

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
(Non-Spill)

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/cm ²	bar	PSI
Working pressure	3.5	36	36	508
Seal material	Seal material	Mark	Working temperature range	Remarks
	Nitrile rubber	NBR (SG)	-20°C to +80°C	Standard material
	Fluoro rubber	FKM (X-100)	-20°C to +180°C	Standard material
Working temperature range	Ethylene-propylene rubber	EPDM (EPT)	-40°C to +150°C	Standard material

Note: Applicable fluids depend on the body material and seal material.
Acceptable working temperature range depends on 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.

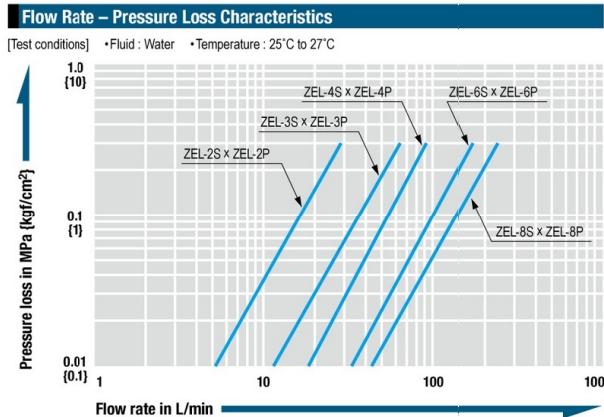
Minimum Cross-Sectional Area		(mm ²)				
Model	ZEL-2SP	ZEL-3SP	ZEL-4SP	ZEL-6SP	ZEL-8SP	
Min. cross-sectional area	31	60.5	86.5	160.6	188.7	

Suitability for Vacuum		1.3 x 10 ⁻¹ Pa {1 x 10 ⁻³ mmHg}		
Socket only	Plug only	When connected		
—	—	Operational		

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



Models and Dimensions

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-6P 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

Connected → Disconnected

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

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 152 for the details.

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