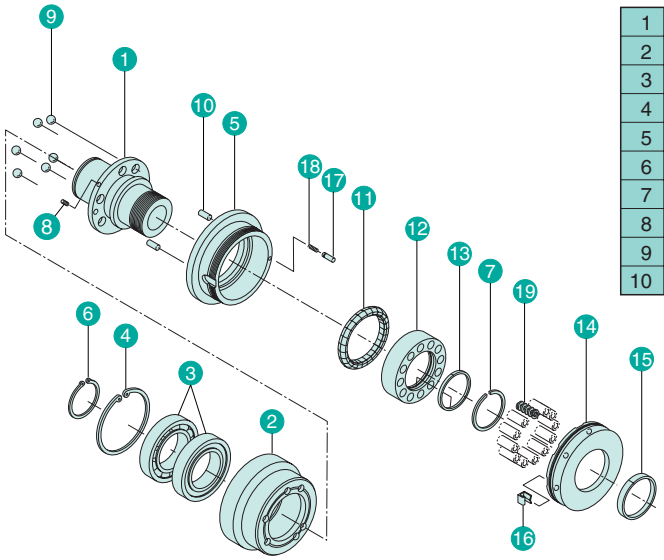
Design and Operating Principle (TY Series)

The TY series of torque releasers is available in A, D and AR types, to meet the users' needs more closely. The clutch mechanism is basically the same in all three types. The design and operating principle will be explained using type TY□A as the example.



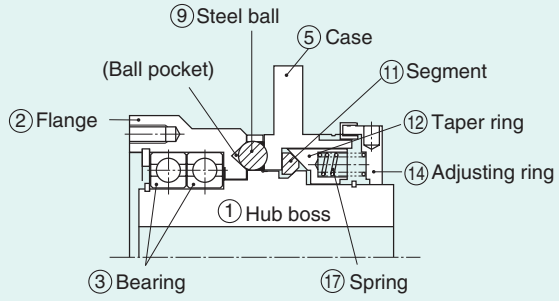
1	Hub boss	11	Segment
2	Flange	12	Taper ring
3	Bearing	13	Slide ring
4	C-ring for hole	14	Adjusting ring
5	Case	15	Metal
6	C-ring for shaft	16	Clip
7	WR type snap ring	17	Pin
8	Hexagon socket head setscrew	18	Spring
9	Steel ball	19	Spring
10	Parallel pin		

(1) In normal operation, the steel balls ⑨ held by the hub boss ① are forced into the ball pocket of the hub boss ① by the spring ⑲, and the torque is transmitted from the hub boss ① through the steel balls ⑨ to the flange ②.

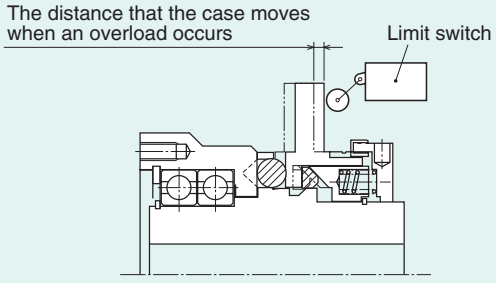
(2) When an overload occurs, the steel balls ⑨ are pushed out along the sloping ball pocket in the flange ② in order to stop transmitting torque. In addition, the segment ⑪ moves up the hub boss slope against the force of the springs ⑲ to open the gap between the case ⑤ and the taper ring ⑫, finally reaching the peak of the hub boss. Consequently, the force needed to press the steel balls ⑨ against the ball pocket in the flange ② is removed and therefore the flange ② is free to rotate on the bearing ③. At this time, since the case ⑤ moves in the axial direction (toward the adjusting ring ⑭), you can use this motion to detect an overload by installing a limit switch, proximity switch or the like.

(3) To resume operation, remove the cause of the overload and rotate the input side or the output side of the torque releaser until the marks on the hub boss ① and flange ② are aligned, and then press the case ⑤ against the flange ② to reset it.

In normal operation (when the torque releaser is set)



When an overload occurs (when the torque is released)



*Dimensions and specifications are subject to change without prior notice.

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