Q-BS-04

Q&A

Question: What kinds of accuracy grade are there in Ball Screws?

Accuracy grade of Ball Screw is prescribed in JIS B 1192-1997. There are 6 types of grade, which are class-0,1,3,5,7, and 10. The lower number of class is higher accuracy grade. Generally, the accuracy grade is described as "C" (class) + grade number, like C0,C1,C3,C5,C7, and C10.

Some items of specifications will differ based on accuracy grade as shown below.

1) Lead accuracy
   Actual mean travel deviation, Variation, etc.
2) Mounting accuracy
   Total Run-out, Radial Run-out, Axial Run-out (Perpendicularity)
3) Preload Dynamic Drag Torque
   Deviation of Torque ripple

KSS inspects Lead accuracy and Mounting accuracy based on JIS (Japan Industrial Standard). But regarding Preload Dynamic Drag Torque, KSS uses our own standard. Because there is no criterion about Torque deviation on JIS for such small size Ball Screws.

****In detail****

In the purpose of correspondence to ISO, Japan Industrial Standard (JIS B 1191, 1192) of Ball Screw was revised in 1997 (JIS B 1192-1997 unified). Regarding accuracy grade, C series (current JIS C0, 1,3,5) and Cp, Ct series (standard corresponding to ISO) was established. Small symbol, p means positioning Ball Screw, t means transport Ball Screw.

KSS conforms to JIS B 1192-1997 and adopts C series regarding class-0,1,3 and 5, Cp, Ct series regarding class-7 and 10.

Smaller number higher accuracy!!!