)	10	4.8	2.5	5 mm or less	$11.1^{+0.3}_{0}$
	SPC-06PHB-BLU	6 mm ID	With	6.2	(45)	15	7	3.6	5 mm or less	$11.1^{+0.3}_{0}$
	SPC-06PHB-VL-BLU	6 mm ID	Without	5.7	(45)	15	7	3.6	5 mm or less	$11.1^{+0.3}_{0}$
Yellow	SPC-04PHB-YEL	4 mm ID	With	5.9	(40)	10	4.8	2.5	5 mm or less	$11.1^{+0.3}_{0}$
	SPC-04PHB-VL-YEL	4 mm ID	Without	5.4	(40)	10	4.8	2.5	5 mm or less	$11.1^{+0.3}_{0}$
	SPC-06PHB-YEL	6 mm ID	With	6.2	(45)	15	7	3.6	5 mm or less	$11.1^{+0.3}_{0}$
	SPC-06PHB-VL-YEL	6 mm ID	Without	5.7	(45)	15	7	3.6	5 mm or less	$11.1^{+0.3}_{0}$
Pink	SPC-04PHB-PNK	4 mm ID	With	5.9	(40)	10	4.8	2.5	5 mm or less	$11.1^{+0.3}_{0}$
	SPC-04PHB-VL-PNK	4 mm ID	Without	5.4	(40)	10	4.8	2.5	5 mm or less	$11.1^{+0.3}_{0}$
	SPC-06PHB-PNK	6 mm ID	With	6.2	(45)	15	7	3.6	5 mm or less	$11.1^{+0.3}_{0}$
	SPC-06PHB-VL-PNK	6 mm ID	Without	5.7	(45)	15	7	3.6	5 mm or less	$11.1^{+0.3}_{0}$
Green	SPC-04PHB-GRN	4 mm ID	With	5.9	(40)	10	4.8	2.5	5 mm or less	$11.1^{+0.3}_{0}$
	SPC-04PHB-VL-GRN	4 mm ID	Without	5.4	(40)	10	4.8	2.5	5 mm or less	$11.1^{+0.3}_{0}$
	SPC-06PHB-GRN	6 mm ID	With	6.2	(45)	15	7	3.6	5 mm or less	$11.1^{+0.3}_{0}$
	SPC-06PHB-VL-GRN	6 mm ID	Without	5.7	(45)	15	7	3.6	5 mm or less	$11.1^{+0.3}_{0}$

Plug PHL Type (Hose barb)

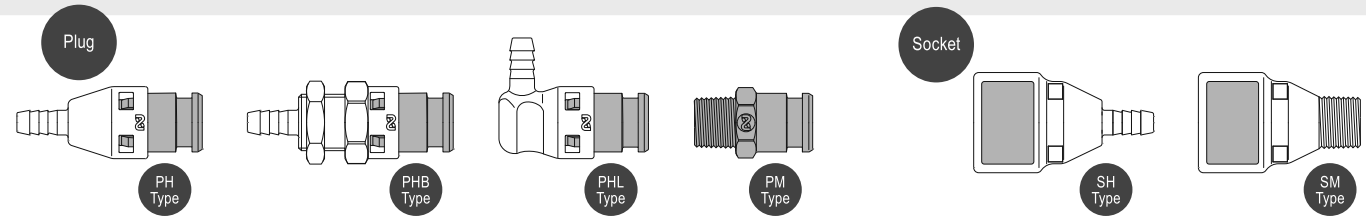


Color	Model	Application (Tube)	Built-in valve	Mass (g)	Dimensions (mm)					
					L	P	A	E	øT	øB
Ivory	SPC-04PHL-IVR	4 mm ID	With	3.5	(29)	(24.5)	10.5	23.5	4.8	2.5
	SPC-04PHL-VL-IVR	4 mm ID	Without	3	(29)	(24.5)	10.5	23.5	4.8	2.5
	SPC-06PHL-IVR	6 mm ID	With	3.9	(30.5)	(25.5)	15.5	28.5	7	4
	SPC-06PHL-VL-IVR	6 mm ID	Without	3.4	(30.5)	(25.5)	15.5	28.5	7	4
Blue	SPC-04PHL-BLU	4 mm ID	With	3.5	(29)	(24.5)	10.5	23.5	4.8	2.5
	SPC-04PHL-VL-BLU	4 mm ID	Without	3	(29)	(24.5)	10.5	23.5	4.8	2.5
	SPC-06PHL-BLU	6 mm ID	With	3.9	(30.5)	(25.5)	15.5	28.5	7	4
	SPC-06PHL-VL-BLU	6 mm ID	Without	3.4	(30.5)	(25.5)	15.5	28.5	7	4
Yellow	SPC-04PHL-YEL	4 mm ID	With	3.5	(29)	(24.5)	10.5	23.5	4.8	2.5
	SPC-04PHL-VL-YEL	4 mm ID	Without	3	(29)	(24.5)	10.5	23.5	4.8	2.5
	SPC-06PHL-YEL	6 mm ID	With	3.9	(30.5)	(25.5)	15.5	28.5	7	4
	SPC-06PHL-VL-YEL	6 mm ID	Without	3.4	(30.5)	(25.5)	15.5	28.5	7	4
Pink	SPC-04PHL-PNK	4 mm ID	With	3.5	(29)	(24.5)	10.5	23.5	4.8	2.5
	SPC-04PHL-VL-PNK	4 mm ID	Without	3	(29)	(24.5)	10.5	23.5	4.8	2.5
	SPC-06PHL-PNK	6 mm ID	With	3.9	(30.5)	(25.5)	15.5	28.5	7	4
	SPC-06PHL-VL-PNK	6 mm ID	Without	3.4	(30.5)	(25.5)	15.5	28.5	7	4
Green	SPC-04PHL-GRN	4 mm ID	With	3.5	(29)	(24.5)	10.5	23.5	4.8	2.5
	SPC-04PHL-VL-GRN	4 mm ID	Without	3	(29)	(24.5)	10.5	23.5	4.8	2.5
	SPC-06PHL-GRN	6 mm ID	With	3.9	(30.5)	(25.5)	15.5	28.5	7	4
	SPC-06PHL-VL-GRN	6 mm ID	Without	3.4	(30.5)	(25.5)	15.5	28.5	7	4

Choose from 5 colors Blue Yellow Pink Green Ivory

The following ■ part shown below are colored. The other plastic parts are ivory.

See page 7 for the colors



- Resin (POM) such as the main body ... Conforms to article No.3-D-2-(2)-2 and has passed both material and elution tests specified in the Food sanitation Act and the standards For Food and Food additives (Notice No. 370 of 1959 issued by the Ministry of Health and Welfare of Japan).
- O-ring (NBR) ... Conforms to article No.3-D-3-(1) and has passed both material and elution tests specified in the Food sanitation Act and the standards For Food and Food additives (Notice No. 370 of 1959 issued by the Ministry of Health and Welfare of Japan).
- Silicone type grease (NSF H1, NSF 61 registered product) is applied to the sealing material.
- Evaluation shall be made by the customer before use to determine the suitability with applications that require sanitation control.

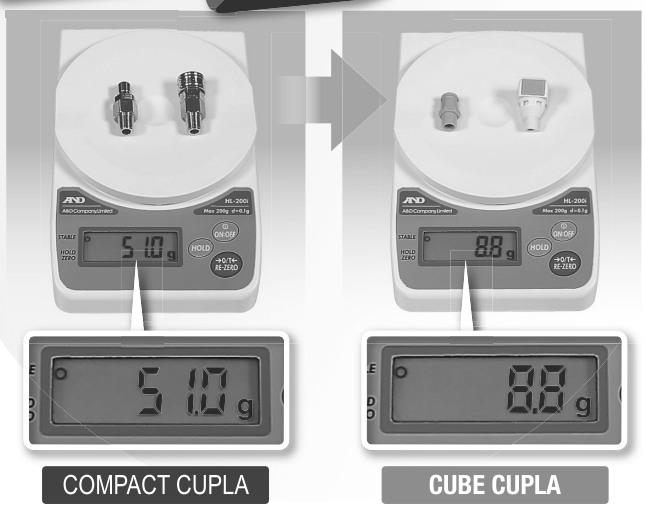
Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.

Small size

Lightweight made of resin

Compared with products of the same specification

(Our products with similar working pressure / flow rate)



The weight is about ...

1/5

Push-to-connect operation

Push in

A clicking sound

Push button easy disconnection

Push button for disconnection

2 places on the socket side

Just push the buttons

Push button easy disconnection

For Low Pressure (Air)

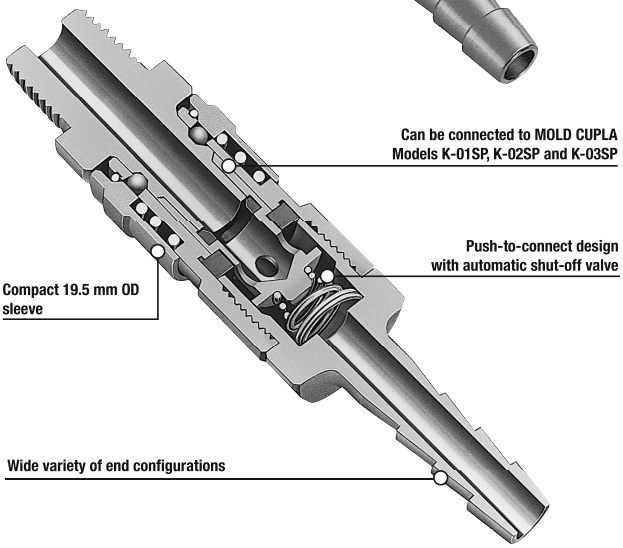
SUPER CUPLA

Light, compact for air piping connections

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

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

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



Specifications

Body material		CUPLA : Steel (Chrome plated), Aluminum alloy *2 Tube Fitter Part : Brass (Nickel plated) , Plastic			
Size	Thread	1/8", 1/4"			
	Hose barb	1/4", Urethane hose : ø5×ø8, ø6.5×ø10			
	Tube barb (Tube fitter) *1	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			
Pressure unit		MPa	kgf/cm²	bar	PSI
Working pressure		1.0	10	10	145
Seal material		Seal material	Mark	Working temperature range	Remarks
Working temperature range *3		Nitrile rubber	NBR	-20˚C to +80˚C	Standard material

- Above specifications apply only to CUPLA. Maximum working pressure and working temperature range may vary depending on tube materials you use with and the working temperature.

*1: When connecting an extremely soft tube such as soft polyurethane or soft nylon, attach the insert ring specified by the tube manufacturer to the inner diameter of the tube to be connected.
*2: Aluminum alloy is used for the body of 01SN, 02SN, 02SMF, 02SC-6, 02SC-8, 02SCL-6, 02SCL-8, 02SCB-6, 02SCB-8.
*3: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque — Nm {kgf•cm}

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

Tightening Torque Range — Nm {kgf•cm}

PN Type, SN Type
9 to 11 {92 to 112}

To mount on 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 flow can be bi-directional when socket and plug are connected.

Interchangeability

Sockets and plugs can be connected regardless of end configurations and sizes.
*Interchangeable with MOLD CUPLA.
*Sockets of HI CUPLA models 10, 17, 20, 30, 40 can be connected when 02S20P is used.

Minimum Cross-Sectional Area — (mm²)

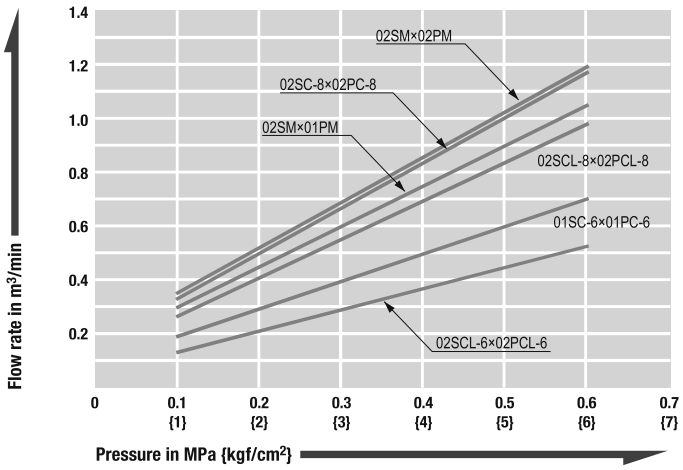
Socket \ Plug	01PN	02PC-6 02PCL-6	02PC-8 02PCL-8	02PH 01PM	02PN	02PM 02PFF
01SN	11.3	11.3	11.3	11.3	11.3	11.3
02SC-6/02SCL-6/02SCB-6	11.3	12.5	12.5	12.5	12.5	12.5
02SC-8/02SCL-8/02SCB-8	11.3	12.5	19	19	19	19
02SH	11.3	12.5	19	19.6	19.6	19.6
02SN	11.3	12.5	19	19.6	22	22
02SM/02SF/02SMF	11.3	12.5	19	19.6	22	28.2
02S20P	11.3	12.5	19	19.6	22	28.2

Suitability for Vacuum

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

Pressure - Flow Characteristics

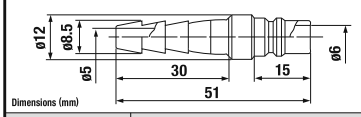
[Test conditions] -Fluid : Air -Temperature : Room temperature
-Tube size : ø6 mm×ø4 mm, ø8 mm×ø6 mm (SUPER CUPLA with Tube Fitter)



Models and Dimensions

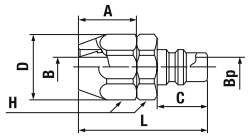
WAF : WAF stands for width across flats.

Plug 02PH type (Hose barb)



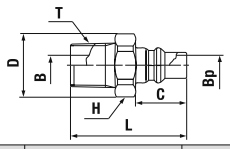
Model	Application (Hose)	Mass (g)
02PH	1/4"	16

Plug PN type (For connection to urethane hose)



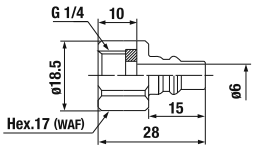
Model	Application (Hose)	Mass (g)	Dimensions (mm)						
			L	C	øD	A	H(WAF)	øBp	øB
01PN	ø5 mm×ø8 mm	35.9	(38.5)	15	18.5	17	Hex.17	6	3.8
02PN	ø6.5 mm×ø10 mm	35.3	(38.5)	15	18.5	17	Hex.17	6	5.3

Plug PM type (Male thread)



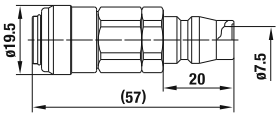
Model	Application (Thread)	Mass (g)	Dimensions (mm)						
			L	C	øD	H(WAF)	T	øBp	øB
01PM	Rc 1/8	12	31	15	–	Hex.12	R 1/8	6	5
02PM	Rc 1/4	22.7	34	15	18.5	Hex.17	R 1/4	6	6

Plug 02PFF type (Parallel female thread)



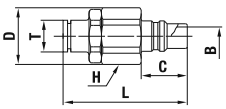
Model	Application (Thread)	Mass (g)
02PFF	G 1/4	17.7

Plug/Socket Model 02S20P (Conversion model to connect HI CUPLA socket)



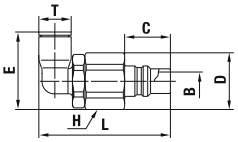
Model	Application	Mass (g)
02S20P	HI CUPLA (Socket)	58

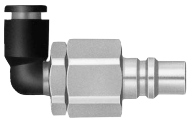
Plug PC type (With Tube Fitter)



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

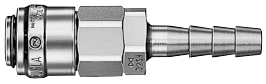
Plug PCL type (With L-shaped Tube Fitter)

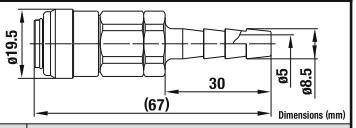




Model	Application (Tube)	Mass (g)	Dimensions (mm)						
			L	C	øD	E	H(WAF)	øT	øB
02PCL-6	6 mm OD	29.5	(43)	15	18.5	(25.3)	Hex.17	10.5	6
02PCL-8	8 mm OD	34.5	(46.5)	15	18.5	(32.3)	Hex.17	13.5	6

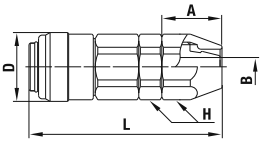
Socket 02SH type (Hose barb)





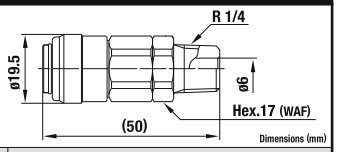
Model	Application (Hose)	Mass (g)
02SH	1/4"	56

Socket SN type (For connection to urethane hose)



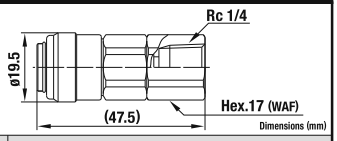
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	A	øD	H(WAF)	øB
01SN	ø5 mm×ø8 mm	45.8	(54.5)	17	19.5	Hex.17	3.8
02SN	ø6.5 mm×ø10 mm	44.4	(54.5)	17	19.5	Hex.17	5.3

Socket SM type (Male thread)



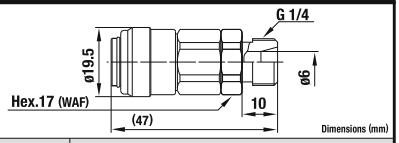
Model	Application (Thread)	Mass (g)
02SM	Rc 1/4	57

Socket 02SF type (Female thread)



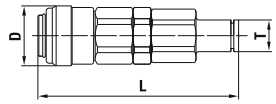
Model	Application (Thread)	Mass (g)
02SF	R 1/4	56.4

Socket 02SMF type (Parallel male thread)



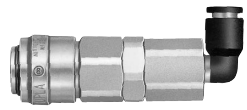
Model	Application (Thread)	Mass (g)
02SMF	G 1/4	27

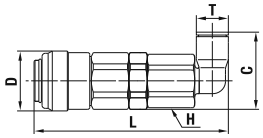
Socket SC type (With Tube Fitter)



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

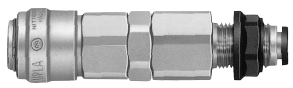
Socket SCL type (With L-shaped Tube Fitter)

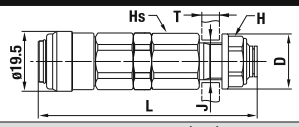




Model	Application (Tube)	Mass (g)	Dimensions (mm)				
			L	øD	H(WAF)	C	øT
02SCL-6	6 mm OD	47.5	(63.5)	19.5	Hex.16	(25.7)	10.3
02SCL-8	8 mm OD	49.5	(67.7)	19.5	Hex.16	(32.8)	13.5

Socket SCB type (With Tube Fitter for panel mounting)





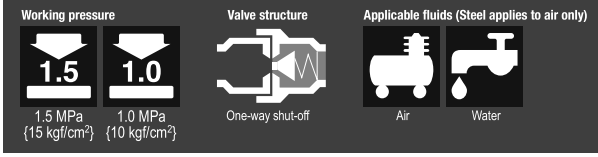
• T and øJ are dimensions of panel.

Model	Application (Tube)	Mass (g)	Dimensions (mm)					
			L	øD	Hs(WAF)	H(WAF)	T	øJ
02SCB-6	6 mm OD	58.5	(71.5)	18	Hex.17	Hex.15	7 or less	$12.5^{+0.3}_{0}$
02SCB-8	8 mm OD	60.4	(72)	21	Hex.17	Hex.18	8 or less	$15.5^{+0.3}_{0}$

For Low Pressure

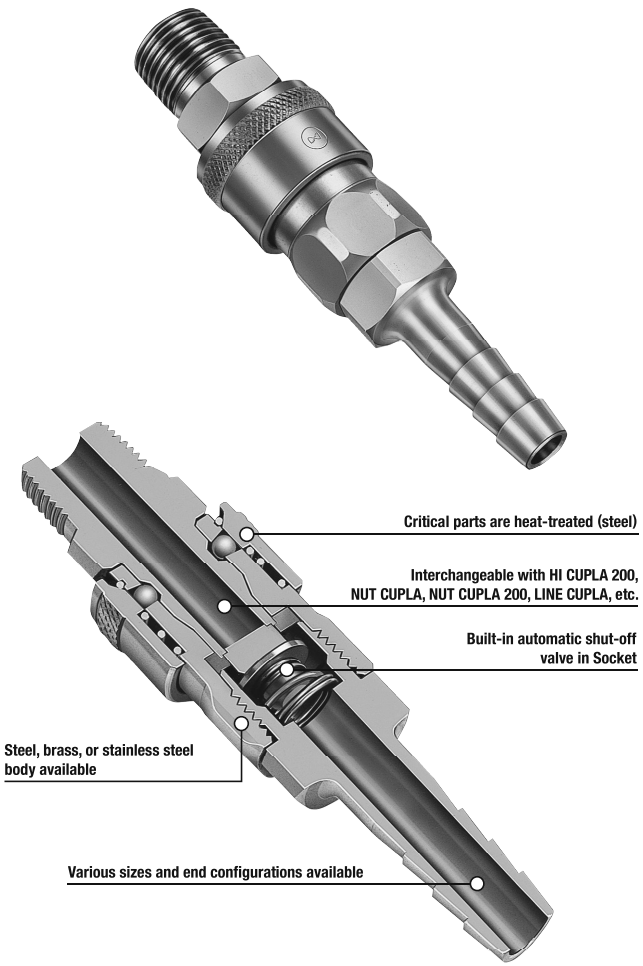
HI CUPLA

Universal purpose couplings for air lines



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 (SUS304)
Size	Thread and hose barb	Thread and hose barb 1/8" to 1", 1/4" to 1" hose		
	Tube barb (Tube fitter) *1	Polyurethane tube: Outer dia. ø6 ± 0.1, ø8 ± 0.15, ø10 ± 0.15 Polyamide tube: Outer dia. $ø6^{+0.05}_{-0.08}$, $ø8^{+0.05}_{-0.1}$, $ø10^{+0.05}_{-0.1}$ Fluorine contained resin tube: Outer dia. ø6 ± 0.07, ø8 ± 0.07, ø10 ± 0.07		
Working pressure	MPa	1.5	1.0	1.5
	kgf/cm²	15	10	15
	bar	15	10	15
	PSI	218	145	218

Seal material	Mark	Working temperature range	Remarks
Nitrile rubber	NBR	-20˚C to +80˚C	Standard material
Fluoro rubber	FKM	-20˚C to +180˚C	

Seal material Working temperature range *2

- Above specifications apply only to CUPLA. Maximum working pressure and working temperature range may vary depending on tube materials you use with and the working temperature.
*1: When connecting an extremely soft tube such as soft polyurethane or soft nylon, attach the insert ring specified by the tube manufacturer to the inner diameter of the tube to be connected.
*2: The operable temperature range depends on the operating conditions.

Maximum 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 of models 10, 17, 20, 30, and 40 can be connected with each other regardless of end configurations.
❷ Sockets and plugs of 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 each models of NUT CUPLA series and HI CUPLA series.
Please see page 21 for "HI CUPLA Series Interchangeability".

Minimum Cross-Sectional Area

(mm²)

10, 17, 20, 30, 40 type

Socket \ Plug	17PH	20PH	30PH	40PH	10PM	20PM	30PM	40PM	20PF	30PF	40PF
10SM	16	20	20	20	13	20	20	20	20	20	20
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

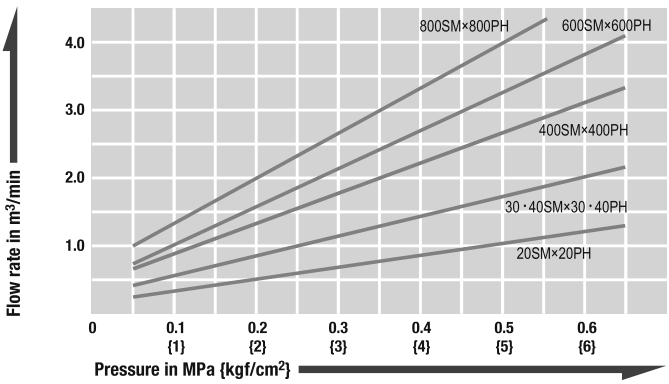
Socket \ Plug	400PH	600PH	800PH	400PM	600PM	800PM	400PF	600PF	800PF
400SH	64	64	64	64	64	64	64	64	64
400SM, SF	64	94	94	94	94	94	94	94	94
600SH	64	94	94	94	94	94	94	94	94
600SM, SF	64	94	94	94	94	94	94	94	94
800SH	64	94	94	94	94	94	94	94	94
800SM, SF	64	94	94	94	94	94	94	94	94

Suitability for Vacuum

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

Pressure - Flow Characteristics

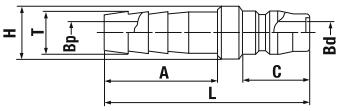
[Test conditions] -Fluid : Air -Temperature : Room temperature



Models and Dimensions

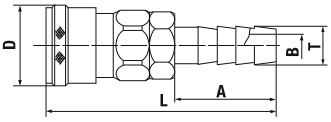
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



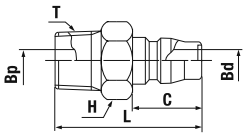
Model	Application (Hose)	Body material・Mass (g)			Dimensions (mm)						
		Steel	Brass	Stainless steel	L	øH	A	C	øT	øBp	øBd
17PH	1/4"	24	–	–	54	16	27	20	7.2	4.5	7.5
20PH	1/4"	28	31	27	57	16	30	20	9	5	7.5
30PH	3/8"	32	34	33	61	16	34	20	11.3	7.5	7.5
40PH	1/2"	59	64	60	63	20	36	20	15	9	7.5
400PH	1/2"	65	71	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

Socket SH type (Hose barb)



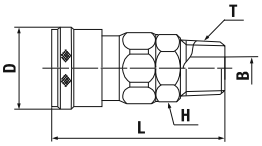
Model	Application (Hose)	Body material・Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	L	øD	A	øT	øB
17SH	1/4"	99	–	–	(69.5)	(26.5)	27	7.2	4.5
20SH	1/4"	99	105	97	(72.5)	(26.5) *1	30	9	5
30SH	3/8"	102	107	100	(76.5)	(26.5) *1	34	11.3	7.5
40SH	1/2"	115	122	113	(78.5)	(26.5) *1	36	15	9
400SH	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

Plug PM type (Male thread)



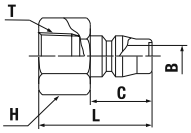
Model	Application (Thread)	Body material・Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	L	H(WAF)	C	T	øBp	øBd
10PM	Rc 1/8	22	24	–	37	Hex.14	20	R 1/8	4	7.5
20PM	Rc 1/4	25	27	26	41	Hex.14	20	R 1/4	7.5	7.5
30PM	Rc 3/8	40	43	41	42	Hex.19 *3	20	R 3/8	7.5	7.5
40PM	Rc 1/2	60	65	60	46	Hex.22	20	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

Socket SM type (Male thread)



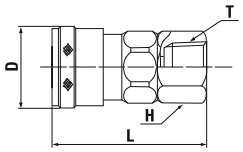
Model	Application (Thread)	Body material・Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	L	øD	H(WAF)	T	øB
10SM	Rc 1/8	97	–	–	(52.5)	(26.5)	Hex.19	R 1/8	5
20SM	Rc 1/4	97	103	96	(55.5)	(26.5) *1	Hex.19	R 1/4	7
30SM	Rc 3/8	104	108	100	(56.5)	(26.5) *1	Hex.19	R 3/8	8 *4
40SM	Rc 1/2	127	135	126	(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

Plug PF type (Female thread)



Model	Application (Thread)	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

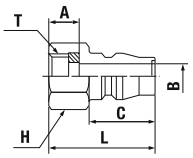
Socket SF type (Female thread)



Model	Application (Thread)	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	138	(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

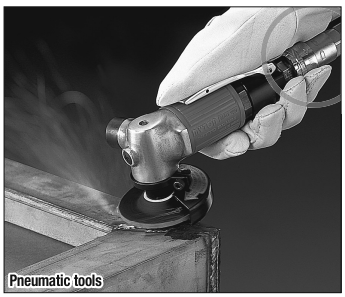
• Above pictures are plugs and sockets of steel 20, 30 and 40 models.
*1 : D = 25.4 for brass and stainless steel models.
*2 : H = Hex. 22 for brass and stainless steel models.
*3 : H = Hex. 17 for brass and stainless steel models.
*4 : B = 9 for brass and stainless steel models.

Plug PFF type (Parallel female thread)



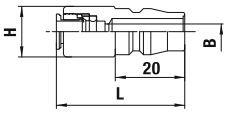
Model	Application (Thread)	Body material・Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	L	H(WAF)	A	C	T	øB
20PFF	G 1/4	23	–	–	32	Hex.17	9	20	G 1/4	7.5

Application Example


Pneumatic tools

Automatic woodworking assembler

Plug PC type (Tube Fitter)

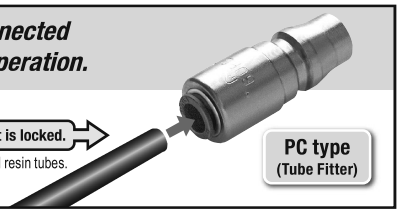


Model	Application (Tube)	Mass (g)	Dimensions (mm)		
			L	øH	øB
60PC	For 6 mm OD tube	25	(37)	14.5	4.5
80PC	For 8 mm OD tube	30	(41)	16.5	6.5
100PC	For 10 mm OD tube	43	(45)	19.5	7.5

Plug and tube can be connected in one push-to-connect operation.

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

Polyurethane, Polyamide and Fluorine contained resin tubes.



PC type
(Tube Fitter)

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 (SUS304)	
Size	Thread and hose barb	1/4", 3/8", 1/2"			
	SN Type for urethane hose	For ø6.5×ø10 mm hose For ø8×ø12 mm hose For ø8.5×ø12.5 mm hose		–	
Pressure unit		MPa	kgf/cm²	bar	PSI
Working pressure		1.5	15	15	218
Seal material Working temperature range *1		Seal material	Mark	Working temperature range	Remarks
		Nitrile rubber	NBR	-20˚C to +80˚C	Standard material

*1: Working temperature range of SN-BL type is -20˚C to +60˚C.
The operable temperature range depends on the operating conditions.

Maximum 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 for urethane hose
9 to 11 {92 to 112}

To mount on 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 plugs of HI CUPLA models 10, 17, 20, 30 and 40.
Interchangeable with each models of NUT CUPLA series and HI CUPLA series (except models 400, 600, and 800).
Please see page 21 for "HI CUPLA Series Interchangeability".

Minimum Cross-Sectional Area — (mm²)

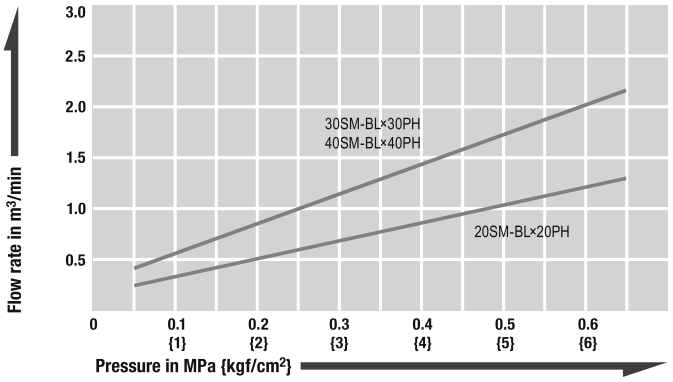
Socket \ Plug	17PH	20PH	30PH	40PH	10PM	20PM	30PM	40PM	20PF	30PF	40PF
20SH-BL	16	20	20	20	13	20	20	20	20	20	20
20SM-BL	16	20	33	33	13	33	33	33	33	33	33
20SF-BL	16	20	33	33	13	33	33	33	33	33	33
30SH-BL	16	20	33	33	13	33	33	33	33	33	33
30SM-BL	16	20	33	33	13	33	33	33	33	33	33
30SF-BL	16	20	33	33	13	33	33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

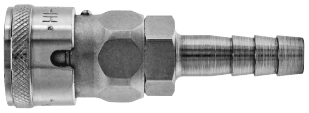


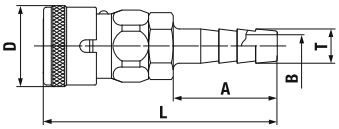
Models and Dimensions

WAF : WAF stands for width across flats.

Steel

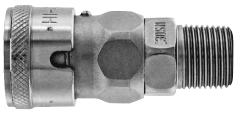
Socket SH-BL type (Hose barb)

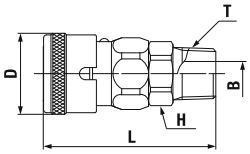




Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	øD	A	øT	øB
20SH-BL	1/4"	103	(72.5)	(26.5)	30	9	5
30SH-BL	3/8"	106	(76.5)	(26.5)	34	11.3	7.5
40SH-BL	1/2"	118	(78.5)	(26.5)	36	15	9

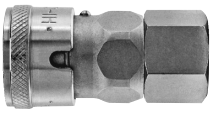
Socket SM-BL type (Male thread)

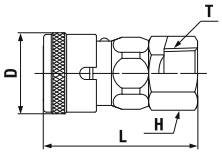




Model	Application (Thread)	Mass (g)	Dimensions (mm)				
			L	øD	H(WAF)	T	øB
20SM-BL	Rc 1/4	101	(55.5)	(26.5)	Hex.19	R 1/4	7
30SM-BL	Rc 3/8	108	(56.5)	(26.5)	Hex.19	R 3/8	8
40SM-BL	Rc 1/2	131	(59.5)	(26.5)	Hex.23	R 1/2	9

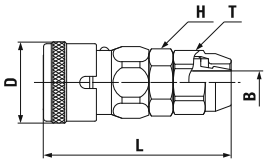
Socket SF-BL type (Female thread)





Model	Application (Thread)	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)

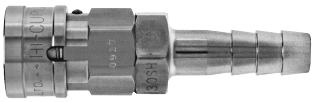


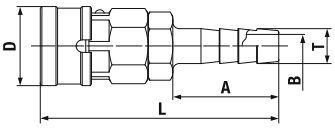
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	øD	øB	H(WAF)	T(WAF)
65SN-BL	ø6.5×ø10	115	(59.5)	(26.5)	5.3	Hex.19	Hex.17
80SN-BL	ø8×ø12	120	(61.5)	(26.5)	7.5	Hex.19	Hex.19
85SN-BL	ø8.5×ø12.5	120	(61.5)	(26.5)	7.5	Hex.19	Hex.19

• Above pictures are sockets of 30 and 80 models.

Stainless steel

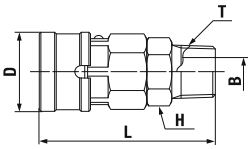
Socket SH-BL type (Hose barb)





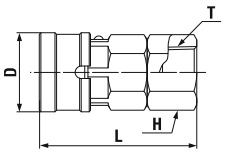
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	øD	A	øT	øB
20SH-BL	1/4"	100	(72.5)	25.4	30	9	5
30SH-BL	3/8"	101	(76.5)	25.4	34	11.3	7.5
40SH-BL	1/2"	118	(78.5)	25.4	36	15	9

Socket SM-BL type (Male thread)



Model	Application (Thread)	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	9
40SM-BL	Rc 1/2	120	(59.5)	25.4	Hex.22	R 1/2	9

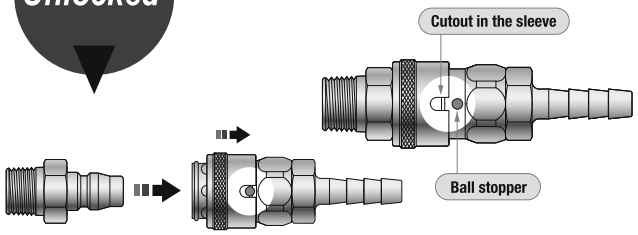
Socket SF-BL type (Female thread)



Model	Application (Thread)	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.

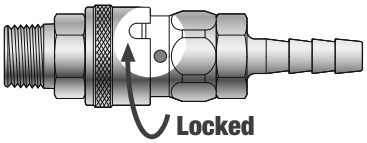


The stopper is marked with blue for visual understanding.

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	Valve structure	Applicable fluid
1.5		
1.5 MPa {15 kgf/cm²}	One-way shut-off	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) *1	Polyurethane tube: Outer dia. ø6 ± 0.1, ø8 ± 0.15, ø10 ± 0.15 Polyamide tube: Outer dia. ø6 $^{+0.05}_{-0.08}$, ø8 $^{+0.05}_{-0.1}$, ø10 $^{+0.05}_{-0.1}$ Fluorine contained resin tube: Outer dia. ø6 ± 0.07, ø8 ± 0.07, ø10 ± 0.07			
Pressure unit		MPa	kgf/cm²	bar	PSI
Working pressure		1.5	15	15	218
Seal material Working temperature range *2		Seal material	Mark	Working temperature range	Remarks
		Nitrile rubber	NBR	-20˚C to +60˚C	Standard material

- Above specifications apply only to CUPLA. Maximum working pressure and working temperature range may vary depending on tube materials you use with and the working temperature.

*1: When connecting an extremely soft tube such as soft polyurethane or soft nylon, attach the insert ring specified by the tube manufacturer to the inner diameter of the tube to be connected.

*2: The operable temperature range depends on the operating conditions.

Maximum 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 plugs of HI CUPLA models 10, 17, 20, 30 and 40.
Interchangeable with each models of NUT CUPLA series and HI CUPLA series (except models 400, 600, and 800).
Please see page 21 for "HI CUPLA Series Interchangeability".

Minimum Cross-Sectional Area — (mm²)

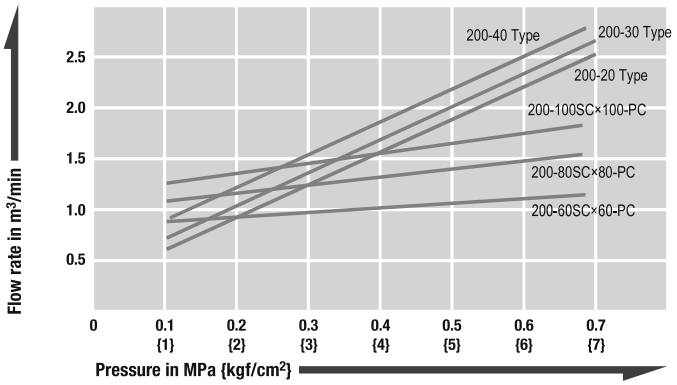
Socket \ Plug	17PH	20PH	30PH	40PH	10PM	20PM	30PM	40PM	20PF	30PF	40PF
200-17SH	16	16	16	16	13	16	16	16	16	16	16
200-20SH	16	20	20	20	13	20	20	20	20	20	20
200-30SH	16	20	41	41	13	41	41	41	41	41	41
200-40SH	16	20	41	41	13	41	41	41	41	41	41
200-20SM	16	20	41	41	13	41	41	41	41	41	41
200-30SM	16	20	41	41	13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

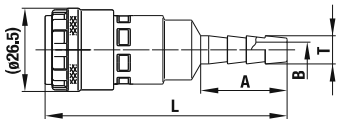
[Test conditions] - Fluid : Air - Temperature : Room temperature



Models and Dimensions

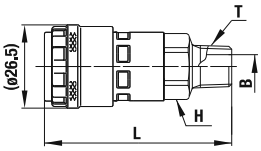
WAF : WAF stands for width across flats.

Socket SH type (Hose barb)



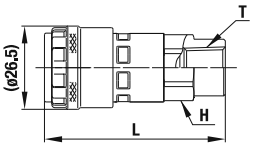
Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			L	A	øT	øB
200-17SH	1/4"	86	(77)	27	7.2	4.5
200-20SH	1/4"	90	(77)	27.5	9	5
200-30SH	3/8"	92	(79)	32	11.3	7.5
200-40SH	1/2"	104	(79.5)	32	15	10

Socket SM type (Male thread)



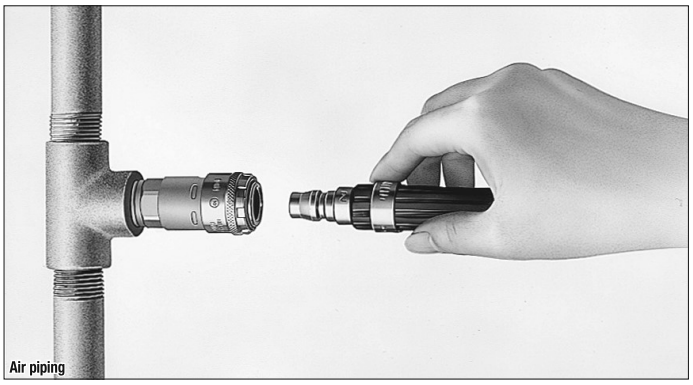
Model	Application (Thread)	Mass (g)	Dimensions (mm)			
			L	H(WAF)	T	øB
200-20SM	Rc 1/4	89	(60)	Hex.19	R 1/4	7.5
200-30SM	Rc 3/8	91	(60.5)	Hex.19	R 3/8	10
200-40SM	Rc 1/2	102	(56)	Hex.24	R 1/2	13

Socket SF type (Female thread)

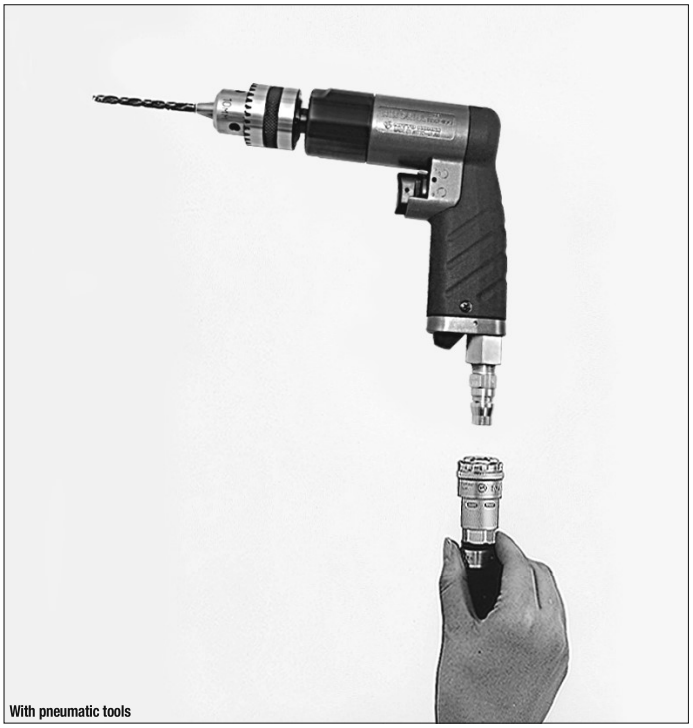


Models	Application (Thread)	Mass (g)	Dimensions (mm)		
			L	H(WAF)	T
200-20SF	R 1/4	94	(57.5)	Hex.19	Rc 1/4
200-30SF	R 3/8	103	(55.5)	Hex.22	Rc 3/8
200-40SF	R 1/2	138	(57.5)	Hex.29	Rc 1/2

Application example



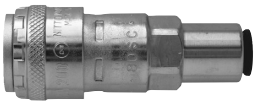
Air piping

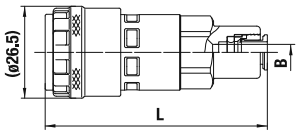


With pneumatic tools

Models and Dimensions (With Tube Fitter)

Socket SC type (Tube Fitter)

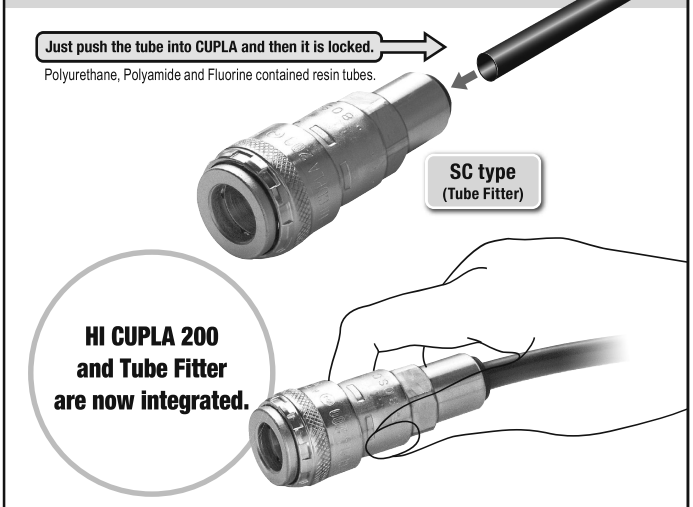




Model	Application (Tube)	Mass (g)	Dimensions (mm)	
			L	øB
200-60SC	For 6 mm OD tube	100	(64)	5
200-80SC	For 8 mm OD tube	105	(67.5)	6.5
200-100SC	For 10 mm OD tube	123	(70.5)	8.5

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

Socket and tube can be connected in one push-to-connect operation.



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

Just push in for quick connection.

For Low Pressure (Air)

HI CUPLA for Connection to Braided Hoses
NUT CUPLA
NUT CUPLA 200
ROTARY NUT CUPLA

For connection to urethane hose, braided 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)

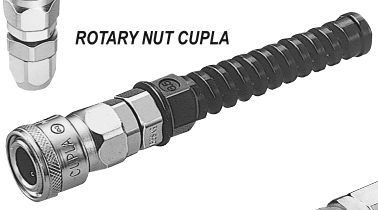
Air Water

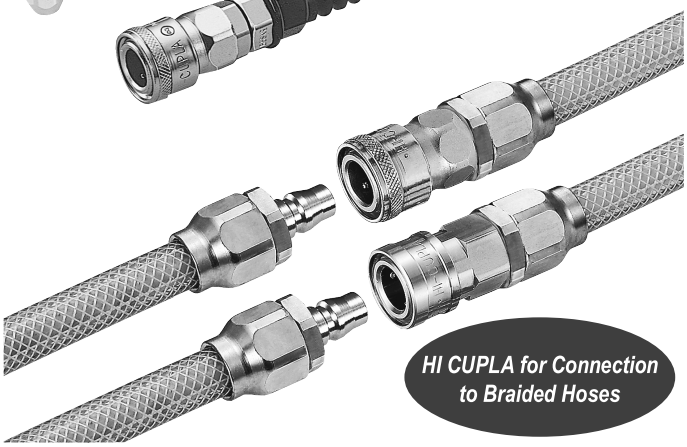
No hose clamp required! Fitted with hose guard nut to prevent possible kinking. HI CUPLA for connection to braided hoses is now available.

- **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.**

NUT CUPLA *NUT CUPLA 200* *NUT CUPLA 200 with hose guard nut*

ROTARY NUT CUPLA





HI CUPLA for Connection to Braided Hoses

Specifications (NUT CUPLA / NUT CUPLA 200 / ROTARY NUT CUPLA)

Body material	Steel (Chrome plated), Stainless Steel (SUS304)			
Urethane hose size	For ø5 mm×ø8 mm, ø6 mm×ø9 mm hose For ø6.5 mm×ø10 mm, ø8 mm×ø12 mm hose For ø8.5 mm×ø12.5 mm, ø11 mm×ø16 mm hose			
Pressure unit	**MPa**	**kgf/cm²**	**bar**	**PSI**
Working pressure	1.5	15	15	218
Seal material	**Seal material**	**Mark**	**Working temperature range**	**Remarks**
Working temperature range *1	Nitrile rubber	NBR	-20˚C to +60˚C	Standard material

*1: The operable temperature range depends on the operating conditions.

Specifications (HI CUPLA for Connection to Braided Hoses)

Body material		Steel (Chrome plated)		Brass	
Braided hose size		For ø9 mm×ø15 mm hose			
Working pressure	**MPa**	1.5		1.0	
	kgf/cm²	15		10	
	bar	15		10	
	PSI	218		145	
Seal material		**Seal material**	**Mark**	**Working temperature range**	**Remarks**
Working temperature range *1		Nitrile rubber	NBR	-20˚C to +80˚C	Standard material

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

*1: The operable temperature range depends on the operating conditions.

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 models of NUT CUPLA series and HI CUPLA series (except models 400, 600, and 800).
Please see page 21 for "HI CUPLA Series Interchangeability".

Minimum Cross-Sectional Area — (mm²)

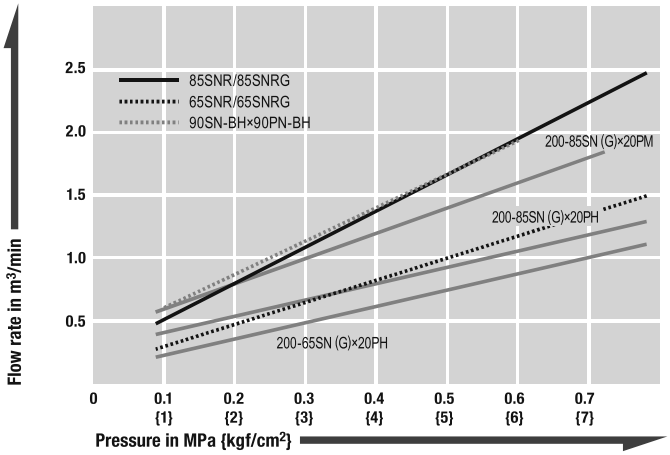
Socket \ Plug	17PH	20PH	30PH	40PH	10PM	20PM	30PM	40PM	20PF	30PF	40PF	90PN-BH
200-50SN	16	16	16	16	13	16	16	16	16	16	16	16
200-60SN	16	20	22	22	13	22	22	22	22	22	22	22
200-65SN	16	20	22	22	13	22	22	22	22	22	22	22
200-80SN	16	20	41	41	13	41	41	41	41	41	41	41
200-85SN	16	20	41	41	13	41	41	41	41	41	41	41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

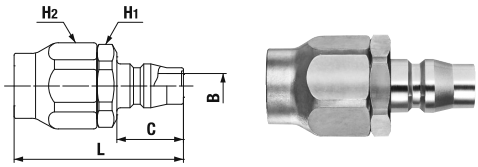
[Test conditions] -Fluid : Air -Temperature : Room temperature



Models and Dimensions (NUT CUPLA / NUT CUPLA 200)

WAF : WAF stands for width across flats.

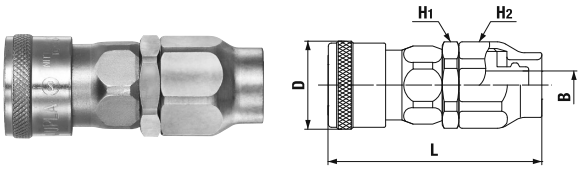
Plug PN type (HI CUPLA for connection to braided hoses)



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

Model	Application (Hose) *1		Body material・Mass (g)		Dimensions (mm)				
	Size (mm)	Hose wall thickness (mm)	Steel	Brass	L	H1(WAF)	H2(WAF)	C	øB
90PN-BH	ø9×ø15	3±0.3	86	88	(51)	Hex.23	Hex.24	20	7.5

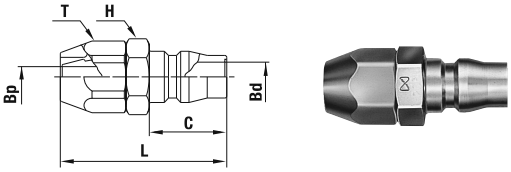
Socket SN type (HI CUPLA for connection to braided hoses)



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

Model	Application (Hose) *1		Body material・Mass (g)		Dimensions (mm)				
	Size (mm)	Hose wall thickness (mm)	Steel	Brass	L	øD	H1(WAF)	H2(WAF)	øB
90SN-BH	ø9×ø15	3±0.3	147	154	(64.5)	(26.5) *2	Hex.24	Hex.24	8.5

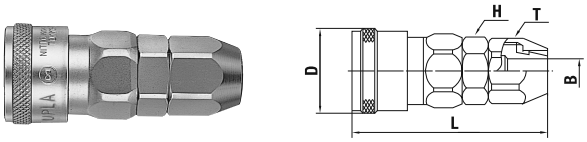
Plug PN type (NUT CUPLA for urethane hose connection)



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×ø8	30	–	(43)	20	4.5	7.5	Hex.17	Hex.17
60PN	ø6×ø9	40	–	(43)	20	5.3	7.5	Hex.17	Hex.17
65PN	ø6.5×ø10	42	43	(43)	20	5.3	7.5	Hex.17	Hex.17
80PN	ø8×ø12	50	52	(45)	20	7.5	7.5	Hex.19	Hex.19
85PN	ø8.5×ø12.5	52	53	(45)	20	7.5	7.5	Hex.19	Hex.19
110PN	ø11×ø16	75	–	(52)	20	7.5	7.5	Hex.23	Hex.24

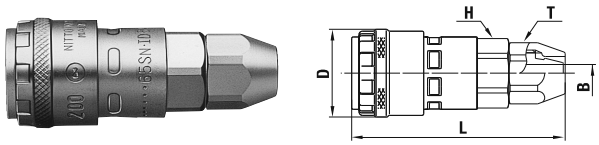
Socket SN type (NUT CUPLA for urethane hose connection)



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

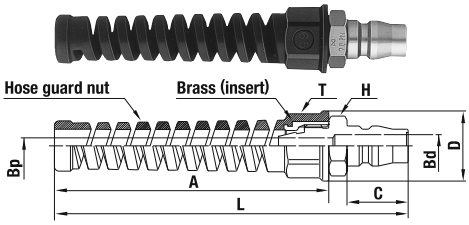
Model	Application (Hose)	Body material・Mass (g)		Dimensions (mm)				
		Steel	Stainless steel	L	øD	øB	H(WAF)	T(WAF)
50SN	ø5×ø8	117	–	(60)	(26.5)	4.5	Hex.19	Hex.17
60SN	ø6×ø9	115	–	(59.5)	(26.5)	5.3	Hex.19	Hex.17
65SN	ø6.5×ø10	115	110	(59.5)	(26.5) *3	5.3	Hex.19	Hex.17
80SN	ø8×ø12	120	114	(61.5)	(26.5) *3	7.5	Hex.19	Hex.19
85SN	ø8.5×ø12.5	120	115	(61.5)	(26.5) *3	7.5	Hex.19	Hex.19
110SN	ø11×ø16	153	–	(64.5)	(26.5)	10	Hex.23	Hex.24

Socket SN type (NUT CUPLA 200 for urethane hose connection)



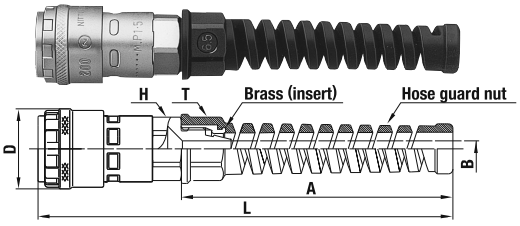
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	øD	øB	H(WAF)	T(WAF)
200-50SN	ø5×ø8	105	(64.5)	(26.5)	4.5	Hex.19	Hex.17
200-60SN	ø6×ø9	105	(64.5)	(26.5)	5.3	Hex.19	Hex.17
200-65SN	ø6.5×ø10	106	(64.5)	(26.5)	5.3	Hex.19	Hex.17
200-80SN	ø8×ø12	112	(66.5)	(26.5)	7.5	Hex.19	Hex.19
200-85SN	ø8.5×ø12.5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

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



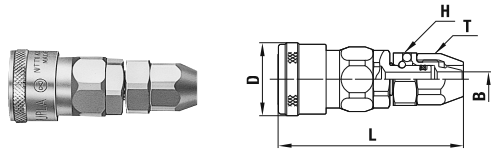
Model	Application (Hose)	Mass (g)	Dimensions (mm)							
			L	C	A	øD	øBp	øBd	H(WAF)	T(WAF)
50PNG *4	ø5×ø8	41	(116)	20	90	23	4.5	7.5	Hex.17	Hex.19
65PNG	ø6.5×ø10	43	(116)	20	90	23	5.3	7.5	Hex.17	Hex.19
85PNG	ø8.5×ø12.5	55	(116)	20	90	26	7.5	7.5	Hex.19	Hex.22

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



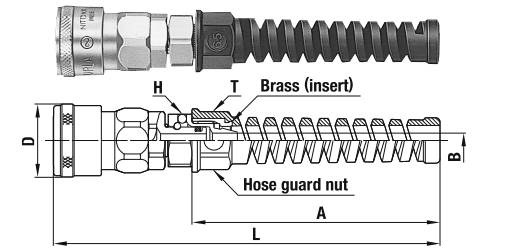
Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			L	A	øD	øB	H(WAF)	T(WAF)
200-50SNG *4	ø5×ø8	105	(137.5)	90	(26.5)	4.5	Hex.19	Hex.19
200-65SNG	ø6.5×ø10	107	(137.5)	90	(26.5)	5.3	Hex.19	Hex.19
200-85SNG	ø8.5×ø12.5	116	(137.5)	90	(26.5)	7.5	Hex.19	Hex.22

Socket SNR type (ROTARY NUT CUPLA with swivel mechanism)



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

Socket SNRG type (ROTARY NUT CUPLA with swivel mechanism)



Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			L	A	øD	øB	H(WAF)	T(WAF)
65SNRG	ø6.5×ø10	121	(140.3)	90	(26.5)	5.3	Hex.19	Hex.19
85SNRG	ø8.5×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 Braided hoses for HI CUPLA for Connection to Braided Hoses should be made of soft PVC and woven by reinforcement thread. *2: Brass: øD=25.4 *3: Stainless steel: øD=25.4 *4: Made-to-order item

For Low Pressure (Air)

LOCK CUPLA 200

Air line coupling with sleeve safety lock feature

Working pressure	Valve structure	Applicable fluid
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.**

Suitability for Vacuum

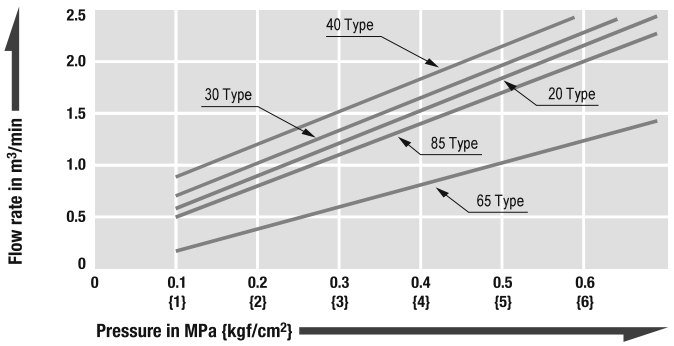
Not suitable for vacuum application in either connected or disconnected condition.

Minimum 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×ø10 mm, ø8.5 mm×ø12.5 mm hose			
Pressure unit		MPa	kgf/cm²	bar	PSI
Working pressure		1.5	15	15	218
Seal material / Working temperature range *1		Seal material	Mark	Working temperature range	Remarks
		Nitrile rubber	NBR	-20˚C to +60˚C	Standard material

*1: The operable temperature range depends on the operating conditions.

Maximum 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×ø10 mm	ø8.5 mm×ø12.5 mm
Torque	14 {143}	22 {224}	60 {612}	5 to 6 {51 to 61}	7 to 8 {71 to 82}

To mount on 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.

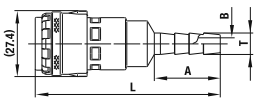
Interchangeability

Interchangeable with plugs of HI CUPLA models 10, 17, 20, 30 and 40.
Interchangeable with each models of NUT CUPLA series and HI CUPLA series.
Please see page 21 for "HI CUPLA Series Interchangeability".

Models and Dimensions

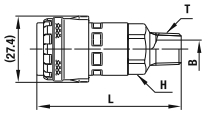
WAF : WAF stands for width across flats.

Socket SH type (Hose barb)



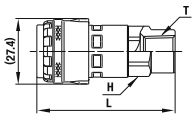
Model	Application (Hose)	Mass (g)	Dimensions (mm) L	A	øT	øB
L200-20SH	1/4"	90	(77)	27.5	9	5
L200-30SH	3/8"	92	(79)	32	11.3	7.5
L200-40SH	1/2"	104	(79.5)	32	15	10

Socket SM type (Male thread)



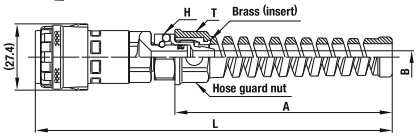
Model	Application (Thread)	Mass (g)	Dimensions (mm) L	H(WAF)	T	øB
L200-20SM	Rc 1/4	89	(60)	Hex.19	R 1/4	7.5
L200-30SM	Rc 3/8	91	(60.5)	Hex.19	R 3/8	10
L200-40SM	Rc 1/2	102	(56)	Hex.24	R 1/2	13

Socket SF type (Female thread)



Model	Application (Thread)	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×ø10 mm	125	(147.8)	(90)	Hex.19	Hex.19	5.3
L200-85SNRG	ø8.5 mm×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 bi-directional compressed air flow

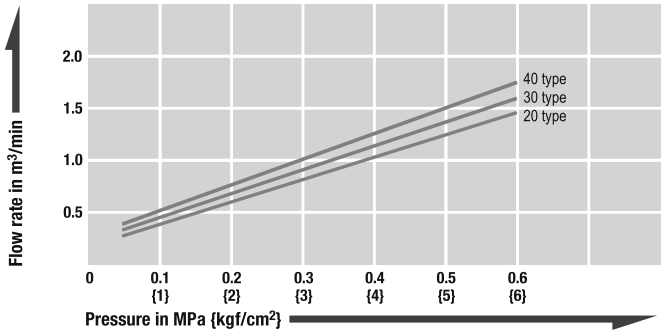
Working pressure	Valve structure	Applicable fluid
1.5 MPa {15 kgf/cm²}	One-way shut-off	Air

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.**

Pressure - Flow Characteristics

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



Specifications

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

Body material		Steel (Chrome plated)			
Size	Thread	1/4", 3/8", 1/2"			
	Hose barb	For ø6.5 mm×ø10 mm, ø8.5 mm×ø12.5 mm hose			
Pressure unit		MPa	kgf/cm²	bar	PSI
Working pressure		1.5	15	15	218
Seal material Working temperature range *1		Seal material	Mark	Working temperature range	Remarks
		Nitrile rubber	NBR	-20˚C to +80˚C	Standard material
		Fluoro rubber	FKM	-20˚C to +180˚C	Made-to-order item

*1: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque

Nm {kgf·cm}

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

Flow Direction

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

Interchangeability

Interchangeable with plugs of HI CUPLA models 10, 17, 20, 30 and 40.
Interchangeable with each models of NUT CUPLA series and HI CUPLA series.
Please see page 21 for "HI CUPLA Series Interchangeability".

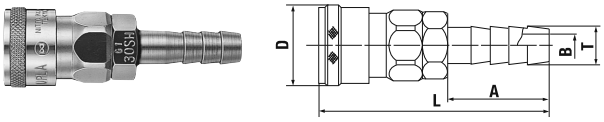
Suitability for Vacuum

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

Models and Dimensions

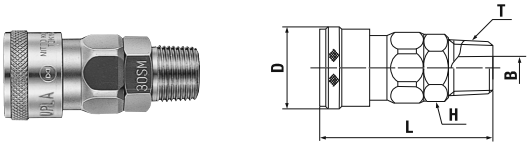
WAF : WAF stands for width across flats.

Socket SH type (Hose barb)



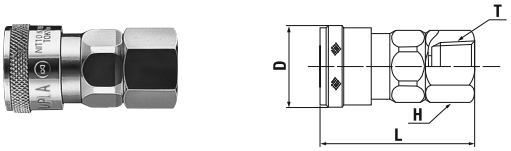
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	øD	A	øT	øB
TW20SH	1/4"	98	(72.5)	(26.5)	30	9	5
TW30SH	3/8"	102	(76.5)	(26.5)	34	11.3	7.5
TW40SH	1/2"	117	(78.5)	(26.5)	36	15	9

Socket SM type (Male thread)



Model	Application (Thread)	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 (Thread)	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

For Low Pressure (Air)

FULL BLOW CUPLA

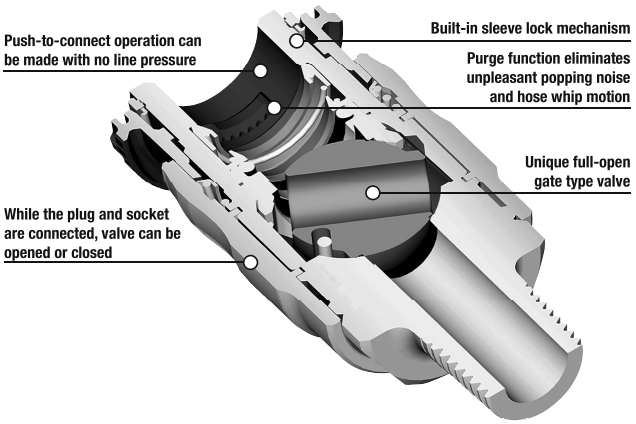
Air line coupling with low pressure loss and high flow rate

Working pressure	Valve structure	Applicable fluid
1.5 MPa {15 kgf/cm²}	One-way shut-off	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 CUPLA.**
- **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 unpleasant popping noise and hose whip motion on disconnection.**
- **Built-in sleeve lock mechanism prevents accidental disconnection of CUPLA, 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 CUPLA.**
- **Plug and socket with hose guard nut are also available (see page 68 of NK CUPLA HOSE for details).**

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 urethane hose	For ø6.5 mm×ø10 mm, ø8 mm×ø12 mm polyurethane hose For ø8.5 mm×ø12.5 mm, ø11 mm×ø16 mm polyurethane hose			
Pressure unit		MPa	kgf/cm²	bar	PSI
Working pressure		1.5	15	15	218
Seal material		Seal material	Mark	Working temperature range	Remarks
Working temperature range *1		Nitrile rubber	NBR	-20˚C to +60˚C	Standard material

*1: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque — Nm {kgf•cm}

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

Tightening Torque Range — Nm {kgf•cm}

SN Type for urethane hose
9 to 11 {92 to 112}

To mount on 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 plugs of HI CUPLA models 10, 17, 20, 30 and 40.
Interchangeable with each models of NUT CUPLA series and HI CUPLA series.
Not interchangeable with some plugs of plastic HI CUPLA 250 (discontinued product).
Please see page 21 for "HI CUPLA Series Interchangeability".

Minimum Cross-Sectional Area — (mm²)

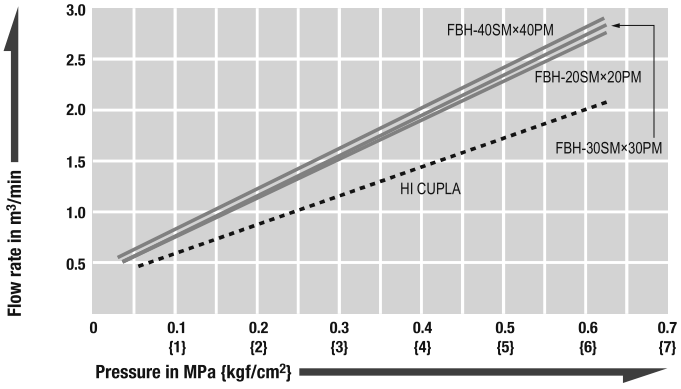
Socket \ Plug	17PH	20PH	30PH	40PH	10PM	20PM	30PM	40PM	20PF	30PF	40PF
FBH-20SH	16	20	24	24	13	24	24	24	24	24	24
FBH-30SH	16	20	44	44	13	44	44	44	44	44	44
FBH-40SH	16	20	44	44	13	44	44	44	44	44	44
FBH-20SM	16	20	44	44	13	44	44	44	44	44	44
FBH-30SM	16	20	44	44	13	44	44	44	44	44	44
FBH-40SM	16	20	44	44	13	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)

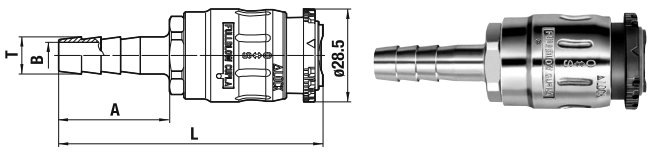
[Test conditions] -Fluid : Air -Temperature : Room temperature



Models and Dimensions

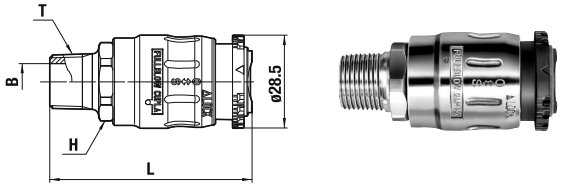
WAF : WAF stands for width across flats.

Socket SH type (Hose barb)



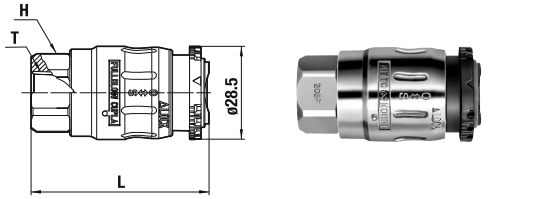
Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			L	A	øT	øB
FBH-20SH	1/4"	70	(77)	30	9	5.5
FBH-30SH	3/8"	74	(81)	34	11.3	8
FBH-40SH	1/2"	85	(83)	36	15	10

Socket SM type (Male thread)



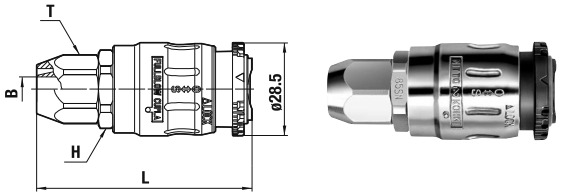
Model	Application (Thread)	Mass (g)	Dimensions (mm)			
			L	H(WAF)	T	øB
FBH-20SM	Rc 1/4	71	(62)	Hex.22	R 1/4	8
FBH-30SM	Rc 3/8	75	(62)	Hex.22	R 3/8	11
FBH-40SM	Rc 1/2	86	(66)	Hex.22	R 1/2	15

Socket SF type (Female thread)



Model	Application (Thread)	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)

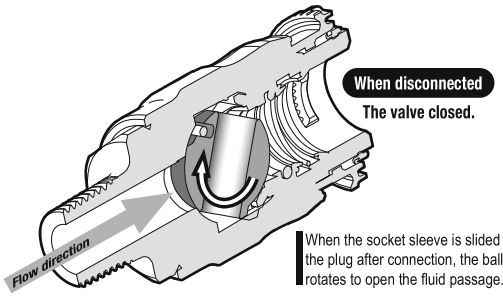


Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			L	H(WAF)	T(WAF)	øB
FBH-65SN	ø6.5 mm×ø10 mm	64	(64)	Hex.22	Hex.17	5.5
FBH-80SN	ø8 mm×ø12 mm	67	(66)	Hex.22	Hex.19	7.5
FBH-85SN	ø8.5 mm×ø12.5 mm	68	(66)	Hex.22	Hex.19	7.5
FBH-110SN	ø11 mm×ø16 mm	86	(71)	Hex.26	Hex.24	10

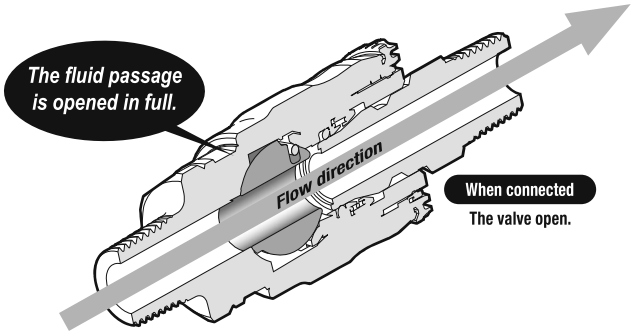
Features of FULL BLOW CUPLA

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 CUPLA.



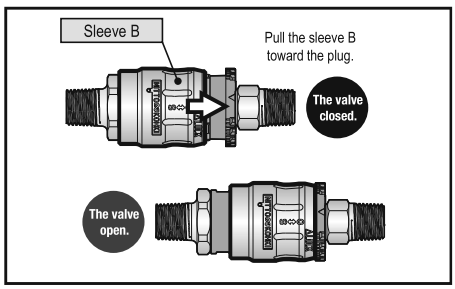
When the socket sleeve is slided toward the plug after connection, the ball valve rotates to open the fluid passage.



How It Works

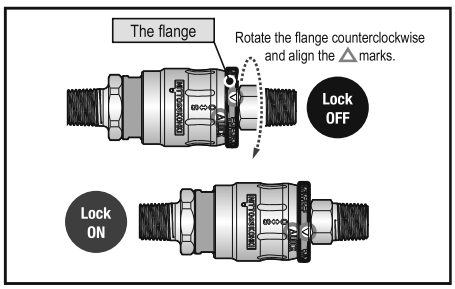
1. Open the valve

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.



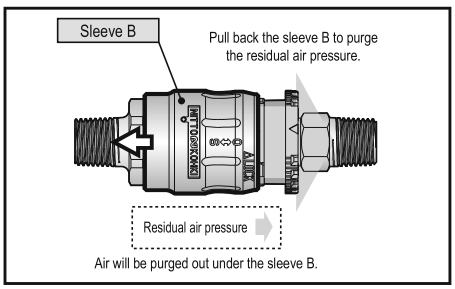
2. Lock the sleeve

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.



For Low Pressure (Air)

PURGE HI CUPLA

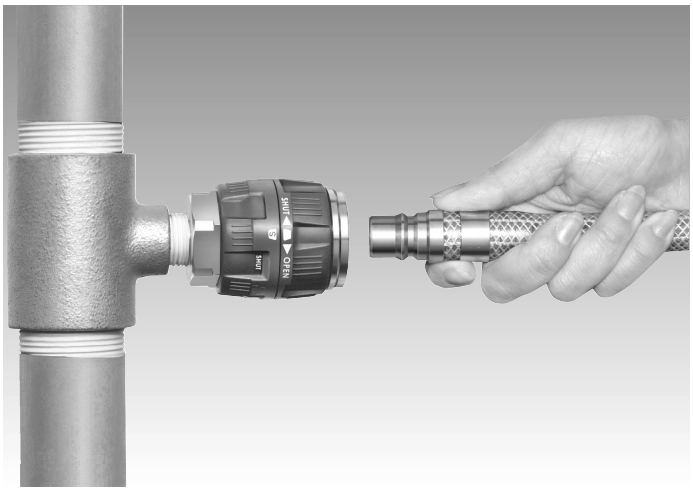
PVR Type

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

Working pressure	Valve structure	Applicable fluid
1.5 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 CUPLA, 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 unpleasant popping noise and hose whip 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 (part Brass and others)			
Size	Thread	1/2", 3/4", 1"			
	Hose barb	1/2", 3/4", 1" hose			
Pressure unit		MPa	kgf/cm²	bar	PSI
Working pressure		1.5	15	15	218
Seal material / Working temperature range *1		Seal material	Mark	Working temperature range	Remarks
		Nitrile rubber	NBR	-20˚C to +60˚C	Standard material

*1: The operable temperature range depends on the operating conditions.

Maximum 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 of HI CUPLA models 400, 600 and 800.
Please see page 21 for "HI CUPLA Series Interchangeability".

Minimum Cross-Sectional Area — (mm²)

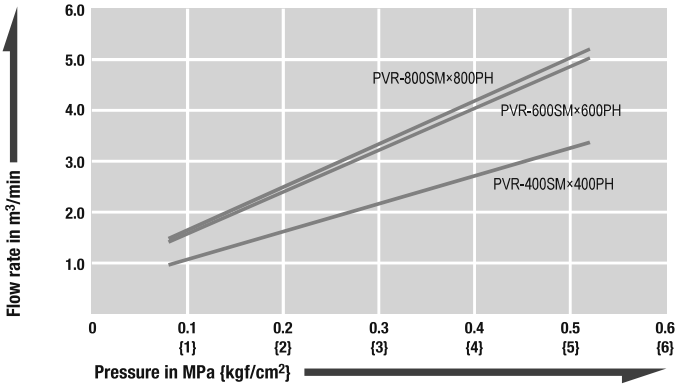
Socket \ Plug	400PH	600PH	800PH	400PM	600PM	800PM	400PF	600PF	800PF
PVR-400SH	64	71	71	71	71	71	71	71	71
PVR-600SH	64	116	116	116	116	116	116	116	116
PVR-800SH	64	116	116	116	116	116	116	116	116
PVR-400SM	64	116	116	116	116	116	116	116	116
PVR-600SM	64	116	116	116	116	116	116	116	116
PVR-800SM	64	116	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

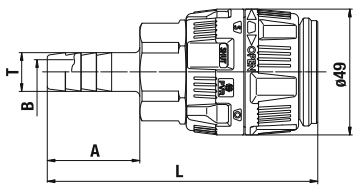
[Test conditions] - Fluid : Air - Temperature : Room temperature



Models and Dimensions

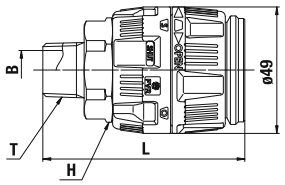
WAF : WAF stands for width across flats.

Socket SH type (Hose barb)



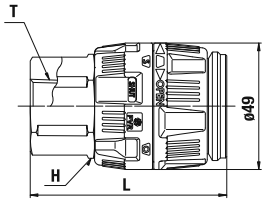
Model	Application (Hose)	Mass (g)	Dimensions (mm)			
			L	A	øT	øB
PVR-400SH	1/2"	380	(105)	36	15	9.5
PVR-600SH	3/4"	361	(109)	45	21	14
PVR-800SH	1"	440	(118)	55	27	16

Socket SM type (Male thread)



Model	Application (Thread)	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)

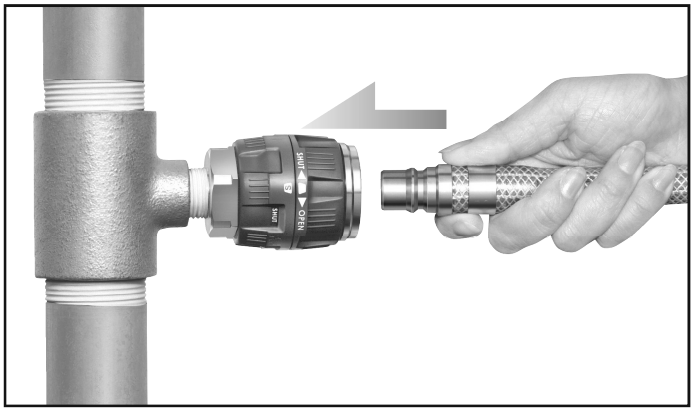


Model	Application (Thread)	Mass (g)	Dimensions (mm)		
			L	H(WAF)	T
PVR-400SF	R 1/2	394	(76)	Hex.35	Rc 1/2
PVR-600SF	R 3/4	370	(77)	Hex.35	Rc 3/4
PVR-800SF	R 1	440	(82)	Hex.41	Rc 1

Function of PURGE HI CUPLA PVR Type

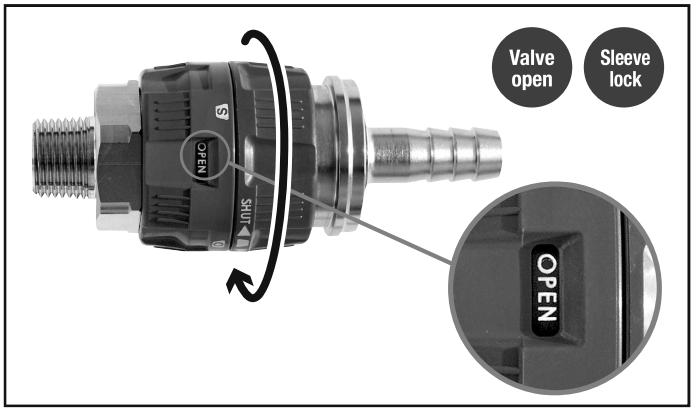
1. Connection

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.



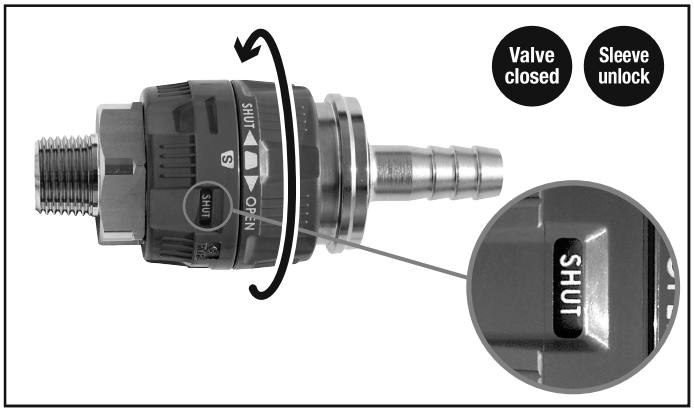
2. Open the valve and lock the sleeve.

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



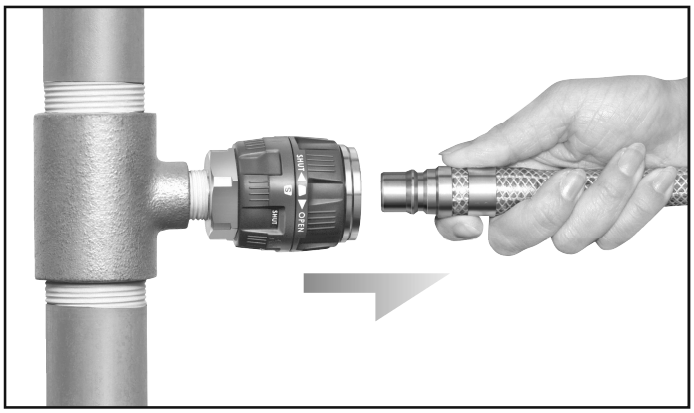
3. Close the valve and unlock the sleeve

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 unpleasant popping noise and hose whip motion due to no residual air pressure inside the plug.



For Low Pressure (Air)

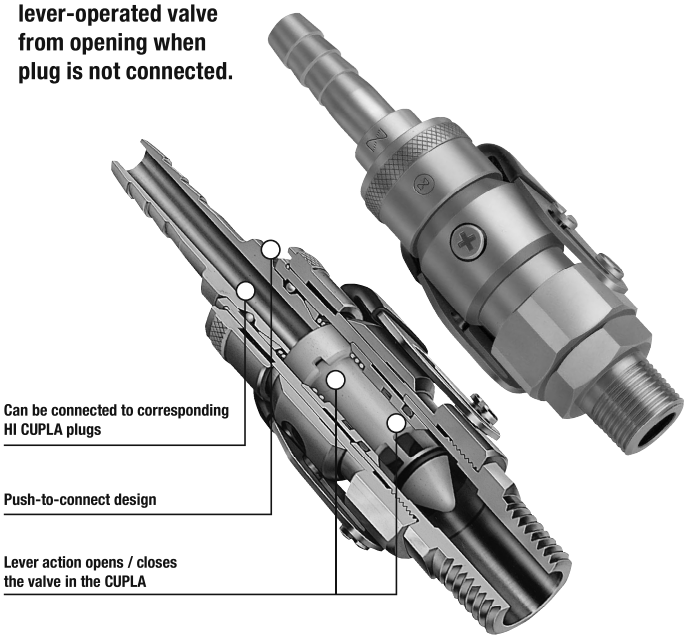
PURGE HI CUPLA

Air line coupling with residual pressure release function

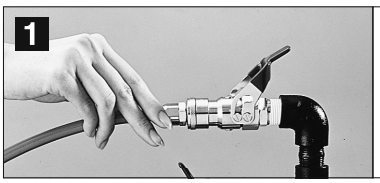
Working pressure	Valve structure	Applicable fluid
1.0 MPa {10 kgf/cm²}	One-way shut-off	Air

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

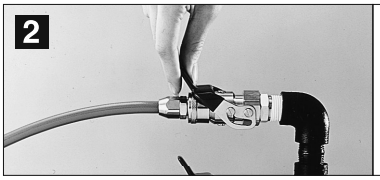
- **Just push in the plug for connection regardless of internal pressure in socket.**
- **Even after connection, lever operation gives perfect control over valve opening/closing.**
- **In disconnection, lever action releases residual air pressure in the plug without unpleasant popping noise and hose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



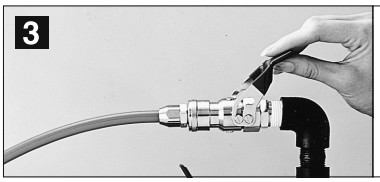
How to Operate



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 unpleasant popping noise and hose whip motion on disconnection. In this stage, the socket valve is still closed.

Specifications

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

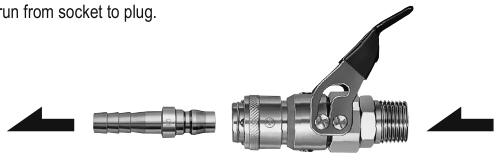
*1: The operable temperature range depends on the operating conditions.

Maximum 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.
Interchangeable with each models of NUT CUPLA series and HI CUPLA series.
Models 400 and 600 can be connected with plugs of HI CUPLA models 400, 600 and 800.
Please see page 21 for "HI CUPLA Series Interchangeability".

Minimum Cross-Sectional Area — (mm²)

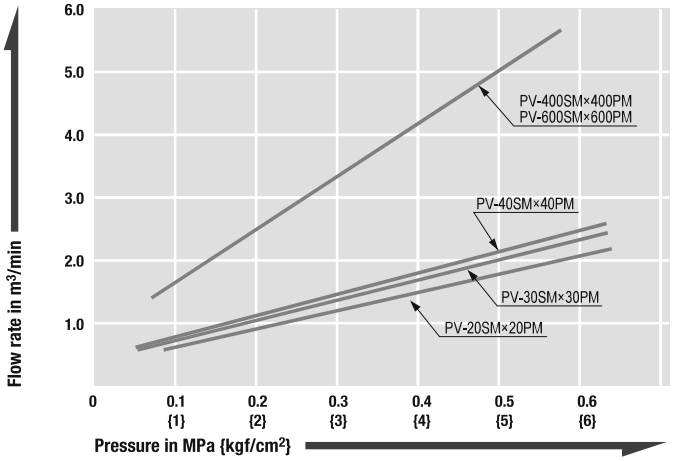
Model	PV-20SM	PV-30SM	PV-40SM	PV-400SM	PV-600SM
Min. cross-sectional area	38	41	41	94	94

Suitability for Vacuum

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

Pressure - Flow Characteristics

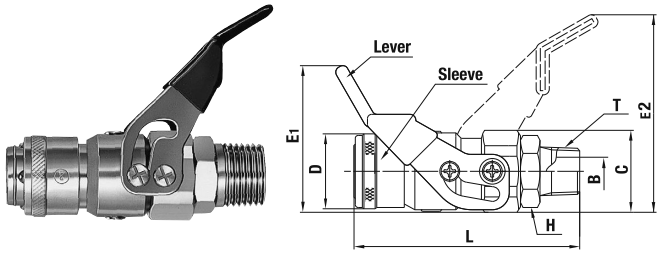
[Test conditions] -Fluid : Air -Temperature : Room temperature



Models and Dimensions

WAF : WAF stands for width across flats.

Socket



Model	Application (Thread)	Mass (g)	Dimensions (mm)							
			L	øD	E_1	E_2	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)

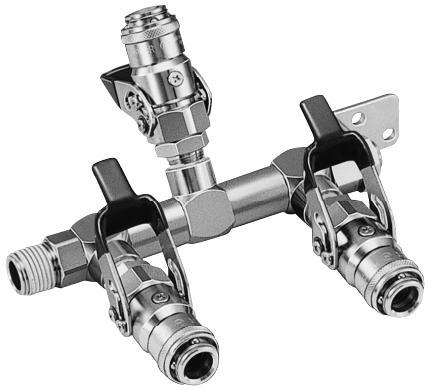
PURGE LINE CUPLA

Simple air line coupling manifold with residual pressure release function

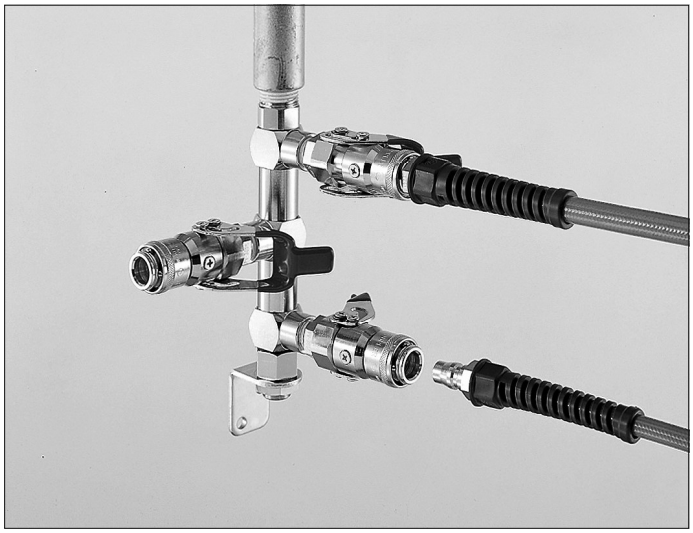
Working pressure	Valve structure	Applicable fluid
1.0 MPa {10 kgf/cm²}	One-way shut-off	Air

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 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)		
Pressure unit	**MPa**	**kgf/cm²**	**bar**	**PSI**
Working pressure	1.0	10	10	145
Seal material	**Seal material**	**Mark**	**Working temperature range**	**Remarks**
Working temperature range *1	Nitrile rubber	NBR	-20˚C to +60˚C	Standard material

*1: The operable temperature range depends on the operating conditions.

Maximum 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

Interchangeable with plugs of HI CUPLA models 10, 17, 20, 30 and 40.
Interchangeable with each models of NUT CUPLA series and HI CUPLA series.
Please see page 21 for "HI CUPLA Series Interchangeability".

Minimum Cross-Sectional Area — (mm²)

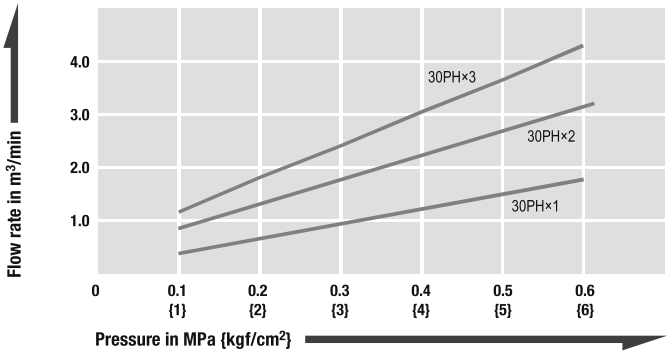
Min. cross-sectional area	41

Suitability for Vacuum

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

Pressure - Flow Characteristics

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



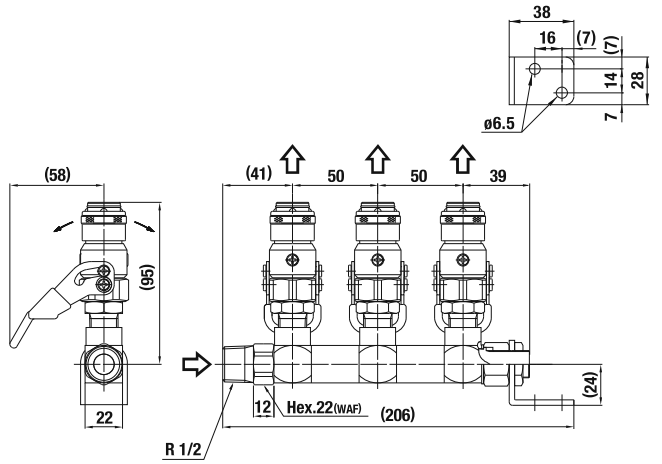
Models and Dimensions

WAF : WAF stands for width across flats.

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

Mass : 1090 g

- **Fluid must run in the direction of the arrow.**



Dimensions (mm)

For Low Pressure (Air)

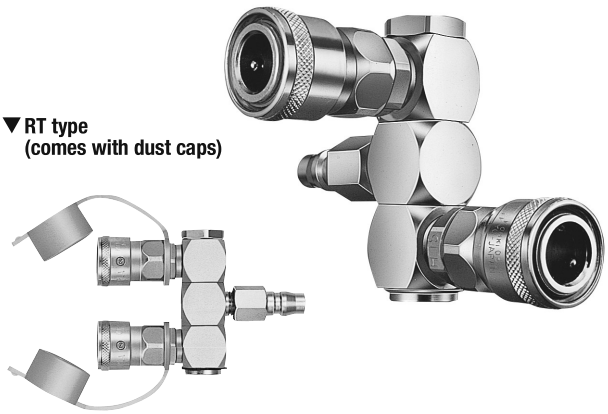
ROTARY LINE CUPLA

Simple design air line couplings on free turn manifold

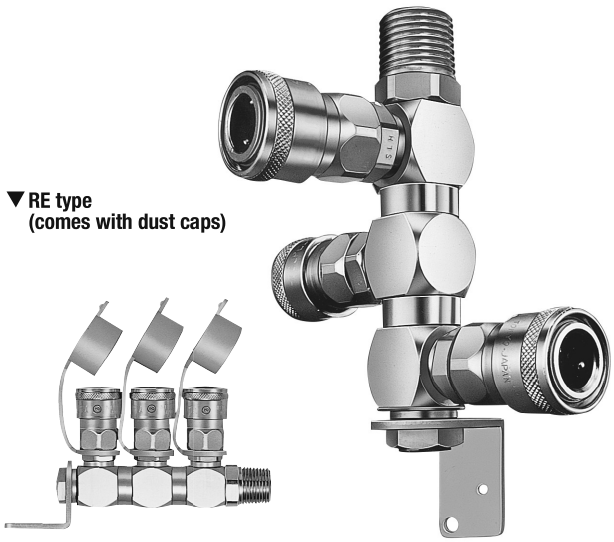
Working pressure	Valve structure	Applicable fluid
1.5 MPa {15 kgf/cm²}	One-way shut-off	Air

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 couplings' 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 Socket Model 20	Outlet	3 sockets for HI CUPLA Socket Model 20

Pressure unit	**MPa**	**kgf/cm²**	**bar**	**PSI**
Working pressure	1.5	15	15	218

Seal material	**Seal material**	**Mark**	**Working temperature range**	**Remarks**
Working temperature range *1	Nitrile rubber	NBR	-20˚C to +60˚C	Standard material

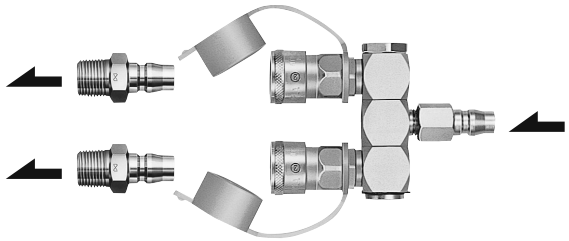
- The products come with dustproof caps.
*1: The operable temperature range depends on the operating conditions.

Maximum 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

Interchangeable with plugs of HI CUPLA models 10, 17, 20, 30 and 40.
Interchangeable with each models of NUT CUPLA series and HI CUPLA series.
Please see page 21 for "HI CUPLA Series Interchangeability".

Minimum Cross-Sectional Area (mm²)

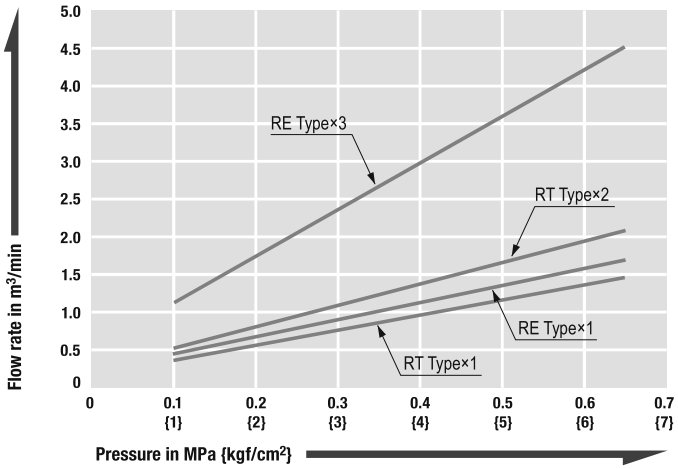
Model	**RT type**	**RE type**
Minimum cross-sectional area	33	

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)



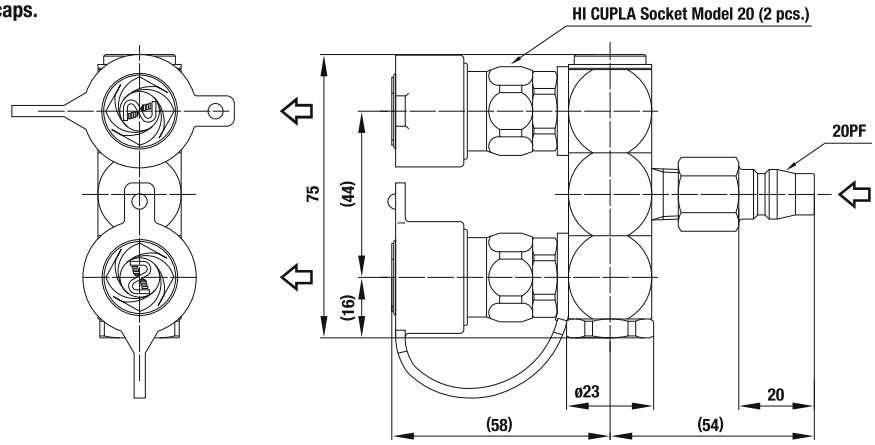
Models and Dimensions

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.**

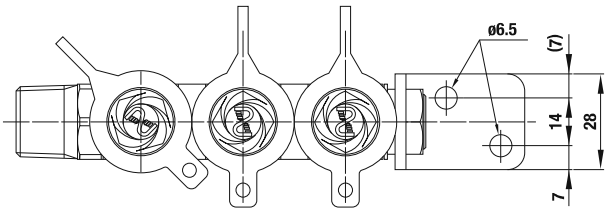


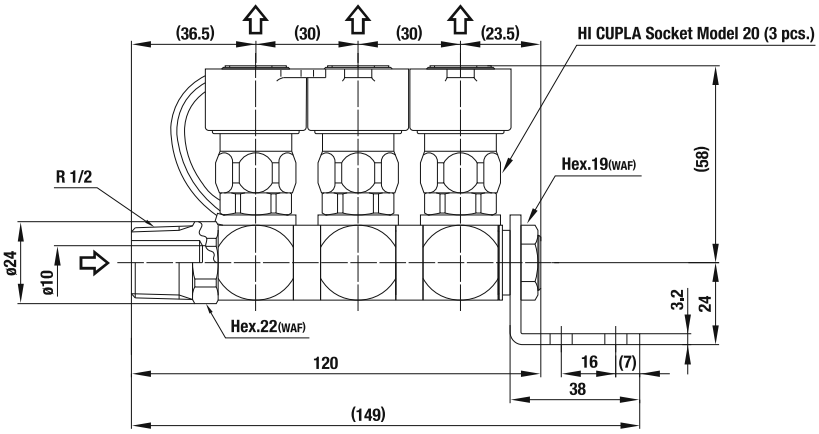
Dimensions (mm)

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

For Low Pressure (Air)

LINE CUPLA

200T Type, 200L Type, 200S Type

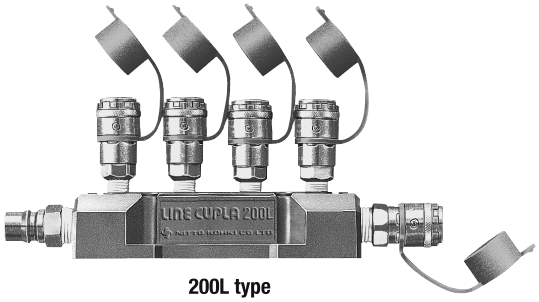
Simple design air line coupling on manifold

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

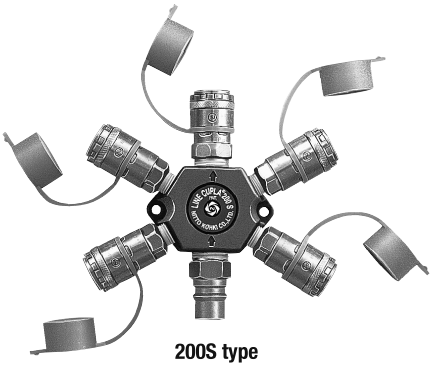
Enables several air lines to be taken simultaneously from one supply line!

- **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
(comes with dust caps)



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



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

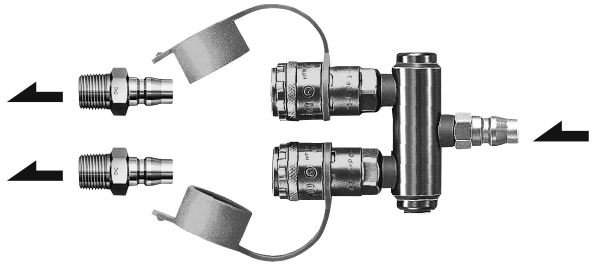
Specifications

Body material	Body : Aluminum alloy, 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, 200-40SM		
Pressure unit	**MPa**	**kgf/cm²**	**bar**	**PSI**
Working pressure	1.5	15	15	218
Seal material	**Seal material**	**Mark**	**Working temperature range**	**Remarks**
Working temperature range *1	Nitrile rubber	NBR	-20˚C to +60˚C	Standard material

- The products come with dustproof caps.
*1: The operable temperature range depends on the operating conditions.

Flow Direction

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



Interchangeability

Interchangeable with plugs of HI CUPLA models 10, 17, 20, 30 and 40.
Interchangeable with each models of NUT CUPLA series and HI CUPLA series.
Please see page 21 for "HI CUPLA Series Interchangeability".

Minimum Cross-Sectional Area (mm²)

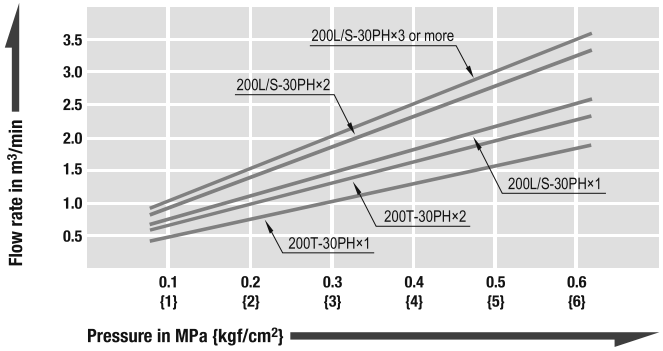
Model	**200T type, 200L type, 200S type**
Minimum cross-sectional area	19

Suitability for Vacuum

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

Pressure - Flow Characteristics

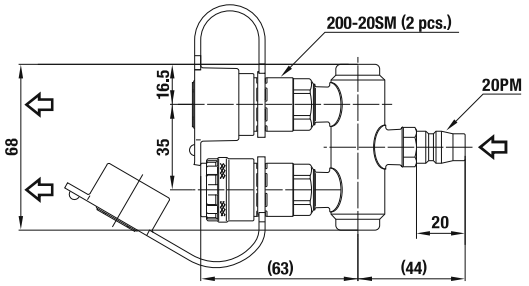
[Test conditions] -Fluid : Air -Temperature : Room temperature



Models and Dimensions

Socket 200T type (For two outlets)

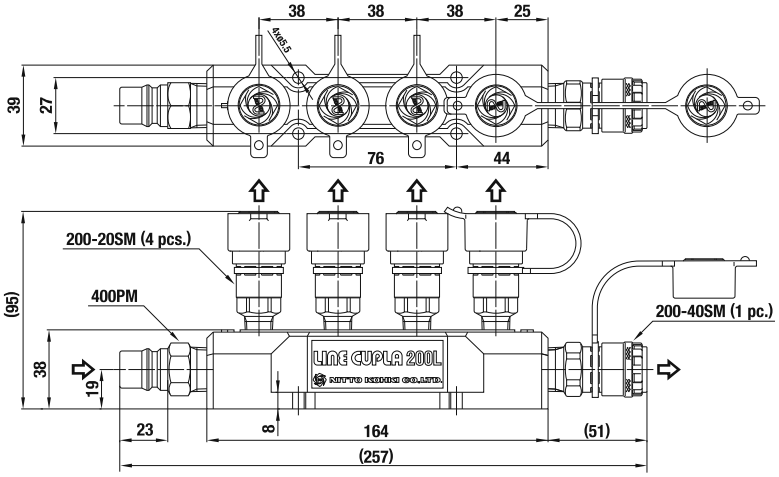
Mass : 272 g
- Fluid must run in the direction of the arrow.
- The product comes with dust caps.



Dimensions (mm)

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

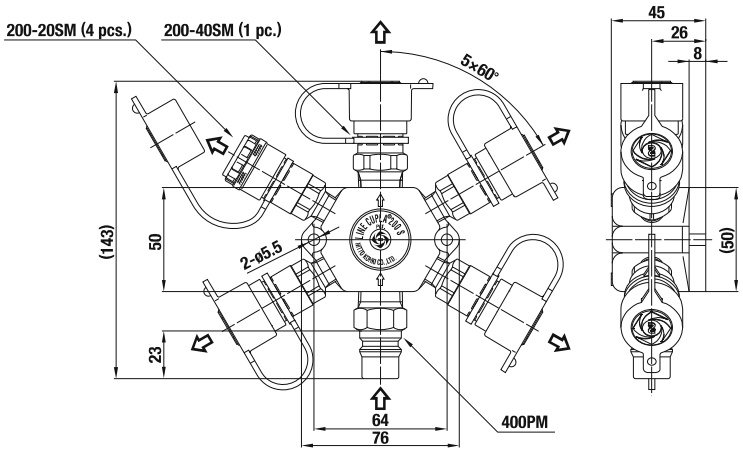
Mass : 890 g
- Fluid must run in the direction of the arrow.
- The product comes with dust caps.
- Accessory : 400SH



Dimensions (mm)

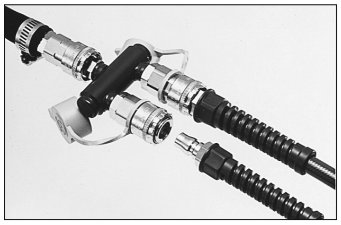
Socket 200S type (For five outlets, star type)

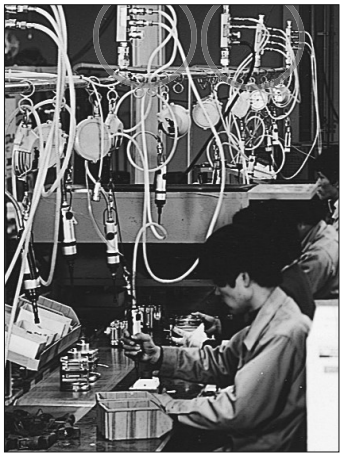
Mass : 769 g
- Fluid must run in the direction of the arrow.
- The product comes with dust caps.
- Accessory : 400SH



Dimensions (mm)

Application Example





For Low Pressure (Air)

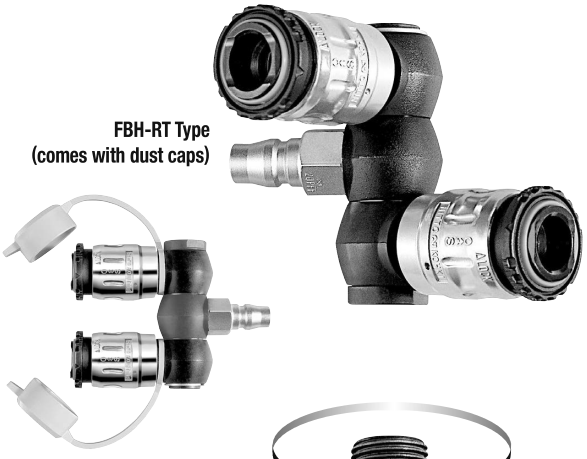
ROTARY FULL BLOW LINE CUPLA

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

Working pressure	Valve structure	Applicable fluid
1.5 MPa {15 kgf/cm²}	One-way shut-off	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 CUPLA.**
- **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 unpleasant popping noise and hose whip motion on disconnection.**
- **Built-in sleeve lock mechanism prevents accidental disconnection of CUPLA, 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
Pressure unit	**MPa**	**kgf/cm²**	**bar**	**PSI**
Working pressure	1.5	15	15	218
Seal material / Working temperature range *1	**Seal material**	**Mark**	**Working temperature range**	**Remarks**
	Nitrile rubber	NBR	-20˚C to +60˚C	Standard material

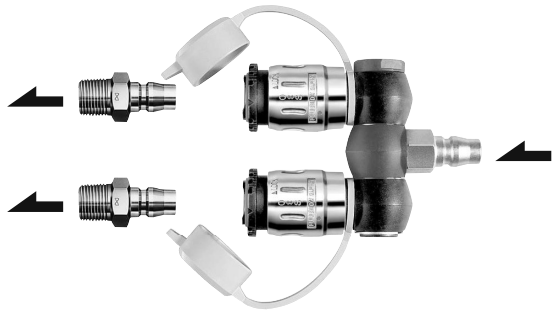
- The products come with dustproof caps.
*1: The operable temperature range depends on the operating conditions.

Maximum 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

Interchangeable with plugs of HI CUPLA models 10, 17, 20, 30 and 40.
Interchangeable with each models of NUT CUPLA series and HI CUPLA series.
Not interchangeable with some plugs of plastic HI CUPLA 250 (discontinued product).
Please see page 21 for "HI CUPLA Series Interchangeability".

Minimum Cross-Sectional Area (mm²)

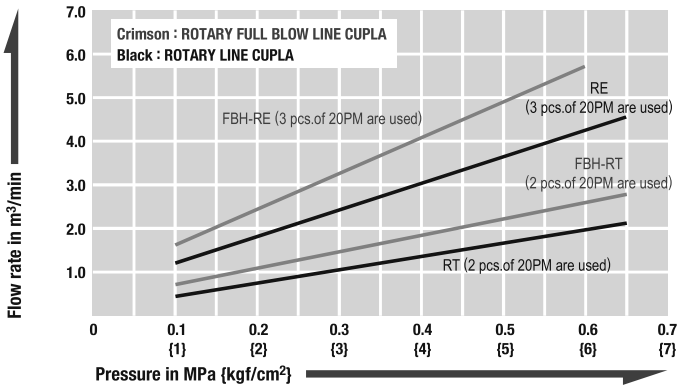
Model	FBH-RT	FBH-RE
Minimum cross-sectional area	44	44

Suitability for Vacuum

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

Pressure - Flow Rated Characteristics (Comparison with ROTARY LINE CUPLA)

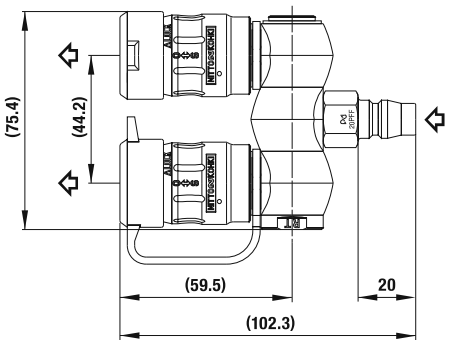
[Test conditions] -Fluid : Air -Temperature : Room temperature -Plug : 20PM



Models and Dimensions

Socket FBH-RT type (For two branch lines)

- Inlet : 1/4" HI CUPLA (20PFF)
- Outlet : FULL BLOW CUPLA (2 pcs.)
- Mass : 358 g
- Fluid must run in the direction of the arrow.

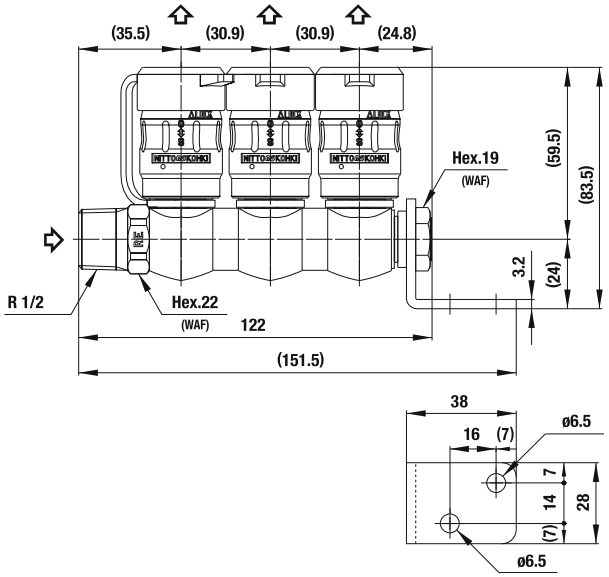


• The product comes with dust caps.

Dimensions (mm)

Socket FBH-RE type (For three branch lines)

- Inlet : R 1/2
- Outlet : FULL BLOW CUPLA (3 pcs.)
- Mass : 527 g
- Fluid must run in the direction of the arrow.



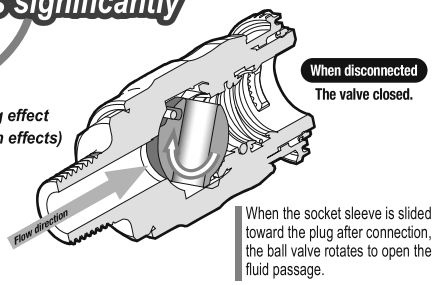
- The product comes with dust caps.

Dimensions (mm)

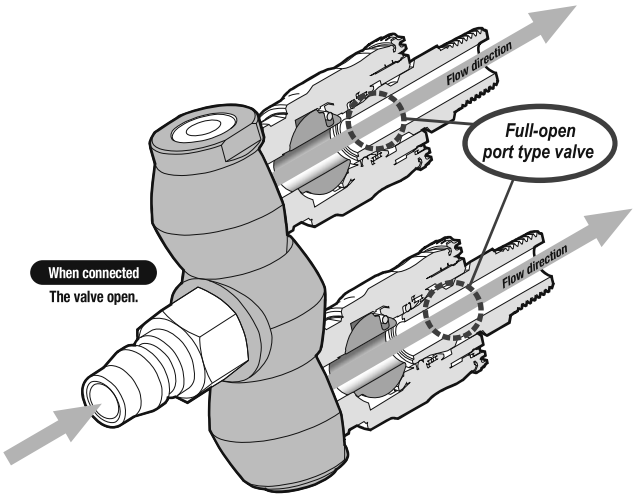
Features of ROTARY FULL BLOW LINE CUPLA

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.

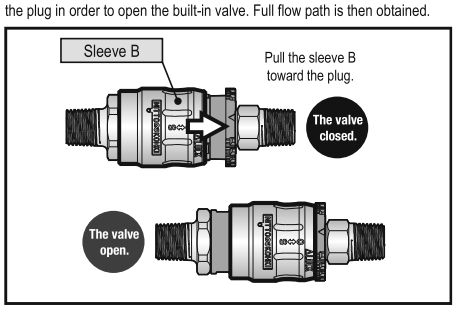
Increased safety operation

Purge function eliminates unpleasant popping noise and hose whip motion.

How It Works

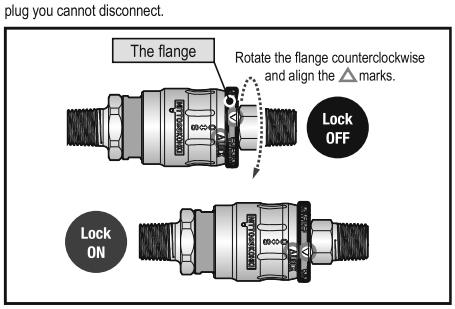
1. Open the valve

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.



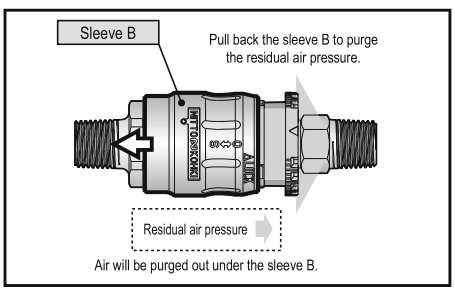
2. Lock the sleeve

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



3. Purge the residual air

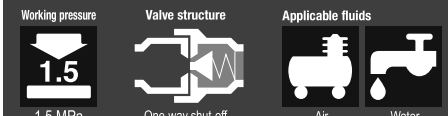
To disconnect the plug, first turn the flange back to its original position for unlocking and then pull the sleeve B back to the original position. The built-in valve will be closed to purge the residual air pressure.



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. Sleeve lock mechanism for safety operation.

- **Pressure ratings comparable to steel CUPLA.**
- **A built-in "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.**
- **Air flows in either direction from plug or from socket side when coupled.**
- **Plug and socket with hose guard nut are also available (see page 68 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×ø8 mm, ø6 mm×ø9 mm, ø6.5 mm×ø10 mm, ø8 mm×ø12 mm, ø8.5 mm×ø12.5 mm polyurethane hose			
	T type	HA-T type • Inlet : 20P-PLA • Outlet : HA-65S			
Working pressure	MPa	1.5	1.0 for plastic plug and Model HA-T		
	kgf/cm²	15	10 for plastic plug and Model HA-T		
	bar	15	10 for plastic plug and Model HA-T		
	PSI	218	145 for plastic plug and Model HA-T		
Seal material Working temperature range *1		Seal material	Mark	Working temperature range	Remarks
		Nitrile rubber	NBR	-20˚C to +60˚C	Standard material

*1: The operable temperature range depends on the operating conditions.

Tightening Torque Range

Nm {kgf•cm}

Model	20/30SM 20/30PM	50/60/65SN 50/60/65PN 50/65SNG 50/65PNG	80/85SN 80/85PN 85SNG 85PNG	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

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

Interchangeability

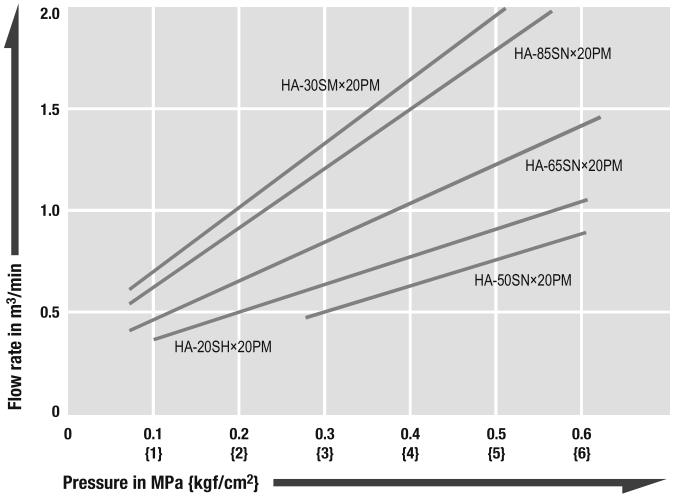
Interchangeable with HI CUPLA models 10, 17, 20, 30 and 40.
Interchangeable with each models of NUT CUPLA series and HI CUPLA series (except models 400, 600, and 800).
Please see page 21 for "HI CUPLA Series Interchangeability".

Suitability for Vacuum

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

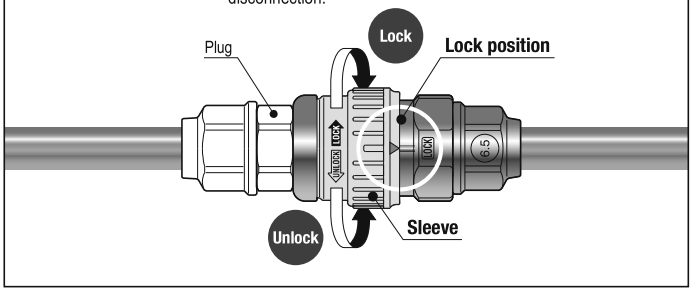
Pressure - Flow Characteristics

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



Sleeve lock function

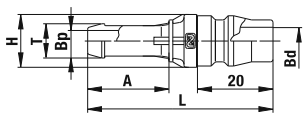
When the sleeve (Yellow color) is aligned to the lock position prior to connection, the sleeve will be locked to prevent accidental disconnection.



Models and Dimensions

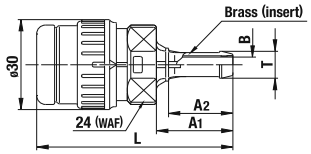
WAF : WAF stands for width across flats.

Plug PH type (Plastic plug / Hose barb)



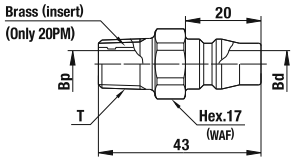
Model	Application (Hose)	Mass (g)	Dimensions (mm)					
			L	øH	A	øT	øBp	øBd
20PH-PLA	1/4"	3	49	14	21.5	9	5.5	7
30PH-PLA	3/8"	4	52	16	23.5	11.5	7.5	7

Socket SH type (Hose barb)



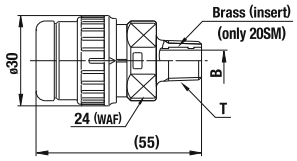
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	A1	A2	øT	øB
HA-20SH	1/4"	26	(65.5)	25.5	21.5	9	5
HA-30SH	3/8"	28	(68)	28	23.5	11.5	7

Plug PM type (Plastic plug / Male thread)



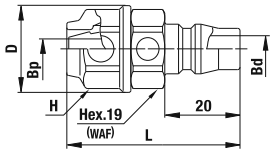
Model	Application (Thread)	Mass (g)	Dimensions (mm)		
			T	øBp	øBd
20PM-PLA	Rc 1/4	8	R 1/4	7.1	7.4
30PM-PLA	Rc 3/8	6	R 3/8	10	7.4

Socket SM type (Male thread)



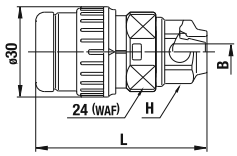
Model	Application (Thread)	Mass (g)	Dimensions (mm)	
			T	øB
HA-20SM	Rc 1/4	27	R 1/4	7.1
HA-30SM	Rc 3/8	26	R 3/8	8

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



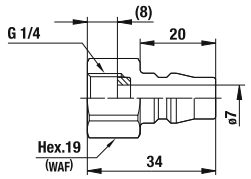
Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	øH	Hp(WAF)	øBp	øBd
50PN-PLA	ø5 mm×ø8 mm	9	(46)	23	Hex.19	4	7
60PN-PLA	ø6 mm×ø9 mm	9	(46)	23	Hex.19	4.7	7
65PN-PLA	ø6.5 mm xø10 mm	9	(46)	23	Hex.19	5.3	7
80PN-PLA	ø8 mm×ø12 mm	12	(48.5)	26	Hex.22	6.5	7
85PN-PLA	ø8.5 mm×ø12.5 mm	12	(48.5)	26	Hex.22	7	7

Socket SN type (For urethane hose connection)



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

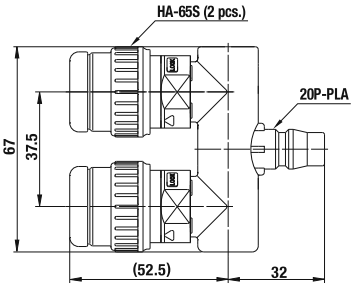
Plug PFF type (Plastic plug / Parallel female thread)



Dimensions (mm)

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

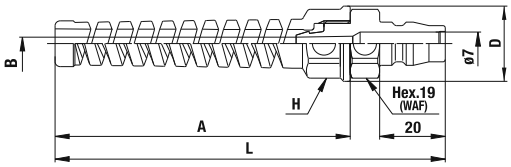
Socket T type (For two branch lines)



Dimensions (mm)

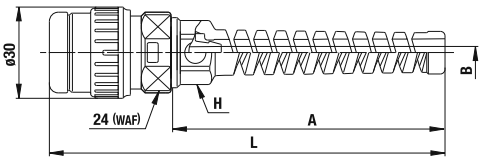
Model	Inlet / Outlet	Mass (g)
HA-T	20P-PLA / HA-65S (2 pcs.)	73

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



Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	øD	H(WAF)	A	øB
50PNG-PLA	ø5 mm×ø8 mm	14	(119)	23	Hex.19	(90)	4
65PNG-PLA	ø6.5 mm×ø10 mm	15	(119)	23	Hex.19	(90)	5.3
85PNG-PLA	ø8.5 mm×ø12.5 mm	17	(119)	26	Hex.22	(90)	7

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×ø8 mm	31	(130)	Hex.19	(90)	4
HA-65SNG	ø6.5 mm×ø10 mm	33	(130)	Hex.19	(90)	5.3
HA-85SNG	ø8.5 mm×ø12.5 mm	35	(130)	Hex.22	(90)	7

For Low Pressure (Air)

ROTARY PLUG

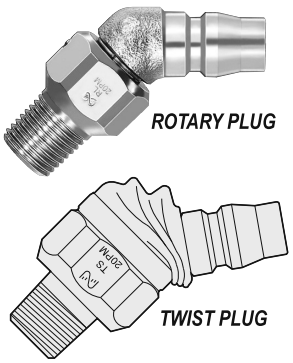
For pneumatic tools and devices

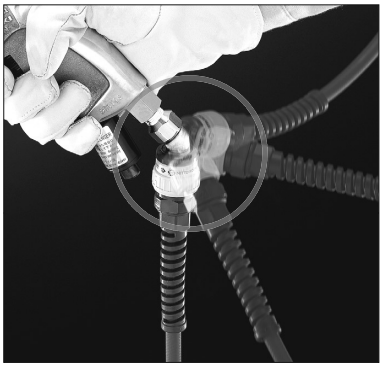
Working pressure	Valve structure	Applicable fluid
1.5 MPa {15 kgf/cm²}	One-way shut-off	Air

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"			
Pressure unit	**MPa**	**kgf/cm²**	**bar**	**PSI**
Working pressure	1.5	15	15	218
Seal material	**Seal material**	**Mark**	**Working temperature range**	**Remarks**
Working temperature range *1	Nitrile rubber	NBR	-20°C to +80°C	Standard material

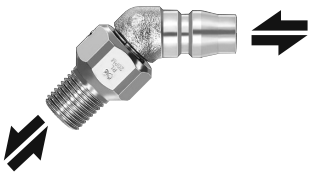
*1: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque — Nm {kgf·cm}

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

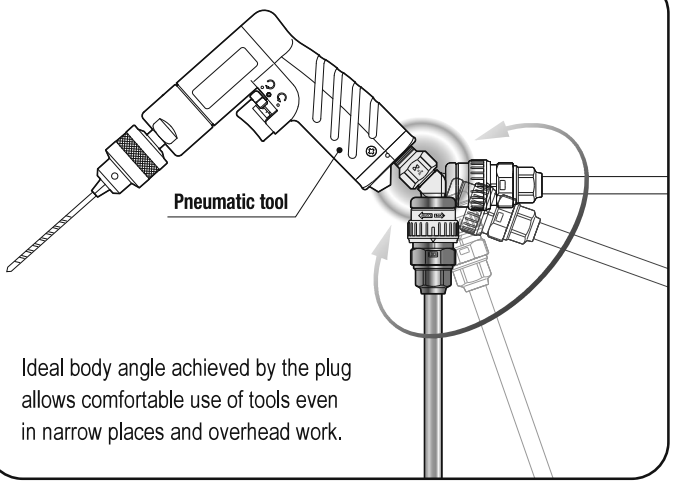
Flow Direction

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



Interchangeability

Interchangeable with sockets of HI CUPLA models 10, 17, 20, 30 and 40.
Interchangeable with each models of NUT CUPLA series and HI CUPLA series (except models 400, 600, and 800).
Please see page 21 for "HI CUPLA Series Interchangeability".

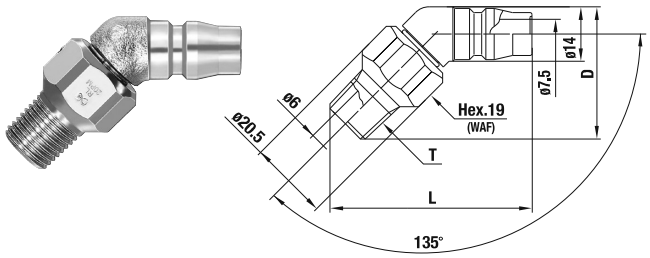


Ideal body angle achieved by the plug allows comfortable use of tools even in narrow places and overhead work.

Models and Dimensions

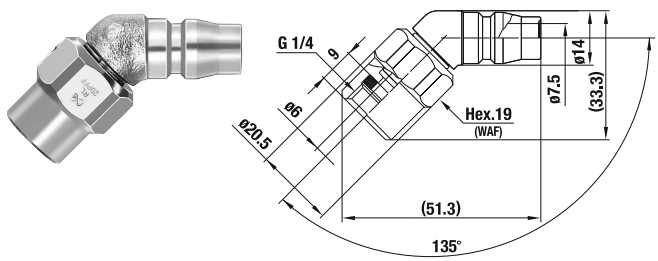
WAF : WAF stands for width across flats.

Plug — PM type (Male thread)



Model	Application (Thread)	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 (Thread) : G 1/4**
- **Mass : 57 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)

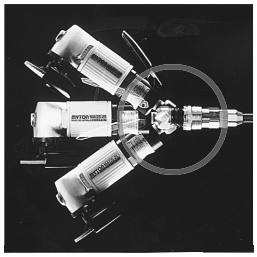
TWIST PLUG

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"			
Pressure unit	**MPa**	**kgf/cm²**	**bar**	**PSI**
Working pressure	1.0	10	10	145
Seal material / **Working temperature range** *1	**Seal material**	**Mark**	**Working temperature range**	**Remarks**
	Nitrile rubber	NBR	-20˚C to +60˚C	Standard material

*1: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque — Nm {kgf•cm}

Size (Thread)	1/8"	1/4"	3/8"
Torque	7 {71}	14 {143}	22 {224}

Flow Direction

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

Interchangeability

Interchangeable with sockets of HI CUPLA models 10, 17, 20, 30 and 40.
Interchangeable with each models of NUT CUPLA series and HI CUPLA series (except models 400, 600, and 800).
Please see page 21 for "HI CUPLA Series Interchangeability".

Suitability for Vacuum

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

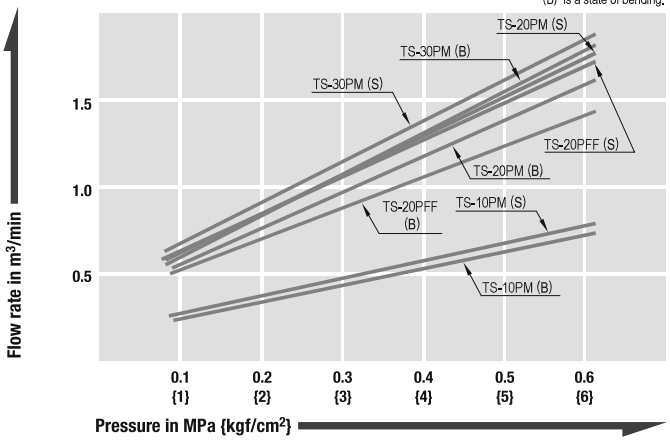
Minimum Cross-Sectional Area — (mm²)

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

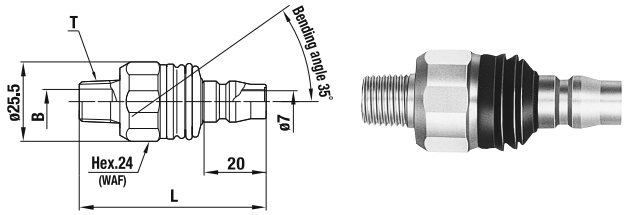
(S) is a state of straight.
(B) is a state of bending.



Models and Dimensions

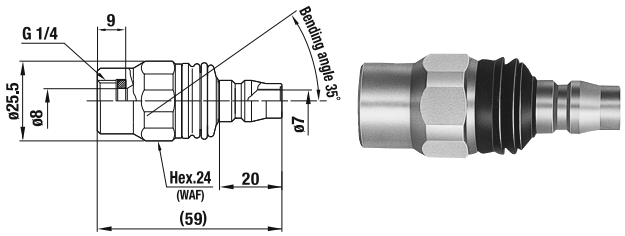
WAF : WAF stands for width across flats.

Plug — PM type (Male thread)



Model	Application (Thread)	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 (Thread) : G 1/4**
- **Mass : 77 g**

Dimensions (mm)

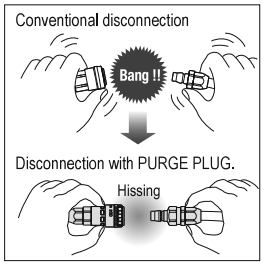
For Low Pressure (Air)

PURGE PLUG

For air lines with purge mechanism

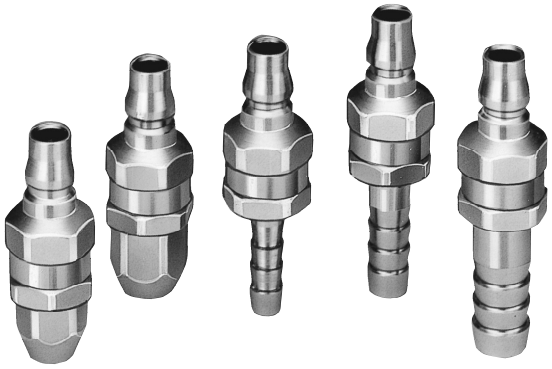
Working pressure: 1.0 MPa {10 kgf/cm²}
Valve structure: Purge valve
Applicable fluid: Air

Eliminates unpleasant popping noise and hose whip motion when CUPLA is disconnected.



- **When CUPLA is disconnected, the pressure left in the plug side hose is released gradually without unpleasant popping noise and hose whip 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 mm×ø10 mm, ø8.5 mm×ø12.5 mm hose			
Pressure unit	**MPa**	**kgf/cm²**	**bar**	**PSI**
Working pressure	1.0	10	10	145
Seal material / **Working temperature range** *1	**Seal material**	**Mark**	**Working temperature range**	**Remarks**
	Nitrile rubber	NBR	-20˚C to +60˚C	Standard material

*1: The operable temperature range depends on the operating conditions.

Tightening Torque Range — Nm {kgf·cm}

Torque	9 to 11 {92 to 112}

To mount on 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 sockets of HI CUPLA models 10, 17, 20, 30 and 40.
Interchangeable with each models of NUT CUPLA series and HI CUPLA series (except models 400, 600, and 800).
Please see page 21 for "HI CUPLA Series Interchangeability".

Minimum Cross-Sectional Area — (mm²)

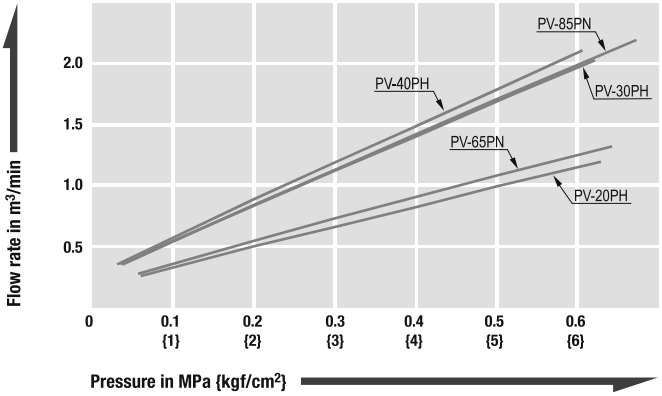
Model	**PV-20PH**	**PV-30PH**	**PV-40PH**	**PV-65PN**	**PV-85PN**
Min. cross-sectional area	19.6	44.1	50.4	22.0	44.1

Suitability for Vacuum

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

Pressure - Flow Characteristics

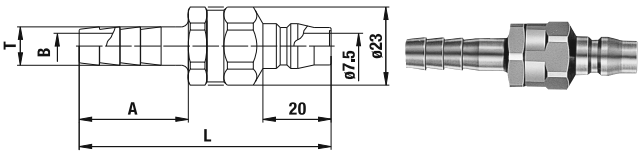
[Test conditions] - Fluid : Air - Temperature : Room temperature



Models and Dimensions

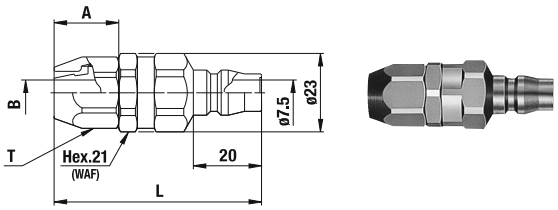
WAF : WAF stands for width across flats.

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×ø10 mm	71	(59)	17	5.3	Hex.17
PV-85PN	ø8.5 mm×ø12.5 mm	78	(61)	19	7.5	Hex.19

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)

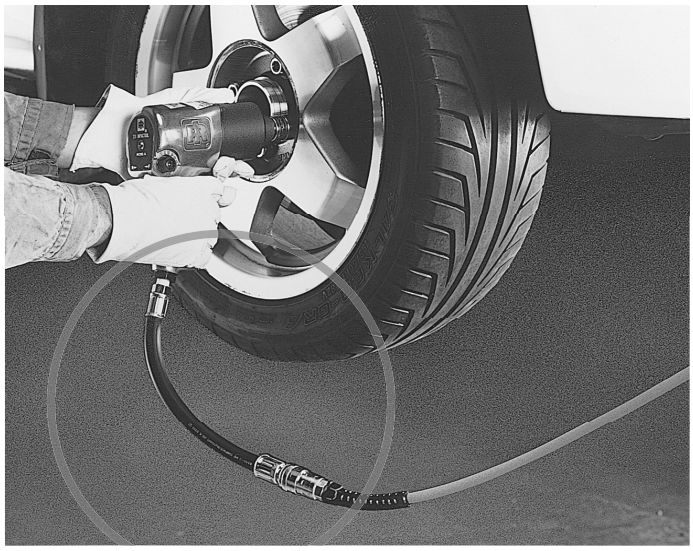
ANTI-VIBRATION PLUG HOSE

Plug hose for vibrating and percussive air tools

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

Protects CUPLA from shock 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.**



Specifications

Applicable fluid	Air			
Model	SHA-3-2R		SHA-3-3R	
Size (Thread)	R 1/4		R 3/8	
Inlet (Plug)	HI CUPLA Plug 30PH			
Pressure unit	MPa	kgf/cm²	bar	PSI
Working pressure	1.5	15	15	218
Air hose	Rubber hose for air			
Overall length	320 mm			
Minimum bend radius	135 mm			

Maximum Tightening Torque — Nm {kgf•cm}

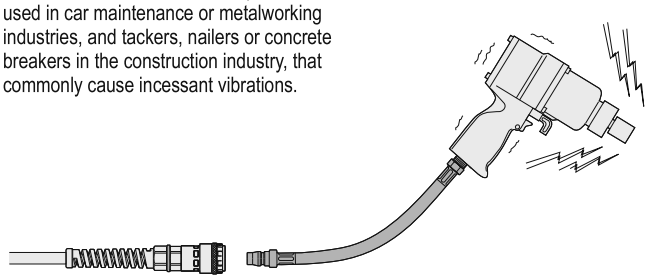
Size (Thread)	R 1/4	R 3/8
Torque	14 {143}	22 {224}

Interchangeability

Interchangeable with sockets of HI CUPLA models 10, 17, 20, 30 and 40.
Interchangeable with each models of NUT CUPLA series and HI CUPLA series (except models 400, 600, and 800).
Please see page 21 for "HI CUPLA Series Interchangeability".

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	Valve structure	Applicable fluid
1.0 MPa {10 kgf/cm²}	One-way shut-off	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.**

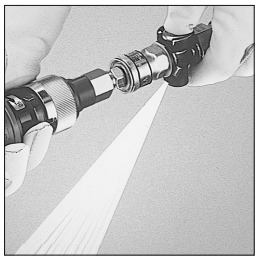


Photo shows simulated air flow.

Specifications

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

*1: The operable temperature range depends on the operating conditions.

Tightening Torque Range — Nm {kgf•cm}

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

To mount on 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

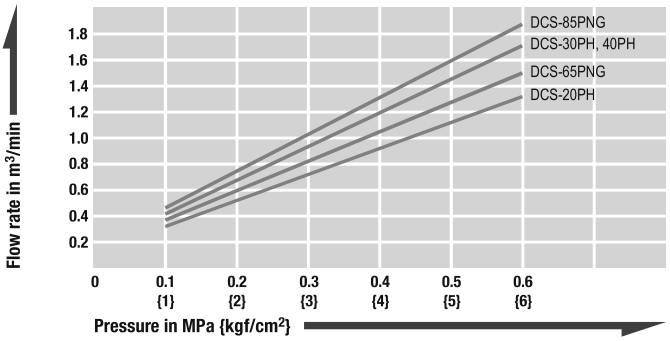
Interchangeable with plugs of HI CUPLA models 10, 17, 20, 30 and 40.
Interchangeable with each models of NUT CUPLA series and HI CUPLA series.
Please see page 21 for "HI CUPLA Series Interchangeability".

Suitability for Vacuum

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

Pressure - Flow Characteristics

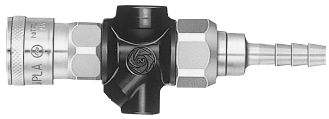
[Test conditions] - Fluid : Air - Temperature : Room temperature

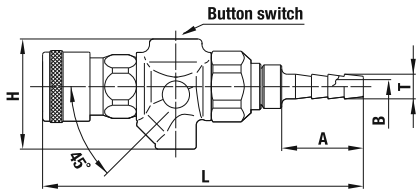


Models and Dimensions

WAF : WAF stands for width across flats.

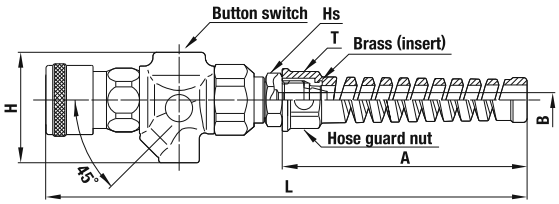
Socket PH type (Hose barb)





Model	Application (Hose)	Mass (g)	Dimensions (mm)				
			L	A	H	øB	øT
DCS-20PH	1/4"	168	(117.9)	30	40.5	5	9
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×ø10 mm	176	(176.9)	90	40.5	5.3	Hex.17	Hex.19
DCS-85PNG	ø8.5 mm×ø12.5 mm	185	(176.9)	90	40.5	7.5	Hex.19	Hex.22

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

For Low Pressure (Air)

NK CUPLA HOSE
with HI CUPLA ACE / FULL BLOW CUPLA
NK CUPLA COIL HOSE
with HI CUPLA ACE

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 and FULL BLOW CUPLA sockets with polyurethane hoses are now standard stock items. Push-to-connect design for quick piping.

- **Sockets of HI CUPLA ACE and FULL BLOW CUPLA comes with a spring nut that prevents hose bending and urethane hose with excellent flexibility, durability and wear resistance.**
- **Built-in "lock mechanism" locks the sleeve upon connection, thus prevents accidental disconnection.**
- **Just push the plug into the socket for simple connection.**
- **Spiral polyurethane coil hoses processed from straight tube have self-recoiling feature. (Only with HI CUPLA ACE)**
- **A Sleeve Cover is attached to "NK CUPLA HOSE with FULL BLOW CUPLA", which reduces the impact on CUPLA and improves operability.**

Specifications

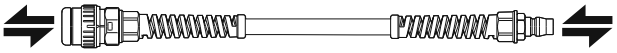
Name		NK CUPLA HOSE	NK CUPLA COIL HOSE	NK CUPLA HOSE
CUPLA (Socket)		HI CUPLA ACE		FULL BLOW CUPLA
Body material (Socket)		Engineering plastics (PBT, POM)		Aluminum alloy
Body material (Plug)		Steel (Chrome plated)		
Hose Size	mm	ø6.5×ø10, ø8.5×ø12.5	ø5×ø8, ø6.5×ø10	ø6.5×ø10, ø8.5×ø12.5
Working pressure	MPa	1.0	0.7	1.0
	kgf/cm²	10	7	10
	bar	10	7	10
	PSI	145	102	145

Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range *1	Nitrile rubber	NBR	-5˚C to +60˚C	Standard material

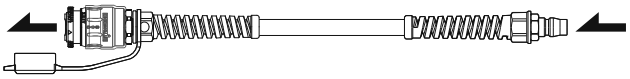
*1: The operable temperature range depends on the operating conditions.

Flow Direction

- With HI CUPLA ACE: Fluid flow can be bi-directional when socket and plug are connected.



- With FULL BLOW CUPLA: Fluid must run from socket side to plug side of the hose.



Interchangeability

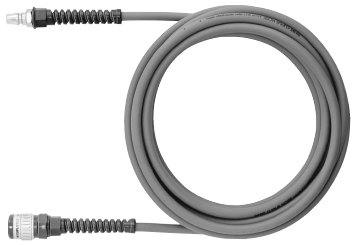
Interchangeable with HI CUPLA models 10, 17, 20, 30 and 40.
Interchangeable with each models of NUT CUPLA series and HI CUPLA series (except models 400, 600, and 800).
Please see page 21 for "HI CUPLA Series Interchangeability".

Suitability for Vacuum

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

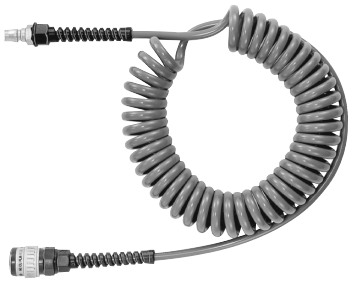
Models and Dimensions / Hose length

Plug / Socket NK CUPLA HOSE with HI CUPLA ACE



Model	Hose size	Hose length	Socket	Plug
			HI CUPLA ACE	NUT CUPLA
NKU-605B	ø6.5 mm×ø10 mm	5 m	HA-65SNG	65PNG
NKU-610B	ø6.5 mm×ø10 mm	10 m	HA-65SNG	65PNG
NKU-620B	ø6.5 mm×ø10 mm	20 m	HA-65SNG	65PNG
NKU-810B	ø8.5 mm×ø12.5 mm	10 m	HA-85SNG	85PNG
NKU-820B	ø8.5 mm×ø12.5 mm	20 m	HA-85SNG	85PNG

Plug / Socket NK CUPLA COIL HOSE with HI CUPLA ACE



Model	Hose size	Maximum extensible length	Socket	Plug
			HI CUPLA ACE	NUT CUPLA
NKC-503B	ø5 mm×ø8 mm	2 m	HA-50SNG	50PNG
NKC-505B	ø5 mm×ø8 mm	4 m	HA-50SNG	50PNG
NKC-603B	ø6.5 mm×ø10 mm	2 m	HA-65SNG	65PNG
NKC-605B	ø6.5 mm×ø10 mm	4 m	HA-65SNG	65PNG

Plug / Socket NK CUPLA HOSE with FULL BLOW CUPLA

NEW

Sleeve Cover included
Dust Cap included

Model	Hose size	Hose length	Socket	Plug
			FULL BLOW CUPLA	NUT CUPLA
NKU-605P	ø6.5 mm×ø10 mm	5 m	FBH-65SNG	65PNG
NKU-610P	ø6.5 mm×ø10 mm	10 m	FBH-65SNG	65PNG
NKU-810P	ø8.5 mm×ø12.5 mm	10 m	FBH-85SNG	85PNG

*Sleeve Cover and Dust Cap are attached to the NK CUPLA HOSE with FULL BLOW CUPLA.

For Low Pressure

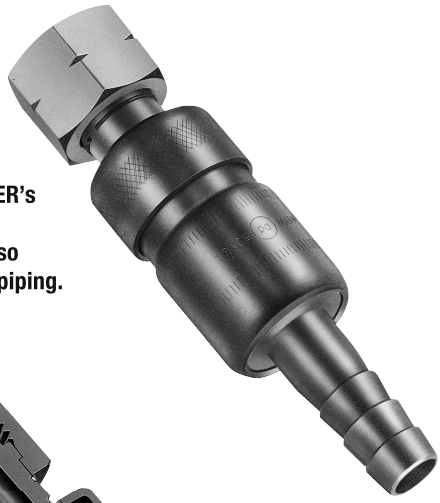
MINI CUPLA

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

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

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

- **From cylinders to 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 CUPLA 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.**

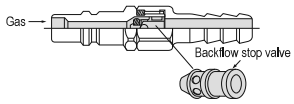


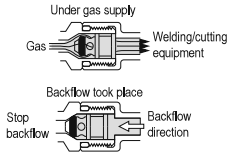
Structure and Principle of Backflow Prevention

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"			
Pressure unit		MPa	kgf/cm²	bar	PSI
Working pressure		0.7	7	7	102
Seal material / Working temperature range *1		Seal material	Mark	Working temperature range	Remarks
		Nitrile rubber	NBR	-20˚C to +80˚C	Standard material

*1: The operable temperature range depends on the operating conditions.

Maximum 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 connection, CUPLA for oxygen are not interchangeable with CUPLA for fuel gas. However, plugs and sockets for oxygen are interchangeable regardless of end configurations and plugs and sockets for fuel gas are interchangeable regardless of end configurations.
*Interchangeable with MINI CUPLA SUPER.

Minimum Cross-Sectional Area — (mm²)

For Oxygen

Socket \ Plug	22PH	25PH	22PF	22PFF	25PF	22PHB	25PHB	22PFB	21PMT	22PMT
22SH	19.6	19.6	19.6	19.6	19.6	15.9	15.9	15.9	19.6	19.6
25SH	19.6	19.6	19.6	19.6	19.6	15.9	15.9	15.9	19.6	19.6
22SF	19.6	19.6	19.6	19.6	19.6	15.9	15.9	15.9	19.6	19.6
22SM	19.6	19.6	19.6	19.6	19.6	15.9	15.9	15.9	19.6	19.6

For Fuel Gas

Socket \ Plug	33PH	35PH	33PF	33PHB	35PHB	33PFB
33SH	44.1	28.2	44.1	15.9	15.9	15.9
35SH	28.2	28.2	28.2	15.9	15.9	15.9
33SF	19.6	19.6	19.6	15.9	15.9	15.9
33SM	44.1	28.2	44.1	15.9	15.9	15.9

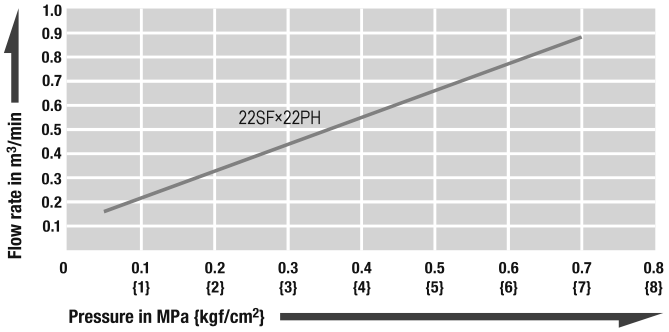
Suitability for Vacuum

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

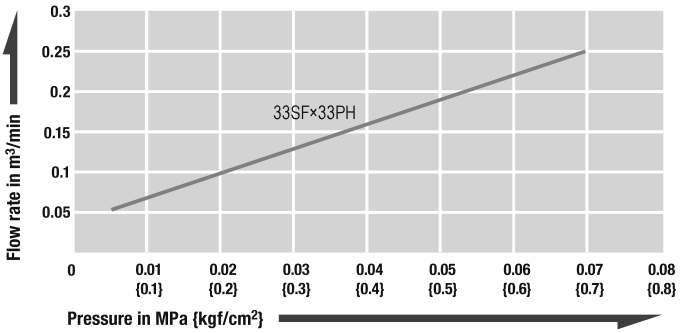
Pressure - Flow Characteristics

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

For Oxygen



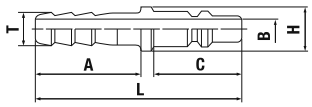
For Fuel Gas



Models and Dimensions

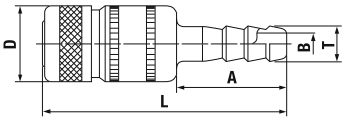
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



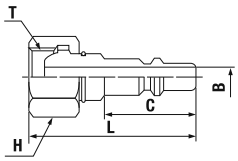
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				L	C	A	øH	øT	øB
For Oxygen	22PH	1/4"	16	55	23.5	28	11	7.8	5
	25PH	5/16"	19					9	
For Fuel Gas	33PH	3/8"	22	57	25.5	28	14	10.5	7.5
	35PH	5/16"	20					9	6

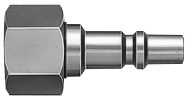
Socket SH type (Hose barb)



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

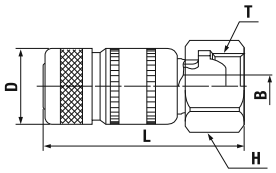
Plug PF type (Female thread for torch connection)





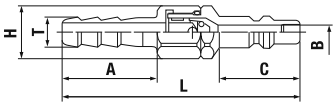
Usage	Model	Application (Thread)	Mass (g)	Dimensions (mm)				
				L	C	H(WAF)	T	øB
For Oxygen	22PF	For oxygen torch side	31	(43)	23.5	Hex.19	M16×1.5	5
	22PFF		29	(43.5)		Hex.17	G 1/4	
	25PF		26				W12.5-20	
For Fuel Gas	33PF	For fuel gas torch side	36	(44.5)	25.5	Hex.19	M16×1.5 left-hand thread	7.5

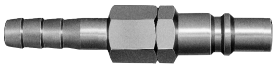
Socket SF type (Female thread for cylinder connection)



Usage	Model	Application (Thread)	Mass (g)	Dimensions (mm)				
				L	øD	T	øB	H(WAF)
For Oxygen	22SF	For oxygen gauge side	80	(52)	(19.8)	M16×1.5	5	Hex.19
For Fuel Gas	33SF	For fuel gas gauge side	96	(54)	(22.6)	M16×1.5 left-hand thread	5	Hex.19

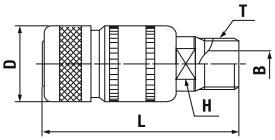
Plug PHB type (Hose barb with backflow stop valve)





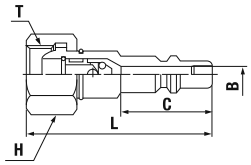
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				L	C	A	øH	øT	øB
For Oxygen	22PHB	1/4"	31	(69.6)	23.5	28	15.5	7.8	4.5
	25PHB	5/16"	34					9	
For Fuel Gas	33PHB	3/8"	41	(70.6)	25.5	28	15.5	10.5	4.5
	35PHB	5/16"	39					9	

Socket SM type (Male thread)



Usage	Model	Application (Thread)	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)

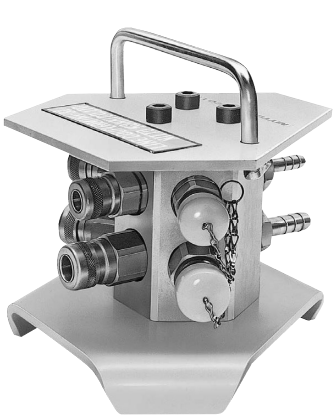


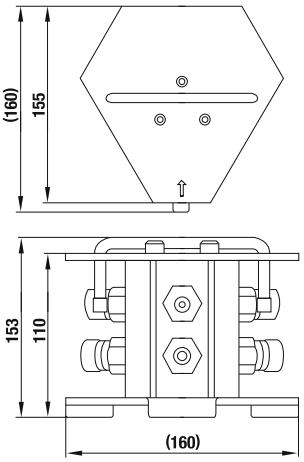
Usage	Model	Application (Thread)	Mass (g)	Dimensions (mm)				
				L	C	H(WAF)	T	øB
For Oxygen	22PFB	For oxygen torch side	36	(48.5)	23.5	Hex.19	M16×1.5	4.5
For Fuel Gas	33PFB	For fuel gas torch side	41	(49)	25.5	Hex.19	M16×1.5 left-hand thread	4.5

Socket LINE CUPLA MINI LM-32 (For three port branch piping)

Mass : 4,300 g

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

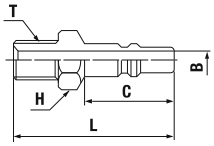




Dimensions (mm)

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.

Plug PMT type (Male thread)



Usage	Model	Application (Thread)	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

For Low Pressure

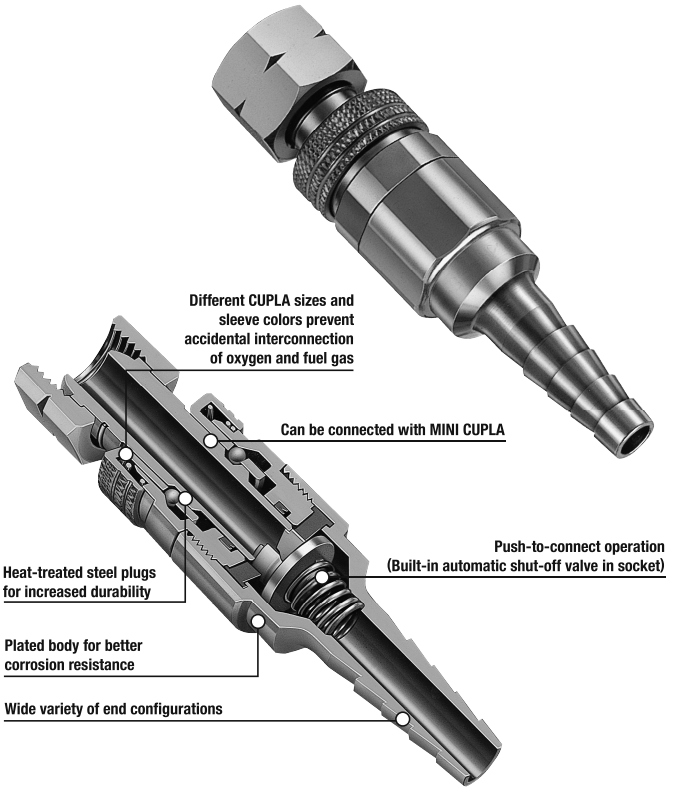
MINI CUPLA SUPER

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

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

Exclusively for welding and cutting equipment.

- **From cylinders to torches, all piping connections associated with welding and cutting equipment are push-to-connect operations.**
- **Plated body for better corrosion resistance.**
- **Heat-treated plugs for better durability.**
- **Oxygen and fuel gas CUPLA have different configuration sizes with sleeves in different appearances, silver colored plating for oxygen and copper colored 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.**

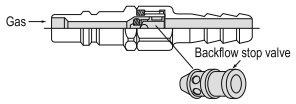


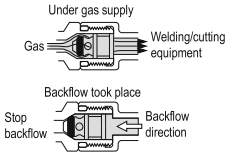
Structure and Principle of Backflow Prevention

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			
Pressure unit		MPa	kgf/cm²	bar	PSI
Working pressure		0.7	7	7	102
Seal material / Working temperature range *1		Seal material	Mark	Working temperature range	Remarks
		Nitrile rubber	NBR	-20˚C to +80˚C	Standard material

*1: The operable temperature range depends on the operating conditions.

Maximum 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 connection, CUPLA for oxygen are not interchangeable with CUPLA for fuel gas. However, plugs and sockets for oxygen are interchangeable regardless of end configurations and plugs and sockets for fuel gas are interchangeable regardless of end configurations.
Can be connected with MINI CUPLA series.

Minimum Cross-Sectional Area — (mm²)

For Oxygen

Socket \ Plug	S22PH	S225PH	S22PF	S22PN
S22SH	15.9	7.5	15.9	15.9
S225SH	7.5	7.5	7.5	7.5
S22SF	15.9	7.5	15.9	15.9
S22SM	15.9	7.5	15.9	15.9
S22SN	15.9	7.5	15.9	15.9

For Fuel Gas

Socket \ Plug	S33PH	S335PH	S33PF	S33PN
S33SH	28.2	7.5	28.2	15.9
S335SH	7.5	7.5	7.5	7.5
S33SF	28.2	7.5	28.2	15.9
S33SM	28.2	7.5	28.2	15.9
S33SN	15.9	7.5	15.9	15.9

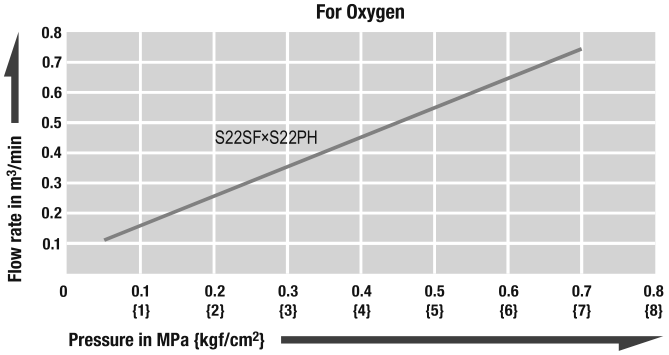
Suitability for Vacuum

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

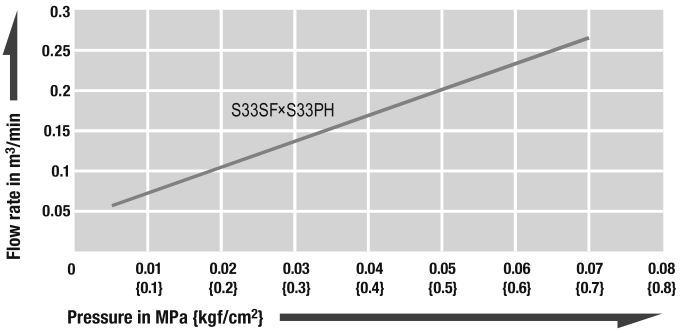
Pressure - Flow Characteristics

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

For Oxygen



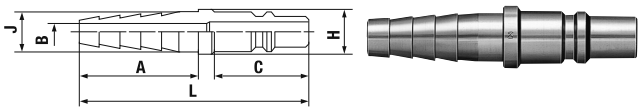
For Fuel Gas



Models and Dimensions

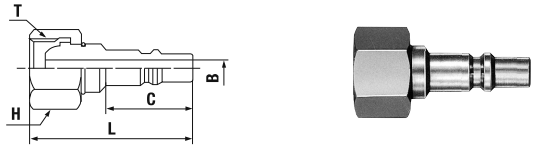
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



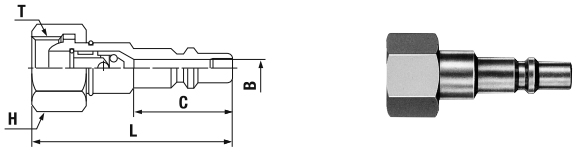
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				L	C	A	øH	øJ	øB
For Oxygen	S22PH	1/4", 5/16"	17	58	23.5	30	11	9.5	4.5
For Oxygen	S225PH	5 mm ID	12	49	23.5	21	11	6.2	3.1
For Fuel Gas	S33PH	5/16", 3/8"	22	59.5	25.5	30	14	11	6
For Fuel Gas	S335PH	5 mm ID	15	50.5	25.5	21	14	6.2	3.1
For Fuel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



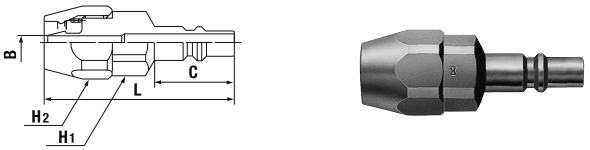
Usage	Model	Application (Thread)	Mass (g)	Dimensions (mm)				
				L	C	H(WAF)	T	øB
For Oxygen	S22PF	For oxygen torch side	35	(43)	23.5	Hex.19	M16×1.5	5
For Fuel Gas	S33PF	For fuel gas torch side	32	(44.5)	25.5	Hex.19	M16×1.5 left-hand thread	7.5

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



Usage	Model	Application (Thread)	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)

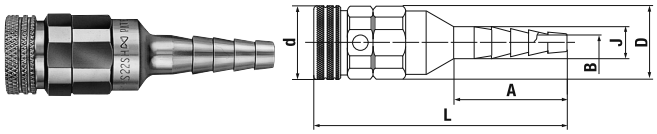


Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)				
				L	C	H1(WAF)	H2(WAF)	øB
For Oxygen	S22PN	5 mm ID *2	54	(53.5)	23.5	Hex.17	Hex.19	4.5
For Fuel Gas	S33PN	5 mm ID *2	57	(54.5)	25.5	Hex.17	Hex.19	4.5

Application Example

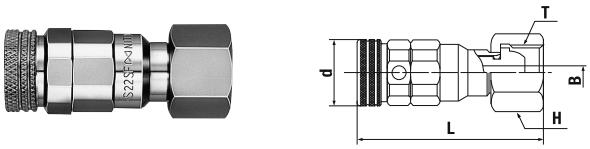
Welding and cutting torches

Socket SH type (Hose barb)



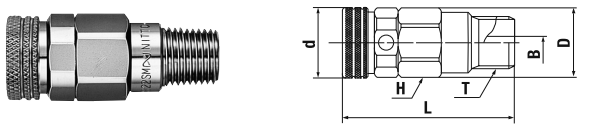
Usage	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				L	ød	øD	A	øJ	øB
For Oxygen	S22SH	1/4", 5/16"	50	(64.5)	(19.5)	20	30	9.5	4.5
For Oxygen	S225SH	5 mm ID	54	(62.5)	(19.5)	20	21	6.2	3.1
For Fuel Gas	S33SH	5/16", 3/8"	73	(68)	(22)	22	30	11	6
For Fuel Gas	S335SH	5 mm ID	65	(63)	(22)	22	21	6.2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



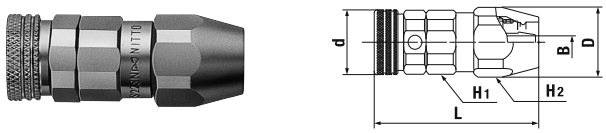
Usage	Model	Application (Thread)	Mass (g)	Dimensions (mm)				
				L	ød	T	H(WAF)	øB
For Oxygen	S22SF	For oxygen torch side	74	(52.5)	(19.5)	M16×1.5	Hex.19	4.5
For Fuel Gas	S33SF	For fuel gas torch side	97	(57.5)	(22)	M16×1.5 left-hand thread	Hex.19	6
For Oxygen	S23SF-BS *1	For oxygen torch side	82	(55.5)	(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 (Thread)	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

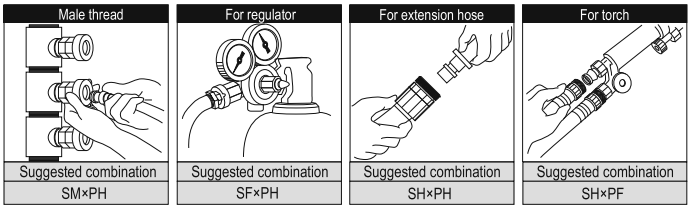
Socket SN type (Nut type for small diameter hose)



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×ø11.2 mm, ø5 mm×ø11.5 mm and ø5 mm×ø11.8 mm.

Select the combination in accordance with your own application.



For Low Pressure

MOLD CUPLA

General purpose and mold coolant port coupling

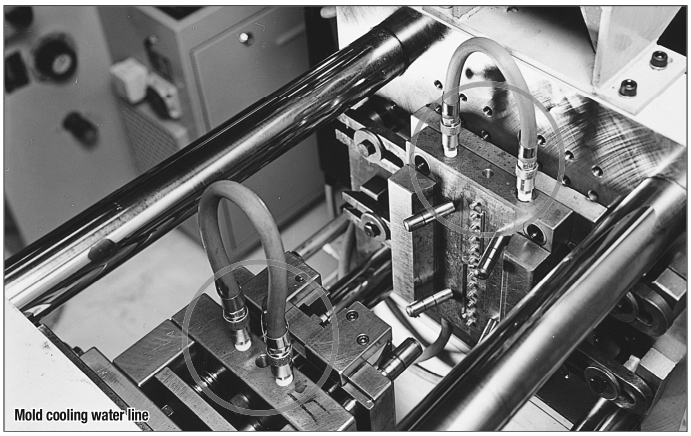
Working pressure: 1.0 MPa {10 kgf/cm²}

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

Applicable fluids: Water, Heated oil

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 CUPLA, 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 mm×ø15 mm			
Pressure unit		MPa	kgf/cm²	bar	PSI
Working pressure		1.0	10	10	145
Seal material Working temperature range *1		Seal material	Mark	Working temperature range	Remarks
		Nitrile rubber	NBR	-20˚C to +80˚C	Standard material
		Fluoro rubber	FKM	-20˚C to +180˚C	Available on request

- Maximum working pressure and working temperature range of CUPLA for braided hoses depend upon the specifications of braided hoses to be used.

*1: The operable temperature range depends on the operating conditions.

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

Interchangeability

Sockets and plugs can be connected regardless of end configurations and sizes. K-0 series are not interchangeable with high flow type K3 and K4 series. Can be connected with SUPER CUPLA.

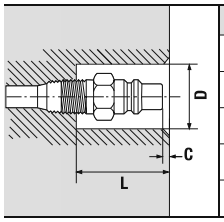
Minimum Cross-Sectional Area — (mm²)

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

Suitability for Vacuum

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

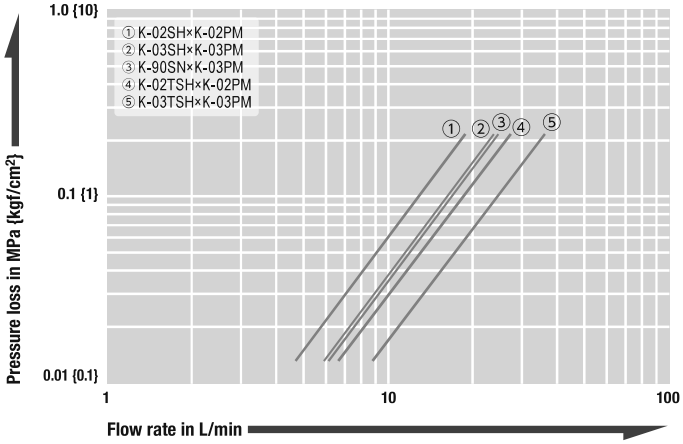
Plug Embedment Dimensions — (mm)



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

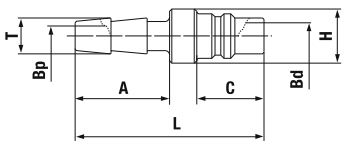
[Test conditions] - Fluid : Water - Temperature : 23˚C±5˚C



Models and Dimensions

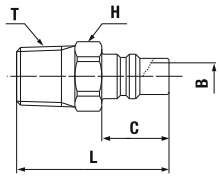
WAF : WAF stands for width across flats.

Plug PH type (Hose barb)



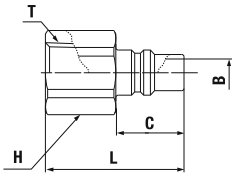
Model	Application (Hose)	Mass (g)	Dimensions (mm)						
			L	A	C	øH	øT	øBp	øBd
K-02PH	1/4"	17	42	21	15	12	8	4.5	6
K-03PH	3/8"	19	42	21	15	15	12	7	6

Plug PM type (Male thread)



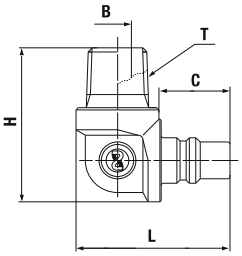
Model	Application (Thread)	Mass (g)	Dimensions (mm)				
			L	H(WAF)	C	T	øB
K-01PM	Rc 1/8	14	31	Hex.12	15	R 1/8	5.5
K-02PM	Rc 1/4	20	34	Hex.14	15	R 1/4	6
K-03PM	Rc 3/8	35	35	Hex.17	15	R 3/8	6

Plug PF type (Female thread)



Model	Application (Thread)	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

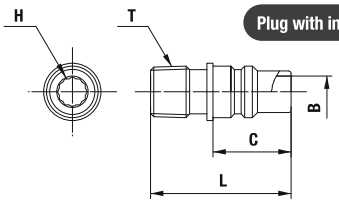
Plug PML type (Male thread)



Model	Application (Thread)	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

Plug PM-HH type (Male thread)

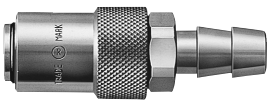
Plug with internal hexagon socket for Allen wrench

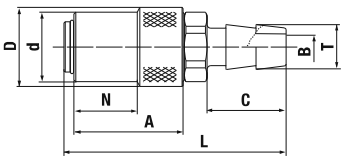


• The photo shows model K-01PM-HH.

Model	Application (Thread)	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

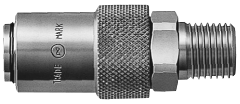
Socket SH type (Hose barb)

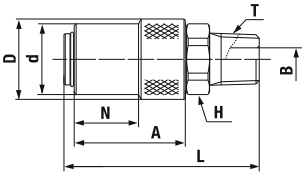




Model	Application (Hose)	Mass (g)	Dimensions (mm)							
			L	øD	ød	N	A	C	øT	øB
K-02SH	1/4	52	(67)	(21)	18.5	16.8	29	29	8	5
K-02TSH *1	1/4	52	(67)	(21)	18.5	16.8	29	29	8	5
K-03SH	3/8	60	(59)	(21)	18.5	16.8	29	21	12	7
K-03TSH *1	3/8	60	(59)	(21)	18.5	16.8	29	21	12	7

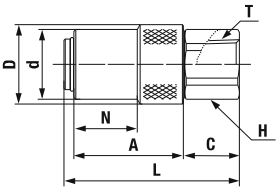
Socket SM type (Male thread)





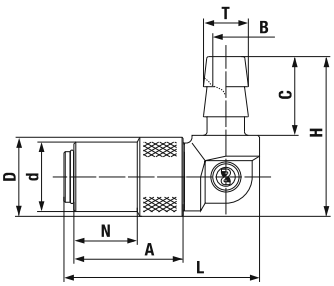
Model	Application (Thread)	Mass (g)	Dimensions (mm)							
			L	øD	ød	N	A	H(WAF)	T	øB
K-02SM	Rc 1/4	70	(51)	(21)	18.5	16.8	29	Hex.17	R 1/4	6
K-02TSM *1	Rc 1/4	70	(51)	(21)	18.5	16.8	29	Hex.17	R 1/4	6
K-03SM	Rc 3/8	82	(52)	(21)	18.5	16.8	29	Hex.19	R 3/8	6
K-03TSM *1	Rc 3/8	82	(52)	(21)	18.5	16.8	29	Hex.19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

Socket SF type (Female thread)



Model	Application (Thread)	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
K-02TSF *1	R 1/4	57	(46.5)	(21)	18.5	16.8	29	14.5	Rc 1/4	Hex.17

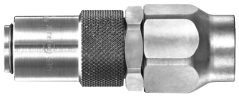
Socket SHL type (Hose barb)

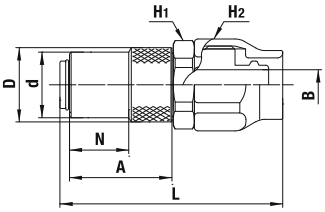


Model	Application (Hose)	Mass (g)	Dimensions (mm)								
			L	øD	ød	N	A	C	øT	H	øB
K-02SHL	1/4	79	(52)	(21)	18.5	16.8	29	21	8	(42.5)	4.5
K-03SHL	3/8	87	(52)	(21)	18.5	16.8	29	21	12	(42.5)	7
K-03TSHL *1	3/8	87	(52)	(21)	18.5	16.8	29	21	12	(42.5)	7

*1: 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 sockets with sleeve stopper (Made-to-order item).

Socket SN type (For braided hose connection)





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

* Braided hoses for SN type should be made of soft PVC and woven by reinforcement thread.

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

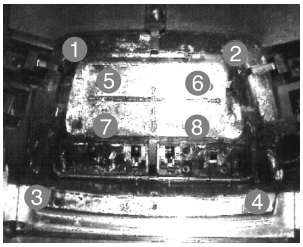
Applicable fluids: Water / Heated oil

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 K-01, K-02 and K-03 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.**

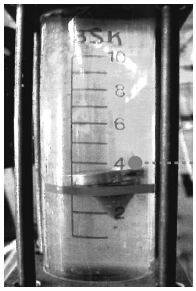
Results of reduced cooling time in the field

A customer replaced conventional K-0 series MOLD CUPLA 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.



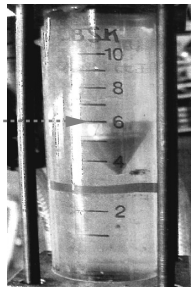
Flow comparison

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 CUPLA 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			
Pressure unit		MPa	kgf/cm²	bar	PSI
Working pressure		1.0	10	10	145
Seal material Working temperature range *1		Seal material	Mark	Working temperature range	Remarks
		Nitrile rubber	NBR	-20˚C to +80˚C	Standard material
		Fluoro rubber	FKM	-20˚C to +180˚C	Available on request

*1: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque — Nm {kgf•cm}

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

Flow Direction

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

Interchangeability

K3 series sockets and plugs can be connected regardless of end configuration and sizes.
K4 series sockets and plugs can be connected regardless of end configuration and sizes.
K3 series and K4 series are not interchangeable with each other.
Also not interchangeable with other K-0 series.

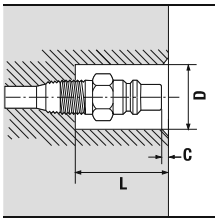
Minimum Cross-Sectional Area — (mm²)

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.

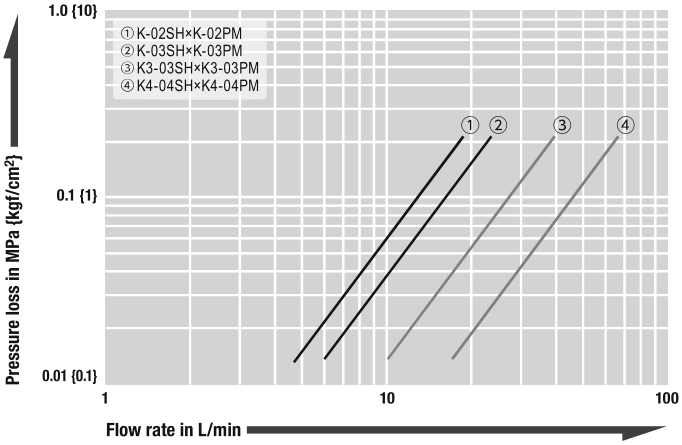
Plug Embedment Dimensions — (mm)



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)

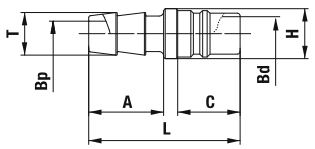
[Test conditions] - Fluid : Water - Temperature : 23˚C±5˚C



Models and Dimensions

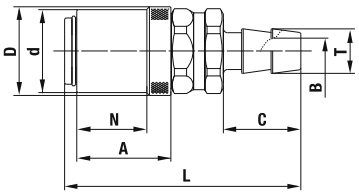
WAF : WAF stands for width across flats.

Plug PH type (Hose barb / High flow type)



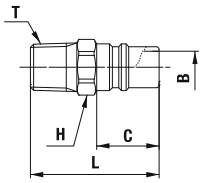
Model	Application (Hose)	Mass (g)	Dimensions (mm)						
			L	A	C	øH	øT	øBp	øBd
K3-03PH	3/8"	19	42.5	21	17.5	14	12	7	9.5

Socket SH type (Hose barb / High flow type)



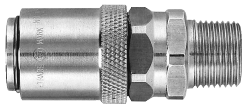
Model	Application (Hose)	Mass (g)	Dimensions (mm)							
			L	øD	ød	N	A	C	øT	øB
K3-03SH	3/8"	100	(65)	(24)	22.5	19	25.5	21	12	7
K3-04SH	1/2"	102	(67)	(24)	22.5	19	25.5	23	15	10
K4-04SH	1/2"	226	(82)	(32)	30	26.5	34	23	15	10

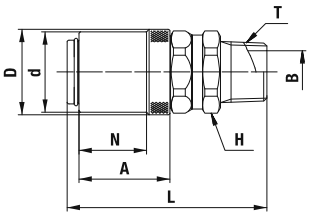
Plug PM type (Male thread / High flow type)



Model	Application (Thread)	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

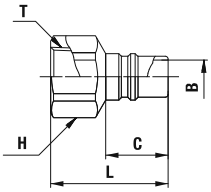
Socket SM type (Male thread / High flow type)

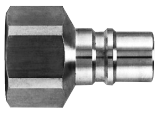




Model	Application (Thread)	Mass (g)	Dimensions (mm)							
			L	øD	ød	N	A	H(WAF)	T	øB
K3-03SM	Rc 3/8	90	(56)	(24)	22.5	19	25.5	Hex.21	R 3/8	12

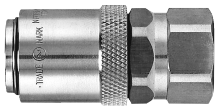
Plug PF type (Female thread / High flow type)

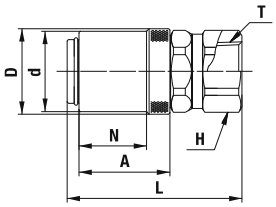




Model	Application (Thread)	Mass (g)	Dimensions (mm)				
			L	H(WAF)	C	T	øB
K3-03PF	R 3/8	30	33	Hex.21	17.5	Rc 3/8	9.5

Socket SF type (Female thread / High flow type)





Model	Application (Thread)	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 CUPLA with sleeve stopper (Made-to-order item).

For Low Pressure

FLOW METER

Flow meter with special valve for mold cooling line

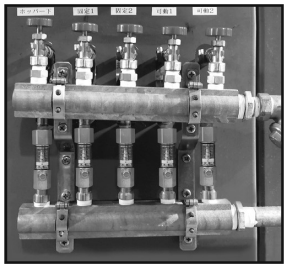
Working pressure: 0.5 MPa {5 kgf/cm²}

Applicable fluids: Water

For stable and accurate coolant flow rate.

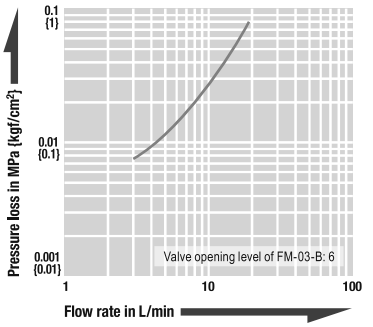
- Graduated scale enables easy visual check of coolant flow rate regardless of operator.
- Built-in flow rate adjustment valve enables desired setting of mold conditions for each machine.
- Easy resumption of previously set molding conditions to cut lead times.
- T2 side is equipped with rotary function. Even after fixing the body on T1 side to the piping, additional screw tightening on T2 side is possible.

Application



Pressure - Flow Characteristics

[Test conditions] - Fluid : Water - Temperature : 23˚C±5˚C



Specifications

Body material	Body: Brass Graduated tube: Polycarbonate			
Size (Thread)	Both ends Rc 3/8 female thread			
Pressure unit	MPa	kgf/cm²	bar	PSI
Working pressure	0.5	5	5	72.5
Maximum flow rate	18 L/min (5 to 18 L/min adjustable)			
Seal material	Seal material	Mark	Working temperature range	Remarks
Working temperature range *1	Nitrile rubber	NBR	+10˚C to +60˚C	Standard material

*1: The operable temperature range depends on the operating conditions.

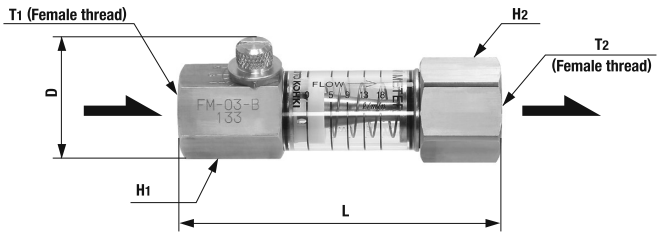
Maximum Tightening Torque

Nm {kgf·cm}

Torque	11 {112}

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

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 CUPLA 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.

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 (MIL-C-27487).**
- **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 (Aluminum alloy, Copper alloy, and Stainless steel) *Plastic body*

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	Mark	Working temperature range
Seal material Working temperature range	Nitrile rubber	NBR	-20˚C to +80˚C
Optional seal material Working temperature range *1	Silicone rubber	SI	-40˚C to +150˚C
	Fluoro rubber	FKM	-20˚C to +180˚C
	Ethylene-propylene rubber	EPDM	-40˚C to +150˚C
	FEP-covered silicone rubber *2	—	+5˚C to +50˚C
	FEP-covered fluoro rubber *2	—	+5˚C to +50˚C

*1: The operable temperature range depends on the operating conditions.
*2: 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 *1	MPa	0.5	0.2
	kgf/cm²	5	2
	bar	5	2
	PSI	72.5	29

	Seal material	Mark	Working temperature range
Seal material Working temperature range	Nitrile rubber	NBR	+5˚C to +50˚C
Optional seal material Working temperature range *2	Silicone rubber	SI	+5˚C to +50˚C
	Fluoro rubber	FKM	+5˚C to +50˚C
	Ethylene-propylene rubber	EPDM	+5˚C to +50˚C

*1: Pressure at 20˚C. Pressure reduces as temperature rises.
*2: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque — Nm {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 flow can be bi-directional when socket and plug are connected.

Interchangeability

Sockets and plugs can be connected regardless of end configurations if the size is same.
Can be connected with products whose mating part dimensions are in compliance with MIL-A-A-59326.

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

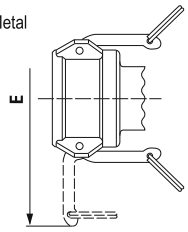
Socket only	Plug only	When connected
—	—	Operational

Suitability for Vacuum (Plastic Body)

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

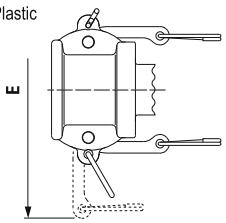
Dimensions with Lever Fully Opened

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

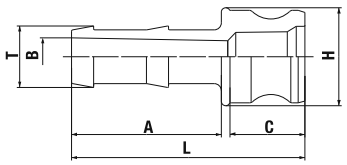


Size	Dimensions E (mm)
3/4"	(115)
1"	(126)
1 1/2"	(187)
2"	(195)
3"	(249)

Models and Dimensions

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

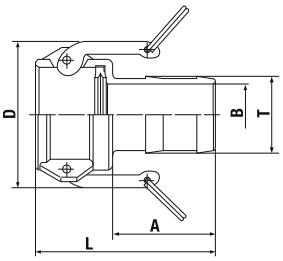
Plug LE type (Hose barb)



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	49.4	97	79	68
	LE-32TPH	4"	850	176	106	51.8	133	105	93
Copper alloy	LE-6TPH	3/4"	215	90.5	52.5	26	39	21.5	12.5
	LE-8TPH	1"	305	107	60	34.5	41	27.5	20
	LE-10TPH	1 1/4"	440	102	58	40	48	34.1	25.5
	LE-12TPH	1 1/2"	560	107	61	42	58	40.5	31.5
	LE-16TPH	2"	865	131	73	44	70.5	53.5	44.5
	LE-20TPH	2 1/2"	1180	149	84	48	91	67	57
	LE-24TPH	3"	1800	171	104	50	102	79	70
	LE-32TPH	4"	3500	176	109	52	129	105	93
Stainless steel	LE-6TPH	3/4"	170	90	52	27	35	21	15
	LE-8TPH	1"	265	107	60	35	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	42.7	83	67	56
	LE-24TPH	3"	1755	162	99.5	49.2	102	78	68
	LE-32TPH	4"	2595	174	109	50	130	105	94

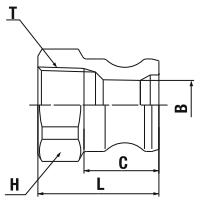
Socket LC type (Hose barb)

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)
	LC-10TSH	1 1/4"	320	104	58	(82)	34.1	(23)
	LC-12TSH	1 1/2"	350	108.5	61	(90)	40.5	(29)
	LC-16TSH	2"	430	122.5	70	(100)	53.2	(41.5)
	LC-20TSH	2 1/2"	560	136.5	80	(112)	66.7	(54)
	LC-24TSH	3"	915	175	100	(139)	79	68
	LC-32TSH	4"	1190	180	104	(165)	104	93
Copper alloy	LC-6TSH	3/4"	320	85	52	(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	25.5
	LC-12TSH	1 1/2"	720	110	62	(91)	41	33
	LC-16TSH	2"	870	121	70	(100)	53	44
	LC-20TSH	2 1/2"	1530	137	83	(113)	67	57
	LC-24TSH	3"	1795	160	105	(139)	79	68
	LC-32TSH	4"	3100	163	107	(168)	104	92
Stainless steel	LC-6TSH	3/4"	230	86	52	(55)	21	15
	LC-8TSH	1"	340	99	60	(63)	27	20
	LC-10TSH	1 1/4"	615	107	61	(85)	34	25.5
	LC-12TSH	1 1/2"	645	108	61	(91)	40	33
	LC-16TSH	2"	1000	129	73	(101)	53	44
	LC-20TSH	2 1/2"	1270	134	81	(113)	67	57
	LC-24TSH	3"	2065	158	100	(139)	79	67
	LC-32TSH	4"	3020	165	107	(167)	105	94

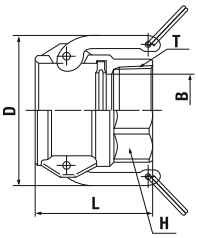
Plug LA type (Female thread)



Material	Model	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	Oct..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.

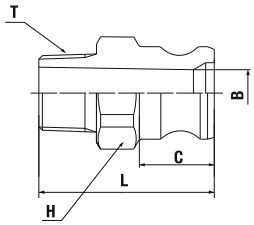


Material	Model	Application (Thread)	Mass (g)	Dimensions (mm) Oct. stands for octagon. Dod.stands for dodecagon.				
				L	D	H(WAF)	øB	T
Aluminum alloy	LD-6TSF	3/4"	130	53	(62.4)	Hex.36	21	Rc 3/4
	LD-8TSF	1"	190	64.5	(61)	Hex.41	26	Rc 1
	LD-10TSF	1 1/4"	330	72.5	(82)	Hex.50	34	Rc 1 1/4
	LD-12TSF	1 1/2"	360	70.5	(90)	Oct.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)	Oct.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

Models and Dimensions

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

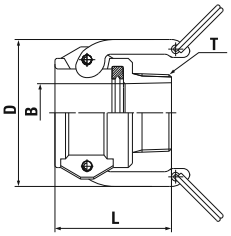
Plug LF type (Male thread)



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"	680	90	46.5	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

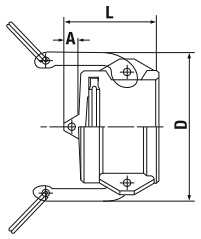
Socket LB type (Male thread)

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



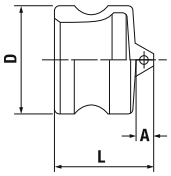
Material	Model	Application (Thread)	Mass (g)	Dimensions (mm)			
				L	D	øB	T
Aluminum alloy	LB-6TSM	3/4"	110	53	(60.5)	(17)	R 3/4
	LB-8TSM	1"	170	65	(61)	(235)	R 1
	LB-10TSM	1 1/4"	310	72	(82)	29.5	R 1 1/4
	LB-12TSM	1 1/2"	340	71.5	(90)	36	R 1 1/2
	LB-16TSM	2"	400	79.5	(100)	(46)	R 2
	LB-20TSM	2 1/2"	530	88.5	(112)	(57.5)	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)

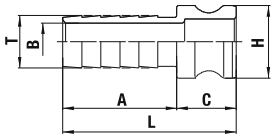


Material	Model	Size	Mass (g)	Dimensions (mm)		
				L	A	øD
Aluminum alloy	L-6SD	3/4"	35	32	8	32
	L-8SD	1"	45	44	10	36.7
	L-10SD	1 1/4"	70	57	14	45.5
	L-12SD	1 1/2"	90	54	15	53.4
	L-16SD	2"	140	62	13	63
	L-20SD	2 1/2"	210	69	20	75.8
	L-24SD	3"	290	71	15	91.5
	L-32SD	4"	960	74	16	119.4
Copper alloy	L-6SD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

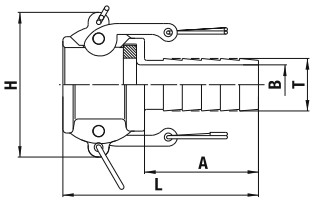
Designs and specifications are subject to change for improvement without notice. / **WAF** : WAF stands for width across flats.

Plug LE type (Hose barb)



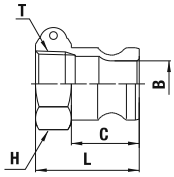
Material	Model	Application (Hose)	Mass (g)	Dimensions (mm)					
				L	A	C	øH	øT	øB
Plastic	LE-6TPH	3/4"	16	74.5	51.5	(23)	(32)	20.7	14.2
	LE-8TPH	1"	29	87.5	57.5	(30)	(36.5)	26.3	19
	LE-12TPH	1 1/2"	73	103	61.5	(41.5)	(53.5)	40	30
	LE-16TPH	2"	122	119	71	(48)	(63)	52.5	41
	LE-24TPH	3"	221	151.5	106.5	(45)	(91.5)	77	64.5

Socket LC type (Hose barb)



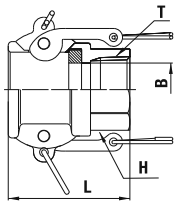
Material	Model	Application (Hose)	Mass (g)	Dimensions (mm)				
				L	A	H	øT	øB
Plastic	LC-6TSH	3/4"	64	83	52	(63.5)	20.2	14
	LC-8TSH	1"	104	97.5	56.5	(73)	26.2	20
	LC-12TSH	1 1/2"	242	109.5	58	(95)	39	29.5
	LC-16TSH	2"	269	125	70.5	(105.5)	52.5	41
	LC-24TSH	3"	527	161	102	(136.5)	77	64.5

Plug LA type (Female thread)



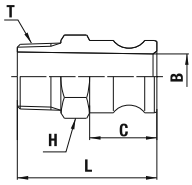
Material	Model	Application (Thread)	Mass (g)	Dimensions (mm)				
				L	C	H(WAF)	øB	T
Plastic	LA-6TPF	3/4"	19	42	(26)	Hex.34	21.3	Rc 3/4
	LA-8TPF	1"	27	59	(34)	Hex.43	22	Rc 1
	LA-12TPF	1 1/2"	65	67	(42)	Ribbed 65	34	Rc 1 1/2
	LA-16TPF	2"	102	73	(47.5)	Ribbed 78	42	Rc 2
	LA-24TPF	3"	211	90	(52.5)	Ribbed 108	71	Rc 3

Socket LD type (Female thread)



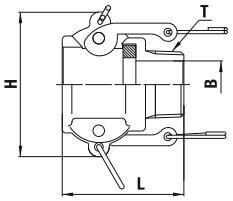
Material	Model	Application (Thread)	Mass (g)	Dimensions (mm)			
				L	H(WAF)	øB	T
Plastic	LD-6TSF	3/4"	65	49	Hex.32	21.5	Rc 3/4
	LD-8TSF	1"	98	61	Hex.41	27	Rc 1
	LD-12TSF	1 1/2"	260	77.5	Ribbed 68	39	Rc 1 1/2
	LD-16TSF	2"	285	83	Ribbed 80	51	Rc 2
	LD-24TSF	3"	444	90.5	Ribbed 109	77.5	Rc 3

Plug LF type (Male thread)



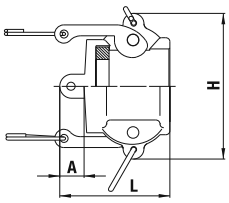
Material	Model	Application (Thread)	Mass (g)	Dimensions (mm)				
				L	C	H(WAF)	øB	T
Plastic	LF-6TPM	3/4"	23	60	(26)	Hex.32	19	R 3/4
	LF-8TPM	1"	19	71	(34)	Hex.37	23	R 1
	LF-12TPM	1 1/2"	72	77	(42)	Ribbed 63	32	R 1 1/2
	LF-16TPM	2"	105	84.5	(48)	Ribbed 74	44.5	R 2
	LF-24TPM	3"	210	102.5	(51.5)	Ribbed 100	72	R 3

Socket LB type (Male thread)



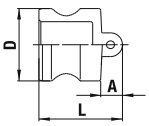
Material	Model	Application (Thread)	Mass (g)	Dimensions (mm)			
				L	H	øB	T
Plastic	LB-6TSM	3/4"	58	49.5	(63.5)	19	R 3/4
	LB-8TSM	1"	88	61	(73)	23.5	R 1
	LB-12TSM	1 1/2"	227	77.5	(95)	37	R 1 1/2
	LB-16TSM	2"	251	82.5	(105.5)	48	R 2
	LB-24TSM	3"	397	88	(136.5)	75	R 3

Plug L-PD type (Plug cap)



Material	Model	Size	Mass (g)	Dimensions (mm)		
				L	A	H
Plastic	L-6PD	3/4"	60	45	12	(63.5)
	L-8PD	1"	94	55.5	12	(73)
	L-12PD	1 1/2"	214	65	15	(95)
	L-16PD	2"	219	70.5	16	(106)
	L-24PD	3"	408	77	17.5	(136)

Socket L-SD type (Socket cap)



Material	Model	Size	Mass (g)	Dimensions (mm)		
				L	A	øD
Plastic	L-6SD	3/4"	10	35.5	12	(32.1)
	L-8SD	1"	18	42.5	11	(36.5)
	L-12SD	1 1/2"	46	53.5	14	(53.2)
	L-16SD	2"	68	63	16	(63)
	L-24SD	3"	102	71	17.5	(109)

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.

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.

Specifications

Body material		Brass				Stainless steel (SUS304), 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 *1 Working temperature range *2	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR	-20˚C to +80˚C	Standard material
	Fluoro rubber	FKM	-20˚C to +180˚C	
	Ethylene-propylene rubber	EPDM	-40˚C to +150˚C	

- SUS316 is available as option.
- Maximum working pressure and working temperature range of TSP CUPLA for braided hoses depend upon the specifications of braided hoses to be used.

*1: Seal material available for braided hoses is nitrile rubber only.
*1: Seal material available for steel body is nitrile rubber only.
*2: The operable temperature range depends on the operating conditions.

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

Interchangeability

Sockets and plugs can be connected regardless of end configurations if the first number(s) of the model is the same.

Minimum 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)

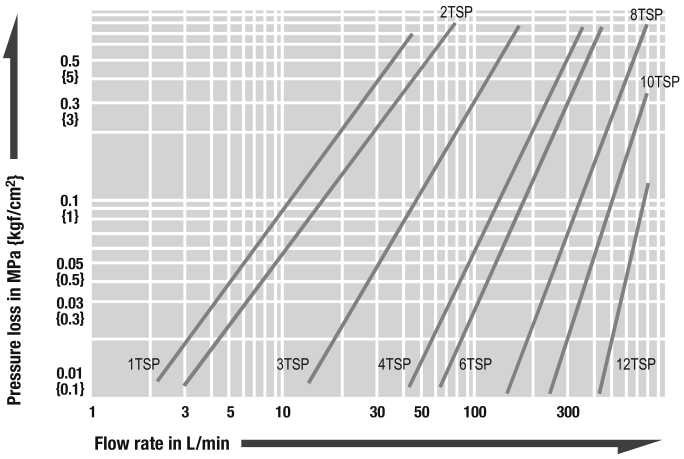
Model / End configurations	2TSN-60 2TPN-60	3TSN-90 3TPN-90	4TSN-120 4TPN-120	4TSN-150 4TPN-150	6TSN-190 6TPN-190	8TSN-250 8TPN-250
N type (For braided hose connection)	23.7 (ø5.5)	56.7 (ø8.5)	95.0 (ø11)	132 (ø13)	226 (ø17)	415 (ø23)

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

Socket only	Plug only	When connected
—	—	Operational

Flow Rate – Pressure Loss Characteristics

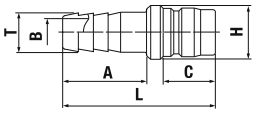
[Test conditions] -Fluid : Hydraulic oil -Temperature : 30˚C±10˚C
-Fluid viscosity : 32×10^{-6} m²/s -Density : 0.87×10^{3} kg/m³



Models and Dimensions

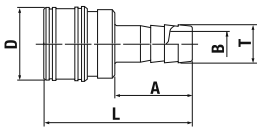
WAF : WAF stands for width across flats.

Plug TPH type (Hose barb)



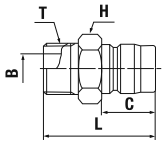
Model	Application (Hose)	Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	L	øH	A	C	øT	øB
1TPH	1/8"	12 *1	13	12	41	12	20	15.5	6.5	3
2TPH	1/4"	21	23	21	53	14	29	18	8	5
3TPH	3/8"	38	41	38	60	18	32	21	11	7
4TPH	1/2"	71	77	71	70	22	39	24	15	10
6TPH	3/4"	134	146	135	84	28	48	28	21	15
8TPH	1"	327	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"	1330	1430	1345	142	70	80	51	54	40

Socket TSH type (Hose barb)



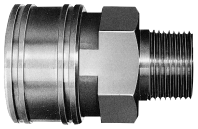
Model	Application (Hose)	Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	L	øD	A	øT	øB
1TSH	1/8"	24 *1	26	24	40	17.5	20	6.5	3
2TSH	1/4"	63	69	64	55	24	29	8	5
3TSH	3/8"	95	104	96	62	28	32	11	7
4TSH	1/2"	176	192	177	74	35	39	15	10
6TSH	3/4"	348	379	350	90	45	48	21	15
8TSH	1"	570	605	570	102	58	57	27	19
10TSH	1 1/4"	840	910	850	117	69	70	34.5	26
12TSH	1 1/2"	1060	1140	1070	128	75	75	41	32
16TSH	2"	2095	2251	2100	141	98	80	54	40

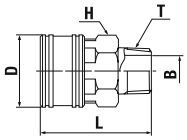
Plug TPM type (Male thread)



Model	Application (Thread)	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	1240	1345	1250	102	75×ø80	51	R 2	50

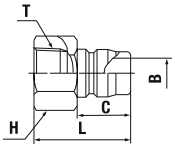
Socket TSM type (Male thread)

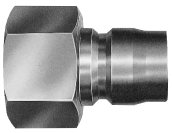




Model	Application (Thread)	Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	L	øD	H(WAF)	T	øB
1TSM	Rc 1/8	25 *1	27	26	30	17.5	Hex.14	R 1/8	4.5
2TSM	Rc 1/4	66	72	67	42	24	Hex.19	R 1/4	6.5
3TSM	Rc 3/8	99	108	100	46	28	Hex.23	R 3/8	10
4TSM	Rc 1/2	178	194	179	56	35	Hex.29	R 1/2	13
6TSM	Rc 3/4	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×ø64	R 1 1/4	32
12TSM	Rc 1 1/2	1180	1275	1190	95	75	58×ø70	R 1 1/2	38
16TSM	Rc 2	2040	2190	2060	108	98	77×ø82	R 2	49

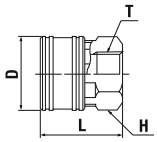
Plug TPF type (Female thread)





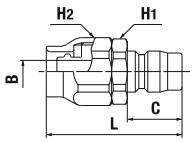
Model	Application (Thread)	Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	L	H(WAF)	C	T	øB
1TPF	R 1/8	14 *1	15	14	26	Hex.14	15.5	Rc 1/8	4.5
2TPF	R 1/4	28	31	29	34	Hex.17	18	Rc 1/4	6.5
3TPF	R 3/8	43	47	43	38	Hex.21	21	Rc 3/8	10
4TPF	R 1/2	103	113	104	45	Hex.29	24	Rc 1/2	13
6TPF	R 3/4	166	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	1226	1374	1190	83	77×ø82	51	Rc 2	50

Socket TSF type (Female thread)



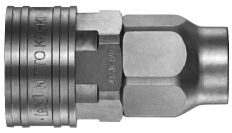
Model	Application (Thread)	Mass (g)			Dimensions (mm)			
		Steel	Brass	Stainless steel	L	øD	H(WAF)	T
1TSF	R 1/8	25 *1	27	25	27	17.5	Hex.14	Rc 1/8
2TSF	R 1/4	57	62	57	32	24	Hex.19	Rc 1/4
3TSF	R 3/8	83	90	83	35	28	Hex.23	Rc 3/8
4TSF	R 1/2	153	167	154	42	35	Hex.29	Rc 1/2
6TSF	R 3/4	288	314	289	48	45	Hex.38	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×ø64	Rc 1 1/4
12TSF	R 1 1/2	1003	1064	1005	71	75	58×ø70	Rc 1 1/2
16TSF	R 2	1765	1880	1770	80	98	77×ø82	Rc 2

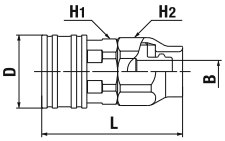
Plug TPN type (For braided hose connection)



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×ø11	2.5±0.25	60	55	(47)	Hex.19	Hex.19	18	5.5
3TPN-90	ø9×ø15	3±0.3	93	87	(52)	Hex.23	Hex.24	21	8.5
4TPN-120	ø12×ø18		140	130	(60)	Hex.27	Hex.27	24	11
4TPN-150	ø15×ø22	3.5±0.35	182	170	(68)	Hex.30	Hex.30	24	13
6TPN-190	ø19×ø26		261	245	(76)	Hex.35	Hex.35	28	17
8TPN-250	ø25×ø33	4±0.4	461	427	(96)	Hex.41	Hex.41	36	23

Socket TSN type (For braided hose connection)





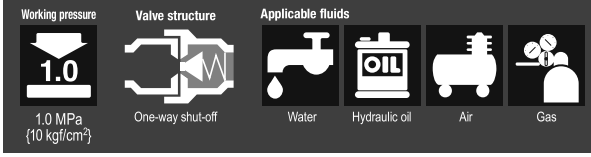
Model	Application (Hose) *5		Mass (g)		Dimensions (mm)				
	Size (mm)	Hose wall thickness (mm)	Brass	Stainless steel	L	øD	H1(WAF)	H2(WAF)	øB
2TSN-60	ø6×ø11	2.5±0.25	91	84	(49)	24	Hex.19	Hex.19	5.5
3TSN-90	ø9×ø15	3±0.3	139	129	(54)	28	Hex.23	Hex.24	8.5
4TSN-120	ø12×ø18		222	206	(62)	35	Hex.29	Hex.27	11
4TSN-150	ø15×ø22	3.5±0.35	255	237	(70)	35	Hex.30	Hex.30	13
6TSN-190	ø19×ø26		435	408	(81)	45	Hex.38	Hex.35	17
8TSN-250	ø25×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×ø60 *3 : Stainless steel: 54×ø59 *4 : Stainless steel: 58×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.

For Low Pressure

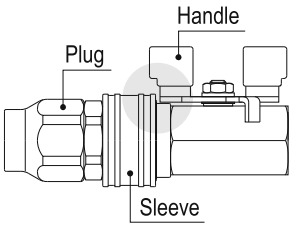
TSP CUPLA
Socket with Ball Valve

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.**
- **High viscosity fluids such as grease can be applied.**



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

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				
Pressure unit	MPa	kgf/cm²	bar	PSI	
Working pressure	1.0	10	10	145	
Seal material Working temperature range *1		Seal material	Mark	Working temperature range	
	CUPLA Part	Fluoro rubber	FKM	-5˚C to +120˚C	
	Ball Valve Part	Fluoropolymer resin	–		

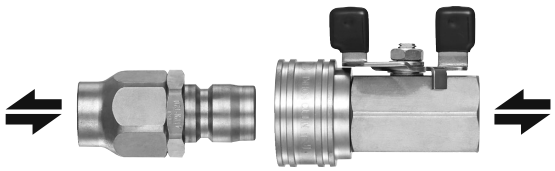
*1: The operable temperature range depends on the operating conditions.

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



Interchangeability

TSP CUPLA plugs of the same size can be connected regardless of end configurations.

Minimum 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

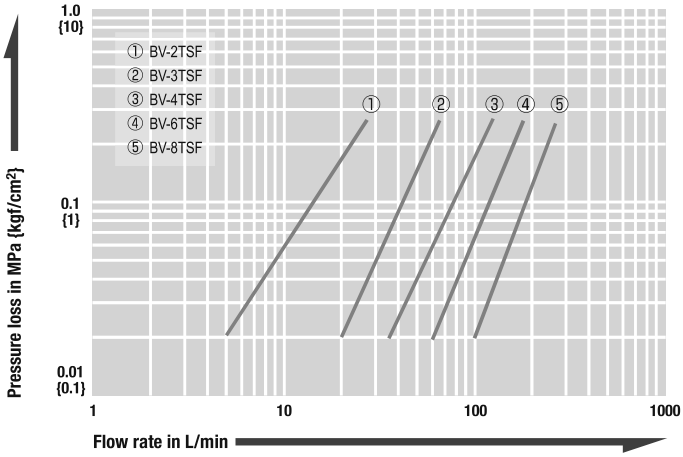
• Value of BV type only. The minimum cross-sectional area may vary depending upon the end configuration of the plug.

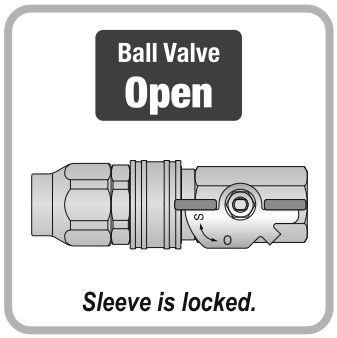
Suitability for Vacuum

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 : 32×10^{-6} m²/s - Density : 0.87×10^{3} kg/m³





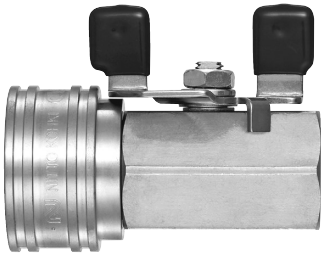
Sleeve is locked.

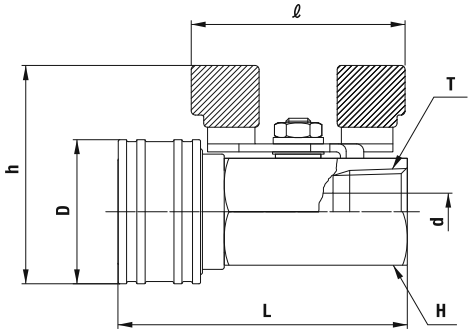
Sleeve is free.

Models and Dimensions

WAF : WAF stands for width across flats.

Socket BV-TSF type (Female thread)



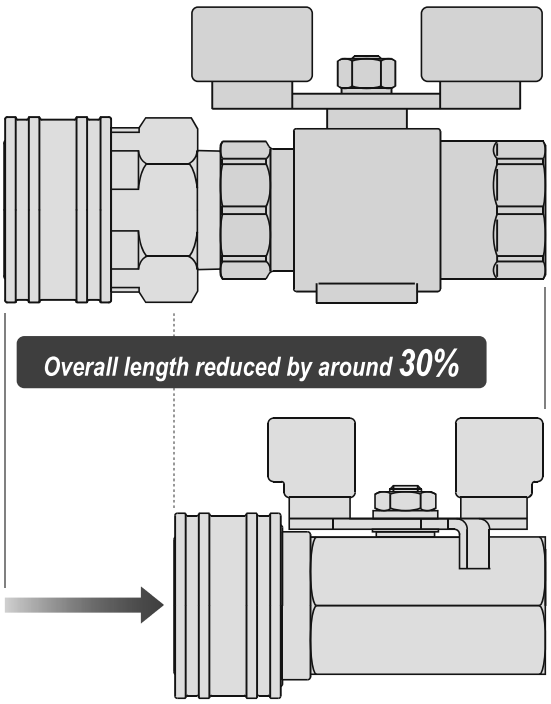


Model	Application (Thread)	Mass (g)	Dimensions (mm)						
			L	h	øD	H(WAF)	T	ød	ℓ
BV-2TSF	R 1/4	104	(52.3)	(43)	24	Hex.17	Rc 1/4	5	(38.5)
BV-3TSF	R 3/8	163	(60.5)	(47.5)	28	Hex.21	Rc 3/8	7.5	(44)
BV-4TSF	R 1/2	270	(70.3)	(53)	35	Hex.26	Rc 1/2	9	(52)
BV-6TSF	R 3/4	491	(82.8)	(66.1)	45	Hex.32	Rc 3/4	12.5	(60.5)
BV-8TSF	R 1	904	(102.3)	(76.6)	58	Hex.41	Rc 1	16	(76)

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%.

Accessory

CUPLA ADAPTER for Braided Hose Connection

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

See page 166 for the details.

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.

For medium pressure applications, with automatic shut-off valves in both socket and plug. Various body materials, sizes and end configurations. Plugs with male thread end are also available.

- **Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection.**
- **Available in various standard body materials, sizes and end configurations to cope with diversified applications and operating situations.**

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).

Specifications

Body material		Brass				Stainless steel (SUS304), 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 *1 Working temperature range *2	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR	-20˚C to +80˚C	Standard material
	Fluoro rubber	FKM	-20˚C to +180˚C	
	Ethylene-propylene rubber	EPDM	-40˚C to +150˚C	

*1: Plugs with male thread with nitrile rubber or ethylene-propylene rubber are made-to-order items.
*1: Seal material available for steel body is nitrile and fluoro rubber.
*2: The operable temperature range depends on the operating conditions.

Maximum 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 material.

Flow Direction

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

Interchangeability

Socket and plug of different sizes cannot be connected.
Interchangeable with conventional SP CUPLA in the same size.
*Can be connected with SP-V CUPLA but take heed of flow rate change.

Minimum 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 — 1.3×10^{-1} Pa {1×10^{-3} mmHg}

Socket only	Plug only	When connected
–	–	Operational

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

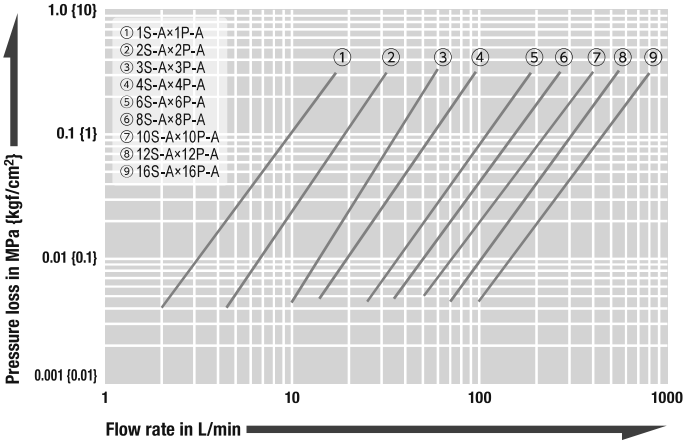
Model	1SP-A	2SP-A	3SP-A	4SP-A	6SP-A	8SP-A	10SP-A	12SP-A	16SP-A
Volume of air admixture	0.6	1.1	2.7	3.9	11	17	29	45	84

Volume of Spillage per Disconnection 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

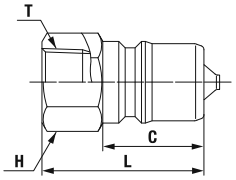
[Test conditions] - Fluid : Water - Temperature : 23˚C±5˚C



Models and Dimensions

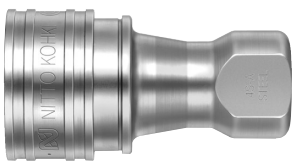
WAF : WAF stands for width across flats.

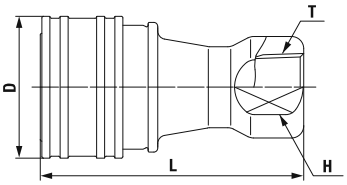
Plug Female thread



Model	Application (Thread)	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×ø84	Rc 2

Socket Female thread

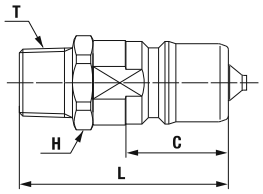




Model	Application (Thread)	Mass (g)			Dimensions (mm)			
		Steel	Brass	Stainless steel	L	øD	H(WAF)	T
1S-A	R 1/8	73 *1	79	75	48	24	14	Rc 1/8
2S-A	R 1/4	119	128	130	58	28	19	Rc 1/4
3S-A	R 3/8	187	202	193	65	35	21	Rc 3/8
4S-A	R 1/2	368	397	391	72	45	29	Rc 1/2
6S-A	R 3/4	639	686	645	88	55	35	Rc 3/4
8S-A	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 (Steel) and 1S-A (Steel) are made-to-order items. *2 Stainless steel: 54×ø59 *3 Stainless steel: 63×ø67

Plug Male thread



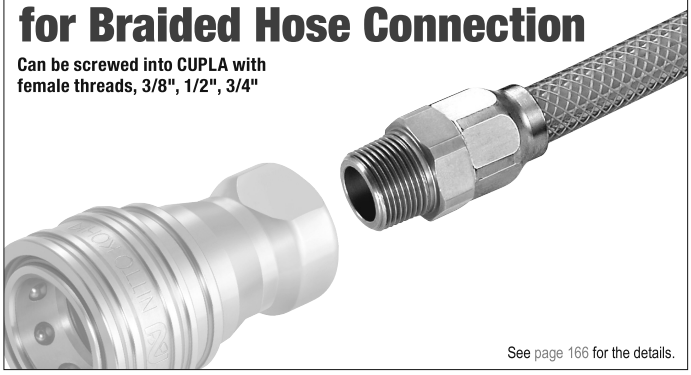
Model	Application (Thread)	Mass (g)	Dimensions (mm)			
		Brass	L	C	H(WAF)	T
1P-M-A	Rc 1/8	24	(40)	19	Hex.14	R 1/8
2P-M-A	Rc 1/4	41	(44)	22	Hex.17	R 1/4
3P-M-A	Rc 3/8	71	(51)	25	Hex.21	R 3/8
4P-M-A	Rc 1/2	149	(62)	28	Hex.27	R 1/2
6P-M-A	Rc 3/4	295	(75)	36	Hex.35	R 3/4
8P-M-A	Rc 1	406	(83)	40 *4	Hex.41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



See page 166 for the details.

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.

Attached to SP CUPLA Type A

See page 165 for the details.

Related product

For Medium Pressure / Connectable with residual pressure [With Purge Valve]

SP CUPLA TypeA PV Type

Made-to-order

SP CUPLA Type A equipped with residual pressure eliminating valve.

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

Purge Valve

The small purge valve is pressed and completes the connection by releasing the residual pressure.

See page 161 for the details.

For Medium Pressure

HOT WATER CUPLA

HW Type

For temperature control piping

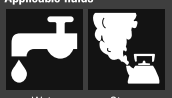
Working pressure

2.0 MPa
{20 kgf/cm²}

Valve structure

Two-way shut-off

Applicable fluids *



Water Steam

* This product is designed for use with water from -20˚C to +180˚C. When used with other fluids, check the suitability of the seal and body material.

The most suitable rubber for hot water adopted. Best suited for hot water applications such as plastic moldings.

- **The safety lock function prevents accidental disconnection caused by vibration or impact.**
- **Nickel plated on the liquid contact parts to improve corrosion resistance.**
- **The socket has double O-ring for improved seal.**

Specifications

Body material	Brass (Nickel plated)			
Size (Thread)	Plug : R 1/4, R 3/8, R 1/2 / Socket : Rc 1/4, Rc 3/8, Rc 1/2			
Pressure unit	**MPa**	**kgf/cm²**	**bar**	**PSI**
Working pressure	2.0	20	20	290
Seal material	**Seal material**	**Mark**	**Working temperature range**	**Remarks**
Working temperature range *1	Fluoro rubber	FKM	-20˚C to +180˚C	Standard material

*1: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque — Nm {kgf•cm}

Size (Thread)	**1/4"**	**3/8"**	**1/2"**
Torque	9 {92}	12 {122}	30 {306}

On installation or removal always use correct size spanner / wrench on the hexagon section of socket/plug body.

Flow Direction

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

Interchangeability

Socket and plug of different sizes cannot be connected.
SP CUPLA Type A and HW Type CUPLA of the same size can be connected regardless of end configurations.
However, SP CUPLA Type A has different seal material characteristics, so the product specification and durability will differ.
Conduct performance evaluation test under your actual operating environment and conditions within range of the working conditions of the product.

Minimum Cross-Sectional Area — (mm²)

Model	**HW-2S-F×HW-2P-M**	**HW-3S-F×HW-3P-M**	**HW-4S-F×HW-4P-M**
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 — May vary depending upon the usage conditions. (mL)

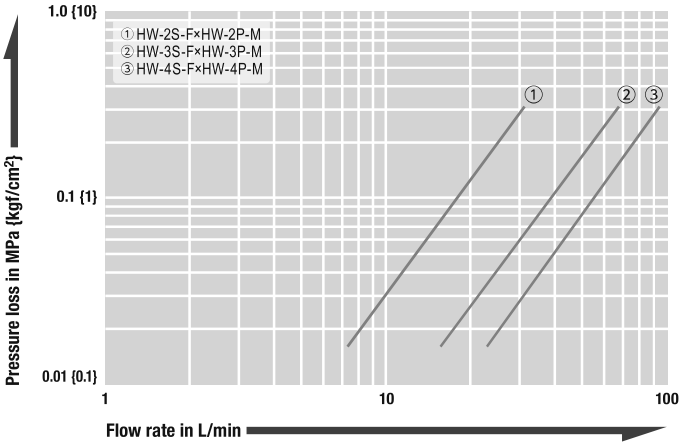
Model	**HW-2S-F×HW-2P-M**	**HW-3S-F×HW-3P-M**	**HW-4S-F×HW-4P-M**
Volume of air	1.2	2.7	3.9

Volume of Spillage per Disconnection — May vary depending upon the usage conditions. (mL)

Model	**HW-2S-F×HW-2P-M**	**HW-3S-F×HW-3P-M**	**HW-4S-F×HW-4P-M**
Volume of spillage	0.8	2.1	3.2

Flow Rate – Pressure Loss Characteristics

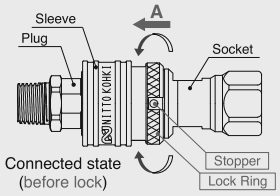
[Test conditions] - Fluid : Water - Temperature : 23˚C±5˚C



Safety lock function (Sleeve lock)

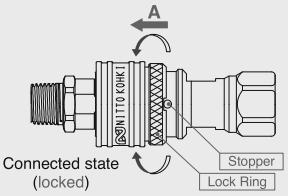
How to lock

Slide the Lock Ring in the direction of the **arrow A** and rotate it simultaneously.
When the Stopper is aligned with the shallower cutout on the Lock Ring, it will be in an inseparable state.



How to unlock

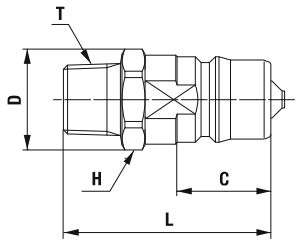
Slide the Lock Ring in the direction of the **arrow A** and rotate it simultaneously.
When the Stopper is aligned with the deeper cutout on the Lock Ring, it will be in a separable state.



Models and Dimensions

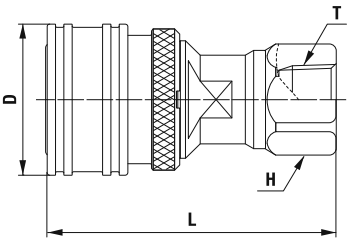
WAF : WAF stands for width across flats.

Plug — Male thread



Model	Application (Thread)	Mass (g)	Dimensions (mm)				
			L	C	øD	H (WAF)	T
HW-2P-M	Rc 1/4	41	(44)	22	18.5	Hex.17	R 1/4
HW-3P-M	Rc 3/8	71	(51)	25	23	Hex.21	R 3/8
HW-4P-M	Rc 1/2	149	(62)	28	30	Hex.27	R 1/2

Socket — Female thread



Model	Application (Thread)	Mass (g)	Dimensions (mm)			
			L	øD	H (WAF)	T
HW-2S-F	R 1/4	150	(66)	28	Hex.19	Rc 1/4
HW-3S-F	R 3/8	247	(74)	35	Hex.24	Rc 3/8
HW-4S-F	R 1/2	480	(87)	45	Hex.30	Rc 1/2

Approximate time for Valve / O-ring replacement

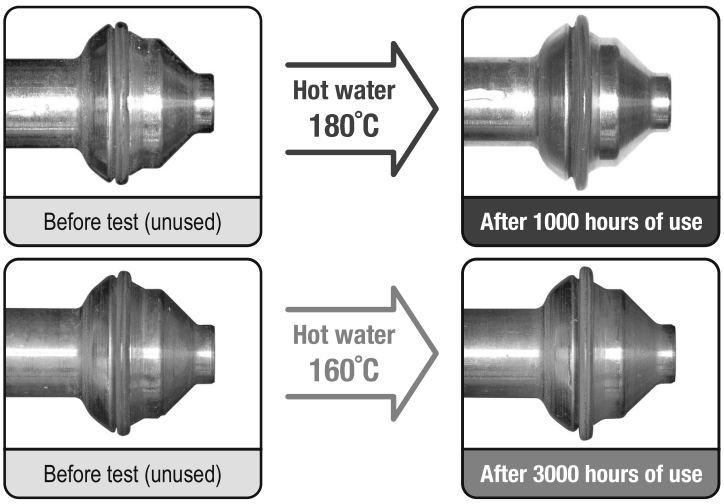
*Test results by us

Test conditions • Testing device: Mold temperature controlling machine • Fluid: Clean water • Test temperature: 160˚C, 180˚C • Test condition: Continuous test with CUPLA connected

Valve

when 180˚C — Please replace the whole CUPLA in approximately 1000 hours.
The valve cannot be replaced.

when 160˚C — Please replace the whole CUPLA in approximately 3000 hours.
The valve cannot be replaced.

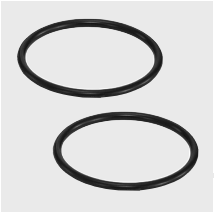


The packing starts to swell

O-ring

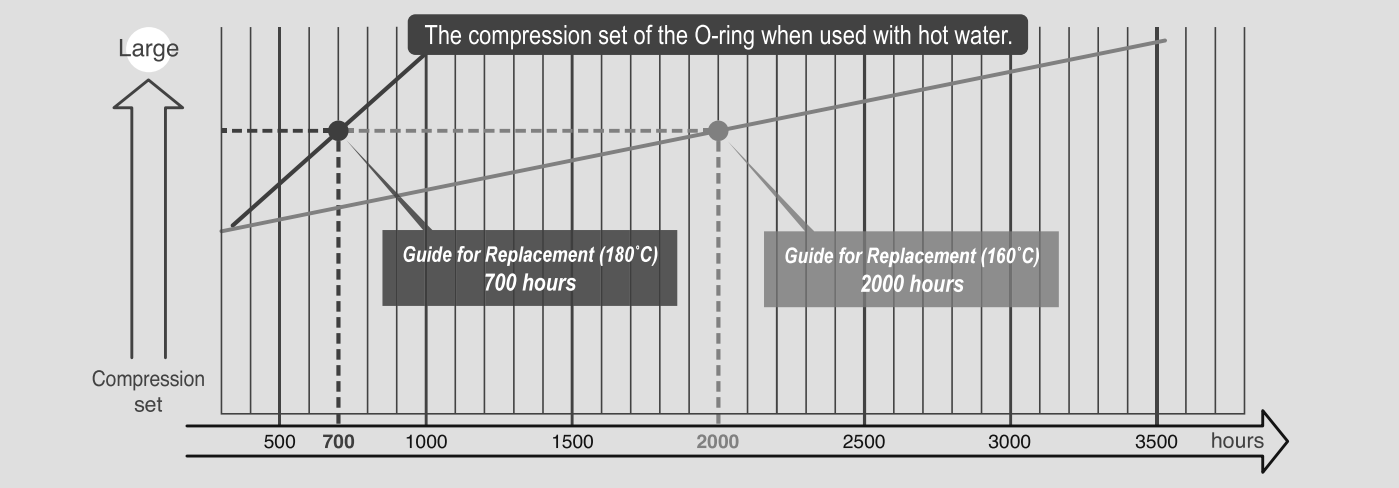
when 180˚C — Please replace the O-rings of the Socket in approximately 700 hours.
Please replace the two O-rings at once.

when 160˚C — Please replace the O-rings of the Socket in approximately 2000 hours.
Please replace the two O-rings at once.



Accessory
O-ring (2 pieces/set)

Please apply grease at the replacement.



⚠Caution

***Hot water continuous flow test by a mold temperation controller**

Valve: For continuous use of 3000 hours at 160˚C / 1000 hours at 180˚C

O-ring: For continuous use of 2000 hours at 160˚C / 700 hours at 180˚C

- Air will be admixed at the time of connection. Please purge the air by the equipment side when using with hot water.
- If additives are mixed in water or the piping is filled with steam, the lifetime of the seal will be decreased.
  When using in such an environment, conduct performance evaluation test by actual product.

Although we have confirmed that there is no leakage, it is our experimental value and not a guaranteed value. Please consider above hours just as a guide. The durability of the seal differs depending on the customers usage conditions. (Number of connection / disconnection, fluid additives, etc.)

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 (Spill Reduction)

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)	
Size (Thread)	1/4", 3/8", 1/2", 3/4", 1"			
Pressure unit	**MPa**	**kgf/cm²**	**bar**	**PSI**
Working pressure	3.5	36	36	508
Seal material Working temperature range *1	**Seal material**	**Mark**	**Working temperature range**	**Remarks**
	Nitrile rubber	NBR	-20˚C to +80˚C	Standard material
	Fluoro rubber	FKM	-20˚C to +180˚C	Standard material
	Ethylene-propylene rubber	EPDM	-40˚C to +150˚C	Standard material

*1: The operable temperature range depends on the operating conditions.

Maximum Tightening Torque — Nm {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 flow can be bi-directional when socket and plug are connected.

Interchangeability

Socket and plug of different sizes cannot be connected.

Minimum Cross-Sectional Area — (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 — 1.3×10^{-1} Pa {1×10^{-3} mmHg}

Socket only	Plug only	When connected
–	–	Operational

Admixture of Air on Connection — (mL)

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)

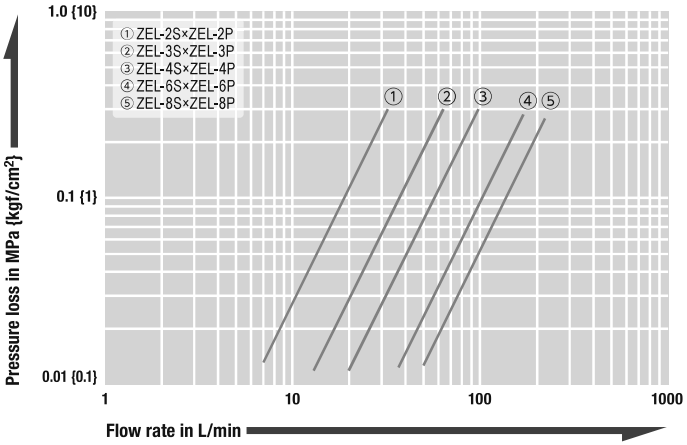
May vary depending upon the usage conditions.

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 CUPLA or the use of fluids with low viscosity may cause some spillage.

Flow Rate – Pressure Loss Characteristics

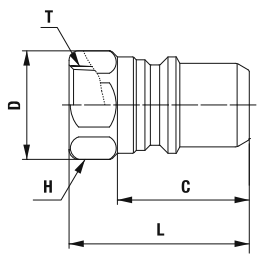
[Test conditions] - Fluid : Water - Temperature : 23˚C±5˚C

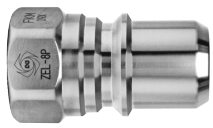


Models and Dimensions

WAF : WAF stands for width across flats.

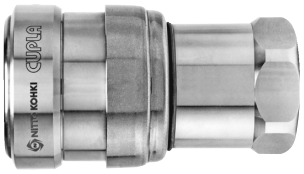
Plug Female thread

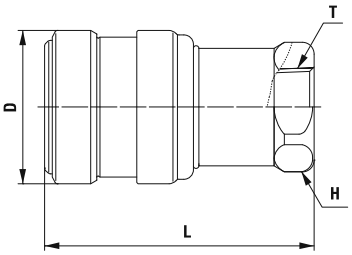




Model	Application (Thread)	Mass (g)		Dimensions (mm)				
		Brass	Stainless steel	L	C	øD	H (WAF)	T
ZEL-2P	R 1/4	34	32	39	26.1	19	Hex.17	Rc 1/4
ZEL-3P	R 3/8	67	63	44.5	32	25	Hex.23	Rc 3/8
ZEL-4P	R 1/2	117	109	52.5	36.8	32	Hex.29	Rc 1/2
ZEL-6P	R 3/4	264	248	68.5	48	39.5	Hex.36	Rc 3/4
ZEL-8P	R 1	359	339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

Socket Female thread





Model	Application (Thread)	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

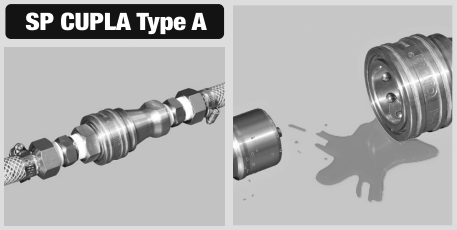
Unique seal design reduces both liquid spillage and air ingress

To compare with SP CUPLA Type A.

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

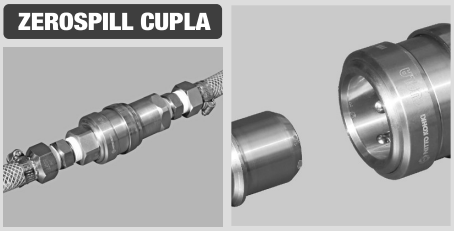
Volume of air ingress:
about 94% less vs SP CUPLA Type A

SP CUPLA Type A



Connected → Disconnected

ZEROSPILL CUPLA



Connected → Disconnected

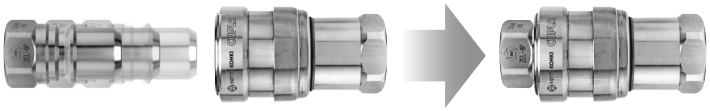
*blue colored water is used to show volume of spillage clearly.

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 CUPLA with female threads, 3/8", 1/2", 3/4"

See page 166 for the details.

For High Pressure

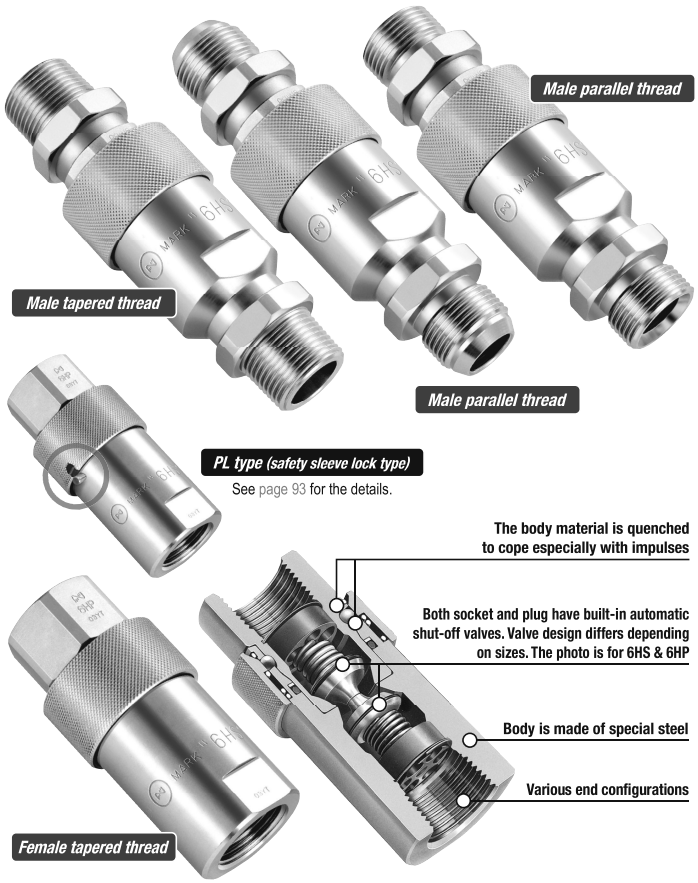
HSP CUPLA

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

Working pressure	Valve structure	Applicable fluid
14.0 to 20.6		OIL
14.0 to 20.6 MPa {14.0 to 210 kgf/cm²}	Two-way shut-off	Hydraulic oil

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

- **Quenched special steel body! Powerful impact resistance, especially against impulses.**
- **Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection.**
- **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 available. 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 CUPLA series 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 *1		**Seal material**	**Mark**	**Working temperature range**	**Remarks**
		Nitrile rubber	NBR	-20˚C to +80˚C	Standard material
		Fluoro rubber	FKM	-20˚C to +180˚C	Available on request

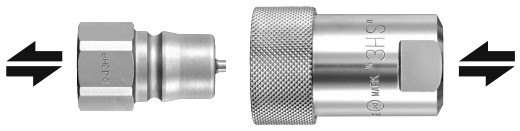
*1: The operable temperature range depends on the operating conditions.

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



Interchangeability

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

Minimum Cross-Sectional Area — (mm²)

Model	2HSP	3HSP	4HSP	6HSP	66HSP	8HSP	10HSP	12HSP	16HSP
Minimum cross- sectional area	21	37	77	77	145	203	595	595	1084

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

Socket only	Plug only	When connected
–	–	Operational

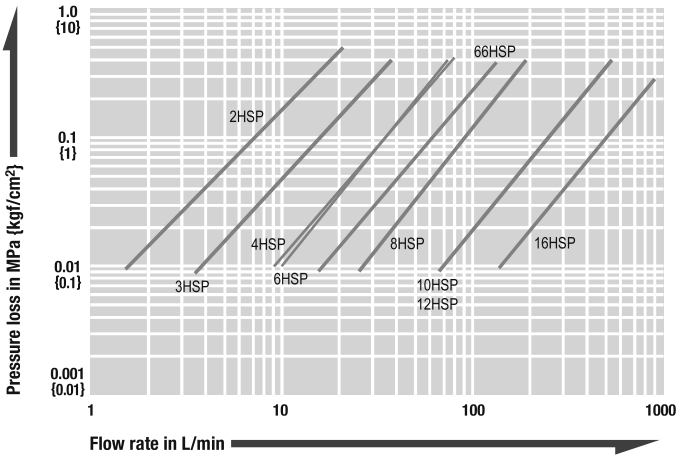
Admixture of Air on Connection — (mL)

May vary depending upon the usage conditions.

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 : 32×10^{-6} m²/s - Density : 0.87×10^{3} 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.

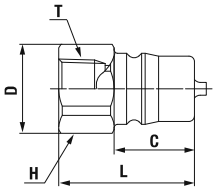
⚠ Precautions for use

There is no interchangeability between HSP CUPLA and 210 CUPLA, 280 CUPLA or 450B CUPLA. Do not connect to each other even if sizes are similar.

Models and Dimensions

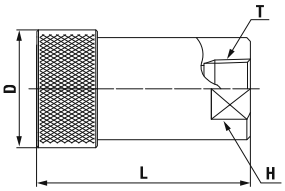
Product appearance may vary by size. / **WAF** : WAF stands for width across flats.

Plug HP type (Female tapered thread)



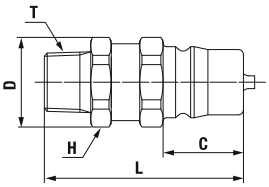
Model	Application (Thread)	Mass (g)	Dimensions (mm)				
			L	øD	C	H(WAF)	T
2HP	R 1/4	40	32	20.5	17.5	Hex.19	Rc 1/4
3HP	R 3/8	68	38	25	22.5	Hex.23	Rc 3/8
4HP	R 1/2	124	44	32	27.5	Hex.29	Rc 1/2
6HP	R 3/4	148	50	35	27.5	Hex.32	Rc 3/4
66HP	R 3/4	232	51	40	28	35	Rc 3/4
8HP	R 1	361	61	47	36	41	Rc 1
10HP	R 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	3307	115	100	83	90	Rc 2

Socket HS type (Female tapered thread)



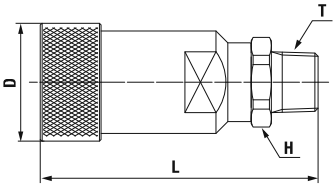
Model	Application (Thread)	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
2HS	R 1/4	134	49	(27.5)	19	Rc 1/4
3HS	R 3/8	226	60	(33)	23	Rc 3/8
4HS	R 1/2	485	(72)	(43)	35	Rc 1/2
6HS	R 3/4	460	(72)	(43)	35	Rc 3/4
66HS	R 3/4	569	78.5	(47)	35	Rc 3/4
8HS	R 1	1042	93	(58)	46	Rc 1
10HS	R 1 1/4	2586	138	87	58	Rc 1 1/4
12HS	R 1 1/2	2510	138	87	58	Rc 1 1/2
16HS	R 2	7286	198	123	80	Rc 2

Plug HP-R type (Male tapered thread)



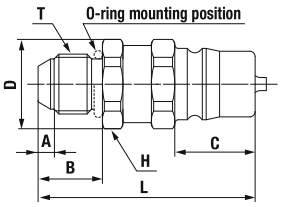
Model	Application (Thread)	Mass (g)	Dimensions (mm)				
			L	øD	C	H(WAF)	T
2HP-R	Rc 1/4	60	(49)	21	17.5	Hex.19	R 1/4
3HP-R	Rc 3/8	102	(55.5)	25	22.5	Hex.23	R 3/8
4HP-R	Rc 1/2	171	(63)	31	27.5	Hex.29	R 1/2
6HP-R	Rc 3/4	197	(66)	35	27.5	Hex.32	R 3/4

Socket HS-R type (Male tapered thread)



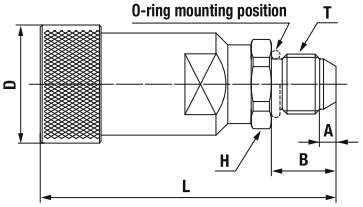
Model	Application (Thread)	Mass (g)	Dimensions (mm)			
			L	øD	H(WAF)	T
2HS-R	Rc 1/4	148	(66)	(27.5)	Hex.19	R 1/4
3HS-R	Rc 3/8	245	(77.5)	(33)	Hex.23	R 3/8
4HS-R	Rc 1/2	466	(90)	(43)	Hex.29	R 1/2
6HS-R	Rc 3/4	493	(93)	(43)	Hex.32	R 3/4

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



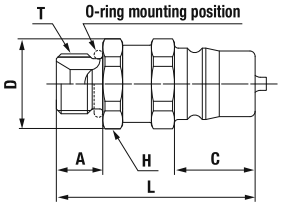
Model	Application* (Thread)	Mass (g)	O-ring size	Dimensions (mm)						
				L	øD	A	B	C	H(WAF)	T
2HP-GP	G 1/4	62	P-11	(52.5)	21	(4.5)	16	17.5	Hex.19	G 1/4B
3HP-GP	G 3/8	103	P-14	(60.5)	25	(4.5)	18	22.5	Hex.23	G 3/8B
4HP-GP	G 1/2	173	P-18	(66)	31	(5.5)	20	27.5	Hex.29	G 1/2B
6HP-GP	G 3/4	203	P-24	(69)	35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

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



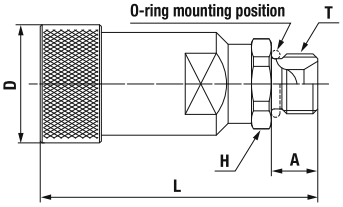
Model	Application* (Thread)	Mass (g)	O-ring size	Dimensions (mm)						
				L	øD	A	B	H(WAF)	T	
2HS-GP	G 1/4	149	P-11	(69.5)	(27.5)	(4.5)	16	Hex.19	G 1/4B	
3HS-GP	G 3/8	246	P-14	(82.5)	(33)	(4.5)	18	Hex.23	G 3/8B	
4HS-GP	G 1/2	476	P-18	(93)	(43)	(5.5)	20	Hex.29	G 1/2B	
6HS-GP	G 3/4	498	P-24	(96)	(43)	(5.5)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

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



Model	Application* (Thread)	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)



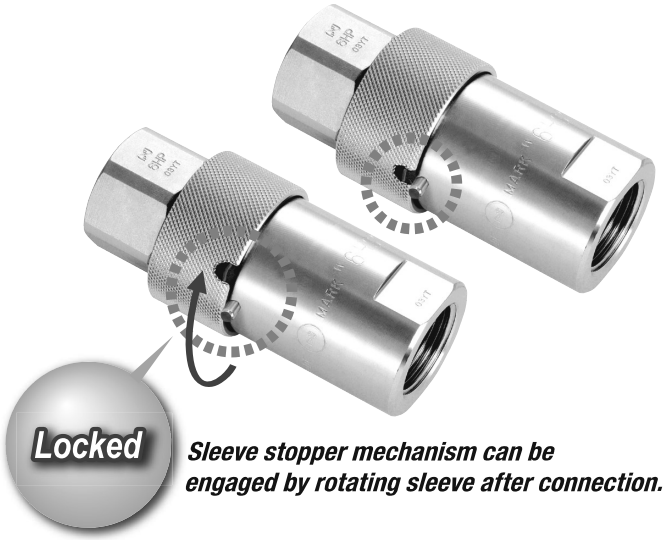
Model	Application* (Thread)	Mass (g)	O-ring size	Dimensions (mm)				
				L	øD	A	H(WAF)	T
2HS-GS	G 1/4	146	P-11	(65)	(27.5)	11.5	Hex.19	G 1/4B
3HS-GS	G 3/8	242	P-14	(77.5)	(33)	13	Hex.23	G 3/8B
4HS-GS	G 1/2	469	P-18	(87.5)	(43)	14.5	Hex.29	G 1/2B
6HS-GS	G 3/4	485	P-24	(90)	(43)	16.5	Hex.32	G 3/4B

*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).

Sleeve Stopper Mechanism

HSP CUPLA PL Type

Easy to operate sleeve stopper mechanism enhances operator safety.



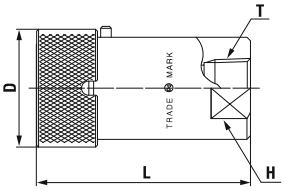
Sleeve stopper mechanism can be engaged by rotating sleeve after connection.

Models and Dimensions

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

Socket HS-PL type (Female tapered thread)

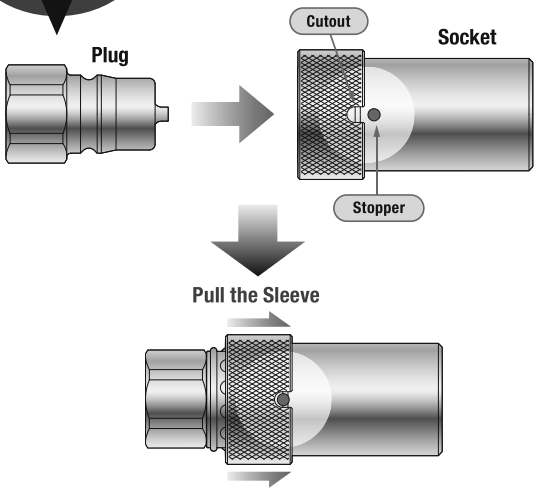
With sleeve lock mechanism



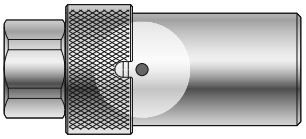
Model	Application (Thread)	Mass (g)	Dimensions (mm)			
			L	øD	H (WAF)	T
2HS-PL	R 1/4	134	49	(27.5)	19	Rc 1/4
3HS-PL	R 3/8	226	60	(33)	23	Rc 3/8
4HS-PL	R 1/2	485	(72)	(43)	35	Rc 1/2
6HS-PL	R 3/4	460	(72)	(43)	35	Rc 3/4
8HS-PL	R 1	1042	93	(58)	46	Rc 1

At connection

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

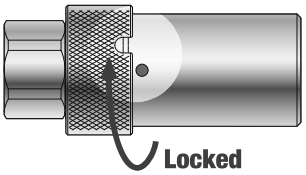


Locking the sleeve



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

Accidental disconnection is prevented.



Align the cutout in the sleeve with the stopper, and pull the sleeve to disconnect.

The stopper is marked with blue for visual understanding.

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