

Universal Joint



Ordering code

F-M10X125 U

Accessories code

Code

U: Universal joint

Screw thread

| |
|----------|
| M4: M4 |
| M5: M5 |
| M6: M6 |
| M8: M8 |
| M10: M10 |
| M12: M12 |
| M14: M14 |
| M16: M16 |
| M18: M18 |
| M20: M20 |
| M27: M27 |
| M36: M36 |

Thread pitch

| Screw thread | Thread pitch |
|--------------|--------------|
| M4 | 070: 0.7mm |
| M5 | 080: 0.8mm |
| M6 | 100: 1.0mm |
| M8, M10, M12 | 125: 1.25mm |
| M14, M16 | 150: 1.5mm |
| M18, M20 | 200: 2.0mm |
| M27, M36 | |

Table for universal joint and cylinder

| Cylinder Accessory | SE | | | | | | | SI | | | | | | | | |
|-----------------------|----|----|----|----|----|-----|-----|----|----|----|----|----|-----|-----|-----|-----|
| | 32 | 40 | 50 | 63 | 80 | 100 | 125 | 32 | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 200 |
| F-M10X125U | ● | | | | | | | ● | | | | | | | | |
| F-M12X125U | | ● | | | | | | | ● | | | | | | | |
| F-M16X150U | | | ● | ● | | | | | | ● | ● | | | | | |
| F-M20X150U | | | | | ● | ● | | | | | | ● | ● | | | |
| F-M27X200U | | | | | | | ● | | | | | | | ● | | |
| F-M36X200U | | | | | | | | | | | | | | | ● | ● |

| Cylinder Accessory | SGC | | | | SC/SU | | | | JSI | | | | | | | | |
|-----------------------|-----|-----|-----|-----|-------|----|----|----|-----|-----|----|----|----|----|----|-----|-----|
| | 125 | 160 | 200 | 250 | 32 | 40 | 50 | 63 | 80 | 100 | 32 | 40 | 50 | 63 | 80 | 100 | 125 |
| F-M10X125U | | | | | ● | | | | | | ● | | | | | | |
| F-M12X125U | | | | | | ● | | | | | | | | | | | |
| F-M14X150U | | | | | | | | | | | | | ● | | | | |
| F-M16X150U | | | | | | | ● | ● | | | | | | | | | |
| F-M18X150U | | | | | | | | | | | | | ● | ● | | | |
| F-M20X150U | | | | | | | | | ● | ● | | | | | | | |
| F-M27X200U | ● | | | | | | | | | | | | | | | | ● |
| F-M36X200U | | ● | ● | | | | | | | | | | | | | | |

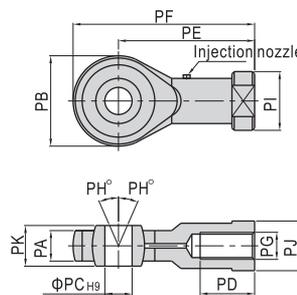
| Cylinder Accessory | ACQ | | | | | | | | | |
|-----------------------|-----|----|----|----|----|----|----|----|----|-----|
| | 12 | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
| F-M5X080U | ● | | | | | | | | | |
| F-M6X100U | | ● | | | | | | | | |
| F-M8X125U | | | ● | | | | | | | |
| F-M10X125U | | | | ● | | | | | | |
| F-M14X150U | | | | | ● | ● | | | | |
| F-M18X150U | | | | | | | ● | ● | | |

| Cylinder Accessory | MA | | | | MAL | | | | MF | | | | MBL | | | | | |
|-----------------------|----|----|----|----|-----|----|----|----|----|----|----|----|-----|----|----|----|----|----|
| | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 20 | 25 | 32 | 40 | 20 | 25 | 32 | 40 | 50 | 63 |
| F-M6X100U | ● | | | | | | | | | | | | | | | | | |
| F-M8X125U | | ● | | | | | | ● | | | | | | | | | | |
| F-M10X125U | | | ● | | | | | | ● | | | | | | | | | |
| F-M12X125U | | | | ● | | | | | | ● | | | | | | | | |
| F-M14X150U | | | | | ● | ● | | | | | | | | | | | | |

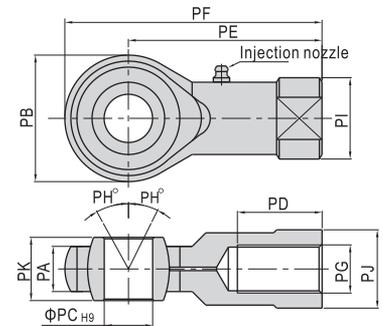
| Cylinder Accessory | PB | | | | MI | | | | | | | | |
|-----------------------|----|---|----|----|----|---|----|----|----|----|----|----|----|
| | 4 | 6 | 10 | 12 | 16 | 8 | 10 | 12 | 16 | 20 | 25 | 32 | 40 |
| F-M4X070U | | | ● | | | ● | ● | | | | | | |
| F-M5X080U | | | | ● | ● | | | | | | | | |
| F-M6X100U | | | | | | | | ● | ● | | | | |
| F-M8X125U | | | | | | | | | | ● | | | |
| F-M10X125U | | | | | | | | | | | ● | ● | |
| F-M12X125U | | | | | | | | | | | | ● | ● |

Dimensions

M8 and below



M10 and above



| Type\Item | PA | PB | PC | PD | PE | PF | PG | PH | PI | PJ | PK |
|------------|------|----|----|----|-----|-----|----------|----|------|----|----|
| F-M4X070U | 6 | 18 | 5 | 10 | 27 | 36 | M4×0.7 | 13 | 12.5 | 10 | 8 |
| F-M5X080U | 6 | 18 | 5 | 10 | 27 | 36 | M5×0.8 | 13 | 12.5 | 10 | 8 |
| F-M6X100U | 6.8 | 20 | 6 | 12 | 30 | 40 | M6×1.0 | 13 | 13 | 11 | 9 |
| F-M8X125U | 9 | 24 | 8 | 16 | 36 | 48 | M8×1.25 | 13 | 16 | 14 | 12 |
| F-M10X125U | 11 | 26 | 10 | 20 | 43 | 56 | M10×1.25 | 13 | 19 | 17 | 14 |
| F-M12X125U | 12 | 32 | 12 | 22 | 50 | 66 | M12×1.25 | 13 | 22 | 19 | 16 |
| F-M14X150U | 14 | 36 | 14 | 28 | 57 | 75 | M14×1.5 | 13 | 25 | 22 | 19 |
| F-M16X150U | 15 | 40 | 16 | 28 | 64 | 84 | M16×1.5 | 15 | 27 | 22 | 21 |
| F-M18X150U | 16.5 | 46 | 18 | 30 | 71 | 94 | M18×1.5 | 15 | 31 | 27 | 23 |
| F-M20X150U | 18 | 46 | 20 | 33 | 77 | 100 | M20×1.5 | 15 | 34 | 30 | 25 |
| F-M27X200U | 25 | 70 | 30 | 51 | 110 | 145 | M27×2.0 | 15 | 50 | 41 | 37 |
| F-M36X200U | 27.5 | 80 | 35 | 56 | 125 | 165 | M36×2.0 | 15 | 57.5 | 50 | 43 |



Universal Joint



CYLINDER ROD ENDS

Thread size M3 × 0.5 ~ M26 × 1.5

A flexible motion ensures cylinder functions!

- Eleven types are available by thread size.
Suitable for $\phi 6$ [0.236in.] ~ $\phi 100$ [3.940in.] bore cylinders.
- Because it uses a fluoro plastic liner, no lubrication is required and it is maintenance free.



Specifications

| Item Model | Thread size | Applicable cylinder and bore size | | | | | | | The max. cylinder thrust of applicable cylinder at 0.97Mpa N [lbf.] | Allowable radial static load N [lbf.] | Mass g [oz.] |
|---------------|-------------|-----------------------------------|-------------|----------------------------------------|--------------------------|----------|--------|--------|---------------------------------------------------------------------|---------------------------------------|--------------|
| | | Pen | Multi mount | Jig C (male thread specification :- B) | Slim | Twinport | DYNA | JC | | | |
| CRE-3×0.5 | M3×0.5 | 6 | 6 | — | — | — | — | — | 27.5 [6.2] | 1863.3 [419] | 10 [0.35] |
| CRE-4×0.7 | M4×0.7 | 10 | 10 | — | — | — | — | — | 76.5 [17.2] | 3334.3 [750] | 12 [0.42] |
| CRE-5×0.8 | M5×0.8 | 16 | 16 | 12 | — | — | — | — | 195.2 [43.9] | 5785.9 [1301] | 18 [0.63] |
| CRE-6×1 | M6×1 | — | — | 16 | 16 ^{Note 1} | 16 | — | — | 305.0 [68.6] | 7355.0 [1654] | 26 [0.92] |
| CRE-8×1 | M8×1 | — | — | 20 | 20, 25 ^{Note 2} | 20 | — | 20 | 475.6 [106.9] | 14121.6 [3175] | 45 [1.59] |
| CRE-10×1.25 | M10×1.25 | — | — | 25 | 20, 25, 32 | 25, 32 | 32 | 25 | 780.6 [175.5] | 19711.4 [4432] | 75 [2.65] |
| CRE-12×1.25 | M12×1.25 | — | — | — | — | — | — | — | 780.6 [175.5] | 23437.9 [5270] | 115 [4.06] |
| CRE-14×1.5 | M14×1.5 | — | — | 32, 40 | 40, 50, 63 | 40 | 40 | 32, 40 | 3026.3 [680.3] | 25497.3 [5733] | 147 [5.19] |
| CRE-18×1.5 | M18×1.5 | — | — | 50, 63 | — | — | 50, 63 | 50, 63 | 3026.3 [680.3] | 31283.2 [7034] | 268 [9.45] |
| CRE-22×1.5 | M22×1.5 | — | — | 80 | — | — | 80 | 80 | 4879.8 [1097] | 48641.0 [10934] | 452 [15.94] |
| CRE-26×1.5 | M26×1.5 | — | — | 100 | — | — | 100 | 100 | 7623.7 [1714] | 50504.2 [11353] | 648 [22.86] |

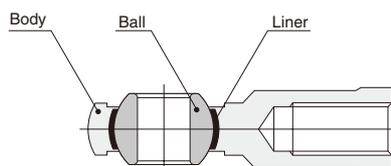
Notes: 1. For the square rod cylinders.
2. Only for the block cylinders.

Order Codes

CRE —

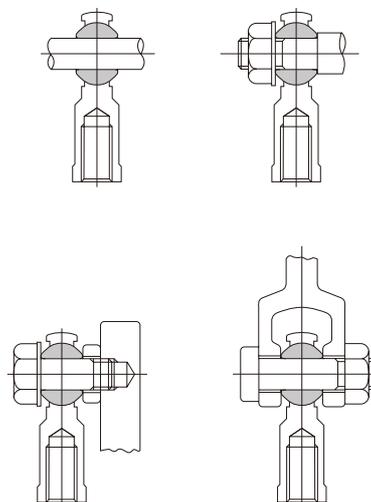
| Cylinder rod end | Thread size | |
|------------------|-------------|----------------------------------------------|
| 3 × 0.5 | M3 × 0.5 | (Hole diameter for pin $\phi 3$ [0.118in.]) |
| 4 × 0.7 | M4 × 0.7 | (Hole diameter for pin $\phi 4$ [0.157in.]) |
| 5 × 0.8 | M5 × 0.8 | (Hole diameter for pin $\phi 5$ [0.197in.]) |
| 6 × 1 | M6 × 1 | (Hole diameter for pin $\phi 6$ [0.236in.]) |
| 8 × 1 | M8 × 1 | (Hole diameter for pin $\phi 8$ [0.315in.]) |
| 10 × 1.25 | M10 × 1.25 | (Hole diameter for pin $\phi 10$ [0.394in.]) |
| 12 × 1.25 | M12 × 1.25 | (Hole diameter for pin $\phi 12$ [0.472in.]) |
| 14 × 1.5 | M14 × 1.5 | (Hole diameter for pin $\phi 14$ [0.551in.]) |
| 18 × 1.5 | M18 × 1.5 | (Hole diameter for pin $\phi 18$ [0.709in.]) |
| 22 × 1.5 | M22 × 1.5 | (Hole diameter for pin $\phi 22$ [0.866in.]) |
| 26 × 1.5 | M26 × 1.5 | (Hole diameter for pin $\phi 25$ [0.984in.]) |

Inner Construction, Major Parts and Materials



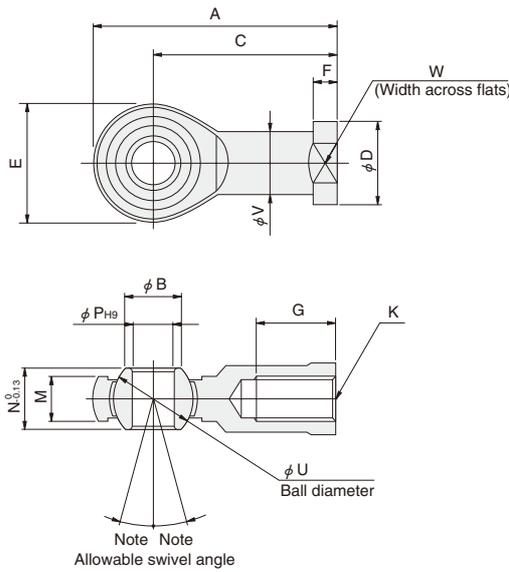
| Parts | Materials |
|-------|-------------------------------|
| Body | Carbon steel (zinc plated) |
| Ball | Bearing steel (chrome plated) |
| Liner | Fluoro plastic |

Mounting Examples

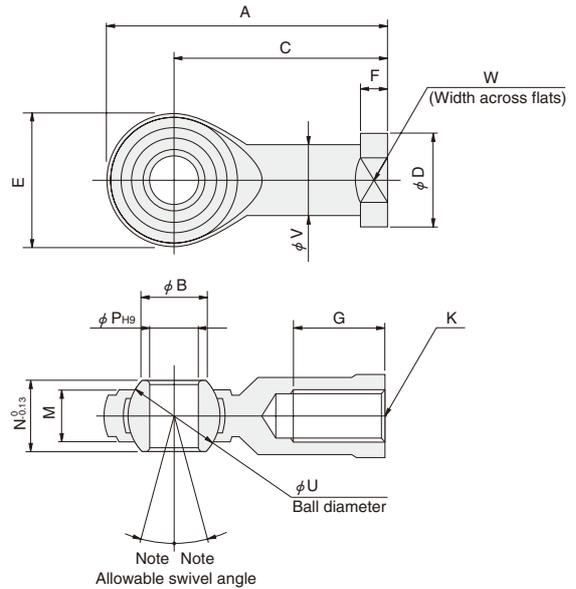
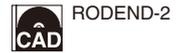


Dimensions (mm)

● CRE-3×0.5~10×1.25



● CRE-12×1.25~26×1.5

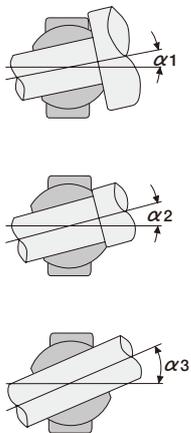


Note: The allowable swivel angle varies depending on the mating shaft. For details, see the table in Handling Instructions and Precautions.

| Model | Code | A | B | C | D | E | F | G | K | M | N | P | U | V | W |
|-------------|------|-----|------|----|----|----|-----|----|----------|------|----|----|--------|------|----|
| CRE-3×0.5 | | 27 | 5.1 | 20 | 8 | 14 | 3 | 6 | M3×0.5 | 4.5 | 6 | 3 | 7.938 | 6.5 | 7 |
| CRE-4×0.7 | | 32 | 7.4 | 24 | 10 | 16 | 3.5 | 8 | M4×0.7 | 5.2 | 7 | 4 | 9.525 | 8 | 8 |
| CRE-5×0.8 | | 35 | 7.7 | 27 | 11 | 16 | 4 | 10 | M5×0.8 | 6 | 8 | 5 | 11.112 | 9 | 9 |
| CRE-6×1 | | 39 | 9 | 30 | 13 | 18 | 5 | 12 | M6×1 | 6.7 | 9 | 6 | 12.700 | 10 | 11 |
| CRE-8×1 | | 47 | 10.4 | 36 | 16 | 22 | 5 | 16 | M8×1 | 9 | 12 | 8 | 15.875 | 12.5 | 14 |
| CRE-10×1.25 | | 56 | 12.9 | 43 | 19 | 26 | 6.5 | 20 | M10×1.25 | 10.5 | 14 | 10 | 19.050 | 15 | 17 |
| CRE-12×1.25 | | 65 | 15.4 | 50 | 22 | 30 | 6.5 | 22 | M12×1.25 | 12 | 16 | 12 | 22.225 | 17.5 | 19 |
| CRE-14×1.5 | | 74 | 16.8 | 57 | 25 | 34 | 8 | 27 | M14×1.5 | 14 | 19 | 14 | 25.400 | 20 | 22 |
| CRE-18×1.5 | | 92 | 21.8 | 71 | 31 | 42 | 10 | 36 | M18×1.5 | 16.5 | 23 | 18 | 31.750 | 25 | 27 |
| CRE-22×1.5 | | 109 | 25.8 | 84 | 37 | 50 | 12 | 43 | M22×1.5 | 20 | 28 | 22 | 38.100 | 30 | 32 |
| CRE-26×1.5 | | 122 | 29.6 | 94 | 42 | 56 | 12 | 48 | M26×1.5 | 22 | 31 | 25 | 42.863 | 33.5 | 36 |

Handling Instructions and Precautions

- The cylinder rod end is for the air cylinder only. Consult us for any use other than for the air cylinder.
- It cannot be disassembled.
- Because it uses a fluoro plastic liner, no lubrication is required and it is maintenance free.
- The ball rotates in any direction, but do not use the cylinder rod end exceeding allowable swivel angle. Moreover, the allowable swivel angle varies depending on the mating shaft. See the table below.



Allowable swivel angle

| Model | α 1 | α 2 | α 3 |
|-------------|-----|-----|-----|
| CRE-3×0.5 | 6° | 20° | 35° |
| CRE-4×0.7 | 6° | 20° | 35° |
| CRE-5×0.8 | 8° | 13° | 30° |
| CRE-6×1 | 8° | 13° | 30° |
| CRE-8×1 | 9° | 13° | 25° |
| CRE-10×1.25 | 9° | 13° | 25° |
| CRE-12×1.25 | 9° | 13° | 25° |
| CRE-14×1.5 | 10° | 14° | 24° |
| CRE-18×1.5 | 10° | 14° | 24° |
| CRE-22×1.5 | 10° | 15° | 23° |
| CRE-26×1.5 | 10° | 15° | 23° |

Rod End Bearings

Standard L Short Type

Rod End Bearings

Link Ball Type



| Type | Standard | | | | L Short Type | | | | Material | | |
|----------------------------|-------------|--------|---------------|--------|--------------|---------|---------------|--------|----------------------------------------|----------------------|----------------------------------|
| | Tapped Type | | Threaded Type | | Tapped Type | | Threaded Type | | Holder | Spherical Inner Ring | Bushing (Liner) |
| ① Steel | PHSC | PHSCL | PHSO | PHSOL | PHSCN | PHSCLN | PHSON | PHSOLN | S35C (Trivalent Chromate) | *SUJ2(S8HRC-) | Special Copper Alloy |
| ② Lubrication Free | PHSCM | PHSCLM | PHSOM | PHSOLM | PHSCMN | PHSCLMN | PHSONN | - | d3, 4 S53C (Trivalent Chromate) | *SUJ2(S8HRC-) | Self-Lubricating Synthetic Resin |
| ③ Stainless Steel Oil Free | PHSS | PHSSL | PHSOS | PHSOSL | PHSSN | PHSSLN | PHSONN | - | (for Thread) S53C (Trivalent Chromate) | SUS303 | Polytetrafluoroethylene |

Applicable Shaft Fits

| Usage Condition | Steel | Lubrication Free | Stainless Steel Oil Free |
|----------------------|-------|------------------|---------------------------------------------------------|
| Normal Load | h7 | p6 | Recommended gap between Sleeve and Shaft: 0.01 to 0.015 |
| Non-directional Load | p6 | p6 | |

Gap between Holder and Inner Ring

| Material | Steel | Lubrication Free | Stainless Steel Oil Free |
|----------------------------|---------------|------------------|--------------------------|
| Radial Direction Clearance | 0.035 or Less | 0.045 or Less | No regulation |
| Axial Clearance | 0.1 or Less | 0.1 or Less | No regulation |

Allowable Incline

| Shaft Step Shape | Shaft Condition | Allowable Incline Angle α |
|------------------|---------------------------------------------------------------------------------------|---------------------------|
| Large | Stepped part of the shaft contacts the outer circumference of the holder. | Small (α1) |
| Medium | Stepped part of the shaft contacts the side or the inner circumference of the holder. | Medium (α2) |
| No | Shaft contacts the inner circumference of the holder. | Large (α3) |

Mechanical Properties

- Tensile Strength: 275~314N/mm²
- Tensile Proof Strength (0.2%): 216~245N/mm²

The thread end of L Short Type has no surface treatment.

The above drawing is for Standard Type. L Short Type does not have T/W dimension.

Tolerance of B Dimension and B-1 Dimensions

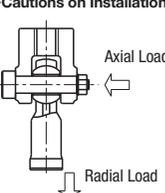
| Type | B | B-1 |
|------|-----------|---------|
| ① | 0~-0.1 | ±0.1 |
| ② | +0.1~-0.4 | 0~-0.1 |
| ③ | ±0.3 | 0~-0.13 |

| Part Number | Type | d | D | D1 | D2 | L | | MxP | B | B1 | T | W | d1 | r | Static Load Capacity Radial Cs (kN) | | | Mass |
|-----------------------|------|---|---|----|----|----------|-------|-----|---|----|---|---|----|---|-------------------------------------|---|---|------|
| | | | | | | Standard | Short | | | | | | | | ① | ② | ③ | |
| Standard L Short Type | | | | | | | | | | | | | | | | | | |
| Right-hand Thread | | | | | | | | | | | | | | | | | | |
| PHSC PHSCM PHSS | | | | | | | | | | | | | | | | | | |
| Left-hand Thread | | | | | | | | | | | | | | | | | | |
| PHSCL PHSCLM PHSSL | | | | | | | | | | | | | | | | | | |

| Part Number | Type | d | D | Standard | Short | L1 | MxP | Standard | Short | B | B1 | T | W | d1 | r | Static Load Capacity Radial Cs (kN) | | | Mass |
|-----------------------|------|---|---|----------|-------|----|-----|----------|-------|---|----|---|---|----|---|-------------------------------------|---|---|------|
| | | | | | | | | | | | | | | | | ① | ② | ③ | |
| Standard L Short Type | | | | | | | | | | | | | | | | | | | |
| Right-hand Thread | | | | | | | | | | | | | | | | | | | |
| PHSO PHSCM PHSON | | | | | | | | | | | | | | | | | | | |
| Left-hand Thread | | | | | | | | | | | | | | | | | | | |
| PHSOL PHSOLM PHSOSL | | | | | | | | | | | | | | | | | | | |

Ordering Example: PHSC5

Cautions on Installation



⚠ Rod End cannot bear the thrust load.

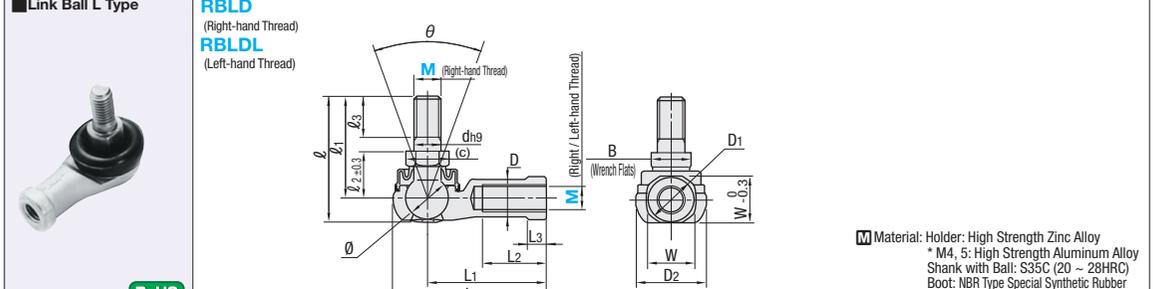
Part Number Table

| d | PHSC, PHSCL | PHSO, PHSOL | PHSCM, PHSCLM | PHSON, PHSOLN | PHSS, PHSSL | PHSOS, PHSOSL |
|-----|-------------|-------------|---------------|---------------|-------------|---------------|
| 3 | - | - | - | - | - | - |
| 4 | - | - | - | - | - | - |
| 5 | - | - | - | - | - | - |
| 6 | - | - | - | - | - | - |
| 8 | - | - | - | - | - | - |
| 10 | - | - | - | - | - | - |
| 12 | - | - | - | - | - | - |
| 14 | - | - | - | - | - | - |
| 14A | - | - | - | - | - | - |
| 16 | - | - | - | - | - | - |
| 18 | - | - | - | - | - | - |
| 18A | - | - | - | - | - | - |
| 20 | - | - | - | - | - | - |
| 22 | - | - | - | - | - | - |

Standard Type price table (d3 and d4 are not available)

| d | PHSC, PHSCL | | PHSO, PHSOL | | PHSCM, PHSCLM | | PHSON, PHSOLN | | PHSS, PHSSL | | PHSOS, PHSOSL | |
|-----|-------------|----------------------|-------------|----------------------|---------------|----------------------|---------------|----------------------|-------------|----------------------|---------------|----------------------|
| | Unit Price | Volume Discount Rate | Unit Price | Volume Discount Rate | Unit Price | Volume Discount Rate | Unit Price | Volume Discount Rate | Unit Price | Volume Discount Rate | Unit Price | Volume Discount Rate |
| 3 | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| 5 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | - | - | - | - | - | - | - | - | - | - | - | - |
| 14A | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 | - | - | - | - | - | - | - | - | - | - | - | - |
| 18 | - | - | - | - | - | - | - | - | - | - | - | - |
| 18A | - | - | - | - | - | - | - | - | - | - | - | - |
| 20 | - | - | - | - | - | - | - | - | - | - | - | - |
| 22 | - | - | - | - | - | - | - | - | - | - | - | - |

Link Ball L Type



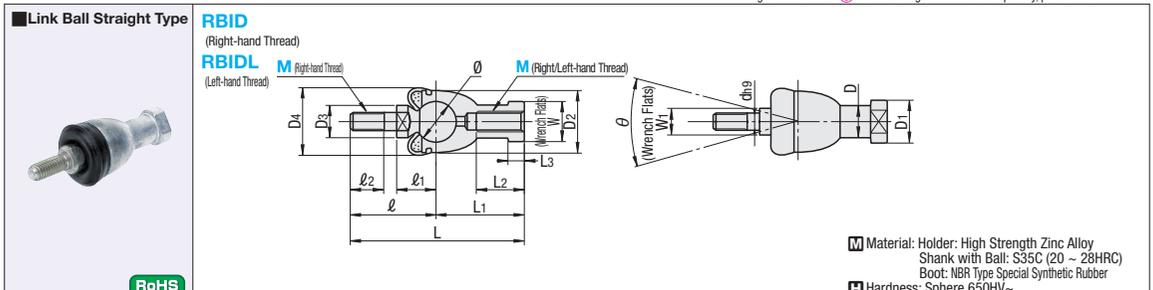
RBLD (Right-hand Thread)
RBLDL (Left-hand Thread)

Material: Holder: High Strength Zinc Alloy
Shank with Ball: S35C (20 ~ 28HRC)
Boot: NBR Type Special Synthetic Rubber

Hardness: Sphere 650HV~

| Part Number | Type | Holder Part | | | | Shank with Ball | | | | | | | Allowable Incline Angle θ | Strength of Yielding Point Pk (N) | Static Load Capacity Radial Cs (N) | Mass (g) | Unit Price | Volume Discount Rate |
|-------------------|------|-------------|---|----|----|-----------------|----|----|-----|----|---|-----|---------------------------|-----------------------------------|------------------------------------|----------|------------|----------------------|
| | | M | D | D1 | D2 | L | L1 | L2 | MxP | L3 | W | dh9 | | | | | | |
| Right-hand Thread | | | | | | | | | | | | | | | | | | |
| RBLD | | | | | | | | | | | | | | | | | | |
| Left-hand Thread | | | | | | | | | | | | | | | | | | |
| RBLDL | | | | | | | | | | | | | | | | | | |

Link Ball Straight Type



RBID (Right-hand Thread)
RBIDL (Left-hand Thread)

Material: Holder: High Strength Zinc Alloy
Shank with Ball: S35C (20 ~ 28HRC)
Boot: NBR Type Special Synthetic Rubber

Hardness: Sphere 650HV~

| Part Number | Type | Holder Part | | | | Shank with Ball | | | | | | | Allowable Incline Angle θ | Strength of Yielding Point Pk (N) | Static Load Capacity Thrust Cs (N) | Mass (g) | Unit Price | Volume Discount Rate |
|-------------------|------|-------------|---|----|----|-----------------|----|----|-----|----|---|-----|---------------------------|-----------------------------------|------------------------------------|----------|------------|----------------------|
| | | M | D | D1 | D2 | L | L1 | L2 | MxP | L3 | W | dh9 | | | | | | |
| Right-hand Thread | | | | | | | | | | | | | | | | | | |
| RBID | | | | | | | | | | | | | | | | | | |
| Left-hand Thread | | | | | | | | | | | | | | | | | | |
| RBIDL | | | | | | | | | | | | | | | | | | |

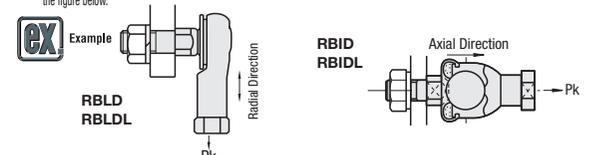
Ordering Example: RBLD6 RBIDL12A

1. Clearance of Sphere

| | RBLD, RBLDL | RBID, RBIDL |
|----------------------------|-------------|--------------|
| Radial Direction Clearance | 0.02~0.06 | 0.03 or Less |
| Axial Clearance | 0.3 or Less | 0.1 or Less |

2. H10 tolerance is recommended for Shank with Ball and the mating hole.

3. Yield Strength (Pk) shows the strength of the direction shown in the figure below.



Spherical Bearing / Spherical Bearing Holder Sets

Standard Type

Hinge Bolt

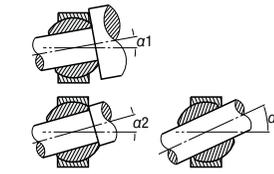
Standard / R Type

Spherical Bearing



| Type | Material | | |
|----------|----------|----------------------|-----------------------------------------------------------|
| | Holder | Spherical Inner Ring | Bushing |
| Standard | RBPB | S35C | *SUJ2 (58HRC~) Special Copper Alloy * Hard Chrome Plating |

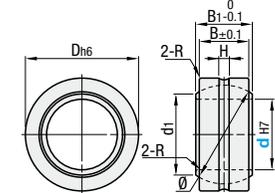
Allowable Incline



Shaft Condition

| Shaft Step Shape | Shaft Condition | Allowable Incline Angles |
|------------------|---------------------------------------------------------------------------------------|--------------------------|
| Large | Stepped part of the shaft contacts the outer circumference of the holder. | Small ($\alpha 1$) |
| Medium | Stepped part of the shaft contacts the side of the inner circumference of the holder. | Medium ($\alpha 2$) |
| No | Shaft contacts the inner circumference of the holder. | Large ($\alpha 3$) |

Dimensions



RoHS

| Part Number Type | d | D | B | B ₁ | d ₁ | H | R | Ball Dia. Ø (mm) | Allowable Incline Angle | | | Static Load Capacity Radial Cs (kN) | Mass (g) | Unit Price 1 ~ 9 pc(s). | Volume Discount Rate 10~30 |
|------------------|----|----|------|----------------|----------------|--------|-----|------------------|-------------------------|------------------|------------------|-------------------------------------|----------|-------------------------|----------------------------|
| | | | | | | | | | $\alpha 1^\circ$ | $\alpha 2^\circ$ | $\alpha 3^\circ$ | | | | |
| RBPB | 5 | 16 | 6 | 8 | 7.7 | 1 | 0.3 | 11.112 | 8 | 13 | 30 | 7.84 | 8.5 | | |
| | 6 | 18 | 6.75 | 9 | 9 | | | 12.7 | 8 | 13 | 30 | 9.8 | 13 | | |
| | 8 | 22 | 9 | 12 | 10.4 | | | 15.875 | 8 | 14 | 25 | 16.7 | 24 | | |
| | 10 | 26 | 10.5 | 14 | 12.9 | 19.05 | 8 | 14 | 25 | 23.5 | 39 | | | | |
| | 12 | 30 | 12 | 16 | 15.4 | 22.225 | 8 | 13 | 25 | 31.4 | 58 | | | | |
| | 14 | 34 | 13.5 | 19 | 16.9 | 25.4 | 10 | 16 | 25 | 40.2 | 84 | | | | |
| | 16 | 38 | 15 | 21 | 19.4 | 28.575 | 9 | 15 | 24 | 50 | 111 | | | | |
| | 18 | 42 | 16.5 | 23 | 21.9 | 31.75 | 9 | 15 | 24 | 61.8 | 160 | | | | |
| | 20 | 46 | 18 | 25 | 24.4 | 34.925 | 9 | 15 | 24 | 73.5 | 210 | | | | |
| | 22 | 50 | 20 | 28 | 25.8 | 38.1 | 10 | 17 | 23 | 88.2 | 265 | | | | |
| | 25 | 56 | 22 | 31 | 29.6 | 42.862 | 9 | 17 | 23 | 111 | 390 | | | | |
| | 30 | 66 | 25 | 37 | 34.8 | 50.8 | 10 | 17 | 23 | 148 | 610 | | | | |

Ordering Example Part Number: RBPB14

Shaft Fits

| Usage Condition | Shaft | Housing |
|-------------------------|-------------------------|---------|
| Inner Ring Rotary Load | Normal Load m6 | H7 |
| Outer Wheel Rotary Load | Non-directional Load n6 | H7 |
| Outer Wheel Rotary Load | Normal Load h7 | M7 |
| Outer Wheel Rotary Load | Non-directional Load k6 | M7 |

Clearance

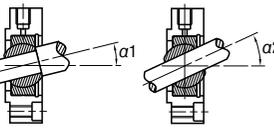
| Standard |
|---------------------------------------------|
| Radial Direction Clearance: 0.035mm or Less |
| Axial Clearance: 0.1mm or Less |

Spherical Bearing Holder Sets

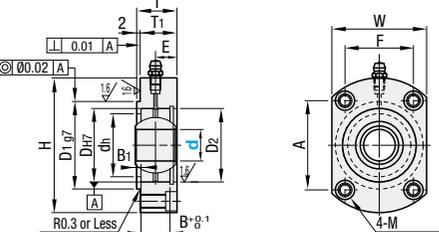


| Type | Material | | | Holder | Surface Treatment | Accessory |
|---------------|----------|----------------------|-------------------------------------|-----------------|------------------------------------------|-----------------------|
| | Holder | Spherical Inner Ring | Bushing | | | |
| Standard Type | RBPBCB | S35C | *SUJ2 (58HRC~) Special Copper Alloy | S45C Equivalent | Black Oxide / Electroless Nickel Plating | SUS304 Retaining Ring |

Allowable Incline



Dimensions



RoHS

| Part Number Type | d | D _{H7} | B | B ₁ | H | W | T | T ₁ | E | d _h | D ₁ | RBPBCB | | | RBPBCM | | | |
|------------------|----|-----------------|------|----------------|-----|----|----|----------------|-------|----------------|----------------|-------------------------|----------------------------|-------------------------|----------------------------|----------|---|---|
| | | | | | | | | | | | | Unit Price 1 ~ 9 pc(s). | Volume Discount Rate 10~20 | Unit Price 1 ~ 9 pc(s). | Volume Discount Rate 10~20 | | | |
| RBPBCB RBPBCM | 5 | 16 | 6 | 4 | 38 | 25 | 13 | 11 | 6 | 12 | 20 | -0.007 | 16 | 24 | 15 | M5 (4.3) | 8 | 5 |
| | 6 | 18 | 6.75 | 3.25 | 40 | 28 | 14 | 12 | 7.5 | 18 | 27 | | 18 | 26 | 17 | | | |
| | 8 | 22 | 9 | 2 | 45 | 31 | 14 | 12 | 7.5 | 18 | 27 | | 22 | 29 | 19 | | | |
| | 10 | 26 | 10.5 | 2.5 | 50 | 36 | 16 | 14 | 8.25 | 22 | 32 | 26 | 31 | 25 | | | | |
| | 12 | 30 | 12 | 3 | 54 | 40 | 18 | 16 | 9 | 24 | 36 | 30 | 34 | 28 | | | | |
| | 14 | 34 | 13.5 | 2.5 | 63 | 45 | 20 | 18 | 10.75 | 28 | 41 | 34 | 40 | 31 | | | | |
| | 16 | 38 | 15 | 2 | 70 | 50 | 21 | 19 | 11.5 | 35 | 46 | 38 | 43 | 37 | | | | |
| | 18 | 42 | 16.5 | 2.5 | 77 | 54 | 23 | 21 | 12.25 | 36 | 50 | 42 | 51 | 39 | | | | |
| | 20 | 46 | 18 | 2 | 87 | 57 | 24 | 22 | 13 | 40 | 53 | 47 | 58 | 39 | | | | |
| | 22 | 50 | 20 | 2 | 92 | 62 | 27 | 25 | 15 | 43 | 58 | 50 | 60 | 44 | | | | |
| | 25 | 56 | 22 | 2 | 97 | 67 | 29 | 27 | 16 | 49 | 63 | 56 | 63 | 49 | | | | |
| | 30 | 66 | 25 | 2 | 112 | 80 | 33 | 31 | 18.5 | 58 | 76 | 68 | 70 | 62 | | | | |

Ordering Example Part Number: RBPBCB12, RBPBCM12

Specifications for Spherical Bearing Holder Sets

| d | Ball Dia. Ø (mm) | Angle $\alpha 1^\circ$ | Angle $\alpha 2^\circ$ | Static Load Capacity Radial Cs (kN) | Mass (g) |
|----|------------------|------------------------|------------------------|-------------------------------------|----------|
| 5 | 11.112 | 13° | 30° | 7.84 | 8.5 |
| 6 | 12.7 | 13° | 29° | 9.8 | 13 |
| 8 | 15.875 | 14° | 25° | 16.7 | 24 |
| 10 | 19.05 | 13° | 23° | 23.5 | 39 |
| 12 | 22.225 | 13° | 23° | 31.4 | 58 |
| 14 | 25.4 | 16° | 24° | 40.2 | 84 |
| 16 | 28.575 | 15° | 24° | 50 | 111 |
| 18 | 31.75 | 15° | 24° | 61.8 | 160 |
| 20 | 34.925 | 14° | 23° | 73.5 | 210 |
| 22 | 38.1 | 15° | 23° | 88.2 | 265 |
| 25 | 42.862 | 9° | 24° | 111 | 390 |
| 30 | 50.8 | 17° | 24° | 148 | 610 |

Shaft Fits

| Usage Condition | Shaft | Housing |
|-------------------------|-------------------------|---------|
| Inner Ring Rotary Load | Normal Load m6 | H7 |
| Outer Wheel Rotary Load | Non-directional Load n6 | H7 |
| Outer Wheel Rotary Load | Normal Load h7 | M7 |
| Outer Wheel Rotary Load | Non-directional Load k6 | M7 |

Shaft Step Shape

| Shaft Step Shape | Shaft Condition | Allowable Incline Angles |
|------------------|---------------------------------------------------------------------------------------|--------------------------|
| Medium | Stepped part of the shaft contacts the side or the inner circumference of the holder. | Medium ($\alpha 1$) |
| No | Shaft contacts the inner circumference of the holder. | Large ($\alpha 2$) |

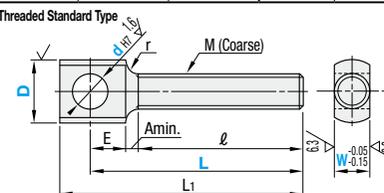
Clearance

| Standard |
|---------------------------------------------|
| Radial Direction Clearance: 0.035mm or Less |
| Axial Clearance: 0.1mm or Less |

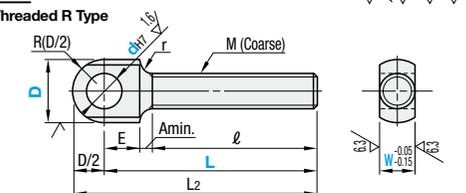
Threaded

| Standard | Type R | Material | Surface Treatment |
|-------------------|------------------|-----------------|----------------------------|
| Right-hand Thread | Left-hand Thread | S45C Equivalent | Black Oxide |
| HGBB | HGBBL | SUS304 | Electroless Nickel Plating |
| HGBM | HGBMR | | |
| HGBS | HGBSR | | |

Threaded Standard Type



Threaded R Type



RoHS

| Part Number Type | d _{H7} | D | L 1mm Increment | W 1mm Increment | M (Coarse) | ℓ max | L ₁ | L ₂ | E | A min | r |
|------------------|-----------------|--------|-----------------|-----------------|------------|--------|----------------|----------------|---|-------|---|
| | | | | | | | | | | | |
| 4 | 8 | 16~44 | 4~5 | 4 | L+5 | - | 5 | 4 | | | |
| 5 | 10 | 17~45 | 4~7 | 5 | L+6 | - | 6 | 4 | | | |
| 6 | 12 | 20~56 | 5~9 | 6 | L+8 | L+7.5 | 8 | 4 | | | |
| 8 | 15 | 24~68 | 6~12 | 8 | L+10 | L+10 | 10 | 5 | | | |
| 10 | 20 | 28~88 | 8~11 | 10 | L+12 | L+12.5 | 12 | 6 | | | |
| 12 | 20 | 30~90 | 10~16 | 12 | L+14 | L+14 | 14 | 7 | | | |
| 14 | 25 | 37~112 | 12~15 | 14 | L+15 | L+15 | 15 | 9 | | | |
| 16 | 25 | 37~112 | 12~21 | 16 | L+17 | L+17 | 17 | 9 | | | |
| 20 | 30 | 42~132 | 14~19 | 20 | L+18 | L+18 | 18 | 9 | | | |
| 25 | 36 | 49~154 | 16~25 | 25 | L+20 | L+20 | 20 | 9 | | | |
| 30 | 40 | 53~174 | 16~28 | 30 | L+20 | L+20 | 20 | 9 | | | |
| 36 | 40 | 53~174 | 20~21 | 36 | L+20 | L+20 | 20 | 9 | | | |
| 40 | 40 | 53~174 | 20~25 | 40 | L+20 | L+20 | 20 | 9 | | | |
| 40 | 40 | 53~174 | 20~30 | 40 | L+20 | L+20 | 20 | 9 | | | |
| 40 | 40 | 53~174 | 22~23 | 40 | L+20 | L+20 | 20 | 9 | | | |
| 40 | 40 | 53~174 | 22~26 | 40 | L+20 | L+20 | 20 | 9 | | | |

Ordering Example Part Number: HGBB12, HGBMR12

HGBB12 - 20 - 55 - 13
HGBMR12 - 25 - 80 - 15

Unit Price

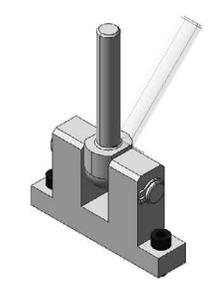
| d _{H7} | D | Unit Price | | | | |
|-----------------|----|------------|-------|------|------|-------|
| | | HGBB | HGBBL | HGBM | HGBS | HGBSR |
| 3 | 8 | | | | | |
| 4 | 8 | | | | | |
| 5 | 10 | | | | | |
| 6 | 12 | | | | | |
| 8 | 15 | | | | | |
| 10 | 20 | | | | | |
| 12 | 20 | | | | | |
| 14 | 25 | | | | | |
| 16 | 30 | | | | | |
| 20 | 30 | | | | | |
| 20 | 34 | | | | | |
| 20 | 36 | | | | | |
| 25 | 36 | | | | | |
| 25 | 40 | | | | | |

EX Example

Combination of these app. examples can be selected on our website. For details of selections, see P87.

*Enter the search keyword in the search box on e-Catalog. The search result will be shown in "Modular Assembler" area.

e-Catalog Search Keyword: #MA764 Search



Rod End Bearings

- Standard Type -

MISUMI C-VALUE Rod End Bearings

Comparing points of Similar Products | Compact D dimension. RoHS Compliant.

Ordering Example: Part Number (Type · d) **PHSC5**

| Type | Tapped Type | | Threaded Type | | Material | | |
|----------------------------|-------------------|------------------|-------------------|------------------|--------------------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------|
| | Right-Hand Thread | Left-Hand Thread | Right-Hand Thread | Left-Hand Thread | Holder | Spherical Inner Ring | Bushing (Liner) |
| ① Steel | PHSC | PHSCL | PHSO | PHSOL | S35C (Trivalent Chromate) | *SUJ2 (58HRC~) | Special Copper Alloy |
| ② Lubrication Free | PHSCM | PHSCLM | PHSOM | PHSOLM | d3 · 4 S35C (Trivalent Chromate) Other Than Above S35C (Trivalent Chromate) | *SUJ2 (58HRC~) SUJ2 (58HRC~) | Self-lubricating Synthetic Resin Polytetrafluoroethylene |
| ③ Stainless Steel Oil Free | PHSS | PHSSL | PHSOS | PHSOSL | SUS303 | SUS440C (58HRC~) | Polytetrafluoroethylene |

* Hard Chrome Plating

Tapped Type

Threaded Type

| Type | d | D | D1 | D2 | L | L1 | MxP | ℓ | | B | B1 | T | W | d1 | | | r | Static Load Capacity Radial Cs (kN) | | | Mass | | |
|----------------------------------------------|-----|----|------|-----|-----|----|----------|--------|------|------|----|-----|----|------|------|-----|------|-------------------------------------|-------|------|-------|----|---|
| | | | | | | | | (1)(2) | (3) | | | | | (1) | (2) | (3) | | (1) | (2) | (3) | | | |
| Tapped Type | 3 | 12 | 6.5 | 8 | 27 | 21 | M3×0.5 | 10 | - | 4.5 | 6 | 3 | 7 | 7.4 | - | - | 0.3 | - | 1.57 | - | 6.5 | - | - |
| Right-Hand Thread PHSC PHSCM PHSS | 4 | 14 | 8 | 9.5 | 31 | 24 | M4×0.7 | 12 | - | 5.3 | 7 | 4 | 8 | 7.6 | - | - | 0.3 | 5.59 | 3.92 | 0.98 | 16.5 | 16 | - |
| | 5 | 16 | 9 | 11 | 35 | 27 | M5×0.8 | 14 | 12.5 | 6 | 8 | 4 | 9 | 7.7 | 8.8 | 0.5 | 6.86 | 5 | 1.44 | 25 | 25 | - | |
| | 6 | 18 | 10 | 13 | 39 | 30 | M6×1.0 | 17 | 13.5 | 6.75 | 9 | 5 | 11 | 9 | 11.1 | 0.5 | 9.8 | 7.45 | 2.69 | 43 | 43 | - | |
| | 8 | 22 | 12.5 | 16 | 47 | 36 | M8×1.25 | 17 | 16 | 9 | 12 | 5 | 14 | 10.4 | 12.7 | 0.5 | 13.2 | 9.41 | 4.16 | 72 | 72 | - | |
| Left-Hand Thread PHSCL PHSCLM PHSSL | 10A | 26 | 15 | 19 | 56 | 43 | M10×1.5 | 21 | 19 | 10.5 | 14 | 6.5 | 17 | 12.9 | 15.2 | 0.7 | 16.7 | 11 | 5.88 | 107 | 107 | - | |
| | 12 | 30 | 17.5 | 22 | 65 | 50 | M12×1.75 | 24 | 24 | 12 | 16 | 8 | 19 | 15.4 | 17.6 | 0.7 | 20.6 | 15.2 | 6.61 | 160 | 160 | - | |
| | 14 | 34 | 20 | 25 | 74 | 57 | M14×2.0 | 27 | 27 | 13.5 | 19 | 10 | 22 | 16.9 | 19.2 | 0.7 | 25 | 20.2 | 8.33 | 210 | 210 | - | |
| | 16 | 38 | 22 | 27 | 83 | 64 | M16×2.0 | 33 | 33 | 15 | 21 | 10 | 27 | 19.4 | 19.4 | 0.7 | 29.4 | 25.2 | 11.52 | 295 | 11.52 | | |
| Right-Hand Thread PHSO PHSOM PHSOS | 18A | 42 | 25 | 31 | 92 | 71 | M18×2.5 | 36 | - | 16.5 | 23 | 10 | 30 | 24.4 | - | 0.7 | 34.3 | 27.8 | - | 380 | - | - | |
| | 20 | 46 | 27.5 | 34 | 100 | 77 | M20×1.5 | 40 | - | 18 | 25 | 10 | 32 | 25.8 | - | 0.7 | 41.2 | 35.9 | - | 490 | - | - | |
| | 22 | 50 | 30 | 37 | 109 | 84 | M22×1.5 | 43 | - | 20 | 28 | 12 | 32 | 25.8 | - | 0.7 | - | - | - | - | - | - | |
| | 22 | 50 | 30 | 37 | 109 | 84 | M22×1.5 | 43 | - | 20 | 28 | 12 | 32 | 25.8 | - | 0.7 | - | - | - | - | - | - | |

① Steel, ② Lubrication Free, ③ Stainless Steel Oil Free

| Type | d | D | L | L1 | MxP | ℓ | B | B1 | d1 | | | r | Static Load Capacity Radial Cs (kN) | | | Mass | | |
|-----------------------------------------------|----|----|-----|----|----------|----|------|----|--------|------|-----|------|-------------------------------------|-------|------|------|-----|---|
| | | | | | | | | | (1)(2) | (3) | (1) | | (2) | (3) | (1) | (2) | (3) | |
| Threaded Type | 3 | 12 | 33 | 27 | M3×0.5 | 15 | 4.5 | 6 | 7.4 | - | - | 0.3 | - | 1.57 | - | 4.5 | - | - |
| Right-Hand Thread PHSO PHSOM PHSOS | 4 | 14 | 37 | 30 | M4×0.7 | 17 | 5.3 | 7 | 7.6 | - | - | 0.3 | 3.43 | 3.43 | 0.98 | 12.5 | 12 | - |
| | 5 | 16 | 41 | 33 | M5×0.8 | 20 | 6 | 8 | 7.7 | 8.8 | 0.5 | 4.9 | 4.9 | 1.44 | 19 | 19 | - | |
| | 6 | 18 | 45 | 36 | M6×1.0 | 22 | 6.75 | 9 | 9 | 11.1 | 0.5 | 6.86 | 6.86 | 2.69 | 32 | 32 | - | |
| | 8 | 22 | 53 | 42 | M8×1.25 | 25 | 9 | 12 | 10.4 | 12.7 | 0.5 | 10.8 | 9.41 | 4.16 | 54 | 54 | - | |
| Left-Hand Thread PHSOL PHSOLM PHSOSL | 10 | 26 | 61 | 48 | M10×1.5 | 29 | 10.5 | 14 | 12.9 | 15.2 | 0.7 | 16.7 | 11 | 5.88 | 85 | 85 | - | |
| | 12 | 30 | 69 | 54 | M12×1.75 | 33 | 12 | 16 | 15.4 | 17.6 | 0.7 | 20.6 | 15.2 | 6.61 | 126 | 126 | - | |
| | 14 | 34 | 77 | 60 | M14×2.0 | 36 | 13.5 | 19 | 16.9 | 19.2 | 0.7 | 25 | 20.2 | 8.33 | 185 | 185 | - | |
| | 16 | 38 | 85 | 66 | M16×2.0 | 40 | 15 | 21 | 19.4 | 19.4 | 0.7 | 29.4 | 25.2 | 11.52 | 260 | 260 | - | |
| Right-Hand Thread PHSO PHSOM PHSOS | 18 | 42 | 93 | 72 | M18×2.5 | 44 | 16.5 | 23 | 21.9 | 21.9 | 0.7 | 34.3 | 27.8 | - | 340 | - | - | |
| | 20 | 46 | 101 | 78 | M20×1.5 | 47 | 18 | 25 | 24.4 | - | 0.7 | 41.2 | 35.9 | - | 435 | - | - | |
| | 22 | 50 | 109 | 84 | M22×1.5 | 51 | 20 | 28 | 25.8 | - | 0.7 | - | - | - | - | - | - | |
| | 22 | 50 | 109 | 84 | M22×1.5 | 51 | 20 | 28 | 25.8 | - | 0.7 | - | - | - | - | - | - | |

① Steel, ② Lubrication Free, ③ Stainless Steel Oil Free No Grease Fitting for PHSO(L)5 ~ 6.

1. Shaft Fits

| Usage Condition | Tolerance of Shaft Dimensions | |
|----------------------|-------------------------------|-------------------------------------|
| | Steel | Oil Free / Stainless Steel Oil Free |
| Normal Load | h7 | p6 |
| Non-directional Load | p6 | p6 |

2. Clearance

| | Steel | Oil Free / Stainless Steel Oil Free |
|----------------------------|---------------|-------------------------------------|
| Radial Direction Clearance | 0.035 or Less | 0.045 or Less |
| Axial Clearance | 0.1 or Less | 0.1 or Less |

● Tolerance of B Dimension and B - 1 Dimensions

| Type | B | B-1 |
|------|-----------|---------|
| ① | 0~-0.1 | ±0.1 |
| ② | +0.1~-0.4 | 0~-0.1 |
| ③ | ±0.3 | 0~-0.13 |

3. Allowable Slant Face

| Shaft Step Shape | Shaft Condition | Allowable Incline Angle |
|------------------|---------------------------------------------------------------------------|-------------------------|
| Large | Stepped part of the shaft contacts the outer circumference of the holder. | Small (α1) |
| Medium | Stepped part of the shaft contacts the inner circumference of the holder. | Medium (α2) |
| No | Shaft contacts the inner circumference of the holder. | Large (α3) |

| d | Ball Dia. Ø (mm) | | | α1 | | | α2 | | | α3 | | |
|----|------------------|--------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | (1) | (2) | (3) | (1) | (2) | (3) | (1) | (2) | (3) | (1) | (2) | (3) |
| 3 | - | 9.525 | - | - | 8 | - | 10 | - | 42 | - | - | - |
| 4 | - | 16.319 | - | - | 9 | - | 11 | - | 35 | - | - | - |
| 5 | 11.112 | 11.112 | 11.91 | 8 | 8 | 13 | 13 | 30 | 30 | 12 | - | - |
| 6 | 12.7 | 12.7 | 14.29 | 8 | 8 | 13 | 13 | 30 | 30 | 10 | - | - |
| 8 | 15.875 | 15.875 | 17.46 | 8 | 8 | 14 | 14 | 25 | 25 | 12 | - | - |
| 10 | 19.05 | 19.05 | 20.64 | 8 | 8 | 14 | 14 | 25 | 25 | 12 | - | - |
| 12 | 22.225 | 22.225 | 23.81 | 8 | 8 | 13 | 13 | 25 | 25 | 12 | - | - |
| 14 | 25.4 | 25.4 | 26.99 | 10 | 10 | 16 | 16 | 24 | 24 | 14 | - | - |
| 16 | 28.575 | 28.575 | 28.58 | 9 | 9 | 15 | 15 | 24 | 24 | 15 | - | - |
| 18 | 31.75 | 31.75 | 31.75 | 9 | 9 | 15 | 15 | 24 | 24 | 15 | - | - |
| 20 | 34.925 | - | - | - | - | 15 | - | 24 | - | - | - | - |
| 22 | 38.1 | - | - | - | - | 15 | - | 23 | - | - | - | - |

① Steel, ② Lubrication Free, ③ Stainless Steel Oil Free

Comparing points of Similar Products | RoHS Directive unchecked.

Ordering Example: Part Number (Type · d) **C-PHSC8**

| Type | Tapped Type | | Threaded Type | | Material | | |
|--------------------|-------------------|------------------|-------------------|------------------|--------------------------|----------------------|-----------------|
| | Right-Hand Thread | Left-Hand Thread | Right-Hand Thread | Left-Hand Thread | Holder | Spherical Inner Ring | Bushing (Liner) |
| ① Steel | C-PHSC | C-PHSCM | C-PHSC | C-PHSCM | C45 (Trivalent Chromate) | GCr45 | H62 |
| ② Lubrication Free | C-PHSCM | C-PHSCM | C-PHSCM | C-PHSCM | C45 (Trivalent Chromate) | GCr45 | PTFE |

Tapped Type

Threaded Type

| Type | d | D | D1 | D2 | L | L1 | MxP | ℓ | B | B1 | T | W | d1 | (r) | Static Load Capacity Radial Cs (kN) | | | Mass | |
|----------------------------------------|-----|----|----|------|------|----|-----|------|----|------|----|------|------|------|-------------------------------------|------|------|------|-----|
| | | | | | | | | | | | | | | | (1) | (2) | (3) | (1) | (2) |
| Tapped Type | 5 | 16 | 19 | 8.5 | 9 | 11 | 35 | 36.5 | 27 | 6 | 8 | 4 | 9 | 7.7 | 0.3 | 5.7 | 6 | 16 | 18 |
| Right-Hand Thread C-PHSC C-PHSCM | 6 | 18 | 21 | 10 | 10 | 13 | 39 | 40.5 | 30 | 6.75 | 9 | 5 | 11 | 8.96 | 0.3 | 7.2 | 7.65 | 22 | 26 |
| | 8 | 22 | 25 | 12.5 | 12.5 | 16 | 47 | 48.5 | 36 | 9 | 12 | 6.5 | 14 | 10.4 | 0.5 | 11.6 | 12.9 | 47 | 47 |
| | 10 | 26 | 29 | 15 | 15 | 19 | 56 | 57.5 | 43 | 10.5 | 14 | 6.5 | 17 | 12.9 | 0.3 | 14.5 | 18 | 77 | 77 |
| | 10A | - | - | - | - | - | - | - | - | 10.5 | 14 | 6.5 | 17 | 12.9 | 0.5 | - | - | - | - |
| Left-Hand Thread C-PHSC C-PHSCM | 12 | 30 | 33 | 17.5 | 17.5 | 22 | 65 | 66.5 | 50 | 12 | 16 | 19 | 15.4 | 0.3 | 17 | 24 | 100 | 100 | |
| | 14 | 34 | 37 | 20 | 20 | 25 | 74 | 75 | 57 | 13.5 | 19 | 8 | 22 | 16.9 | 0.5 | 24 | - | 160 | - |
| | 14A | - | - | - | - | - | - | - | - | 13.5 | 19 | 8 | 22 | 16.9 | 0.3 | - | - | - | - |
| | 16 | 40 | 43 | 22 | 22 | 27 | 84 | 85.5 | 64 | 15 | 21 | 19.4 | 19.4 | 0.5 | 28.5 | 39 | 220 | 220 | |

① Steel, ② Lubrication Free

| Type | d | D | L | L1 | MxP | ℓ | B | B1 | d1 | (r) | Static Load Capacity Radial Cs (kN) | | | Mass | | | |
|----------------------------------------|----|----|----|----|------|----|----------|----|------|-----|-------------------------------------|------|-----|------|------|-----|-----|
| | | | | | | | | | | | (1) | (2) | (3) | (1) | (2) | | |
| Threaded Type | 5 | 16 | 19 | 41 | 42.5 | 33 | M5×0.8 | 20 | 6 | 6 | 8 | 7.7 | 0.3 | 5.7 | 6 | 13 | 14 |
| Right-Hand Thread C-PHSC C-PHSCM | 6 | 18 | 21 | 45 | 46.5 | 36 | M6×1.0 | 22 | 6.75 | 6.7 | 9 | 8.96 | 0.3 | 7.2 | 7.65 | 20 | 20 |
| | 8 | 22 | 25 | 53 | 54.5 | 42 | M8×1.25 | 25 | 9 | 9 | 12 | 10.4 | 0.3 | 11.6 | 12.9 | 30 | 38 |
| | 10 | 26 | 29 | 61 | 62.5 | 48 | M10×1.5 | 29 | 10.5 | 11 | 14 | 12.9 | 0.3 | 14.5 | 18 | 55 | 55 |
| | 12 | 30 | 33 | 69 | 70.5 | 54 | M12×1.75 | 33 | 12 | 12 | 16 | 15.4 | 0.3 | 17 | 24 | 85 | 85 |
| Left-Hand Thread C-PHSC C-PHSCM | 14 | 34 | 37 | 77 | 78.5 | 60 | M14×2.0 | 36 | 13.5 | 14 | 19 | 16.9 | 0.3 | 24 | 31 | 140 | 140 |
| | 16 | 40 | 43 | 86 | 87.5 | 66 | M16×2.0 | 40 | 15 | 15 | 21 | 19.4 | 0.3 | 28.5 | 39 | 210 | 210 |