

Oil Free Bushing Housing Units - Standard Flanged - Standard - Built-In Copper Alloy Bushings, Single / Double

■ **Features:** Suitable for vertical use. Reduces the time of manufacturing and assembling the housing.

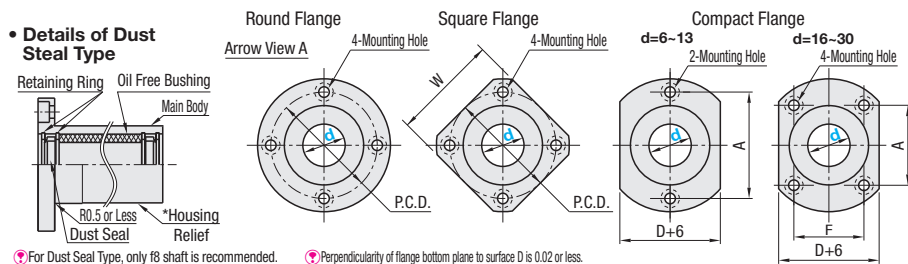
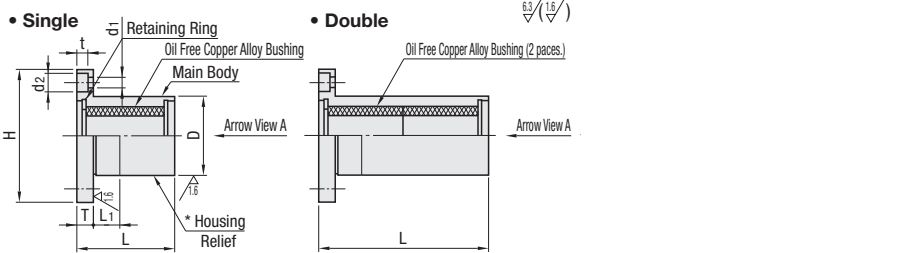
Standard Type



| Housing Type | Type | | | Seal | Seals | Housing | | Bushings |
|--------------|--------------|---------------|----------------|------------------------|----------------|------------|----------------------------|---|
| | Round Flange | Square Flange | Compact Flange | | | M Material | S Surface Treatment | |
| Single | MFMS | MFKS | MFNS | No Seal | - | SS400 | Electroless Nickel Plating | High Tensile Brass Alloy Solid Lubricant Embedded |
| | MFMS-S | MFKS-S | MFNS-S | With Non-Contact Seals | Teflon Resin | | | |
| | MFMS-DS | MFKS-DS | MFNS-DS | With Dust Seals | Nitrile Rubber | | | |
| Double | MFMW | MFKW | MFNW | No Seal | - | SS400 | Electroless Nickel Plating | High Tensile Brass Alloy Solid Lubricant Embedded |
| | MFMW-S | MFKW-S | MFNW-S | With Non-Contact Seals | Teflon Resin | | | |
| | MFMW-DS | MFKW-DS | MFNW-DS | With Dust Seals | Nitrile Rubber | | | |

* Housing Relief
When D ≤ 28, -0.1
When D ≥ 32, -0.3
-0.5

Ⓜ Recommended Mating Shaft f8 or g6



| Type | Part Number | D | L | | | | L1 | H | T | d1 | d2 | t | P.C.D. | W | F | A |
|----------|--|----------------------------------|---------------------------------|--------|-----------------|--------|-------|----|----|----|-----|---|--------|----|----|-------|
| | | | No Seal, With Non-Contact Seals | | With Dust Seals | | | | | | | | | | | |
| | | | Single | Double | Single | Double | | | | | | | | | | |
| • Single | (No Seal) (With Non-Contact Seals) (With Dust Seals) | 12 15 19 21 23 | 0 -0.018 0 0 -0.021 | 22 | 37 | - | - | 5 | 28 | 5 | 3.5 | 6 | 3.1 | 20 | 22 | - 20 |
| | | | | 27 | 47 | - | - | | | | | | | | | |
| | | | | 32 | 57 | - | - | | | | | | | | | |
| | | | | 42 | 32 | - | - | | | | | | | | | |
| | | | | 43 | 34 | - | - | | | | | | | | | |
| | | | | 48 | 37 | 45 | 75 | | | | | | | | | |
| • Double | (No Seal) (With Non-Contact Seals) (With Dust Seals) | 32 40 45 52 60 80 | 0 -0.025 0 -0.030 | 37 | 67 | 45 | 75 | 10 | 54 | 8 | 5.5 | 9 | 5.1 | 43 | 42 | 24 36 |
| | | | | 42 | 77 | 51 | 86 | | | | | | | | | |
| | | | | 58 | 108 | 70 | 120 | | | | | | | | | |
| | | | | 62 | 51 | 50 | 32 40 | | | | | | | | | |
| | | | | 68 | 128 | 81 | 141 | | | | | | | | | |
| | | | | 82 | 67 | 64 | - | | | | | | | | | |
| • Long | (No Seal) | 60 80 | 0 -0.030 | 96 | 13 | 9 | 14 | 15 | 96 | 75 | - | - | - | - | - | - |
| | | | | 98 | 92 | - | - | | | | | | | | | |

Ⓜ Flanged Height-Adjusting Spacers are selectable from **p.330**. Ⓜ With Dust Seals are only available in * marked sizes.

■ **Features of Dust Seal Type and Non-Contact Seal Type**
 - Contact Seals built into Dust Seal Type prevent small dust from sliding contact surface.
 - For sliding resistance of Dust Seal Type, refer to Sliding Resistance Test Data.
 - Employed Dust Seals are SER series of SAKAGAMI SEISAKUSHO LTD.
 - With Non-Contact Seals are provided to prevent larger size dust entry. Clearance between shafts and bushings (approx. 0.1mm) lowers the sliding resistance than Dust Seal Type.

| d | Sliding Resistance (N) | | SAKAGAMI SEISAKUSHO LTD. Dust Seal |
|----|------------------------|----|------------------------------------|
| | 16 | 20 | |
| 16 | 6 | 7 | SER16 |
| 20 | 7 | 8 | SER20 |
| 25 | 8 | 12 | SER25 |
| 30 | 12 | - | SER30 |

Ⓜ Values are for reference only.

■ **Test Conditions**
 1. Tester: Push-Pull Gauge
 2. Bushing: Copper Alloy Type
 3. Shaft: MISUMI f8 shaft

■ **Testing Method**
 Measured the load when the shaft started to move.
 * Velocity 1mm/s approx.

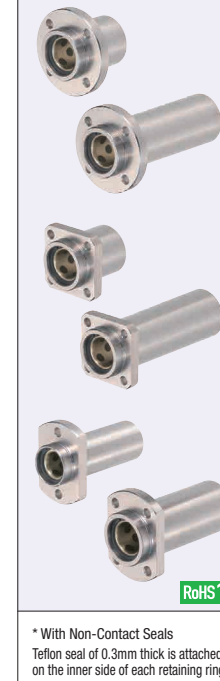
| d | (No Seal) Unit Price | | | | | | (With Non-Contact Seals) Unit Price | | | | | |
|----|----------------------|------|------|--------|------|------|-------------------------------------|--------|--------|--------|--------|--------|
| | Single | | | Double | | | Single | | | Double | | |
| | MFMS | MFKS | MFNS | MFMW | MFKW | MFNW | MFMS-S | MFKS-S | MFNS-S | MFMW-S | MFKW-S | MFNW-S |
| 6 | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | |
| 50 | | | | | | | | | | | | |

| d | (With Dust Seals) Unit Price | | | |
|----|------------------------------|---------|---------|---------|
| | Single | | Double | |
| | MFMS-DS | MFKS-DS | MFNW-DS | MFNS-DS |
| 16 | | | | |
| 20 | | | | |
| 25 | | | | |
| 30 | | | | |

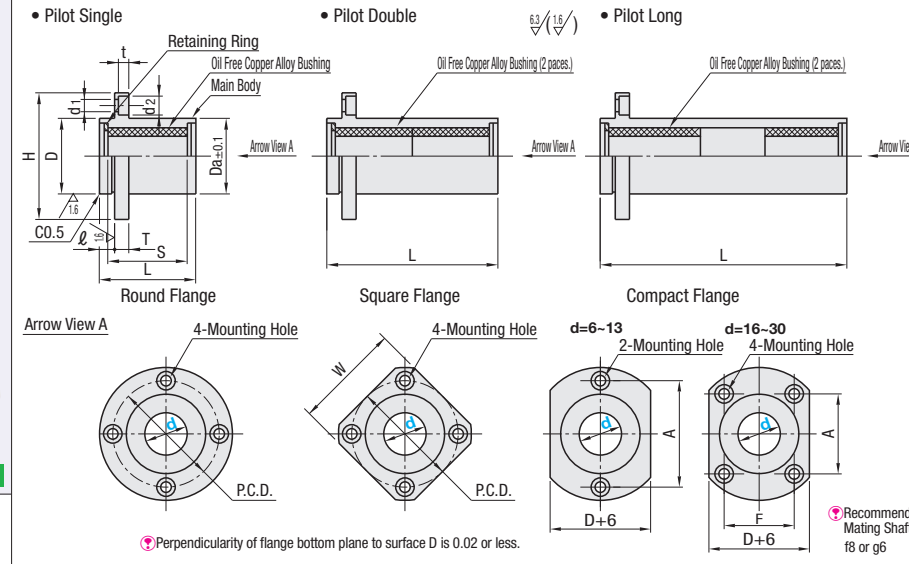
Oil Free Bushing Housing Units - Pilot Flanged - Standard - Built-In Copper Alloy Bushings, Single / Double

■ **Features:** Suitable for vertical use. Reduces the time of manufacturing and assembling the housing.
 Oil Free Bushings do not project from bushing mounting position. Saves space on the opposite side.

Standard Type



| Housing Type | Type | | | Seal | Housing | | Bushings | Operating Temperature (°C) |
|--------------|--------------|---------------|----------------|------------------------|------------|----------------------------|--------------------------|----------------------------|
| | Round Flange | Square Flange | Compact Flange | | M Material | S Surface Treatment | | |
| Single | MFIMS | MFIKS | MFINS | No Seal | SS400 | Electroless Nickel Plating | High Tensile Brass Alloy | -40 ~ 150 |
| | MFIMS-S | MFIKS-S | MFINS-S | With Non-Contact Seals | | | | |
| | MFIMW | MFIKW | MFINW | No Seal | | | | |
| Double | MFIMW-S | MFIKW-S | MFINW-S | With Non-Contact Seals | SS400 | Electroless Nickel Plating | High Tensile Brass Alloy | -40 ~ 150 |



| Type | Part Number | d | Tolerance | D | Tolerance | L | | | S | ℓ | H | T | d1 | d2 | t | P.C.D. | W | F | A | |
|----------|---------------------------------------|--------------------------------|---|----------------------------------|--------------------------------------|--------------|---------------|----------------|-----|-----|----|-----|----|-----|-----|--------|----|----|----|----|
| | | | | | | Single | Double | Long | | | | | | | | | | | | |
| | | | | | | Round Flange | Square Flange | Compact Flange | | | | | | | | | | | | |
| • Single | (No Seal) (With Non-Contact Seals) | 6 8 10 12 16 20 | +0.022 0 +0.028 0 +0.034 0 | 12 15 19 21 28 32 | 0 -0.018 0 -0.021 0 0 | 11.8 | 22 | 37 | 52 | 15 | 5 | 28 | 5 | 3.5 | 6 | 3.1 | 20 | 22 | - | 20 |
| | | | | | | 14.8 | 27 | 47 | 67 | 20 | 32 | 40 | 24 | 25 | - | 24 | | | | |
| | | | | | | 18.8 | 32 | 57 | 82 | 25 | 6 | 42 | 6 | 4.5 | 7.5 | 4.1 | 32 | 32 | - | 32 |
| | | | | | | 20.8 | 37 | 67 | 97 | 30 | 48 | 38 | 37 | 22 | 31 | | | | | |
| | | | | | | 27.8 | 31.6 | 42 | 77 | 112 | 35 | 54 | 43 | 42 | 24 | 36 | | | | |
| | | | | | | 31.6 | 42 | 77 | 112 | 35 | 8 | 62 | 8 | 5.5 | 9 | 5.1 | 51 | 50 | 32 | 40 |
| • Double | (No Seal) (With Non-Contact Seals) | 25 30 35 40 50 | +0.041 0 +0.050 0 +0.050 | 40 45 52 60 80 | 0 -0.025 0 -0.030 0 | 39.6 | 58 | 108 | 158 | 50 | 8 | 62 | 8 | 6.6 | 11 | 6.1 | 60 | 58 | 35 | 49 |
| | | | | | | 44.6 | 68 | 128 | 188 | 60 | 10 | 74 | 10 | 6.6 | 11 | 6.1 | 67 | 64 | - | |
| | | | | | | 51.6 | 68 | 128 | - | 60 | 10 | 82 | 13 | 9 | 14 | 8.1 | 78 | 75 | - | |
| | | | | | | 59.6 | 80 | 150 | - | 70 | 13 | 96 | 13 | 9 | 14 | 8.1 | 98 | 92 | - | |
| | | | | | | 79.6 | 90 | 170 | - | 80 | 13 | 116 | 13 | 9 | 14 | 8.1 | 98 | 92 | - | |

Ⓜ For Features of Non-Contact Seal Type, refer to **P.393**. Ⓜ Flanged Height-Adjusting Spacers are selectable from **p.330**.

| d | (No Seal) Unit Price | | | | | | (With Non-Contact Seals) Unit Price | | | | | | | | | |
|----|----------------------|-------|--------|-------|-------|-------|-------------------------------------|-------|---------|---------|---------|---------|---------|---------|---------|---------|
| | Single | | Double | | Long | | Single | | Double | | Long | | | | | |
| | MFIMS | MFIKS | MFINS | MFIMW | MFIKW | MFINW | MFIML | MFIKL | MFIMS-S | MFIKS-S | MFINS-S | MFIMW-S | MFIKW-S | MFINW-S | MFIML-S | MFIKL-S |
| 6 | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | | | | |
| 50 | | | | | | | | | | | | | | | | |

Ordering Example
 Part Number
 MFIMS6
 MFIMS-S6