

# Glossary

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

## International System of Units (SI Units)

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

## Glossary

### The Meaning of Each Letter in the Model Name

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

Model name (in case of Hi Cupla 200)

200 - 20 S H

Series name

End configuration \*2

Plug or Socket

Size \*1

Symbol	H	M	F
Meaning	Hose barb	Male thread	Female thread

Symbol	P	S
Meaning	Plug	Socket

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

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

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

### Body material

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

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

Please refer to Page 144 for body material selection table.

### Size

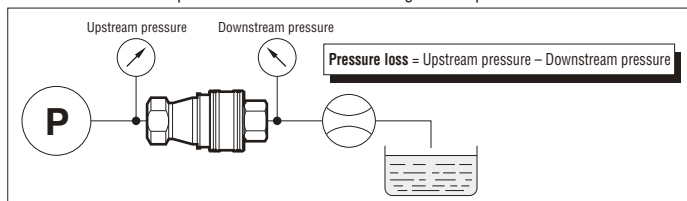
This indicates the nominal size of the pipe thread connection or of the hose to be used.

### Working pressure

This shows the normal allowable fluid pressure under continuous use.

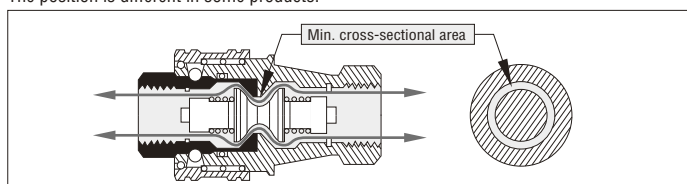
### Pressure Loss

This shows the loss of pressure when fluid runs through the Cupla set.



### Min. Cross-Sectional Area

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



### Seal Material

This shows the material used to seal the Cupla, usually an O-ring. The standard material is nitrile butadiene rubber. For materials other than those shown below, please specify such as silicone (SI), butyl (IIR), Kalrez (KL) or rubber for food, depending on your application.

#### • Properties of rubbers used for O-rings

Seal material		Working Temperature Range	Features
Common name	Nitto symbol		
Nitrile rubber	NBR (SG)	-20°C to +80°C	Standard seal with excellent oil resistance.
Hydrogenated nitrile rubber	HNBR	-20°C to +120°C	Compared with the standard nitrile rubber, the seal material is more heat and weather resistant.
	HNBR (H708)	-20°C to +120°C	In addition to the above features, the seal material can also be used for refrigeration oil and refrigerant applications such as HFC-134a. (The seal material is employed only in SP-V Cupla and PCV Pipe Cupla.)
Fluoro rubber	FKM (X-100)	-20°C to +180°C	Excellent for heat, weather, and oil resistance. Applicable to wide range of applications.
Chloroprene rubber	CR (X-306)	-20°C to +80°C	Excellent weather resistance.
	CR (C308)	-20°C to +80°C	In addition to the above features, the seal material can also be used for refrigeration oil and refrigerant applications such as HFC-134a.
Ethylene-propylene rubber	EPDM (EPT)	-40°C to +150°C	Excellent resistance to steam and hot water, also excellent resistance to weather and ozone.
Perfluoroelastomer	P	0°C to +50°C	Excellent resistance to chemical and solvents.

Note: Even among rubber materials of the same category, the working temperature range differs depending upon the design of the Cuplas. For details, see the specifications of each Cupla series. As for the Nitto symbol for rubber material, fluoro rubber is designated as "FKM" or "X-100" for example. The above are general features, but the seal resistance depends on fluid temperature, fluid concentration, and additives contained in the fluid.

### Working Temperature Range

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

### Valve Structure

<b>Two-way shut-off</b>		Automatic shut-off valves are mounted in both plug and socket. The valves prevent spill out of fluid from the lines on disconnection.	
<b>Two-way shut-off (Spill Reducing)</b>		"Two-way shut-off" with spill reduction design allows extremely little admixture of air on connection and minimizes fluid spill out on disconnection.	
<b>One-way shut-off</b>		This design prevents fluid outflow only from the socket side on disconnection. Also available are plugs with an automatic shut-off valve.	
<b>Straight through</b>		Shut-off valve is equipped neither in plug nor in socket. Fluid flows out from either side on disconnection.	

### Suitability for Vacuum

Indicates if the Cupla has necessary performance required for vacuum applications. (Note that the required performance is different in connection and in disconnection.)

### Interchangeability

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

### Max. Tightening Torque, Tightening Torque Range

Considering the balance between possible leakage caused by loose fit and too much structural stress when a Cupla is mounted on a workpiece, the appropriate screw-in torque value or range is suggested by the maker.

### Flow Direction

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