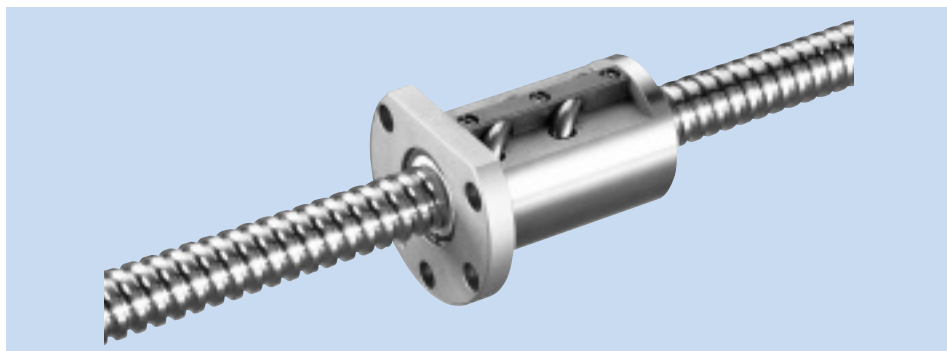


2.2. Types of Ball Screws with Ball Cage®

High-Speed Ball Screw with Ball Cage Model SBN



● Structure and Features

High-Speed Ball Screw with Ball Cage model SBN has a circulation structure where balls are picked up at the tangential direction (Fig. 2), has a strengthened circulation path and uses a ball cage, thus to achieve a DN value* of 130,000 (* DN value = ball center diameter x rotation speed per minute).

As a result of adopting the offset preloading method (Fig. 4), which shifts the lead in the central area of the ball screw nut, its overall ball screw nut length is shorter and its body is more compact than the double-nut type, which uses the spacer-based preloading method.

Optionally, QZ Lubricator for Ball Screws (see page K-98), which has been developed for long-term maintenance-free operation, and a wiper ring (see page K-102), which prevents foreign matter from entering the ball screw nut, are available.

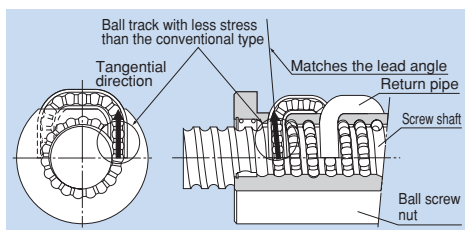


Fig. 2 Circulation Structure of Model SBN

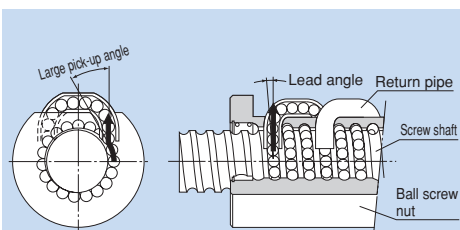


Fig. 3 Circulation Structure of Conventional Type

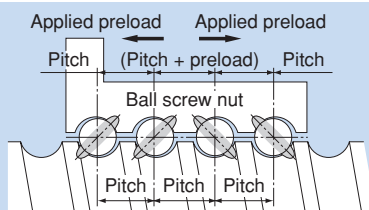
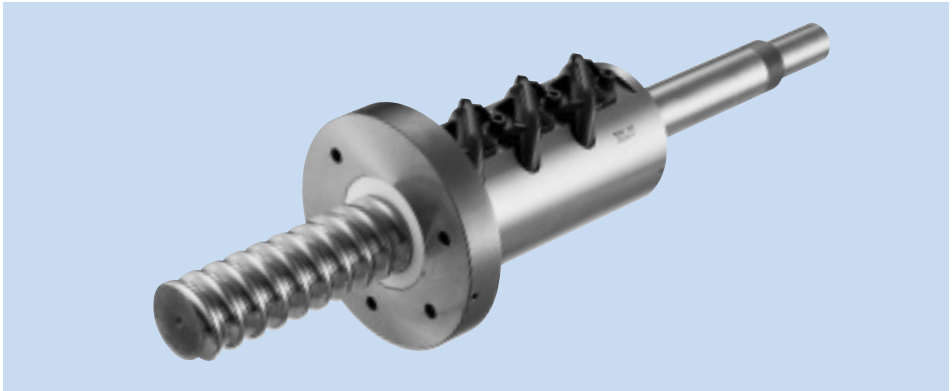


Fig. 4 Offset Preloading Method

High-Load Ball Screw with Ball Cage Model HBN



● Structure and Features

High-Load Ball Screw with Ball Cage model HBN has a rated load more than twice greater than the conventional type because of the optimal design (in ball cage, ball diameter, groove curvature radius, contact angle between ball and groove, and number of turns) for high loads.

In addition, it has a circulation structure where balls are picked up at the near-tangential direction (Fig. 5), has a strengthened circulation path and uses a ball cage, thus to achieve a DN value of 130,000.

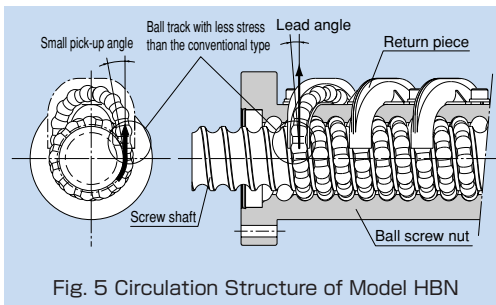


Fig. 5 Circulation Structure of Model HBN

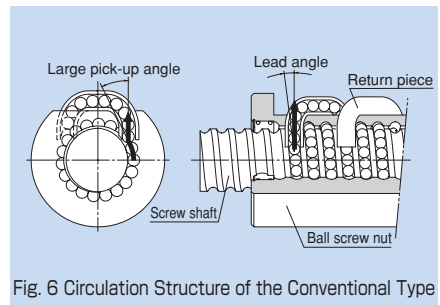


Fig. 6 Circulation Structure of the Conventional Type

High-Speed Ball Screw with Ball Cage Model SBK



● Structure and Features

Model SBK has a circulation structure where balls are picked up at the tangential direction (Fig. 7), has a strengthened circulation path and uses a ball cage, thus to achieve a DN value of 160,000.

As a result of adopting the offset preloading method (Fig. 4 on page K-16), which shifts the lead in the central area of the ball screw nut, its overall ball screw nut length is shorter and its body is more compact than the double-nut type, which uses the spacer-based preloading method.

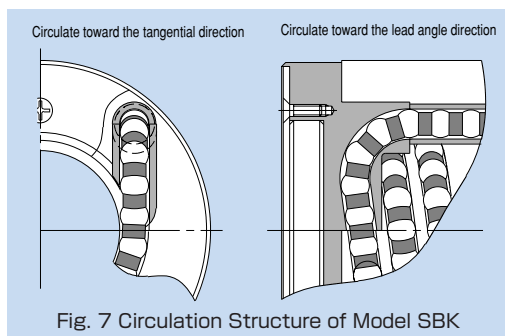


Fig. 7 Circulation Structure of Model SBK