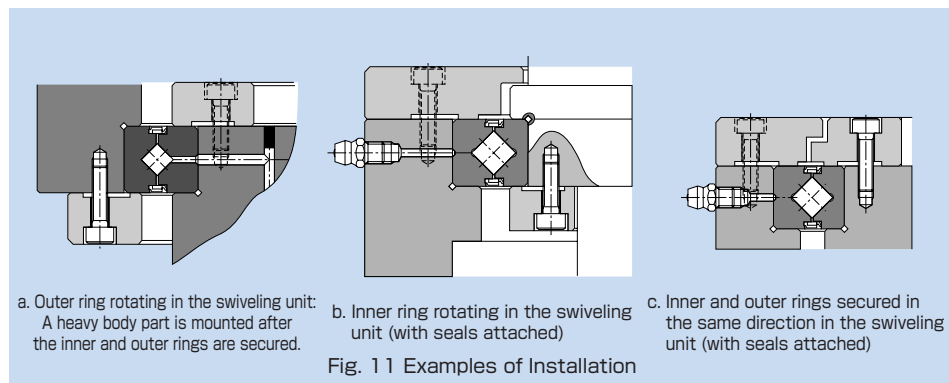


1.12. Designing the Housing and the Presser Flange

Since the Cross-Roller Ring is a compact, thin device, special consideration must be given to the rigidity of the housing and the presser flange.

With types having a separable outer ring, insufficiency in the strength of the housing, the flange or the presser bolt will result in the inability to evenly hold the inner or outer ring, or the deformation of the bearing when a moment load is applied. Consequently, the contact area of the rollers will become uneven, causing the bearing's performance to significantly be deteriorated.

Fig. 11 shows examples of installing the Cross-Roller Ring.



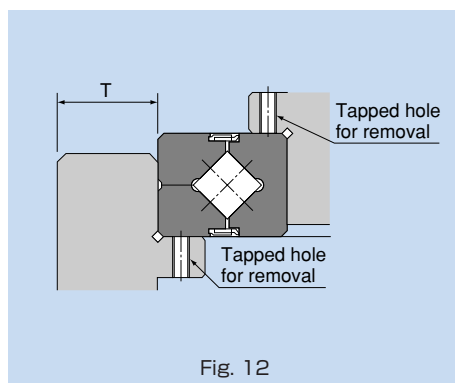
Housing

When determining the thickness of the housing, be sure it must be at least 60% of the sectional height of the bearing as a guide.

$$\text{Housing thickness } T = \frac{D-d}{2} \times 0.6 \text{ or greater}$$

(D: outer diameter of the outer ring;
d: inner diameter of the inner ring)

If tapped holes for removing the inner or outer ring (Fig. 12) are provided, the ring can be removed without causing damage to the bearing. When removing the outer ring, do not press the inner ring, or vice versa. For the dimensions of the presser on the side(s), see the shoulder dimensions indicated in the corresponding dimensional table in the "THK General Catalog - Product Specifications," provided separately.



Presser Flange and Presser Bolt

When determining the thickness of the presser flange (F) or the clearance of the flange section (S), refer to the dimensions indicated below as a guide. As for the number of the presser bolts, the greater the number of the bolts, the more stable the system becomes. As a guide, however, it is normally appropriate to use 12 bolts and equidistantly arrange them.

$$F = B \times 0.5 \text{ to } B \times 1.2$$

$$H = B_{-0.1}^0$$

$$S = 0.5 \text{ mm}$$

Even if the shaft and the housing are made of light alloy, it is recommendable to select a steel-based material for the presser flange.

When tightening the presser bolts, firmly secure them using a torque wrench or the like so that they will not loosen.

Table 16 shows tightening torques for the housing and presser flanges made of typical steel materials with medium hardness.

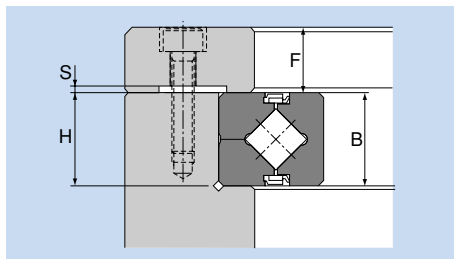


Table 15 Number of Presser Bolts and Bolt Sizes
Unit: mm

Outer diameter of the outer ring (D)		No. of bolts	Bolt size (reference value)
Above	Or less		
—	100	8 or more	M3 to M5
100	200	12 or more	M4 to M8
200	500	16 or more	M5 to M12
500	—	24 or more	M12 or thicker

Table 16 Bolt Tightening Torque
Unit: mm

Nominal size of screw	Tightening torque	Nominal size of screw	Tightening torque
M3	2	M10	70
M4	4	M12	120
M5	9	M16	200
M6	14	M20	390
M8	30	M22	530