

## 6.2. Preload and Rigidity

Preload is defined as the load preliminarily applied to the ball in order to eliminate angular backlash (clearance in the rotational direction) and increase rigidity.

When given a preload, the Ball Spline is capable of increasing its rigidity by eliminating the angular backlash according to the magnitude of the preload. Fig. 2 shows the displacement in the rotational direction when a rotational torque is applied.

Thus, the effect of a preload can be obtained up to 2.8 times that of the applied preload. When given the same rotational torque, the displacement when a preload is applied is 0.5 or less of that without a preload. The rigidity with a preload is at least twice greater than that without a preload.

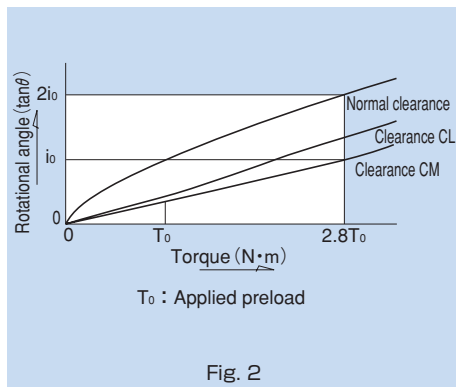


Fig. 2