

THE TSUDAKOMA DUAL LEAD GEARING SYSTEM

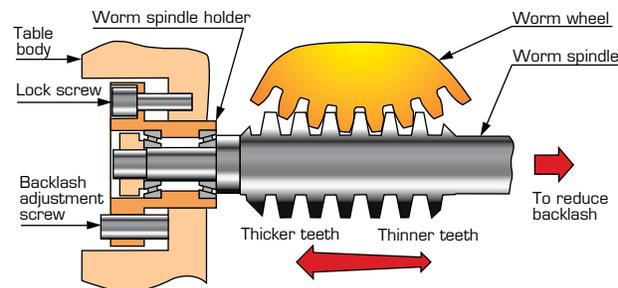
THE TSUDAKOMA DUAL LEAD GEARING SYSTEM DELIVERS THE OPTIMUM BALANCE BETWEEN POWER, DURABILITY, AND SMOOTH CUTTING PERFORMANCE.

Tsudakoma's Proprietary Dual Lead Worm Gearing System with Full Depth Gear Tooth Engagement

The lead on the Tsudakoma worm spindle varies in thickness. By adjusting the worm spindle axially, the tooth engagement with the worm wheel is changed. The backlash between the worm wheel and the worm spindle can be adjusted in 15 minutes, maintaining Tsudakoma precision and performance.



TSUDAKOMA DUAL LEAD GEARING



TSUDAKOMA BACKLASH ADJUSTMENT

(Same procedure for all tables, requires approximately 15 minutes)

- 1 Remove cover plate
- 2 Loosen lock screws
- 3 Turn backlash adjustment screw counterclockwise to reduce backlash, turn backlash adjustment screw clockwise to increase backlash
- 4 Tighten lock screw

TOOTH PROFILE

Tsudakoma utilizes full tooth depth engagement along with a larger gear module. The results are a larger surface contact area yielding a substantially stronger worm gear system.

Conventional tooth profile



Tsudakoma tooth profile



GEARING MATERIALS

Worm wheel: Special high tensile strength brass alloy (650N/mm² / 170HB)

Worm spindle: Case hardened alloy steel

Tsudakoma's dual lead gearing system features exceptionally smooth cutting due to the inherent lubricating properties of the gear materials.

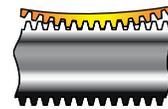
TORQUE TRANSFER EFFICIENCY

The Tsudakoma dual lead gearing system features the largest tooth engagement of any rotary table manufacturer. This system generates 60% - 85% torque transfer efficiency.

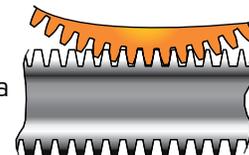
OVERSIZE WORM WHEEL

The Tsudakoma worm wheel uses an oversize diameter pitch circle resulting in reduced pressure on the contact surface compared to a conventional gearing system.

Conventional gearing



Tsudakoma gearing



TSUDAKOMA: PRECISION PERFORMANCE PRODUCTIVITY INNOVATION



TSUDAKOMA CROSS ROLLER BEARINGS

TSUDAKOMA ULTRA PRECISION

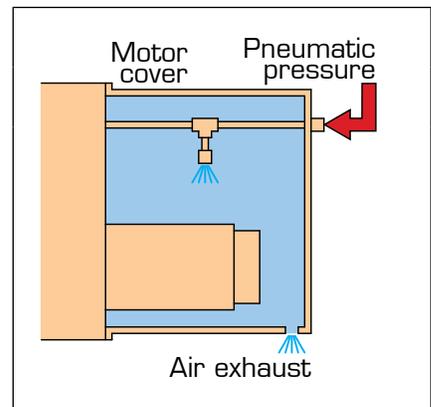
Ultra precision cross roller bearings support radial, axial, and moment loads providing four times the level of stiffness as angular contact bearings. Cross roller bearings are constructed with a sequence of cylindrical rollers arranged at right angles to each other within a sealed 90° V-groove. All Tsudakoma rotary tables and indexers use ultra precision cross roller bearings.



TSUDAKOMA AIR PURGING

WATERPROOFING

All Tsudakoma rotary tables have a multi-port pneumatic inlet on the motor cover. One branch of the port constantly feeds air into the o-ring sealed motor cover, thereby maintaining positive pneumatic pressure to prevent condensation and moisture related damage to the servo motor.



KOMA APPLICATION ENGINEERING

ROTARY TABLE SELECTION ASSISTANCE

Koma application engineers - with AutoCAD® and SolidWorks® 3D CAD support - ensure Tsudakoma rotary tables purchased from Koma will be the best available for the required machining operations. Torque calculations and interference drawings are standard no-charge, value added services offered by Koma Precision.



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