

COMPACT ZERO SPILL CUPLA

Suitable for use in power electronics applications

NEW

Blind Mate Type



*Optimal solutions for
Direct Liquid Cooling (DLC) piping to enhance
High Performance Computing (HPC) efficiency*

Dedicated model For liquid-cooling unit for servers

CUPLA

Brass

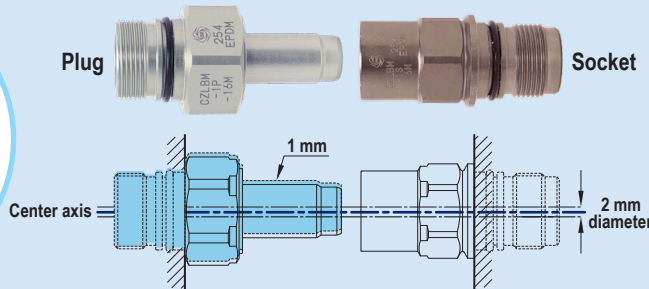
Aluminum alloy

Allows for more flexibility in the design of racks and units.

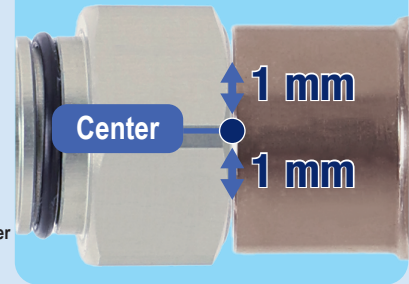
Feature 1

Allowable eccentricity
on connection
2 mm
diameter

Allowable eccentricity on connection



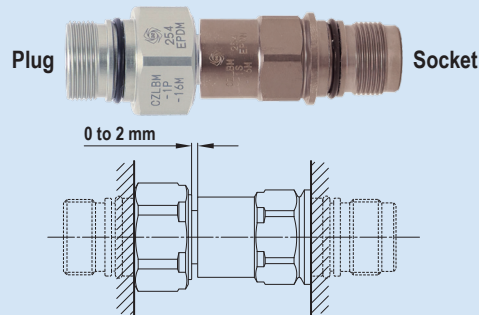
1 mm from the center axis



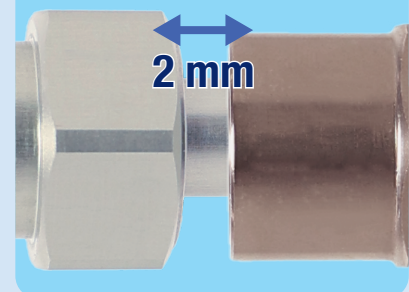
Feature 2

Acceptable distance
between plug and socket
2 mm

Acceptable distance



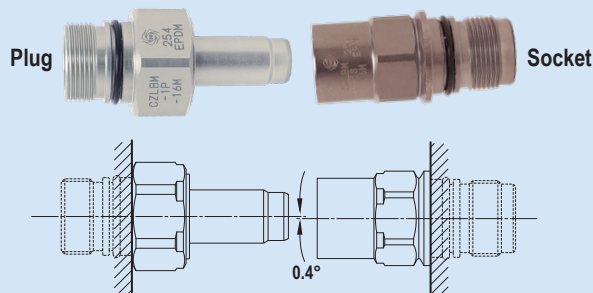
2 mm distance



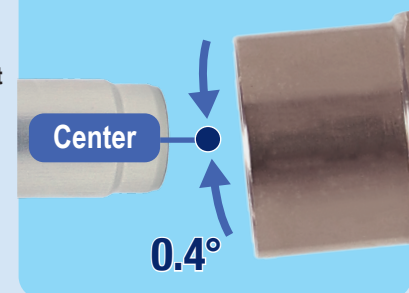
Feature 3

Allowable inclination
0.4°

Allowable inclination



0.4° from the center axis

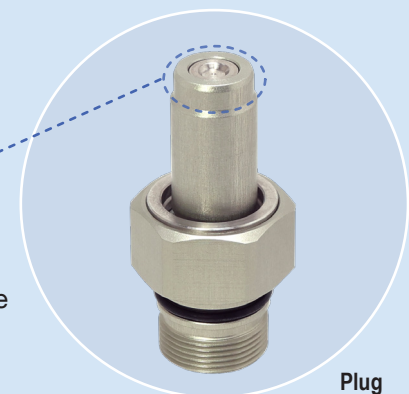


Feature 4

**Minimized
spillage**

Unique valve structure to
minimize the liquid spillage

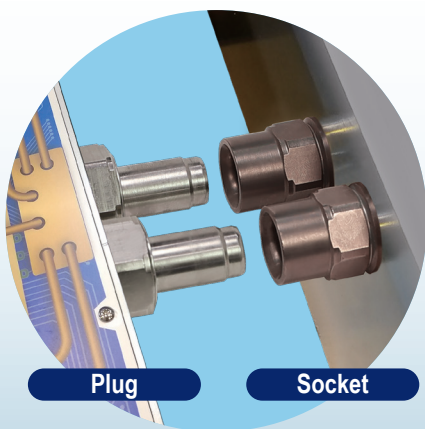
Unique valve design minimizes both liquid spillage
and air ingress on connection and disconnection





Dedicated model

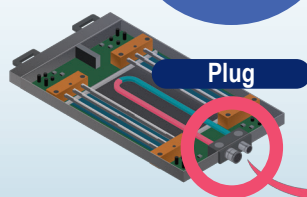
For liquid-cooling unit for servers



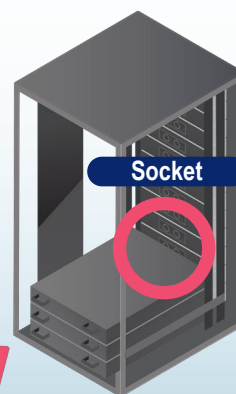
Plug

Socket

Maximum
outer diameter
26.5 mm



Plug

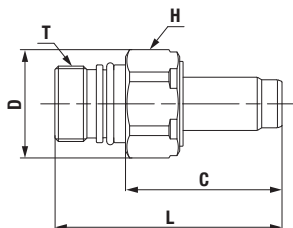


Socket

Models and Dimensions

WAF : WAF stands for width across flats.

Plug



Brass

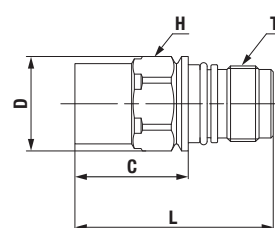
Model	Application (Thread)	Mass (g)		Dimensions (mm)				
		Brass	Aluminum alloy	L	C	ϕD	H (WAF)	T
CZLBM-1P-16M	M16×1	50	21	(48.2)	(33.2)	23	Hex.21	M16×1
CZLBM-2P-18M	M18×1	66	28	(51.2)	(36.2)	26.5	Hex.24	M18×1

- A Dip Mold Dust Cap is equipped as standard.

Socket



Brass

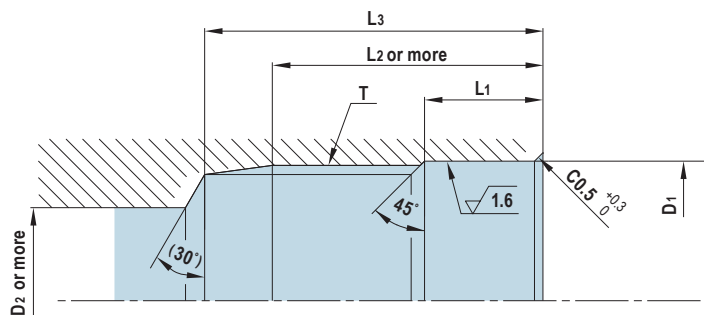


Model	Application (Thread)	Mass (g)		Dimensions (mm)				
		Brass	Aluminum alloy	L	C	ϕD	H (WAF)	T
CZLBM-1S-16M	M16×1	51	21	42	24	20	Hex.18	M16×1
CZLBM-2S-18M	M18×1	65	27	43	25	23	Hex.21	M18×1

- A Dip Mold Dust Cap is equipped as standard.

Dimensions for Mounting

CZLBM-1・2SP type



Model	Dimensions (mm)					
	ϕD_1	ϕD_2	L1	L2	L3	T
CZLBM-1S-16M CZLBM-1P-16M	$16.5^{+0.05}_0$	11	7	16	20	M16×1
CZLBM-2S-18M CZLBM-2P-18M	$18.5^{+0.05}_0$	13				M18×1

Specifications				
Model	CZLBM-1P-16M	CZLBM-1S-16M	CZLBM-2P-18M	CZLBM-2S-18M
	Plug	Socket	Plug	Socket
Body material	Brass (Nickel plated) Aluminum alloy ^{*3} (Plug: Hard anodized / Socket: Nickel plated)			
Size (Thread)	M16×1 (Male thread)		M18×1 (Male thread)	
Pressure unit	MPa	kgf/cm ²	bar	PSI
Working pressure ^{*1}	1.0	10	10	145
Seal material	Seal material	Mark	Working temperature range	Remarks
	Ethylene-propylene rubber	EPDM	-10°C to +100°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.



*3: Please contact us before adopting the product since aluminum alloy may cause electrochemical corrosion depending on the operating environment.

Maximum Tightening Torque		Nm {kgf·cm}
Size (Thread)	M16×1	M18×1
Torque	17 {173}	21 {214}



Minimum Cross-Sectional Area (mm ²)		
Model	CZLBM-1S-16M×CZLBM-1P-16M	CZLBM-2S-18M×CZLBM-2P-18M
Minimum cross-sectional area	14.9	30.2

Interchangeability
Socket and plug of different sizes cannot be connected.

Suitability for Vacuum
Please contact us if vacuum is required for your application.

Repulsive Force When Connected (N)		
Model	CZLBM-1S-16M×CZLBM-1P-16M	CZLBM-2S-18M×CZLBM-2P-18M
Repulsive force generated during connection ^{*4}	$F=(P \times 120) + 50$	$F=(P \times 180) + 65$

*4: Assign the actual pressure P [MPa] to the above formula to calculate the load F. The load F is the repulsive force generated in CUPLA.



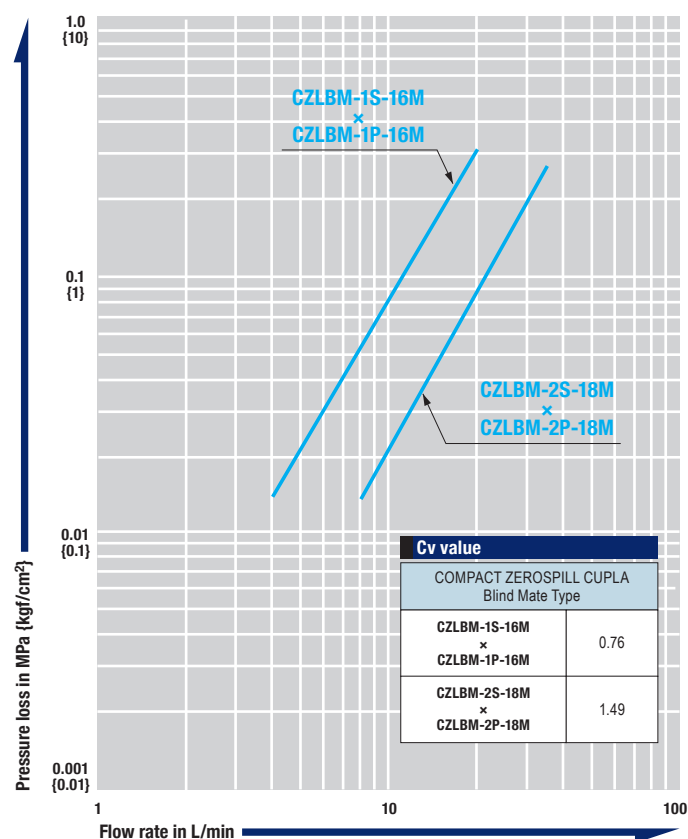
Safety Guide

Read without fail and observe the "Instructions for COMPACT ZEROSPILL CUPLA Blind Mate Type" that comes with the product and the following pages in the Quick Connect Couplings General Catalog; [Precautions Relating to the Use of ALL CUPLA].

- Under the condition that the hose is filled with fluid and the socket and plug are unconnected, if the hose is bent or the fluid temperature rises, the internal pressure may exceed the working pressure and this may cause the valve to pop out. Always use expansion joints and safety valves in the piping, and make sure that the internal pressure will not exceed the working pressure.
- Although this product accepts a certain amount of misalignment against eccentricity, the durability may decrease if the connection and disconnection is repeated in a constantly misaligned state.
- Install the socket and plug within 2.0 mm diameter of eccentricity from their center axes.

Flow Rate – Pressure Loss Characteristics

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



Admixture of Air on Connection May vary depending upon the usage conditions. (mL)		
Model	CZLBM-1S-16M×CZLBM-1P-16M	CZLBM-2S-18M×CZLBM-2P-18M
Volume of air inclusion	0.02	0.04

Volume of Spillage per Disconnection May vary depending upon the usage conditions. (mL)		
Model	CZLBM-1S-16M×CZLBM-1P-16M	CZLBM-2S-18M×CZLBM-2P-18M
Volume of spillage	0.015	0.023

Acceptable distance between plates (mm)		
Model	CZLBM-1S-16M×CZLBM-1P-16M	CZLBM-2S-18M×CZLBM-2P-18M
Acceptable distance between plates	36 to 38	38 to 40

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