

For Multi-Port Connection (Automatic)

Multi Cupla MAS Type / MAT Type

7.0 MPa {71 kgf/cm²} general purpose type

Working pressure



7.0 MPa
(71 kgf/cm²)

Valve structure



Two-way shut-off

Applicable fluids



Air

Water

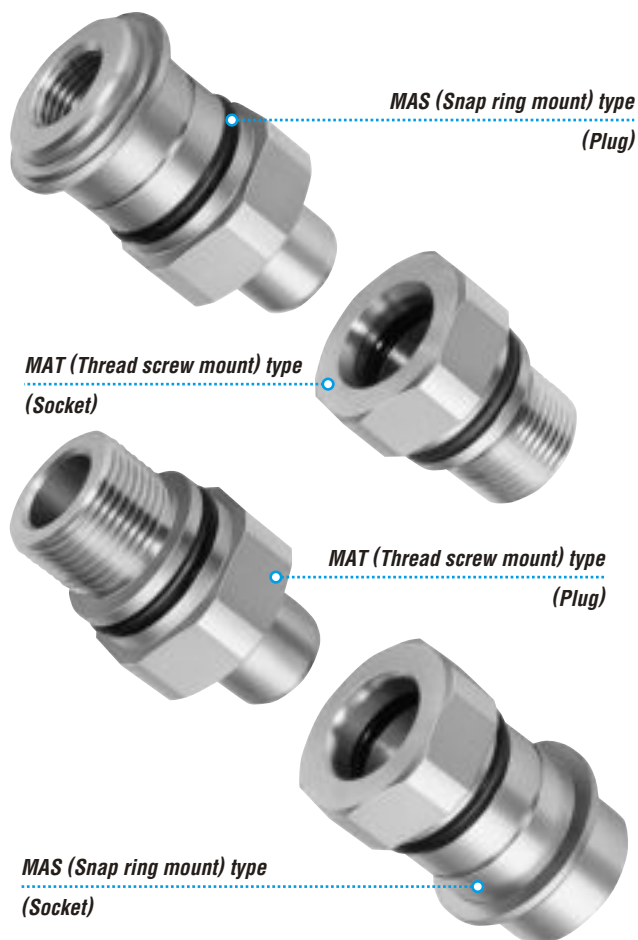
Hydraulic oil

Connects multiple lines simultaneously with a single operation for different fluids and sizes.

- Ideal for automated hydraulic or pneumatic cylinder operated systems that need to connect and disconnect several lines simultaneously.
- Automatic shut-off valves in both sockets and plugs ensure no outflow of fluid on disconnection.
- Body materials other than stainless steel are available, which can be ordered with or without valves (made-to-order products).
- Snap ring and screw thread-in types to mount on the base plate are standardized.
- MAS type can accept axial eccentricity between socket and plug.

The allowance of eccentricity is within the radius range of 0.3mm.

* Cupla connection or disconnection with fluid under dynamic pressure cannot be made.



| Specifications | | | |
|---------------------------|---------------------|---|-------------|
| Body material | | Stainless steel (Autocatalytic nickel-phosphorus coating) | |
| Working pressure | MPa | 7.0 | |
| | kgf/cm ² | 71 | |
| | bar | 70 | |
| | PSI | 1020 | |
| Sealing material | | Sealing material | Mark |
| Working temperature range | | Fluoro rubber | FKM (X-100) |
| | | Working temperature range | |
| | | -20°C to +180°C | |

| Max. Tightening Torque | | | | | Nm (kgf·cm) |
|------------------------|----------|----------|----------|----------|-------------|
| Size (Thread) | 1/4" | 3/8" | 1/2" | 3/4" | 1" |
| Torque (MAS type) | 14 [143] | 22 [224] | 60 [612] | 90 [918] | 120 [1224] |
| Size (Thread) | M20 | M24 | M30 | M39 | M45 |
| Torque (MAT type) | 50 [510] | 50 [510] | 50 [510] | 70 [714] | 80 [816] |

Interchangeability

- MAS & MAT or MAS & MAS types of the same size are to be connected.
- Connection between the same MAT types is virtually not possible because there is no allowance for eccentricity.

| Min. Cross-Sectional Area | | | | | (mm ²) |
|---------------------------|-----|-----|-----|-----|--------------------|
| Model | 2SP | 3SP | 4SP | 6SP | 8SP |
| Min. cross-sectional area | 23 | 41 | 76 | 145 | 224 |

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

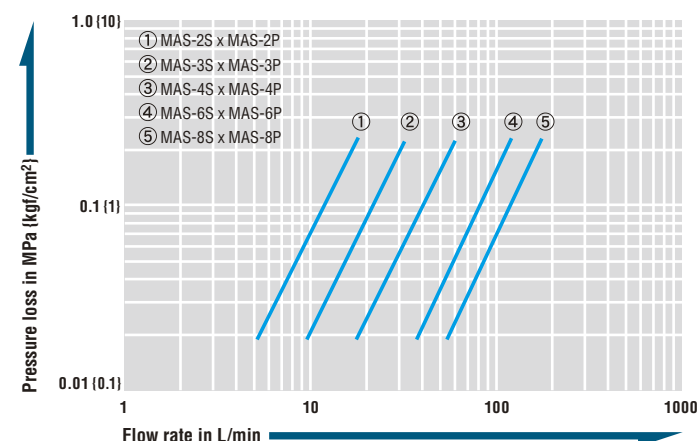
| Admixture of Air on Connection | | | | Admixture of air may vary depending upon the usage conditions. | (mL) |
|--------------------------------|-----|-----|-----|--|------|
| Model | 2SP | 3SP | 4SP | 6SP | 8SP |
| Volume of air | 1.1 | 2.4 | 3.2 | 10.5 | 17.0 |

| Load Required to Maintain Connection When Line Is Pressurized | | | | | |
|---|----------------------------|-------------------------|----------------------------|---------------------------|------------------------------|
| Model | 2SP | 3SP | 4SP | 6SP | 8SP |
| Maximum acceptable load N (kgf) | 3200 {327} | 5200 {531} | 9000 {919} | 13900 {1419} | 20200 {2062} |
| Minimum load required to maintain connection N (kgf) * | Px185+45 {p x 1.85+4.5} | Px310+70 {p x 3.1+7} | Px545+75 {p x 5.45+7.5} | Px850+95 {p x 8.5+9.5} | Px1225+120 {p x 12.25+12} |

* 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 : Water • Temperature : 20°C ± 5°C



Application Example

