

Miniature Fittings Stainless Steel 316

MS Series

RoHS

Applicable Tubes: $\varnothing 3.2$, $\varnothing 4$, $\varnothing 6$ Connection Thread: M5, R 1/8

For use in corrosive environments Stainless steel 316

Compact piping space

Tube has a large retaining force. Hose nipple assures easy installation and removal.

Line up various types

Possible for special tubing in the same direction. Accepts many types of plastic tubing

Hose nipple and hose elbow

Accepts nylon, soft nylon, and polyurethane tubing.



Made to Order

(Refer to page 340 for details.)

Hose nipple

Barb

Configuration for easy insertion into the tube
Holds the tube tightly.

Body

Stainless steel 316

Gasket

Low tightening torque
Tight seal

Tube

Possible for combination use of nylon tubing and polyurethane tubing.

Cap nut

Certainly hold the tube by manual clamping
Easy removal of tube by loosening
Stainless steel 316

Barb fitting

Barb

Configuration for easy insertion into the tube
Holds the tube tightly.

Body

Stainless steel 316

Tube

Gasket

Low tightening torque
Tight seal

Specifications

| Applicable tubing material | Nylon | Soft nylon | Polyurethane | Super PFA ⁽¹⁾ | FEP ⁽²⁾ | Modified PTFE ⁽³⁾ |
|--------------------------------------|---|-------------------------------------|--|--|-------------------------------|--|
| Applicable tubing O.D./I.D. | $\varnothing 4/\varnothing 2.5$ $\varnothing 6/\varnothing 4$ | $\varnothing 3.18/\varnothing 2.18$ | $\varnothing 4/\varnothing 2.5$ $\varnothing 6/\varnothing 4$ | $\varnothing 3.18/\varnothing 2$ $\varnothing 4/\varnothing 2.5$ $\varnothing 6/\varnothing 4$ | $\varnothing 6/\varnothing 4$ | $\varnothing 4/\varnothing 2.5$ $\varnothing 6/\varnothing 4$ |
| Fluid | Air/Water ^(4,5) | | | | | |
| Maximum operating pressure (at 20°C) | 1.5 MPa | 1 MPa | 0.8 MPa | 1 MPa | 1.5 MPa | 1.4 MPa |
| Ambient and fluid temperature | -5 to 60°C, Water: 0 to 40°C (No freezing) | | | | | |
| Connection size | M5, R1/8 | | | M5 | | |
| Thread | JIS B0205 (Metric fine thread) JIS B0203 (Taper thread for piping) | | | JIS B0205, Class 2 (Metric fine thread) | | |

Note 1) , Note 2) , Note 3) Applicable only for hose nipple type.







Note 4) Barb fitting, barb elbow and barb tee are not compatible with water.










Note 5) Deionized water is not recommended for use as it may affect the material used in the fittings.
In addition, it is known to degrade the water quality.

Principal Parts Material

| Material | Body | Gasket |
|----------|---------------------|----------------------|
| | Stainless steel 316 | PVC, Nylon 66, GF30% |

Model

| Model | Description | Application | Note |
|------------|--|---|------------------|
| MS-5AU-3 |  | For soft nylon tube | ø3.18/ø2.18 x M5 |
| | | For polyurethane tube | ø3.18/ø2 x M5 |
| MS-5AU-4 |  | For soft nylon and polyurethane tube | ø4/ø2.5 x M5 |
| MS-5AU-6 | | | ø6/ø4 x M5 |
| P.338 | | | |
| MS-5ALHU-3 |  | For soft nylon tube | ø3.18/ø2.18 x M5 |
| | | For polyurethane tube | ø3.18/ø2 x M5 |
| MS-5ALHU-4 |  | For soft nylon and polyurethane tube | ø4/ø2.5 x M5 |
| MS-5ALHU-6 | | | ø6/ø4 x M5 |
| P.338 | | | |
| MS-5H-4 |  | For nylon, soft nylon, and polyurethane tube | ø4/ø2.5 x M5 |
| | | | MS-5H-6 |
| P.338 | | | |
| MS-5HLH-4 |  | <ul style="list-style-type: none"> For nylon, soft nylon, and polyurethane tube Body rotates at 360° around the stud axis | ø4/ø2.5 x M5 |
| MS-5HLH-6 | | | ø6/ø4 x M5 |
| P.338 | | | |

| Model | Description | Application | Note |
|------------|--|--|---------------------------------|
| MS-5UL |  | Body rotates at 360° around the stud axis | M5 female x M5 male |
| | | | P.338 |
| MS-5UT |  | Body rotates at 360° around the stud axis | M5 female x M5 female x M5 male |
| | | | P.338 |
| MS-5B |  | For reducing Rc 1/8 female to M5 female | R 1/8 x M5 female |
| | | | P.339 |
| MS-5P |  | Use to plug unused M5 port. | |
| | | | P.339 |
| MS-5J |  | Solid piece moves fitting up from work piece | M5 male x M5 female |
| | | | P.339 |
| MS-5N |  | Fitting to workpiece and fitting to fitting connection | M5 male x M5 male |
| | | | P.339 |
| MS-5UN |  | Body rotates at 360° around the stud axis | M5 male x M5 male |
| | | | P.339 |
| MS-5ATHU-3 |  | For soft nylon tube | ø3.18/ø2.18 x M5 |
| | | polyurethane tube | ø3.18/ø2 x M5 |
| MS-5ATHU-4 |  | For soft nylon and polyurethane tube | ø4/ø2.5 x M5 |
| | | | MS-5ATHU-6 |
| P.339 | | | |

KQ2

KQB2

KS
KX

KM

KF

M

H/DL
L/LL

KC

KK

KK130

DM

KDM

KB

KR

KA

KQG2

KG

KFG2

MS

KKA

KP

LQ

MQR

T

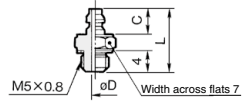
IDK

MS Series

Barb Fitting for Soft Tube: MS-5AU-3/4/6



| Model | C | øD | L | Effective area (mm ²) | Weight (g) |
|----------|-----|-----|------|-----------------------------------|------------|
| MS-5AU-3 | 4.5 | 1.6 | 11.5 | 1.7 | 1.4 |
| MS-5AU-4 | 5 | 1.8 | 12 | 2.1 | 1.5 |
| MS-5AU-6 | 7 | 2.5 | 14 | 4.0 | 1.7 |

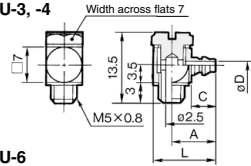


Barb Elbow for Soft Nylon: MS-5ALHU-3/4/6

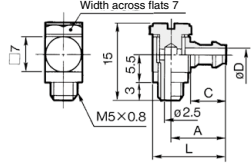


| Model | A | C | øD | L | Effective area (mm ²) | Weight (g) |
|------------|------|-----|-----|------|-----------------------------------|------------|
| MS-5ALHU-3 | 8 | 4.5 | 1.6 | 11.8 | 1.1 | 3 |
| MS-5ALHU-4 | 8.8 | 5 | 1.8 | 12.6 | 1.4 | 3.1 |
| MS-5ALHU-6 | 10.8 | 7 | 2.5 | 14.6 | 2.4 | 3.7 |

MS-5ALHU-3, -4



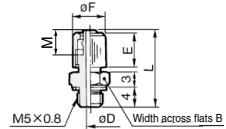
MS-5ALHU-6



Hose Nipple: MS-5H-4/6



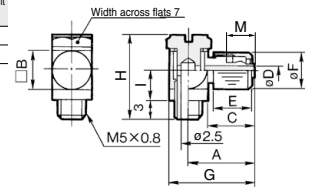
| Model | B | øD | L | E | øF | M | Effective area (mm ²) | Weight (g) |
|---------|---|-----|------|---|-----|---|-----------------------------------|------------|
| MS-5H-4 | 7 | 1.8 | 15.5 | 7 | 6.5 | 5 | 2.1 | 2.5 |
| MS-5H-6 | 8 | 2.5 | 16.5 | 8 | 8.5 | 6 | 4.0 | 3.7 |



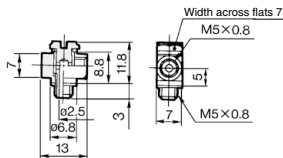
Hose Elbow: MS-5HLH-4/6



| Model | A | B | C | øD | E | øF | G | H | I | M | Effective area (mm ²) | Weight (g) |
|-----------|------|---|-----|-----|---|-----|------|----|-----|---|-----------------------------------|------------|
| MS-5HLH-4 | 12 | 7 | 8.5 | 1.8 | 7 | 6.5 | 15.8 | 15 | 5.5 | 5 | 1.4 | 4.2 |
| MS-5HLH-6 | 13.5 | 8 | 9.5 | 2.5 | 8 | 8.5 | 17.8 | 16 | 6 | 6 | 2.5 | 6.2 |

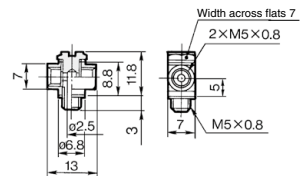


Universal Elbow: MS-5UL



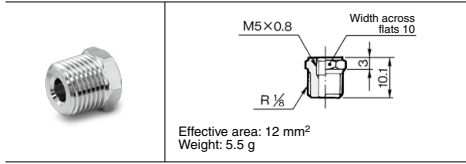
Effective area: 2.4 mm²
Weight: 4.5 g

Universal Tee: MS-5UT

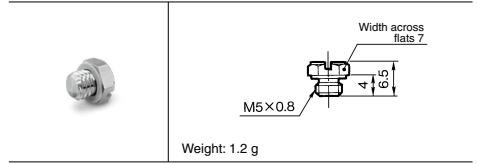


Effective area: 2.4 mm²
Weight: 4.5 g

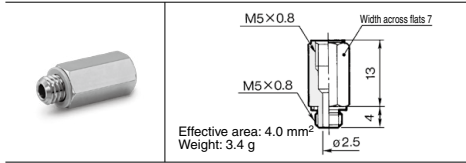
Bushing: MS-5B



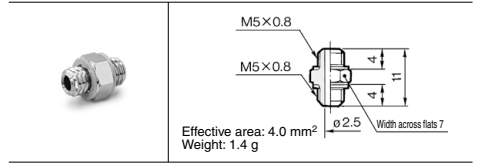
Plug: MS-5P



Extension Fitting: MS-5J



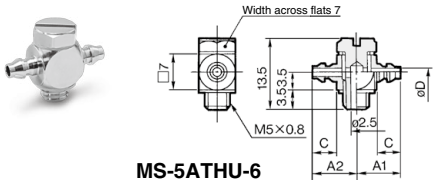
Nipple: MS-5N



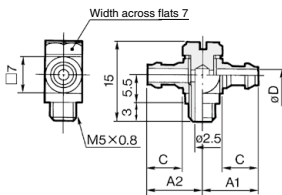
Barb Tee for Soft Tube: MS-5ATHU-3/4/6

| Model | A1 | A2 | C | øD | Effective area (mm ²) | Weight (g) |
|------------|------|------|-----|-----|-----------------------------------|------------|
| MS-5ATHU-3 | 8 | 8.3 | 4.5 | 1.6 | 1.1 | 3.4 |
| MS-5ATHU-4 | 8.8 | 8.8 | 5 | 1.8 | 1.4 | 3.6 |
| MS-5ATHU-6 | 10.8 | 10.8 | 7 | 2.5 | 2.4 | 4.2 |

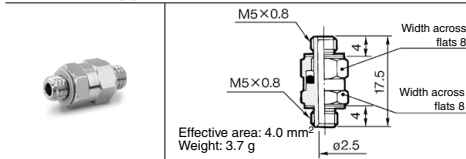
MS-5ATHU-3, -4



MS-5ATHU-6



Universal Nipple: MS-5UN



KQ2

KQB2

**KS
KX**

KM

KF

M

**H/DL
L/LL**

KC

KK

KK130

DM

KDM

KB

KR

KA

KQG2

KG

KFG2

MS

KKA

KP

LQ

MQR

T

IDK



Please contact SMC for detailed dimensions, specifications and lead times.

1 Gasket Material Modification

| Symbol | Specifications | |
|--------|---|-----------------|
| X83 | Gasket material: Stainless steel 304, NBR | |
| | Applicable thread | Gasket part no. |
| | M5 | M-5G2 |
| X112 | Gasket material: Stainless steel 316, Special FKM | |
| | Applicable thread | Gasket part no. |
| | M5 | M-5G3 |

Suffix "X83" to the end of part number.

Example) **MS-5AU-4-X83**

Spare Parts

| Description | Part no. | Applicable thread | Material | Applicable model |
|-------------|------------|-------------------|----------------------------------|--------------------------------------|
| Gasket | M-5G1 | M5 | PVC | — |
| | M-5G2 | | Stainless steel 304, NBR | — |
| | M-5G3 | | Stainless steel 316, Special FKM | — |
| | M-5GH | | Nylon 66, GF30% | MS-5ALHU-6 |
| | | | | MS-5HLH-4 MS-5HLH-6 MS-5ATHU-6 |
| Cap nut | MS-5-4-P01 | — | Stainless steel 316 | MS-5H-4 MS-5HL-4 MS-5HLH-4 |
| | MS-5-6-P01 | — | Stainless steel 316 | MS-5H-6 MS-5HL-6 MS-5HLH-6 |

⚠ Precautions

- Be sure to read this before handling the products.
- Refer to back page 50 for Safety Instructions and pages 13 to 17 for Fittings and Tubing Precautions.

Tightening of M5 Thread

⚠ Caution

- Tighten by hand, and give it an additional rotation with a wrench.
Please check the number of tightening revolutions using the table below. If tightened excessively, thread portion may be damaged and gasket may be deformed. This will cause air leakage. On the contrary, if tightened insufficiently, thread may loosen causing air leakage.

| Thread | Model | Number of tightening rotations |
|--------|---------------|--|
| M5 | MS-5AU-□ | Approx. 1/6 to 1/4 rotation ^{Note)} |
| | MS-5H-□ | |
| | MS-5P | |
| | MS-5J | |
| | MS-5N | |
| | MS-5UN | |
| | MS-5ALHU-6 | Approx. 1/2 rotation ^{Note)} |
| | MS-5HLH-□ | |
| | MS-5ATHU-6 | |
| | MS-5ALHU-3, 4 | |
| | MS-5UL | |
| | MS-5UT | |
| | MS-5ATHU-3, 4 | |

^{Note)} As a guideline, the tightening torque should be 1 to 1.5 N·m.

Use of Tube with Hose Nipple

⚠ Caution

- Cut the tube perpendicularly to the tube axis to a little longer length than required (use tube cutter "TK-1", "TK-2" or "TK-3").
- Pass the tube through the cap nut.
- Push the tube until it comes to the end of the barb portion, or it may cause air leakage or hose releasing.
- Tighten the cap nut firmly by hand on the fitting.

Use of Tube with Barb Fitting

⚠ Caution

- Cut the tube perpendicularly to the tube axis to a little longer length than required (use tube cutter "TK-1", "TK-2" or "TK-3").
- Push the tube until it comes to the end of the barb portion, or it may cause air leakage or release hose.