High Rigidity Needle Guide Sets

Overview

Features
– High accuracy needle rollers are arranged in four directions against the square shafts. Shafts / Bushings are designed to be 1–6 µm preloaded.
– Widely used in parts of semiconductor, liquid crystal manufacturing equipment and inspection device, Lift/slide stages, robotic systems, press machines and transfer mechanism as the guide with high rigidity, straightness and high speed.
– Capable of torque loading without rotation due to square cross section with low yawing and pitching, maintaining smooth rotation and stable accuracy.

Accuracy Standards

Example of Use

Cautions
– Apply lubrication maintenance as needed.
– When specifying, position the bushing where the retainer does not fall out from the bushing at stroke ends.
– As the preload is still applied when inserting retainers, assemble and fit carefully in order not to apply any off-center insertion force as that may cause the damage to the retainers as well as damages on the rolling surfaces.
– Protect it with covers if any foreign objects or dust may adhere to the rolling surfaces.
– Avoid using in high temperature environments, keep below 80°C.
– Do not cold shrink fit the bushings and shafts. Residual austenite will transform into martensite and will expand inner/outer dimension of bushings and shafts, rendering them unusable.

Needle Rollers
No backlash in any direction since Shaft/Bushings are 1–6 µm of preloaded.

Datum axis A=Defined as a center axis of four flat rolling surfaces.

Straightness of bushings=±5µm or less.

Basic Torque Rating

Basic Load Rating

Allowable Static Moment

D Load Point 1Kg

Displacement Measuring Point

D Deflection (L in mm)

Part Number

RGPFN

RGFFT

Part Number Example

RGPFN10 - 60