

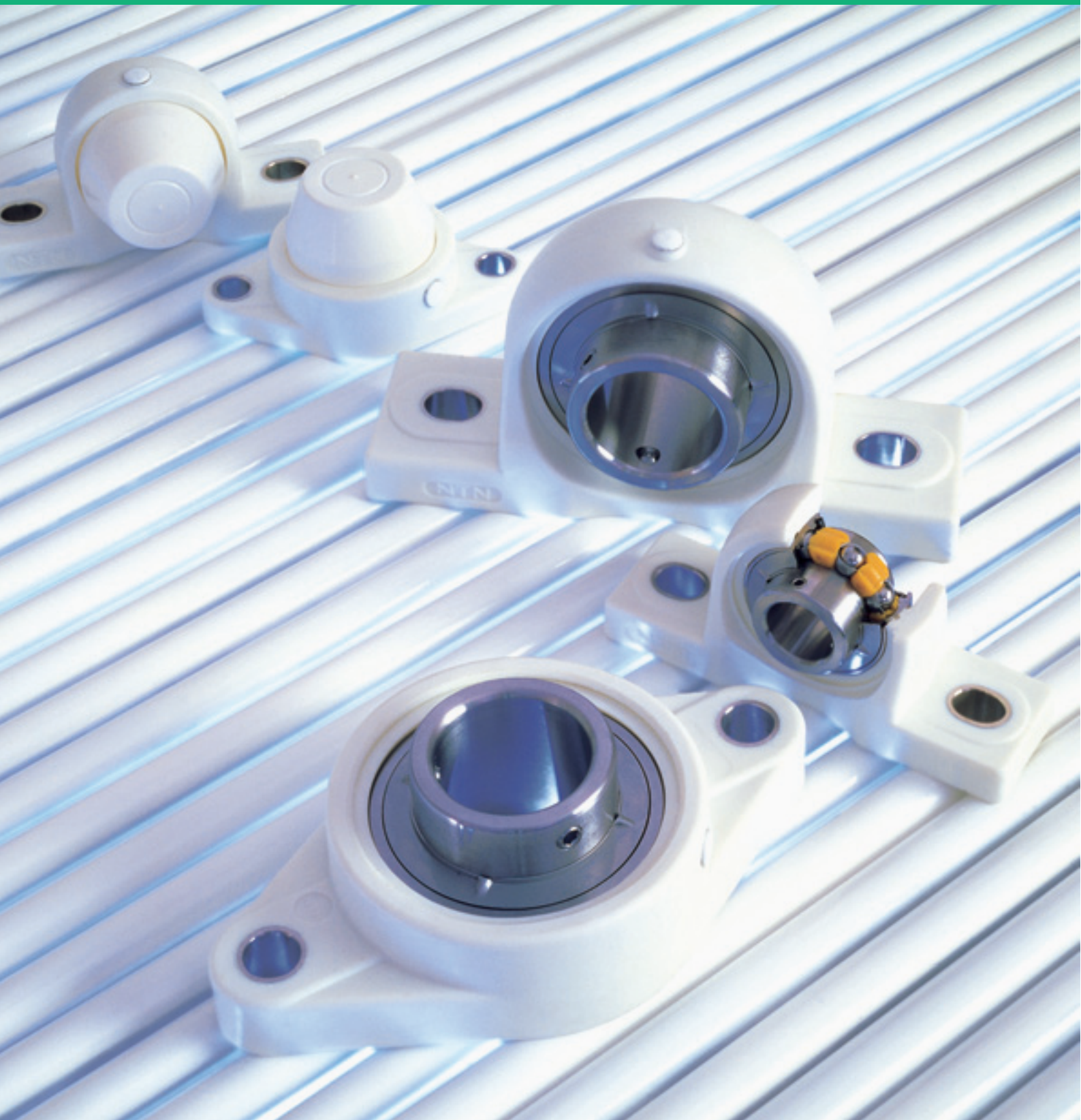
For New Technology Network

NTN®

NTN corporation

Bearing Units Plastic Housing Series

CAT. No. 3904-III / E



The NTN plastic series ensures a clean operating environment.

1. Features

Guards against corrosion

NTN bearing units in the plastic series feature ball bearings inserted into housings made of plastics that provide superior resistance to corrosion as compared to standard series cast iron units. This series is especially useful in a wide variety of applications because of the nonmagnetic and rust free properties of the housing.

Maintains a clean operating environment

The solid grease lubricant in the ball bearing, solely developed by NTN, reduces leakage from the bearing, significantly reducing environmental pollution. Also, the housing will not stain, nor is there paint to peel and contaminate the environment.

Low torque characteristics

The standard solid grease type for these ball bearing units is spot-pack which places the lubricant on the bearing cage. Torque consumption capabilities of spot-pack bearings is low due to reduced whip resistance in comparison to standard grease lubricated ball bearings.

Light weight

Weight is reduced more than 30% to 60% over standard series units.

Water resistant

The glass filled polyester housing not only reduces corrosion but offers better water resistance.

2. Materials

| Parts | | Materials |
|-----------------|-------------------------------|--|
| Bearing | Raceways | Martensite stainless steel (equivalent to SUS440C) |
| | Rolling element | Martensite stainless steel (SUS440C) |
| | Slinger, Cage | Austenite stainless steel (SUS304) |
| | Rubber seal | Nitril rubber |
| | Set screw(W shape screw head) | Martensite stainless steel (SUS410) |
| Bearing housing | Housing | Glass reinforced Polyester (VALOX 420)** |
| | Sleeve for set bolt | Austenite stainless steel (SUS 304) |
| | Nut for grease nipple | Austenite stainless steel (SUS 304) |
| Dust cover | | Polypropylene |
| Plug | | Polyethylene |

**VALOX is a trade mark of General Electric Company

3. Recommended operating temperature and allowable speed

Bearings with solid grease are recommended to operate under -20 to +80°C. However, operating temperature should be below +60°C when bearing is operated with continuous use.

dn value: 12×10^4
(dn = bore diameter in mm \times speed in min^{-1})

Remarks: The recommended operating temperature range and allowable speed is applied to all bearings with solid grease. Contact NTN when your application exceeds these recommendations. For standard grease, the maximum recommended temperature for plastic units is 80°C to prevent creeping between bearing outer ring and housing bore.

4. Compatibility and Handling

Basically, the plastic housing series is compatible with standard cast iron series units when setting, however, the nominal setting bolt diameter may differ from the standard series. The housing should be handled carefully and may be damaged if dropped on hard surfaces or hit with metal hammers. An electrostatic charge may be generated in certain operating conditions, making it inadvisable for use when flammable or explosive conditions may occur. The unit may be regreased using the plug on the housing, however relubrication is not recommended when unit ball bearings are packed with solid grease.

5. Applications

Bearings with solid grease are suitable for applications requiring a clean operating environment such as: food processing and packaging machinery, chemical processing machines, etc.

6. Option

When a stainless steel insert bearing is not required, a standard steel insert bearing can applied. In that case a relubricable type will be provided. Contact NTN for additional information.

Recommended tightening torque for set screw

Unit: N·m/lbf·inch

| Bearing number (F-UC) | Designation of set screws (W shape screw head) | | Tightening torques (Max) | |
|-----------------------|--|-------------|--------------------------|----------|
| | Metric series | Inch series | N·m | lbf·inch |
| 204, 205 | M5×0.8 | No.10-32UNF | 3.9 | 34 |
| 206 | M6×0.75 | 1/4-28UNF | 4.9 | 43 |
| 207 | M6×0.75 | 1/4-28UNF | 5.8 | 52 |
| 208 | M8×1 | 5/16-24UNF | 7.8 | 69 |

Tighten the two set screws uniformly using the torque listed in this table. Over tightening the set screw may cause the inner ring to crack.

Recommended tightening torque for setting bolt

Unit: N·m/lbf·inch

| Housing number | Nominal bolt dia. | | Tightening torques (Max.) | |
|----------------|-------------------|-------------|---------------------------|----------|
| | Metric series | Inch series | N·m | lbf·inch |
| PR204D1 | M10 | 3/8 | 17.7 | 156 |
| PR205D1 | | | 24.5 | 217 |
| PR206D1 | M12 | 7/16 | 29.4 | 260 |
| PR207D1 | | | 35.3 | 312 |
| PR208D1 | | | 45.1 | 399 |
| FLR204D1 | M10 | 3/8 | 17.7 | 156 |
| FLR205D1 | | | 24.5 | 217 |
| FLR206D1 | | | 29.4 | 260 |
| FLR207D1 | M12 | 7/16 | 35.3 | 312 |
| FLR208D1 | | | 40.2 | 356 |

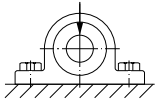
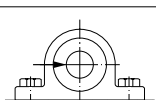
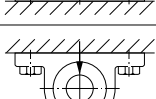
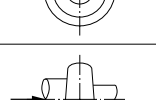
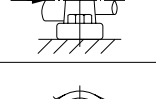
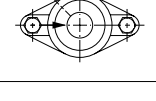
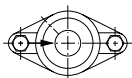
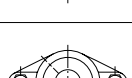

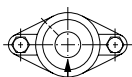


Over tightening the setting bolt may deform the plastic housing. Use the tightening torque guideline listed in this table.

NTN recommends the use of a washer between the bolt and housing base. If a washer is not used, damage to the base could occur.

Plastic housing static strength

The table below indicates the static strength of plastic housings at room temperature (23.5°C). The static strength of plastic housings varies by operating temperature, housing type and load direction and must be factored into the selection process. NTN recommends using safety equipment should the housing become damaged or broken, creating a dangerous working environment.

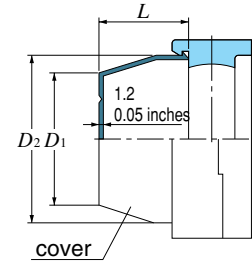
Unit: N/lbf

| Type of housing | Direction of load | Static strength of housing | | | | | |
|-----------------|-------------------|---|--------|--------|--------|--------|--------|
| | | Nominal number | | | | | |
| | | 204 | 205 | 206 | 207 | 208 | |
| PR | Downward |  | 16,600 | 19,600 | 2,830 | 38,300 | 44,500 |
| | |  | 3,730 | 4,410 | 6,370 | 8,620 | 10,000 |
| | Horizontal |  | 7,000 | 7,400 | 8,600 | 10,300 | 12,100 |
| | |  | 1,570 | 1,680 | 1,940 | 2,310 | 2,710 |
| | Upward |  | 5,600 | 5,800 | 6,000 | 6,600 | 11,100 |
| | | ※Not recommended. | 1,260 | 1,300 | 1,340 | 1,480 | 2,490 |
| | Axial direction |  | 3,000 | 3,200 | 4,000 | 5,700 | 8,500 |
| | | ※Not recommended. | 680 | 730 | 900 | 1,280 | 1,920 |
| FLR | Horizontal |  | 5,600 | 8,000 | 10,800 | 13,800 | 17,300 |
| | |  | 1,260 | 1,810 | 2,430 | 3,110 | 3,880 |
| | 45 degrees upward |  | 6,600 | 8,400 | 10,300 | 12,200 | 14,000 |
| | |  | 1,480 | 1,900 | 2,310 | 2,730 | 3,150 |
| | Upward |  | 7,400 | 7,600 | 8,500 | 10,700 | 15,100 |
| | |  | 1,680 | 1,720 | 1,920 | 2,400 | 3,400 |

■ Dimensions for dust cover

Unit: mm/ inch

| Cover number | Dimensions | | | | | |
|--------------|----------------|-------------------|----------------|-------------------|------|------------------|
| | D ₁ | | D ₂ | | L | |
| RM-204 | 36 | 1 $\frac{13}{32}$ | 50 | 1 $\frac{31}{32}$ | 29.5 | 1 $\frac{5}{32}$ |
| RM-205 | 41 | 1 $\frac{5}{8}$ | 55 | 2 $\frac{5}{32}$ | 31.0 | 1 $\frac{7}{32}$ |
| RM-206 | 50 | 1 $\frac{31}{32}$ | 64 | 2 $\frac{17}{32}$ | 35.0 | 1 $\frac{3}{8}$ |
| RM-207 | 60 | 2 $\frac{3}{8}$ | 74 | 2 $\frac{15}{16}$ | 38.0 | 1 $\frac{1}{2}$ |
| RM-208 | 68 | 2 $\frac{11}{16}$ | 84 | 3 $\frac{5}{16}$ | 40.0 | 1 $\frac{9}{16}$ |



■ Water and chemical resistance of housing (VALOX 420®)

Among engineering plastics, VALOX has better water absorption characteristics (0.06% at 23°C over 24 hours) and better dimensional stability. VALOX is made of crystallized polymer and while not affected by organic solvents, is affected by alkaline, making it important to consider the operating environment. The table demonstrates VALOX's chemical resistance when soaked in solvent at 30 or 90 days.

| | Chemicals | Temperature °C | Deterioration ratio ¹⁾ % | | | Chemicals | Temperature °C | Deterioration ratio ¹⁾ % | | |
|----------|-------------------------|----------------|-------------------------------------|---------|--------------------|--------------------|----------------------|-------------------------------------|---------|----|
| | | | Number of days soaked | | | | | Number of days soaked | | |
| | | | 30 days | 90 days | | | | 30 days | 90 days | |
| Acid | Hydrochloric acid, 10% | 23 | 89 | 85 | Organic solvent | Ethyl alcohol | 23 | 99 | 96 | |
| | Sulfuric acid, 36% | 23 | 97 | 97 | | Methyl alcohol | 23 | 91 | 82 | |
| | | 60 | 84 | 60 | | Isopropyl alcohol | 23 | 100 | 100 | |
| | Acetic acid 10% | 23 | 88 | 88 | | Acetone | 23 | 86 | 74 | |
| Alkaline | Potassium hydroacid, 5% | 23 | 88 | 10 | | Methyl Ethyl Keton | 23 | 90 | 80 | |
| | Sodium hydroacid, 10% | 23 | ※ | ※ | | Ethyl acetate | 23 | 96 | 86 | |
| | Ammonia hydroacid, 10% | 23 | 96 | 87 | | Methylene chloride | 23 | 54 | 54 | |
| Oil | Motor oil | 23 | 100 | 100 | | ethylene glycole | 23 | 100 | 100 | |
| | Brake oil | 23 | 100 | 100 | | Sodium | Zinc chrolide 10% | 23 | 97 | 94 |
| | Gasoline (Regular) | 23 | 100 | 100 | | | Calcium chrolide 10% | 23 | 98 | 98 |
| | | 60 | 93 | 90 | Sodium chrolide 5% | | 23 | 97 | 97 | |

Remarks 1) Deterioration (%) is the strength after test divided by the strength before test.

The ※ symbol indicates that results could not be measured as the test piece dissolved.

Remarks 2) The values listed in the table are not guaranteed as they are the result of soaking without operating stresses on the sample. Because this strength data is general, it does not apply under all operating conditions. Actual housing strength will vary depending on the type and concentration of liquid, temperature, load, etc.

Remarks 3) Technical data provided by General Electric Company.

■ Anti-Corrosion capability

NTN recommends ratings of ◎ to ○ for optimum corrosion resistance. ◎ ← → poor

| Materials | Condition | Atmosphere | | Water | | Acid | | |
|-----------------------------|-----------------|------------|-----|---------------|--------------|-------------|---------------|-------------------|
| | | Dry | Wet | Natural water | Sodium water | Nitric acid | Sulfuric acid | Hydrochloric acid |
| Martensite stainless steel | SUS440C, SUS410 | ○ | △ | △ | ▲ | ▲ | × | × |
| Austenite stainless steel | SUS304, SCS13 | ◎ | ◎ | ◎ | ○ | ◎ | ○ | △ |
| Polyester plastics | VALOX 420 | ◎ | ◎ | ◎ | ◎ | ▲ | ○ | ○ |
| Polypropylene, polyethylene | | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ○ |
| High carbon steel | SUJ2 | △ | ▲ | ▲ | × | × | × | × |
| Carbon steel, Cast iron | | ▲ | × | × | × | × | × | × |

Remarks: This data is obtained by observation of the surface conditions of materials.

Note that these anti-corrosion capabilities are altered by anti-corrosion surface treatment.

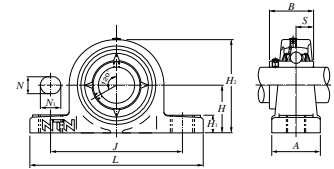
Not recommended for use in liquid.

Pillow type bearing unit F-UCPR2 series

Cylindrical bore, set screw type

| Shaft dia. mm inch | Unit number | Nominal dimensions | | | | | | | | | | | Bolt size | Bearing number | Housing number | Mass of unit (Ref.) kg lb |
|--|--------------------|--------------------|--------|---------|---------|------|----------------|----------------|----------------|--------|-------|--------------------|--------------------|----------------|----------------|---------------------------------|
| | | H | L | J | A | N | N ₁ | H ₁ | H ₂ | B | S | | | | | |
| 20 3/4 | F-UCPR204/LP03 | 33.3 | 127 | 95 | 38 | 11 | 14 | 14.2 | 65 | 31 | 12.7 | M10 | F-UC204D1/LP03 | PR204D1 | 0.3 | |
| | F-UCPR204-012/LP03 | 1 5/16 | 5 | 3 3/4 | 1 1/2 | 7/16 | 9/16 | 2 9/16 | 1.2205 | 0.500 | 3/8 | F-UC204-012D1/LP03 | PR204D1 | 0.7 | | |
| 25 13/16 7/8 15/16 1 | F-UCPR205/LP03 | 36.5 | 140 | 105 | 38 | 11 | 14 | 14.5 | 71 | 34.1 | 14.3 | M10 | F-UC205D1/LP03 | PR205D1 | 0.3 | |
| | F-UCPR205-013/LP03 | | | | | | | | | | | | F-UC205-013D1/LP03 | | | |
| | F-UCPR205-014/LP03 | 1 7/16 | 5 1/2 | 4 1/8 | 1 1/2 | 7/16 | 9/16 | 2 25/32 | 1.3425 | 0.563 | 3/8 | F-UC205-014D1/LP03 | PR205D1 | 0.7 | | |
| | F-UCPR205-015/LP03 | | | | | | | | | | | | F-UC205-015D1/LP03 | | | |
| | F-UCPR205-100/LP03 | | | | | | | | | | | | F-UC205-100D1/LP03 | | | |
| 30 1 1/16 1 1/8 1 3/16 1 1/4 | F-UCPR206/LP03 | 42.9 | 162 | 119 | 46 | 14 | 18 | 17.8 | 83 | 38.1 | 15.9 | M12 | F-UC206-D1/LP03 | PR206D1 | 0.5 | |
| | F-UCPR206-101/LP03 | | | | | | | | | | | | F-UC206-101D1/LP03 | | | |
| | F-UCPR206-102/LP03 | 1 11/16 | 6 3/8 | 4 11/16 | 1 13/16 | 9/16 | 23/32 | 1 1/16 | 3 9/32 | 1.5000 | 0.626 | 7/16 | F-UC206-102D1/LP03 | PR206D1 | 1.1 | |
| | F-UCPR206-103/LP03 | | | | | | | | | | | | F-UC206-103D1/LP03 | | | |
| | F-UCPR206-104/LP03 | | | | | | | | | | | | F-UC206-104D1/LP03 | | | |
| 35 1 1/4 1 5/16 1 3/8 1 1/2 | F-UCPR207/LP03 | 47.6 | 167 | 127 | 48 | 14 | 18 | 18 | 94 | 42.9 | 17.5 | M12 | F-UC207D1/LP03 | PR207D1 | 0.7 | |
| | F-UCPR207-104/LP03 | | | | | | | | | | | | F-UC207-104D1/LP03 | | | |
| | F-UCPR207-105/LP03 | 1 7/8 | 6 9/16 | 5 | 1 7/8 | 9/16 | 23/32 | 23/32 | 3 11/16 | 1.6890 | 0.689 | 7/16 | F-UC207-105D1/LP03 | PR207D1 | 1.5 | |
| | F-UCPR207-106/LP03 | | | | | | | | | | | | F-UC207-106D1/LP03 | | | |
| | F-UCPR207-107/LP03 | | | | | | | | | | | | F-UC207-107D1/LP03 | | | |
| 40 1 1/2 1 5/16 | F-UCPR208/LP03 | 49.2 | 184 | 137 | 54 | 14 | 18 | 19.5 | 98 | 49.2 | 19 | M12 | F-UC208D1/LP03 | PR208D1 | 1.0 | |
| | F-UCPR208-108/LP03 | 1 15/16 | 7 1/4 | 5 13/32 | 2 1/8 | 9/16 | 23/32 | 25/32 | 3 27/32 | 1.9370 | 0.748 | 7/16 | F-UC208-108D1/LP03 | PR208D1 | 2.2 | |
| | F-UCPR208-109/LP03 | | | | | | | | | | | | F-UC208-109D1/LP03 | | | |

Stainless bearing with solid grease + glass fiber reinforced plastic housing.

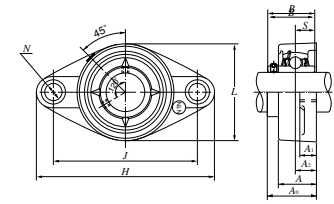


Rhombus flange type bearing unit F-UCFLR2 series

Cylindrical bore, set screw type

| Shaft dia. mm inch | Unit number | Nominal dimensions | | | | | | | | | | | Bolt size | Bearing number | Housing number | Mass of unit (Ref.) kg lb |
|--|---------------------|--------------------|---------|----------------|----------------|---------|------|---------|----------------|--------|-------|------|--------------------|----------------|----------------|---------------------------------|
| | | H | J | A ₂ | A ₁ | A | N | L | A ₀ | B | S | | | | | |
| 20 3/4 | F-UCFLR204/LP03 | 113 | 90 | 15.4 | 11.4 | 26.5 | 11 | 64 | 33.7 | 31 | 12.7 | M10 | F-UC204D1/LP03 | FLR204D1 | 0.3 | |
| | F-UCFLR204-012/LP03 | 4 7/16 | 3 35/64 | 19/32 | 7/16 | 1 1/32 | 7/16 | 2 17/32 | 1 21/64 | 1.2205 | 0.500 | 3/8 | F-UC204-012D1/LP03 | FLR204D1 | 0.7 | |
| 25 13/16 7/8 15/16 1 | F-UCFLR205/LP03 | 130 | 99 | 17 | 13.5 | 29.1 | 11 | 68 | 36.8 | 34.1 | 14.3 | M10 | F-UC205D1/LP03 | FLR205D1 | 0.3 | |
| | F-UCFLR205-013/LP03 | | | | | | | | | | | | F-UC205-013D1/LP03 | | | |
| | F-UCFLR205-014/LP03 | 5 1/8 | 3 57/64 | 21/32 | 1 7/32 | 1 5/32 | 7/16 | 2 11/16 | 1 29/64 | 1.3425 | 0.563 | 3/8 | F-UC205-014D1/LP03 | FLR205D1 | 0.7 | |
| | F-UCFLR205-015/LP03 | | | | | | | | | | | | F-UC205-015D1/LP03 | | | |
| | F-UCFLR205-100/LP03 | | | | | | | | | | | | F-UC205-100D1/LP03 | | | |
| 30 1 1/16 1 1/8 1 3/16 1 1/4 | F-UCFLR206/LP03 | 148 | 117 | 19 | 13.3 | 30.5 | 11 | 80 | 41.2 | 38.1 | 15.9 | M10 | F-UC206-D1/LP03 | FLR206D1 | 0.5 | |
| | F-UCFLR206-101/LP03 | | | | | | | | | | | | F-UC206-101D1/LP03 | | | |
| | F-UCFLR206-102/LP03 | 5 13/16 | 4 39/64 | 3/4 | 1 7/32 | 1 3/16 | 7/16 | 3 5/32 | 1 5/8 | 1.5000 | 0.626 | 3/8 | F-UC206-102D1/LP03 | FLR206D1 | 1.1 | |
| | F-UCFLR206-103/LP03 | | | | | | | | | | | | F-UC206-103D1/LP03 | | | |
| | F-UCFLR206-104/LP03 | | | | | | | | | | | | F-UC206-104D1/LP03 | | | |
| 35 1 1/4 1 5/16 1 3/8 1 1/2 | F-UCFLRM207/LP03 | 163 | 130 | 18 | 16.1 | 32.8 | 13 | 90 | 43.4 | 42.9 | 17.5 | M12 | F-UC207D1/LP03 | FLR207D1 | 0.7 | |
| | F-UCFLR207-104/LP03 | | | | | | | | | | | | F-UC207-104D1/LP03 | | | |
| | F-UCFLR207-105/LP03 | 6 13/32 | 5 1/8 | 23/32 | 5/8 | 1 9/32 | 1/2 | 3 17/32 | 1 45/64 | 1.6890 | 0.689 | 7/16 | F-UC207-105D1/LP03 | FLR207D1 | 1.5 | |
| | F-UCFLR207-106/LP03 | | | | | | | | | | | | F-UC207-106D1/LP03 | | | |
| | F-UCFLR207-107/LP03 | | | | | | | | | | | | F-UC207-107D1/LP03 | | | |
| 40 1 1/2 1 5/16 | F-UCFLR208/LP03 | 175 | 144 | 21.5 | 20 | 37.5 | 14 | 100 | 51.7 | 49.2 | 19 | M12 | F-UC208D1/LP03 | FLR208D1 | 0.9 | |
| | F-UCFLR208-108/LP03 | 6 7/8 | 5 43/64 | 27/32 | 25/32 | 1 15/32 | 9/16 | 3 15/16 | 2 1/32 | 1.9370 | 0.748 | 7/16 | F-UC208-108D1/LP03 | FLR208D1 | 2.0 | |
| | F-UCFLR208-109/LP03 | | | | | | | | | | | | F-UC208-109D1/LP03 | | | |

Stainless bearing with solid grease + glass fiber reinforced plastic housing

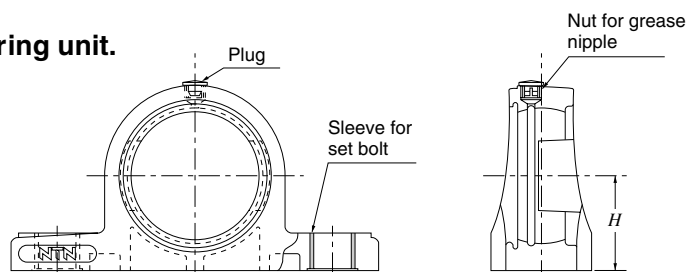


Housing tolerances

1. Center height tolerances for pillow type bearing unit.

Unit: mm/inch

| Housing part number | H deviation | DH _s |
|---------------------|-----------------|-----------------|
| PR204D1 | ±0.25 ±0.010 | |
| PR205D1 | | |
| PR206D1 | | |
| PR207D1 | | |
| PR208D1 | | |

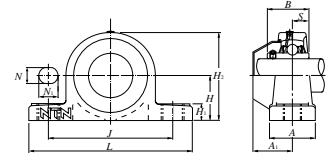


Pillow type bearing unit F-RM-UCPR2 series

Cylindrical bore, set screw type

| Shaft dia. mm inch | Unit number | Nominal dimensions mm inch | | | | | | | | | | | Bolt size | Bearing number | Housing number | Mass of unit (Ref.) kg lb |
|--|-----------------------|-------------------------------|--------|---------|---------|------|----------------|----------------|----------------|----------------|--------|-------|-----------|--------------------|----------------|---------------------------------|
| | | H | L | J | A | N | N ₁ | H ₁ | H ₂ | A ₁ | B | S | | | | |
| 20 3/4 | F-RM-UCPR204/LP03 | 33.3 | 127 | 95 | 38 | 11 | 14 | 14.2 | 65 | 39 | 31 | 12.7 | M10 | F-UC204D1/LP03 | PR204D1 | 0.3 |
| | F-RM-UCPR204-012/LP03 | 1 5/16 | 5 | 3 3/4 | 1 1/2 | 7/16 | 9/16 | 9/16 | 2 3/16 | 1 17/32 | 1.2205 | 0.500 | 3/8 | F-UC204-012D1/LP03 | PR204D1 | 0.7 |
| 25 1 3/16 7/8 15/16 1 | F-RM-UCPR205/LP03 | 36.5 | 140 | 105 | 38 | 11 | 14 | 14.5 | 71 | 40 | 34.1 | 14.3 | M10 | F-UC205D1/LP03 | PR205D1 | 0.3 |
| | F-RM-UCPR205-013/LP03 | | | | | | | | | | | | | F-UC205-013D1/LP03 | | |
| | F-RM-UCPR205-014/LP03 | | | | | | | | | | | | | F-UC205-014D1/LP03 | | |
| | F-RM-UCPR205-015/LP03 | | | | | | | | | | | | | F-UC205-015D1/LP03 | | |
| | F-RM-UCPR205-100/LP03 | 1 7/16 | 5 1/2 | 4 1/8 | 1 1/2 | 7/16 | 9/16 | 9/16 | 2 25/32 | 1 9/16 | 1.3425 | 0.563 | 3/8 | F-UC205-100D1/LP03 | PR205D1 | 0.7 |
| 30 1 1/16 1 1/8 1 3/16 1 1/4 | F-RM-UCPR206/LP03 | 42.9 | 162 | 119 | 46 | 14 | 18 | 17.8 | 83 | 46 | 38.1 | 15.9 | M12 | F-UC206D1/LP03 | PR206D1 | 0.5 |
| | F-RM-UCPR206-101/LP03 | | | | | | | | | | | | | F-UC206-101D1/LP03 | | |
| | F-RM-UCPR206-102/LP03 | | | | | | | | | | | | | F-UC206-102D1/LP03 | | |
| | F-RM-UCPR206-103/LP03 | | | | | | | | | | | | | F-UC206-103D1/LP03 | | |
| | F-RM-UCPR206-104/LP03 | 1 11/16 | 6 3/8 | 4 11/16 | 1 13/16 | 9/16 | 23/32 | 1 1/16 | 3 3/32 | 1 13/16 | 1.5000 | 0.626 | 7/16 | F-UC206-104D1/LP03 | PR206D1 | 1.1 |
| 35 1 1/4 1 5/16 1 3/8 1 1/2 | F-RM-UCPR207/LP03 | 47.6 | 167 | 127 | 48 | 14 | 18 | 18 | 94 | 49 | 42.9 | 17.5 | M12 | F-UC207D1/LP03 | PR207D1 | 0.7 |
| | F-RM-UCPR207-104/LP03 | | | | | | | | | | | | | F-UC207-104D1/LP03 | | |
| | F-RM-UCPR207-105/LP03 | | | | | | | | | | | | | F-UC207-105D1/LP03 | | |
| | F-RM-UCPR207-106/LP03 | | | | | | | | | | | | | F-UC207-106D1/LP03 | | |
| | F-RM-UCPR207-107/LP03 | 1 7/8 | 6 9/16 | 5 | 1 7/8 | 9/16 | 23/32 | 23/32 | 3 11/16 | 1 15/16 | 1.6890 | 0.689 | 7/16 | F-UC207-107D1/LP03 | PR207D1 | 1.5 |
| 40 1 1/2 1 5/16 | F-RM-UCPR208/LP03 | 49.2 | 184 | 137 | 54 | 14 | 18 | 19.5 | 98 | 52 | 49.2 | 19 | M12 | F-UC208D1/LP03 | PR208D1 | 1.0 |
| | F-RM-UCPR208-108/LP03 | | | | | | | | | | | | | F-UC208-108D1/LP03 | | |
| | F-RM-UCPR208-109/LP03 | 1 5/16 | 7 1/4 | 5 13/32 | 2 1/8 | 9/16 | 23/32 | 25/32 | 3 27/32 | 2 1/16 | 1.9370 | 0.748 | 7/16 | F-UC208-109D1/LP03 | PR208D1 | 2.2 |

Stainless bearing with solid grease + glass fiber reinforced plastic housing

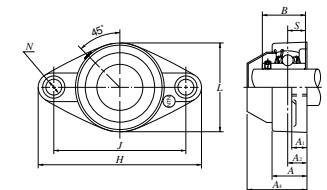


Rhombus Flange type bearing unit F-RM-UCFLR2 series

Cylindrical bore, set screw type

| Shaft dia. mm inch | Unit number | Nominal dimensions mm inch | | | | | | | | | | | Bolt size | Bearing number | Housing number | Mass of unit (Ref.) kg lb |
|--|------------------------|-------------------------------|---------|----------------|----------------|---------|------|---------|----------------|----------------|--------|-------|-----------|--------------------|----------------|---------------------------------|
| | | H | J | A ₂ | A ₁ | A | N | L | A ₀ | A ₄ | B | S | | | | |
| 20 3/4 | F-RM-UCFLR204/LP03 | 113 | 90 | 15.4 | 11.4 | 26.5 | 11 | 64 | 33.7 | 53 | 31 | 12.7 | M10 | F-UC204D1/LP03 | FLR204D1 | 0.3 |
| | F-RM-UCFLR204-012/LP03 | 4 1/16 | 3 39/64 | 19/32 | 7/16 | 1 1/32 | 7/16 | 2 17/32 | 1 21/64 | 2 1/8 | 1.2205 | 0.500 | 3/8 | F-UC204-012D1/LP03 | FLR204D1 | 0.7 |
| 25 1 3/16 7/8 15/16 1 | F-RM-UCFLR205/LP03 | 130 | 99 | 17 | 13.5 | 29.1 | 11 | 68 | 36.8 | 57 | 34.1 | 14.3 | M10 | F-UC205D1/LP03 | FLR205D1 | 0.3 |
| | F-RM-UCFLR205-013/LP03 | | | | | | | | | | | | | F-UC205-013D1/LP03 | | |
| | F-RM-UCFLR205-014/LP03 | | | | | | | | | | | | | F-UC205-014D1/LP03 | | |
| | F-RM-UCFLR205-015/LP03 | | | | | | | | | | | | | F-UC205-015D1/LP03 | | |
| | F-RM-UCFLR205-100/LP03 | 5 1/8 | 3 57/64 | 21/32 | 17/32 | 1 5/32 | 7/16 | 2 11/16 | 1 29/64 | 2 1/4 | 1.3425 | 0.563 | 3/8 | F-UC205-100D1/LP03 | FLR205D1 | 0.7 |
| 30 1 1/16 1 1/8 1 3/16 1 1/4 | F-RM-UCFLR206/LP03 | 148 | 117 | 19 | 13.3 | 30.5 | 11 | 80 | 41.2 | 64 | 38.1 | 15.9 | M10 | F-UC206D1/LP03 | FLR206D1 | 0.5 |
| | F-RM-UCFLR206-101/LP03 | | | | | | | | | | | | | F-UC206-101D1/LP03 | | |
| | F-RM-UCFLR206-102/LP03 | | | | | | | | | | | | | F-UC206-102D1/LP03 | | |
| | F-RM-UCFLR206-103/LP03 | | | | | | | | | | | | | F-UC206-103D1/LP03 | | |
| | F-RM-UCFLR206-104/LP03 | 5 13/16 | 4 39/64 | 3/4 | 17/32 | 1 3/16 | 7/16 | 3 5/32 | 1 5/8 | 2 17/32 | 1.5000 | 0.626 | 3/8 | F-UC206-104D1/LP03 | FLR206D1 | 1.1 |
| 35 1 1/4 1 5/16 1 3/8 1 1/2 | F-RM-UCFLR207/LP03 | 163 | 130 | 18 | 16.1 | 32.8 | 13 | 90 | 43.4 | 67 | 42.9 | 17.5 | M12 | F-UC207D1/LP03 | FLR207D1 | 0.7 |
| | F-RM-UCFLR207-104/LP03 | | | | | | | | | | | | | F-UC207-104D1/LP03 | | |
| | F-RM-UCFLR207-105/LP03 | | | | | | | | | | | | | F-UC207-105D1/LP03 | | |
| | F-RM-UCFLR207-106/LP03 | | | | | | | | | | | | | F-UC207-106D1/LP03 | | |
| | F-RM-UCFLR207-107/LP03 | 6 13/32 | 5 1/8 | 23/32 | 5/8 | 1 9/32 | 1/2 | 3 17/32 | 1 45/64 | 2 5/8 | 1.6890 | 0.689 | 7/16 | F-UC207-107D1/LP03 | FLR207D1 | 1.5 |
| 40 1 1/2 1 5/16 | F-RM-UCFLR208/LP03 | 175 | 144 | 21.5 | 20 | 37.5 | 14 | 100 | 51.7 | 74 | 49.2 | 19 | M12 | F-UC208D1/LP03 | FLR208D1 | 0.9 |
| | F-RM-UCFLR208-108/LP03 | | | | | | | | | | | | | F-UC208-108D1/LP03 | | |
| | F-RM-UCFLR208-109/LP03 | 6 7/8 | 5 43/64 | 27/32 | 25/32 | 1 15/32 | 9/16 | 3 15/16 | 2 3/32 | 2 15/16 | 1.9370 | 0.748 | 7/16 | F-UC208-109D1/LP03 | FLR208D1 | 2.0 |

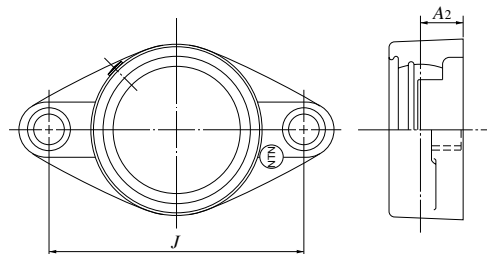
Stainless bearing with solid grease + glass fiber reinforced plastic housing



Housing tolerances

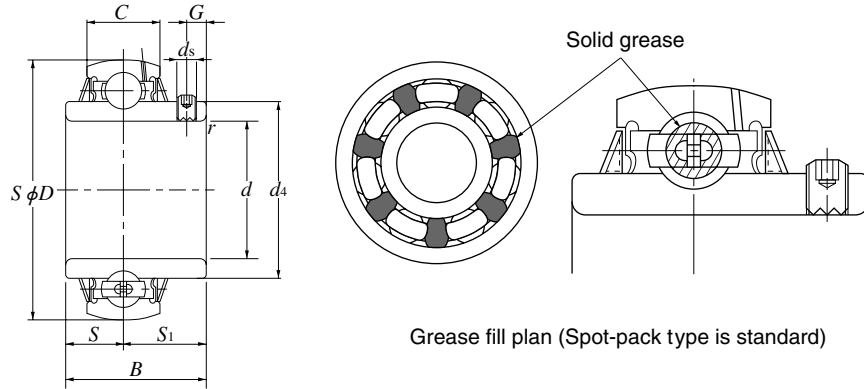
2. Tolerances for rhombus flange type housing. Unit: mm/inch

| Housing number | A ₂ deviation ΔA ₂ | Tolerances for mounting bolt holes |
|----------------|---|------------------------------------|
| FLR204D1 | ±0.7 ±0.028 | ±0.5 ±0.020 |
| FLR205D1 | | |
| FLR206D1 | | |
| FLR207D1 | | |
| FLR208D1 | | |



Stainless insert bearing

Cylindrical bore, set screw type with solid grease



| Shaft dia. mm inch | Bearing number | Nominal dimensions | | | | | | | | | | Basic load rating | | Mass (Ref.) kg lb |
|--|--------------------|--------------------|--------|--------|--------|--------------------|-------|----------------|-------|-------------|----------------|--------------------------------|----------------------------------|----------------------------|
| | | d | D | B | C | r _{s min} | S | S ₁ | G | ds | d ₄ | N dynamic C _r | lbf static C _{or} | |
| 20 3/4 | F-UC204D1/LP03 | 20 | 47 | 31 | 17 | 1 | 12.7 | 18.3 | 4.5 | M5×0.8 | 29.6 | 9 900 | 6 650 | 0.17 |
| | F-UC204-012D1/LP03 | 0.7500 | 1.8504 | 1.2205 | 0.6693 | 0.039 | 0.500 | 0.720 | 0.177 | No.10-32UNF | 1.1654 | 2 220 | 1 500 | 0.39 |
| 25 13/16 7/8 15/16 1 | F-UC205D1/LP03 | 25 | 52 | 34.1 | 17 | 1 | 14.3 | 19.8 | 5 | M5×0.8 | 33.9 | 10 800 | 7 850 | 0.20 |
| | F-UC205-013D1/LP03 | 0.8125 | | | | | | | | | | | | 0.53 |
| | F-UC205-014D1/LP03 | 0.8750 | 2.0472 | 1.3425 | 0.6693 | 0.039 | 0.563 | 0.780 | 0.197 | No.10-32UNF | 1.3346 | 2 430 | 1 770 | 0.51 |
| | F-UC205-015D1/LP03 | 0.9375 | | | | | | | | | | | | 0.46 |
| 30 1 1/16 1 1/8 1 3/16 1 1/4 | F-UC206D1/LP03 | 30 | 62 | 38.1 | 19 | 1 | 15.9 | 22.2 | 5 | M6×0.75 | 40.8 | 15 000 | 11 300 | 0.33 |
| | F-UC206-101D1/LP03 | 1.0625 | | | | | | | | | | | | 0.82 |
| | F-UC206-102D1/LP03 | 1.1250 | 2.4409 | 1.5000 | 0.7480 | 0.039 | 0.626 | 0.874 | 0.197 | 1/4-28UNF | 1.6063 | 3 350 | 2 540 | 0.77 |
| | F-UC206-103D1/LP03 | 1.1875 | | | | | | | | | | | | 0.73 |
| 35 1 1/4 1 5/16 1 3/8 1 7/8 | F-UC207D1/LP03 | 35 | 72 | 42.9 | 20 | 1.5 | 17.5 | 25.4 | 6 | M6×0.75 | 46.8 | 19 700 | 15 300 | 0.49 |
| | F-UC207-104D1/LP03 | 1.2500 | | | | | | | | | | | | 1.21 |
| | F-UC207-105D1/LP03 | 1.3125 | 2.8346 | 1.6890 | 0.7874 | 0.059 | 0.689 | 1.000 | 0.236 | 1/4-28UNF | 1.8425 | 4 450 | 3 450 | 1.15 |
| | F-UC207-106D1/LP03 | 1.3750 | | | | | | | | | | | | 1.08 |
| 40 1 1/2 1 9/16 | F-UC208D1/LP03 | 40 | 80 | 49.2 | 21 | 1.5 | 19 | 30.2 | 8 | M8×1 | 53 | 22 400 | 17 800 | 0.65 |
| | F-UC208-108D1/LP03 | 1.5000 | 3.1496 | 1.9370 | 0.8268 | 0.059 | 0.748 | 1.189 | 0.315 | 5/16-24UNF | 2.0866 | 5 050 | 4 000 | 1.52 |
| | F-UC208-109D1/LP03 | 1.5625 | | | | | | | | | | | | 1.46 |

Note) Insert bearings can be supplied with USDA qualified food grade grease. The resulting grease suffix is "L596". Ex. F-UC204 D1/L596.

| Grease name | Allowable temp. range. | Applications | Note |
|----------------------|------------------------|---------------------------------------|--|
| CALTEX FM Grease EP2 | -20~+80°C | Food processing and general machines. | H-1 standard grease qualified by USDA. |

Unit ball bearing tolerances (JIS B 1558)

1. Inner ring tolerances.

Unit: $\mu\text{m}/0.0001$ inch

| Nominal bore diameter | | | | Bore diameter | | | Width | | | Radial runout (ref.) |
|-----------------------|--------|--------|--------|-----------------|------|-----------------|--------------|------|-------------------|----------------------------|
| d | | | | Δd_{mp} | | ΔV_{dp} | ΔB_s | | Deviations (ref.) | |
| over | incl. | high | low | max. | high | low | max. | | | |
| 18 | 0.7087 | 31.750 | 1.2500 | +18 | 0 | 12 | 0 | -120 | 18 | |
| | | | | +7 | 0 | 5 | 0 | -47 | 7 | |
| 31.750 | 1.2500 | 50.800 | 2.0000 | +21 | 0 | 14 | 0 | -120 | 20 | |
| | | | | +8 | 0 | 6 | 0 | -47 | 8 | |

Δd_{mp} : Mean bore diameter deviation. ΔV_{dp} : Bore diameter variation.
 ΔB_s : Inner ring width deviation.

2. Outer ring tolerances.

Unit: $\mu\text{m}/0.0001$ inch

| Nominal outside diameter | | | | ΔD_m | | Radial runout (ref.) |
|--------------------------|--------|------|--------|--------------|-----|----------------------------|
| D | | | | Deviations | | |
| over | incl. | high | low | max. | | |
| 30 | 1.1811 | 50 | 1.9685 | 0 | -11 | 20 |
| | | | | 0 | -4 | 8 |
| 50 | 1.9685 | 80 | 3.1496 | 0 | -13 | 25 |
| | | | | 0 | -5 | 10 |

ΔD_m : Mean outside diameter deviation.
 The low deviation of outside diameter ΔD_m dose not apply within the distance of 1/4 the width of the outer ring from the side.

Attaching the dust cover

- ① Insert the edge of the dust cover in the housing's groove.
- ② Insert the other side of the dust cover in the opposite housing groove either by hand or with assistance of a plastic/rubber mallet/hammer.
- ③ To remove the dust cover, pry the edge from the housing groove using a screw driver or similar tool.

* Note: frequent mounting/dismounting of the dust cover may damage the edge of the housing and is not recommended.

