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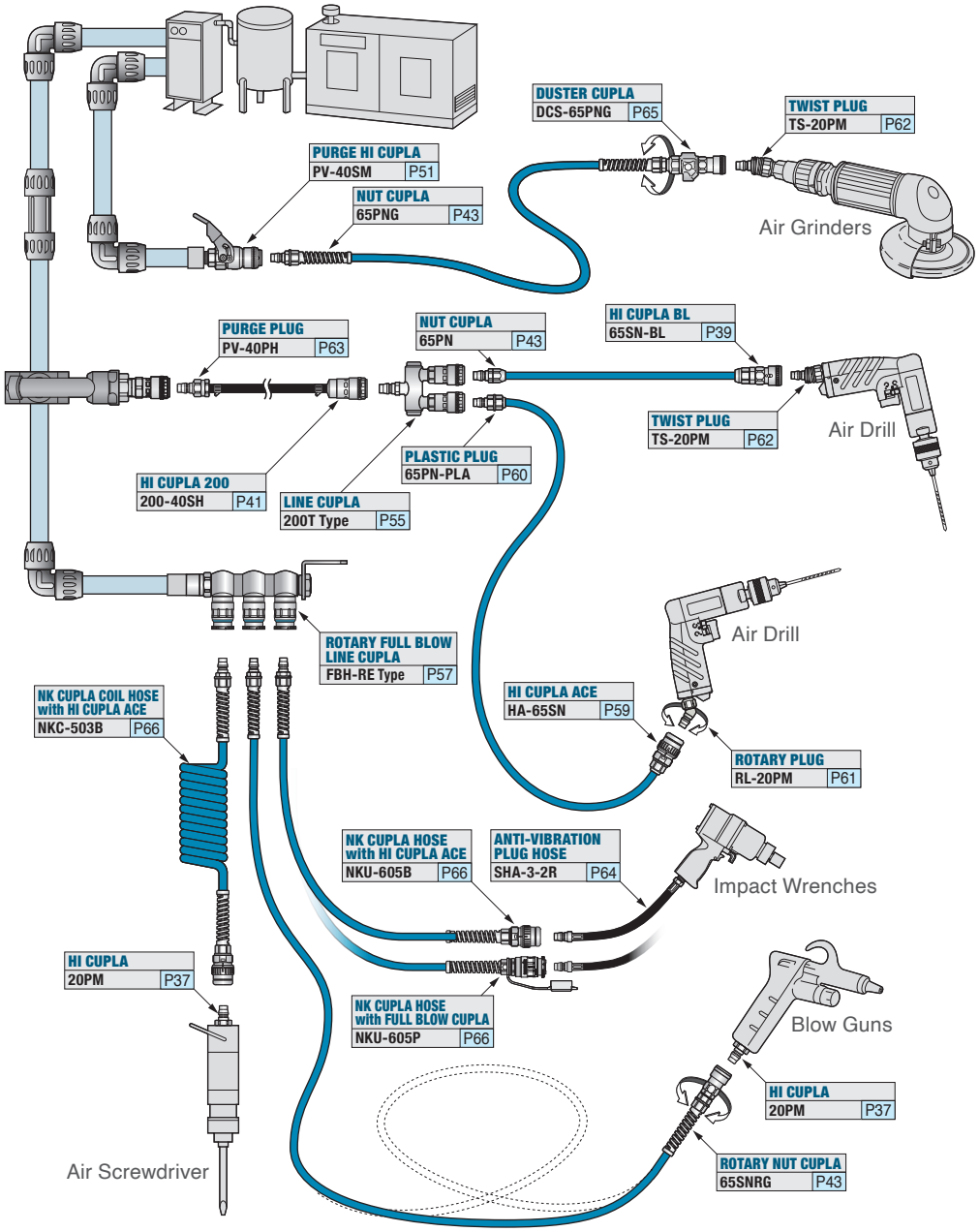
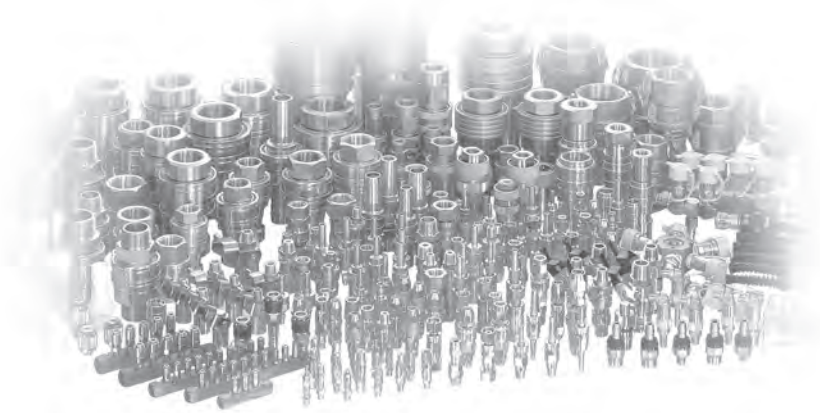
Examples of air line connections using HI CUPLA group models

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.





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.

Hose barb		Female thread	
Male thread		Nut	

You can search “CUPLA” at our web site. (www.nitto-kohki.co.jp/e/) Please take a visit.
The product pictures are just examples and their shape may differ depending on the material and size of the body.
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

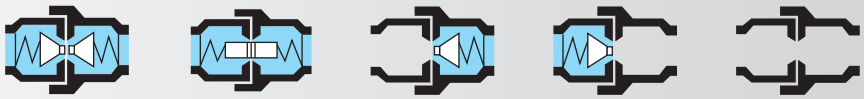
Quick reference symbols:

(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 | 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 182 for body material selection table.

Size

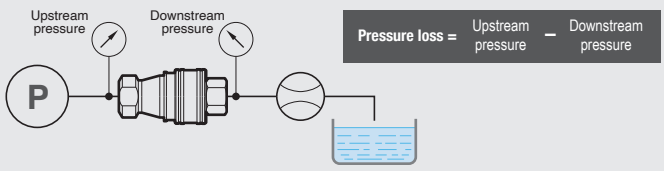
This indicates the nominal size of the pipe thread connection or of the hose to be used.

Working Pressure

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

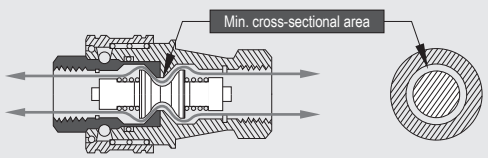
Pressure Loss

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

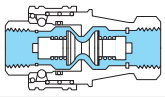
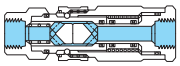
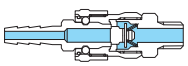
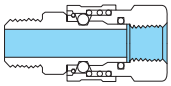
Seal material		Working Temperature Range	Features
Common name	Nitto Kohki symbol		
Nitrile rubber	NBR	-20˚C to +80˚C	Standard seal with excellent oil resistance.
Hydrogenated nitrile rubber	HNBR	-20˚C to +120˚C	Compared with the standard nitrile rubber, the seal material is more heat and weather resistant.
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 +200˚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						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					○			
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CUBE CUPLA
Select from All five colors
See page 31 to 34 for details.

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 Type
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								
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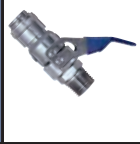
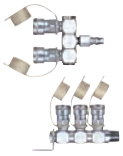
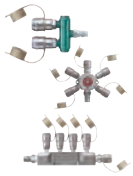
Guide for Selecting “NITTO KOHKI” Standard CUPLA

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	ROTARY LINE CUPLA	LINE CUPLA 200T/200L/200S	ROTARY FULL BLOW LINE CUPLA	HI CUPLA ACE	ROTARY PLUG	TWIST PLUG
Photo								
Body material • Working pressure (MPa)	Brass	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	—	—	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 +80˚C (NBR)	−20˚C to +60˚C (NBR)
Seal material		NBR	NBR	NBR	NBR	NBR	NBR	NBR
Connection method	Manual		○					
	Push-to-connect	○		○	○	○		
Valve structure	Two-way shut-off							
	Two-way shut-off (Spill Reduction)							
	One-way shut-off	○	○	○	○	○		
	Straight through							
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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 FULL BLOW CUPLA	NK CUPLA COIL HOSE with HI CUPLA ACE	MINI CUPLA
Photo									
Body material • Working pressure (MPa)	Brass								0.7
	Stainless steel								
	Steel	1.0							
	Plastic								
	Others		1.5	1.0	1.0	1.0	0.7	0.7	
Body surface treatment		Chrome plated	—	Chrome plated	Chrome plated (Plug only)	Chrome plated (Plug only)	Chrome plated (Plug only)	Chrome plated (Plug 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 +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)	−5°C to +60°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								
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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 Oxygen and Fuel Gas	For Low Pressure (Water/Liquid)						
Name		MINI CUPLA SUPER	MICRO CUPLA	SMALL CUPLA	COMPACT ZEROSPILL CUPLA	COMPACT CUPLA	CUBE CUPLA	HI CUPLA	HI CUPLA ACE
Photo							Choose from 5 colors 		
Body material • Working pressure (MPa)	Brass	0.7	1.0	1.0		1.0		1.0	
	Stainless steel		1.0		1.0	1.0		1.5	
	Steel	0.7							
	Plastic						1.0		1.0, 1.5
	Others								
Body surface treatment		Chrome plated	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)	−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)
Seal material		NBR	NBR, FKM	NBR	EPDM	FKM, EPDM	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		69	21	25	27	29	31	37	59

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/Liquid)			For Medium Pressure / For Low Pressure				
Name		MOLD CUPLA	MOLD CUPLA High Flow Type	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	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			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 +80°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, FKM	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		71	73	75	79	81	83	85	87

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.

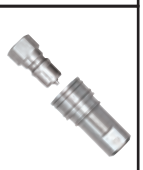
Applicable fluid		For High Pressure							
Name		HSP CUPLA	HYPER HSP CUPLA	210 CUPLA	HSU CUPLA	S210 CUPLA	280 CUPLA	350 CUPLA	FLATFACE CUPLA F35
Photo									
Body material • Working pressure (MPa)	Brass								
	Stainless steel				21.0	20.6			
	Steel	20.6, 18.0, 14.0	20.6	20.6			31.5, 27.5	34.5	35
	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		89	93	95	97	99	101	103	105

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		FLATFACE 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									
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		107	109	110	111	113	117	121	122

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									
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		124	126	129	129	131	133	137	141

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 Food
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	HYGIENIC CUPLA Easy Wash Type
Photo									
Body material • Working pressure (MPa)	Brass						5.0, 3.0	4.5	
	Stainless steel	0.2	0.2				7.5, 4.5		1.0
	Steel								
	Plastic			0.2	0.2	0.2			
	Others								
Body surface treatment		Electropolished	Electropolished	—	—	—	—	—	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 +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 +110°C (SI)
Seal material		P (O-ring for socket)	P, PTFE (Packing seal for socket)	FEP-coated FKM (O-ring for socket)	P (O-ring for socket)	FEP-coated FKM (O-ring for socket)	CR, FKM, HNBR	CR, FKM, HNBR	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		142	143	144	145	146	147	149	151

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) P153

Accidental disconnection prevention mechanism

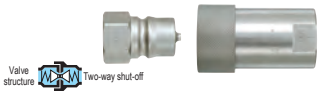
CUPLA with Safety Lock (SL) P153

Accidental disconnection prevention mechanism

For High Pressure

HSP-DC CUPLA P154

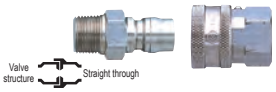
For hydraulic pressure up to 20.6 MPa {210 kgf/cm²}



Working pressure : 20.6 MPa {210 kgf/cm²}
Body material : Special steel (Nickel plated)
Application : 1/4" to 1"
Seal material : NBR

TSP-HP CUPLA (for High Pressure) P158

High pressure and general-purpose type



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

For Temperature Controllers

HI FLOW CUPLA P155

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

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

HI FLOW CUPLA BI Type P156

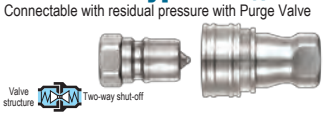
HI FLOW CUPLA with ferrule flange mount
Applicable fluid: Water, Heat transfer fluids

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

For Medium Pressure

SP CUPLA Type A PV Type P157

Connectable with residual pressure with Purge Valve



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 P158

Valveless type for low pressure air piping

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

When placing your order

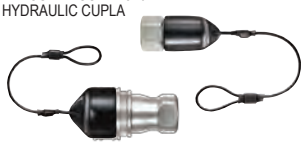
Please select your appropriate combination from the column in each product page (on the right beside the product name) then decide the seal and body materials from the selection tables listed at the end of the catalog.

Accessories

Accessories

DIP MOLD DUST CAP P159

DUST CAPS for HI CUPLA, SP CUPLA Type A, TSP CUPLA, ZEROSPILL CUPLA and HYDRAULIC CUPLA



SAFETY CAP P159

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

Semi-standard

DUST CAP P160

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

For FULL BLOW CUPLA

For HI CUPLA Sries

DUST CAP P160

Dedicated polyethylene cap for HYGIENIC CUPLA

SLEEVE COVER P160

Plastic cover for FULL BLOW CUPLA

PROTECTION COVER P160

Plastic Cover for NUT CUPLA and FULL BLOW CUPLA Nut Type

SLEEVE STOPPER P161

Sleeve Stopper for SP CUPLA Type A

ACCESSORIES for O-RING MAINTENANCE P161

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 P162

Residual Pressure Release Jig for SP CUPLA and HYDRAULIC CUPLA

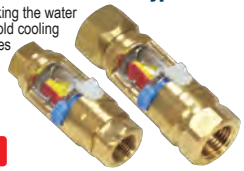
Semi-standard

CUPLA ADAPTER for Braided Hose Connection P162

Mounts on CUPLA plug / socket with female thread

FLOW MONITOR Replaceable Flow Vane type P163

For checking the water flow of mold cooling water pipes



NEW

FLOW METER P164

Flow meter with special valve for mold cooling line

PURGE ADAPTER P165

Residual Pressure Purge Adapter for Hydraulic Lines

CUPLA CONNECTING JIG P166

Connecting Jig for large CUPLA

AUTO CLAMP UNIT for MULTI CUPLA P167

For retaining reaction force of MULTI CUPLA

Adapter for MULTI CUPLA MALC Type P173

Adapter for male thread mounting for MULTI CUPLA

Special Made-to-Order CUPLA

Nitto Kohki is developing couplings with various functions and specifications to suit respective user's applications. 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

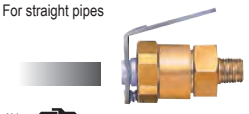
Working pressure : To be defined after consultation.
Body material : POM (Polyacetal), part Stainless steel
Pipe sizes : To be complied with your requirements.
Seal material : CR, FKM, NBR

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

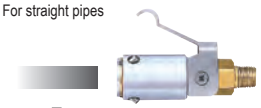
PCL CUPLA
For straight pipes



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

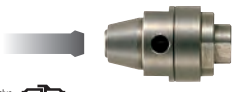
Working pressure : To be defined after consultation.
Body material : Stainless steel (part Brass)
Pipe sizes : To be complied with your requirements.
Seal material : CR, FKM, NBR

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

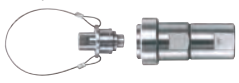
AIRLESS CUPLA
For physical and chemical devices

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

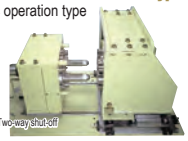


Valve structure: Two-way shut-off

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

Automatic MULTI CUPLA

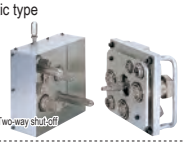
MULTI CUPLA AMCS-FA Type
Full automatic operation type



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