

1.6. ST Shaft

With the ST shaft, used in LM Stroke model ST, balls roll directly on the shaft surface. Therefore, it is necessary to pay much attention to the hardness, surface roughness and dimensional accuracy when manufacturing it.

Since the hardness of the ST shaft has especially large impact on the service life, use much care in selecting a material and heat treatment method.

THK also manufactures high-quality ST shafts. Contact us for details.

●Material

The following materials are generally used as suitable for surface hardening through induction quenching.

SUJ2 (JIS G 4805: high-carbon chromium bearing steel)

SK3 to 6 (JIS G 4401: carbon-tool steel)

S55C (JIS G 4051: carbon steel for machine structural use)

●Hardness

We recommend surface hardness of 58 HRC (\approx 653 HV) or higher. The depth of the hardened layer is determined by the shaft diameter; we recommend approximately 2 mm for general use.

The ST shaft can have a hardened inner ring attached on the shaft raceway.

●Roughness of the surface

To achieve smooth motion, the surface is normally finished to 0.40a or less. If higher wear resistance is required, finish the surface to 0.20a or less.