NITTO KOHKI

C14en

Quick Connect Couplings for Temperature Control Equipment Piping

CUPLA Series for Temperature Control Equipment Piping

COMPACT ZEROSPILL CUPLA
COMPACT CUPLA
TSP CUPLA
SP CUPLA Type A
ZEROSPILL CUPLA
HI FLOW CUPLA

QUICK CONNECT COUPLINGS

Green Procurement
Products Comply with RoHS Directive

CUPLA

Make cooling piping for temperature control

CUPLA allows smooth connection and disconnection of cooling water piping that cools heat-generating components such as CPUs in supercomputers.

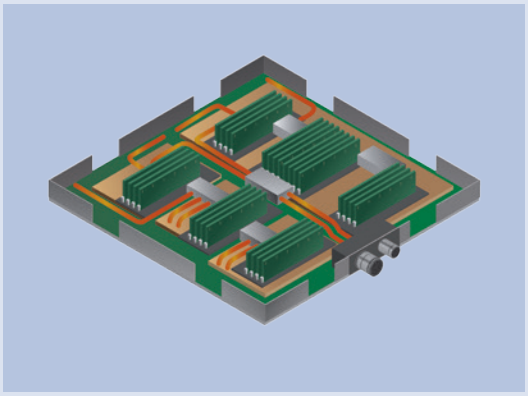
We have a lineup of CUPLA with a unique valve that reduces air inclusion on connection and liquid spillage on disconnection, and also CUPLA without valves for large flow rates.
CUPLA is available in various end configurations, sizes, body materials, and many other functions and specifications.
It is also possible to manufacture "blind mate" connectors that allow piping to be connected via a rack insertion operation. Please contact us for details.

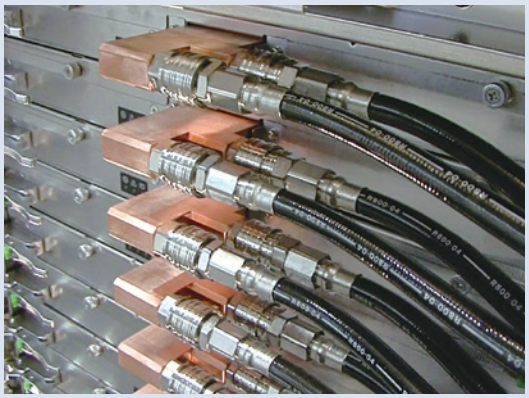
CUPLA enables flexible and fast connections in various fluid lines.

Nitto Kohki's unique technologies and dedicated research have been proven by numerous patents, which led to the development of 25000 different CUPLA variations.

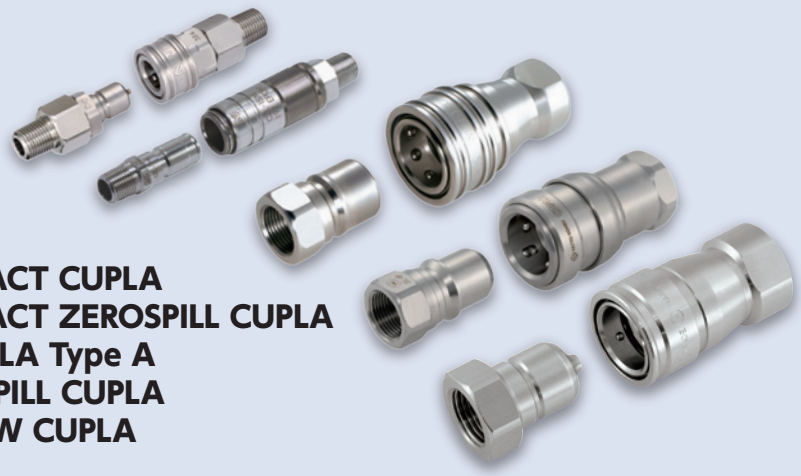
CUPLA
Quick Connect Couplings

Manual Connection and Disconnection



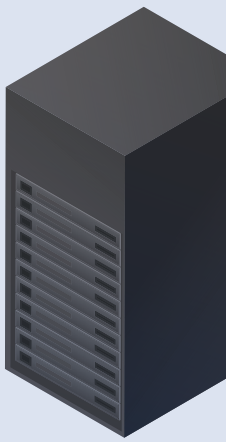


CUPLA



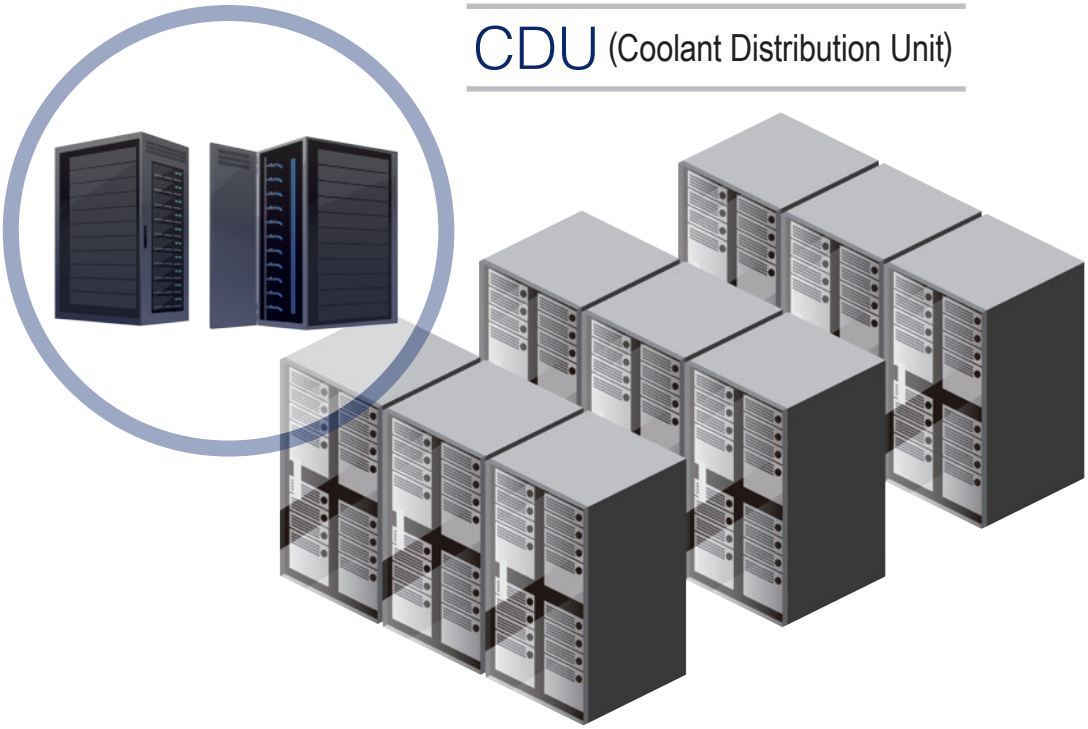
- Standard **COMPACT CUPLA**
- Standard **COMPACT ZEROSPILL CUPLA**
- Standard **SP CUPLA Type A**
- Standard **ZEROSPILL CUPLA**
- Semi-standard **HI FLOW CUPLA**

Coolant Water Main Piping

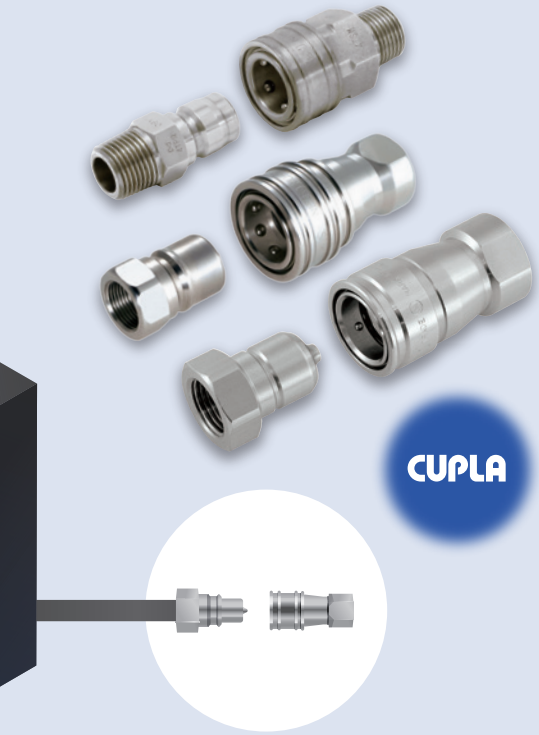


equipment more efficient with CUPLA.

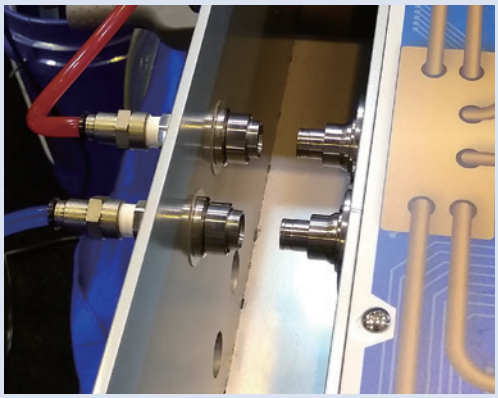
CDU (Coolant Distribution Unit)



- Standard **TSP CUPLA**
- Standard **SP CUPLA Type A**
- Semi-standard **HI FLOW CUPLA**

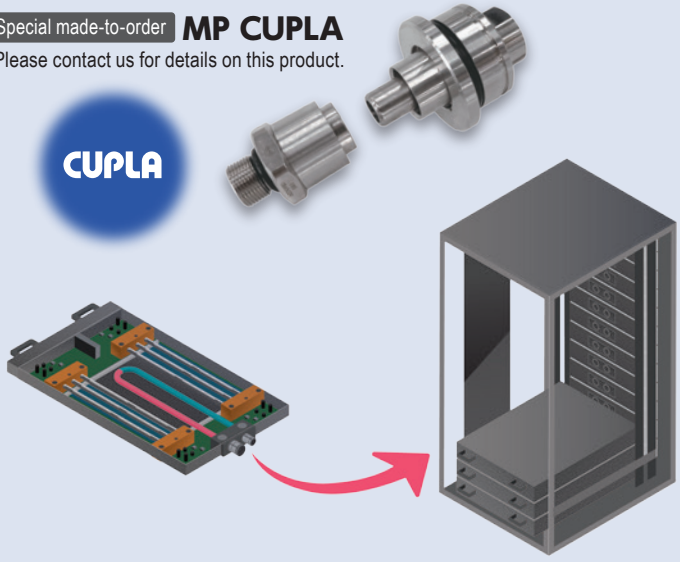


Blind Mate Connector



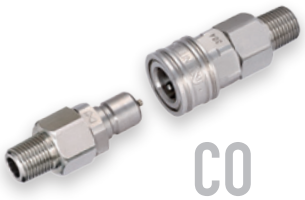
- Special made-to-order **MP CUPLA**

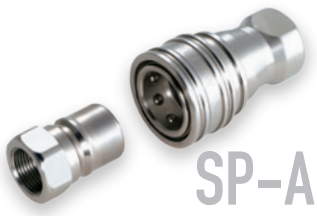
*Please contact us for details on this product.



*1: The normal allowable fluid pressure under continuous use. Exceeding the working pressure may cause damage and leakage.
*2: The operable temperature range depends on the operating conditions.

Various seal materials and end configurations can be accommodated.





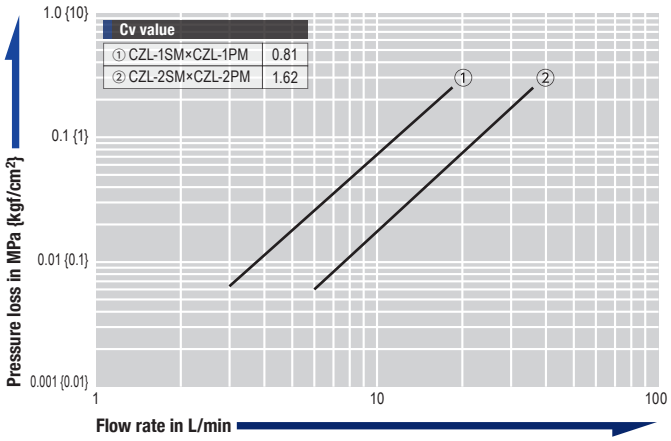
Specifications/Model	COMPACT ZEROSPILL CUPLA	COMPACT CUPLA	SP CUPLA Type A
Product type	Standard	Standard	Standard
Application	For low pressure	For low pressure	For medium pressure
Body material	Stainless steel (SUS304) (Nickel plated on socket body)	Brass Stainless steel (SUS304)	Brass Stainless steel (SUS304) Steel (Nickel plated)
Size (Thread)	R1/8, R1/4 (G thread is available on request)	R1/8, Rc1/8 (G thread is available on request) ø4×ø6, ø6×ø8	R1/8 to R1 (For plugs only), Rc1/8 to Rc2 (G thread is available on request)
Working pressure *1	1.0 MPa, 10 kgf/cm^2, 10 bar, 145 PSI	1.0 MPa, 10 kgf/cm^2, 10 bar, 145 PSI	1.5 to 7.5 MPa, 15 to 76 kgf/cm^2, 15 to 75 bar, 218 to 1090 PSI
Seal material Working temperature range *2	Ethylene-propylene rubber -10˚C to +100˚C	Fluoro rubber -20˚C to +180˚C Ethylene-propylene rubber (Semi-standard) -40˚C to +150˚C	Nitrile rubber -20˚C to +80˚C Fluoro rubber -20˚C to +180˚C Ethylene-propylene rubber -40˚C to +150˚C

- Plugs with male thread with nitrile rubber or ethylene-propylene rubber are made-to-order items.
- Nitrile rubber and fluoro rubber are available as the standard seal materials for steel bodies.

Flow Rate - Pressure Loss Characteristics

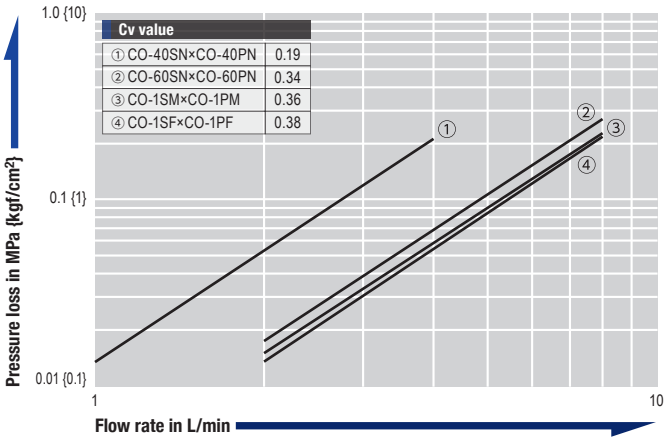
COMPACT ZEROSPILL CUPLA

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



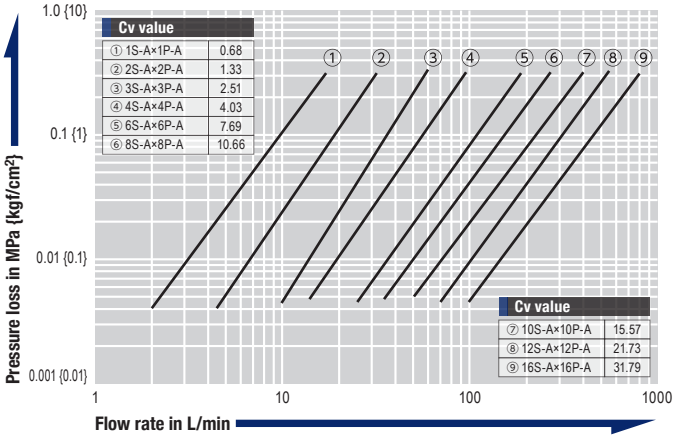
COMPACT CUPLA

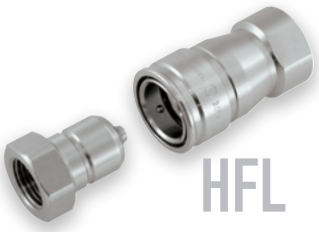
[Test conditions]
- Fluid : Water - Temperature : 23˚C±5˚C

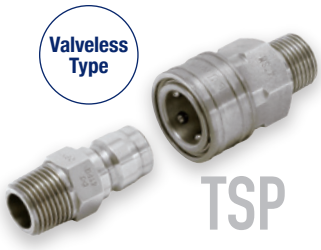


SP CUPLA Type A

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



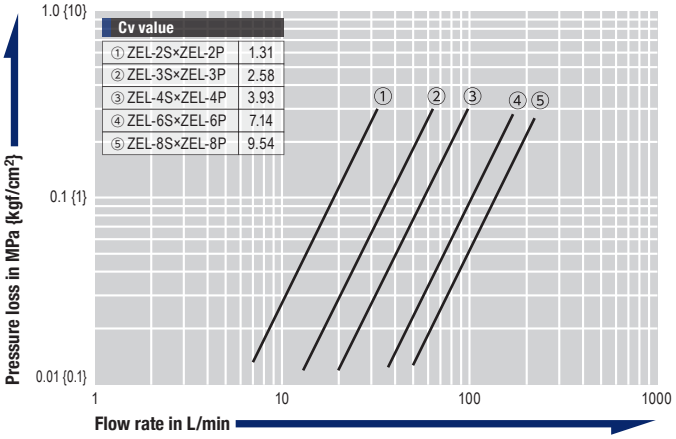




ZEROSPILL CUPLA	HI FLOW CUPLA	TSP CUPLA
Standard	Semi-Standard	Standard
For medium pressure	For low pressure	For medium pressure
Brass Stainless steel (SUS304)	Brass Stainless steel (SUS304)	Brass Stainless steel (SUS304) Steel (Nickel plated)
Rc1/4, Rc3/8, Rc1/2, Rc3/4, Rc1 (G thread is available on request)	Rc1/4, Rc3/8, Rc1/2 (G thread is available on request)	R1/8 to R2, Rc1/8 to Rc2 (G thread is available on request)
3.5 MPa, 36 kgf/cm^2, 36 bar, 508 PSI	1.0 MPa, 10 kgf/cm^2, 10 bar, 145 PSI	1.5 to 7.5 MPa, 15 to 76 kgf/cm^2, 15 to 75 bar, 218 to 1090 PSI
Nitrile rubber -20˚C to +80˚C Fluoro rubber -20˚C to +180˚C Ethylene-propylene rubber -40˚C to +150˚C	Fluoro rubber -20˚C to +180˚C Ethylene-propylene rubber -40˚C to +150˚C	Nitrile rubber -20˚C to +80˚C Fluoro rubber -20˚C to +180˚C Ethylene-propylene rubber -40˚C to +150˚C
	- Brass body with ethylene-propylene rubber is made-to-order item.	- Stainless steel in JIS SUS316 is available as option. - Only nitrile rubber is available as the standard seal material for steel bodies.

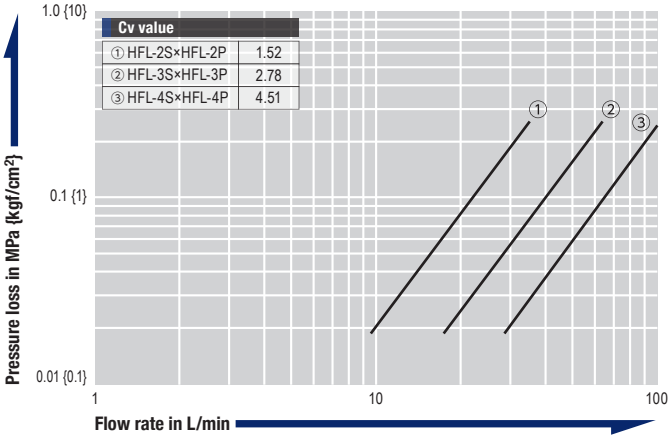
ZEROSPILL CUPLA

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



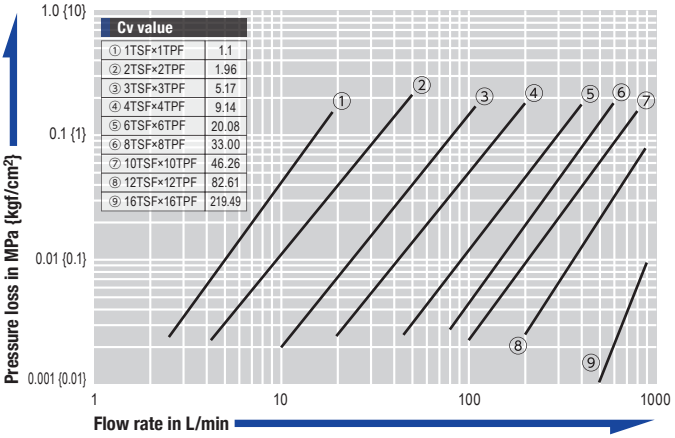
HI FLOW CUPLA

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



TSP CUPLA

[Test conditions]
- Fluid : Water - Temperature : 25˚C±5˚C



*1: The normal allowable fluid pressure under continuous use.
Exceeding the working pressure may cause damage and leakage.
*2: The operable temperature range depends on the operating conditions.

For Low Pressure

Small, high flow type for cooling water piping

COMPACT ZEROSPILL CUPLA

Low Spill Type | Built-in Valve | Push-to-connect Function | Standard

- Compact size saves space.
  Outer diameters of 16 mm (size R1/8) and 18.5 mm (size R1/4)
- High flow rate for efficient cooling.
- Special valve structure reduces air inclusion on connection and liquid spillage on disconnection.
- Easy operation, push-to-connect function.
- Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection.

*G thread is available on request.

Specifications

Body material	Stainless steel (SUS304) (Nickel plated on Socket body)			
Size (Thread)	R1/8, R1/4 (G thread is available on request)			
Pressure unit	MPa	kgf/cm²	bar	PSI
Working pressure *1	1.0	10	10	145
Seal material / Working temperature range *2	Seal material	Mark	Working temperature range	Remarks
	Ethylene-propylene rubber	EPDM	-10˚C to +100˚C	Standard material

For Low Pressure

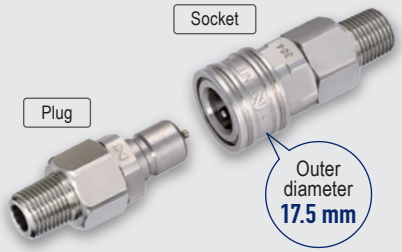
Small multipurpose type for low pressure lines

COMPACT CUPLA

Built-in Valve | Standard

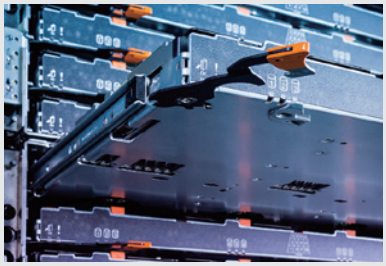
- Compact size with maximum outer diameter 17.5 mm.
- For small bore piping from temperature control equipment piping to scientific equipment.
- Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection.
- Stainless steel (SUS304) and brass have excellent corrosion resistance as body materials.

*G thread is available on request.



Specifications

Body material	Brass, Stainless steel (SUS304)			
Size (Thread)	R1/8, Rc1/8 (G thread is available on request), ø4×ø6, ø6×ø8			
Pressure unit	MPa	kgf/cm²	bar	PSI
Working pressure *1	1.0	10	10	145
Seal material / Working temperature range *2	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



For Medium Pressure

For medium pressure general applications

SP CUPLA Type A

Built-in Valve | Standard

- Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection.
- Steel bodies are surface treated with nickel plating. We are working on measures to reduce environmental impact.
- Available in various standard body materials, sizes and end configurations to cope with diversified applications and operating situations. Plugs with male thread end (R) are also available in brass material.

*G thread is available on request.

Specifications

*Plugs with male thread with nitrile rubber or ethylene-propylene rubber are made-to-order items.
Nitrile rubber and fluoro rubber are available as the standard seal materials for steel bodies.

Body material		Brass				Stainless steel (SUS304), Steel (Nickel plated)			
Size (Thread) (G thread is available on request)		R, Rc	R, Rc	Rc	Rc	Rc	Rc	Rc	Rc
		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 *1	MPa	5.0	3.0	2.0	1.5	7.5	4.5	3.0	2.0
	kgf/cm²	51	31	20	15	76	46	31	20
	bar	50	30	20	15	75	45	30	20
	PSI	725	435	290	218	1090	653	435	290

Seal material Working temperature range *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	Standard material
	Ethylene-propylene rubber	EPDM	-40˚C to +150˚C	Standard material

For Medium Pressure

Low spill type for medium pressure use

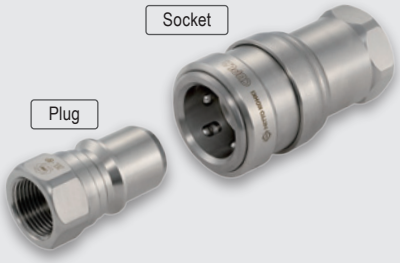
ZEROSPILL CUPLA

Low Spill Type | Built-in Valve | Push-to-connect Function | Standard

- Unique seal design reduces both liquid spillage and air ingress.
  - Volume of spillage: about 96% less vs SP CUPLA Type A
  - Volume of air ingress: about 94% less vs SP CUPLA Type A
- The valve operates smoothly even when dry, thus reducing malfunctions.
- Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection.
- Easy operation, push-to-connect function.
- A variety of body materials and sizes have been standardized to support a wide range of applications and situations.

*G thread is available on request.

YouTube



Specifications

Body material	Brass, Stainless steel (SUS304)			
Size (Thread)	Rc1/4, Rc3/8, Rc1/2, Rc3/4, Rc1 (G thread is available on request)			
Pressure unit	MPa	kgf/cm²	bar	PSI
Working pressure *1	3.5	36	36	508

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	Standard material
	Ethylene-propylene rubber	EPDM	-40˚C to +150˚C	Standard material

For Low Pressure

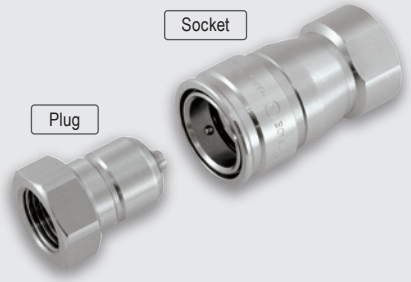
For water, temperature control equipment piping

HI FLOW CUPLA

Built-in Valve | Semi-Standard

- High flow rate type to increase cooling effect.
- Quick connection and disconnection of cooling pipes.
- Automatic shut-off valves in both socket and plug prevent fluid spill out on disconnection.
- Compact and space-saving design.
  HI FLOW CUPLA connection length is a maximum of 22% shorter than that of the SP CUPLA type A.

*G thread is available on request.



Specifications

*Brass body with ethylene-propylene rubber is made-to-order item.

Body material	Brass, Stainless steel (SUS304)			
Size (Thread)	Rc1/4, Rc3/8, Rc1/2 (G thread is available on request)			
Pressure unit	MPa	kgf/cm²	bar	PSI
Working pressure *1	1.0	10	10	145

Seal material Working temperature range *2	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	Standard material

*1: The normal allowable fluid pressure under continuous use.
Exceeding the working pressure may cause damage and leakage.
*2: The operable temperature range depends on the operating conditions.

For Medium Pressure

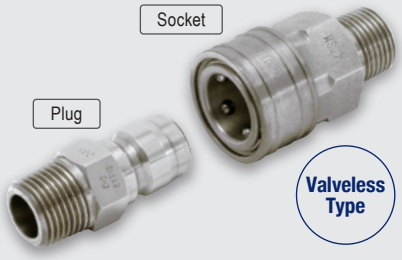
For medium pressure general applications

TSP CUPLA

Standard

- 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.

*G thread is available on request.



Specifications

*Stainless steel in JIS SUS316 is available as semi-standard.
Only nitrile rubber is available as the standard seal material for steel bodies.

Body material		Brass				Stainless steel (SUS304), Steel (Nickel plated)			
Size (Thread and hose) (G thread is available on request)		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 *1	MPa	5.0	3.0	2.0	1.5	7.5	4.5	3.0	2.0
	kgf/cm^2	51	31	20	15	76	46	31	20
	bar	50	30	20	15	75	45	30	20
	PSI	725	435	290	218	1090	653	435	290

Seal material Working temperature range *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	Standard material
	Ethylene-propylene rubber	EPDM	-40˚C to +150˚C	Standard material

- For more information on CUPLA, please refer to the CUPLA general catalog. (Please contact us for details on MP CUPLA.)

⚠Safety Guide

Read without fail and observe the "Instruction sheet" that comes with the product and the following pages in the Quick Connect Couplings General Catalog; [Precautions Relating to the Use of ALL CUPLA].

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