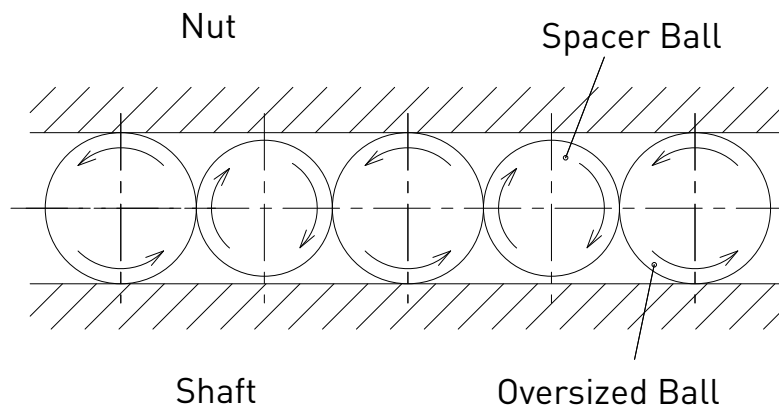


# Q&A

Question: What is the Spacer Ball?

It is often seen "spacer Ball (1 : 1) " in KSS drawing. Let us explain "Spacer Ball".

Jump to conclusion, Spacer Ball is slightly smaller size (several um or more) Ball than nominal size Ball, which is applied Axial load (see figure below) .



"Spacer Ball ratio (1 : 1) " means that Spacer Balls and Load Balls, which are applied Axial load, are installed alternately. As you can see, Spacer Ball cannot carry the Load , so Capacity and Rigidity will decrease by installing Spacer Balls.

Why is the Spacer Ball required then? Ball Screw is spiral structure unlike Bearing, so retainer cannot be inserted between Balls. Because of this, Balls next to each other always contact, so Balls scrape all the time. This phenomenon is one of the reason to deteriorate the smooth movement (i.e. Torque ripple, hand-feeling) . It is effective to install Spacer Balls, which is slightly smaller than Load Balls to relieve this scrape. Spacer Balls play a role of retainer between Load Balls and dissolve scrape of Balls. Installing Spacer Balls are especially effective for oversized Ball Preload.

Therefore, for precision positioning machine, Spacer Balls are usually used to avoid deteriorating smooth movement, even though Capacity and Rigidity decrease.

Installing of spacer Balls is useful way to keep the sooth movement of Ball screw!!!