For Multi-Port Connection (Automatic)

Multi Cupla

MALC-HSP Type for High Pressure Use

Low spill type for high pressure use

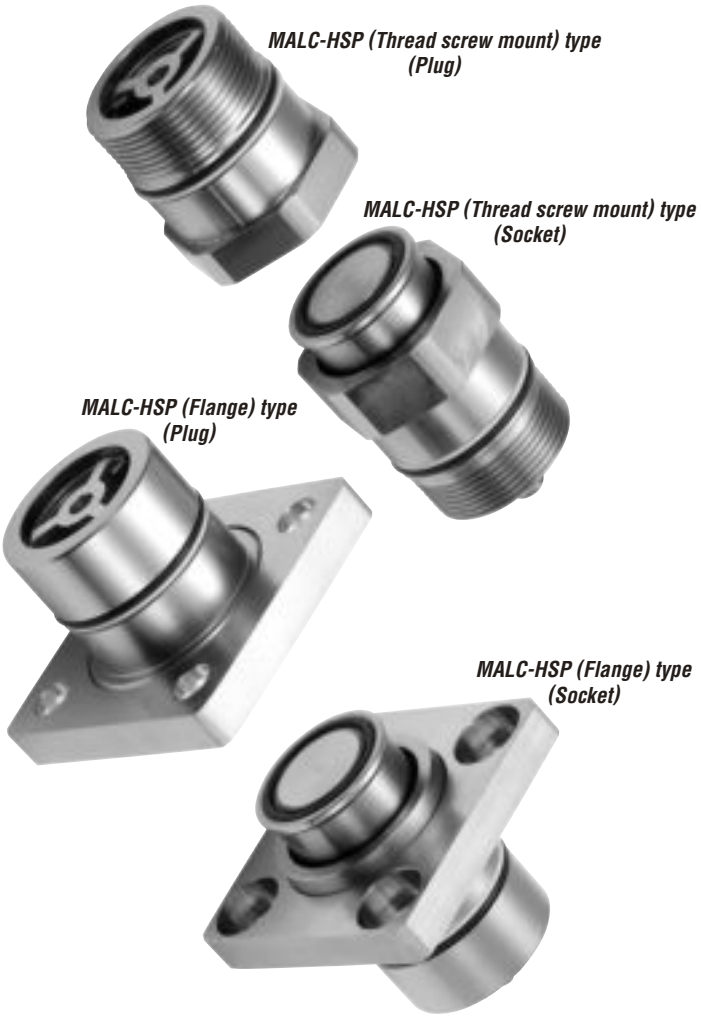
Working pressure: 21.0 to 25.0 — 21.0 to 25.0 MPa (214 to 255 kgf/cm²)

Valve structure: Two-way shut-off

Applicable fluids: Hydraulic oil

A single operation enables simultaneous connections of multiple lines. A special design minimises air admixture in fluid lines upon connection. Suitable for high pressure hydraulic circuits.

- Compared with conventional Multi Cuplas, approximately double flow rates are realized. This could reduce the size of required plates. (Rate of flow increase depends on Cupla sizes.)
- The MALC type realizes a 2 mm axial eccentricity allowance, while the conventional Multi Cupla is only 0.6 mm.
- Special valve design enables connection of socket and plug under dynamic pressure of up to 8 MPa.
- When connected, the distance between the socket plate and plug plate is designed to be 30 mm for all sizes. This means any size of Cupla can be mounted and used on the same plate.
- Low spill valves minimize outflow of fluid and admixture of air into the fluid line.



MALC-HSP (Thread screw mount) type (Plug)

MALC-HSP (Thread screw mount) type (Socket)

MALC-HSP (Flange) type (Plug)

MALC-HSP (Flange) type (Socket)

Specifications

Body material			Special steel (Autocatalytic nickel-phosphorus coating)	
Model	Thread screw mount		MALC-1HSP	MALC-2 to 8HSP
	Flange		–	MALC-2 to 8HSP-FL
Working pressure		MPa	25.0 (Either socket or plug only:8.0)	21.0 (Either socket or plug only:8.0)
		kgf/cm²	255 (Either socket or plug only:81)	214 (Either socket or plug only:81)
		bar	250 (Either socket or plug only:80)	210 (Either socket or plug only:80)
		PSI	3630 (Either socket or plug only:1160)	3050 (Either socket or plug only:1160)

Sealing material / Working temperature range	Sealing material	Mark	Working temperature range
	Fluoro rubber	FKM (X-100)	−20°C to +180°C

Max. Tightening Torque — N m {kgf•cm}

Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Thread screw mount	30 {306}	50 {510}	53 {540}	65 {663}	80 {816}	95 {969}
Flange	–	9 {91}				30 {306}

Interchangeability

Socket and plug in the same size can be connected regardless of their end configurations.

Min. Cross-Sectional Area — (mm²)

Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Min. cross-sectional area	26	49.5	87	153	227	347

Suitability for Vacuum

Not suitable for vacuum application in either connected or disconnected condition.

Admixture of Air on Connection — (mL)

Admixture of air may vary depending upon the usage conditions.

Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Volume of air	0.08	0.14	0.26	0.55	0.95	0.85

Volume of Spillage per Disconnection — (mL)

Volume of spillage may vary depending upon the usage conditions.

Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Volume of spillage	0.08	0.14	0.26	0.55	0.95	0.85

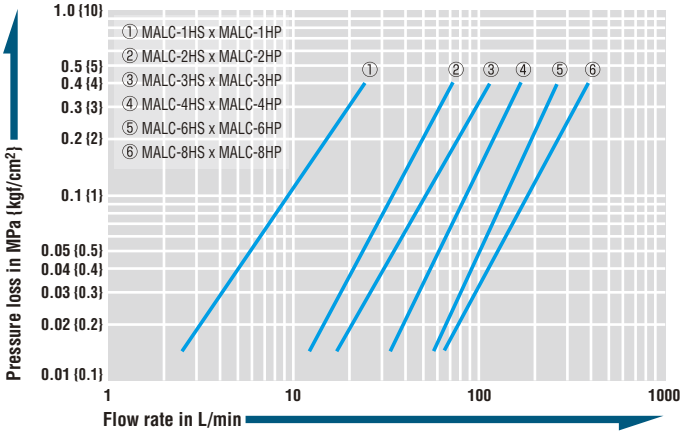
Load Required to Maintain Connection When Line Is Pressurized

Model	1HSP	2HSP	3HSP	4HSP	6HSP	8HSP
Maximum acceptable load N (kgf)	9300 {948}	16500 {1683}	22000 {2244}	40500 {4130}	55000 {5609}	64500 {6577}
Minimum load required to maintain connection N (kgf) *	Px170+85 {px1.7+8.5}	Px345+180 {px3.45+18}	Px460+190 {px4.6+19}	Px855+260 {px8.55+26}	Px1160+260 {px11.6+26}	Px1360+310 {px13.6+31}

* Assign the actual value of pressure [P (MPa), p (kgf/cm²)] to the above formula to calculate the load. Maintain the connection with the minimum load or more, but not more than the maximum acceptable load.

Flow Rate - Pressure Loss Characteristics

[Test conditions] •Fluid : Hydraulic oil •Temperature : 30°C ± 5°C
•Fluid viscosity : 32 x 10^{-6} m²/s •Density : 0.87 x 10^{3} kg/m³



Acceptable distance between Socket and Plug

Plug and socket must be used in contact with each other.
Maximum 0.5 mm distance between socket and plug is acceptable.