

Glossary

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

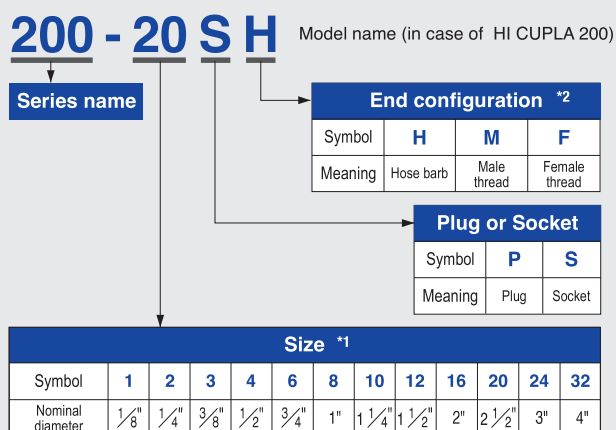
International System of Units (SI Units)

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.



*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

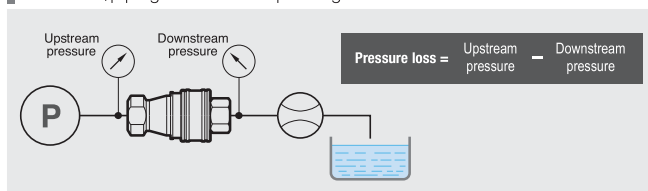
This indicates the nominal size of the pipe thread connection or of the hose to be used.

Working Pressure

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

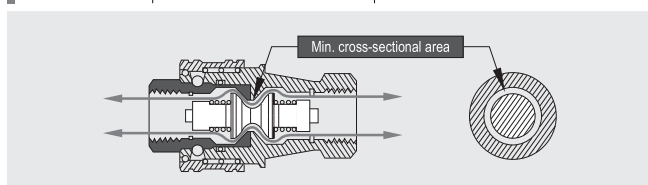
Pressure Loss

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.