Q&A

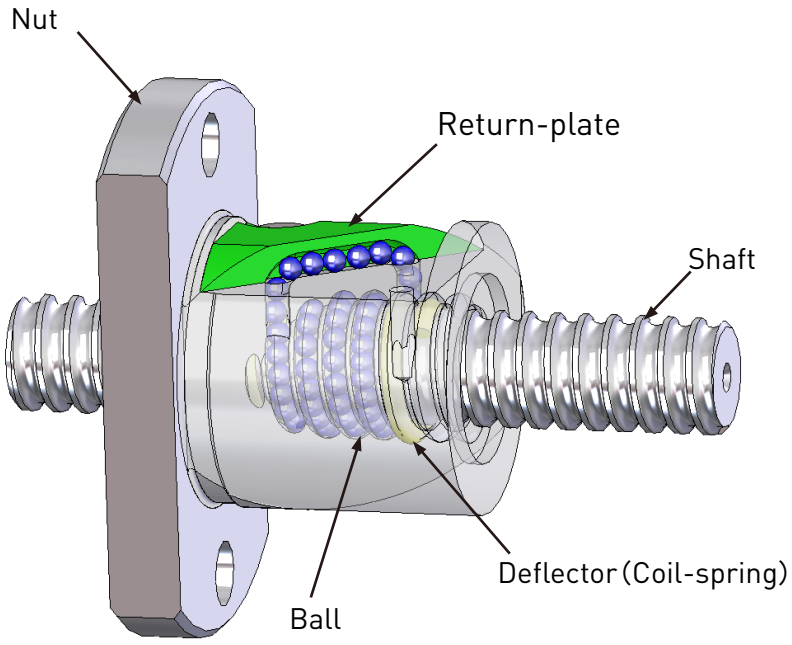
Question: What is the Ball Screw?

Ball Screw is composed of Shaft, Nut and Balls, as shown in figure below. Ball Screw is the mechanical component, which converts rotary motion into linear motion. In other words, either Shaft or Nut will be rotated, another part (Shaft or Nut) will move linearly.

The difference compared to Lead Screws is that Ball Screws have many Balls between Shaft and Nut groove, and will rotate lower Torque than Lead Screws. In Ball Screws, the re-circulation structure, in which Balls circulate endlessly along the Screw Shaft and Nut groove, is the vital element.

Let us take an example for KSS major re-circulation system, which is called Return-plate system.

The figure below shows cross-section of Ball Screw. The Return-plate system uses coil-springs, which is called Deflector, incorporated inside the Nut to pick up the Balls and circulate them via the Return-plate channel. Technical term of "Number of circuit" means how many rotation Balls run through Screw groove between Shaft and Nut and back to Return-plate. For example, Balls run 3 and 3/4 rotations along the groove of Shaft and Nut and back to Return-plate, it will be called 3.7 circuits.



It became clear how the inside of Ball Screw is!!