

1.1. Structure and Features of the LM Stroke

LM Stroke model ST has a ball cage and balls both incorporated into a precision-ground cylindrical nut as shown in Fig. 1. The balls are arranged in zigzags so as to evenly receive a load. The ball cage is a drilled cage made of a light alloy with high rigidity, and capable of following high-speed motion. A thrust ring and a snap ring are installed on both sides of the inner surface of the nut to prevent the ball cage from overrunning.

This structure allows rotational motion, reciprocal motion and complex motion with a small friction coefficient. Model ST has a stroke length up to twice the range within which the ball cage can travel.

Since high accuracy can be obtained at a low price, this model is used in a broad array of applications such as press die setting, ink roll unit of printing machine, workpiece chuck unit of punching press, press feeder, work head of electric discharge machine, wound roll corrector, spinning and weaving machine, distortion measuring equipment, spindle of optical measuring instrument, and photocopiers.

●Minimal Friction Coefficient

The balls and the ball raceway are in point contact, which causes the smallest rolling loss, and the balls are individually retained in the ball cage. This allows the LM stroke to perform rolling motion at a minimal friction coefficient ($\mu=0.0006$ to 0.0012).

●Compact Design

Since it consists only of a thin nut and balls, the outer diameter of the bearing is minimized and a light, space-saving, compact design is achieved.

●High Accuracy at a Low Price

A highly accurate slide unit can be produced at a low price.