Traction Drive Unit
Reducer for high-accuracy feeding

Minimal rotation irregularity
No backlash
Low noise, low vibration
A Traction Drive Unit
conceived from bearing core technologies

The traction drive unit is a power transmission based on the rolling contact between rollers and is capable of smooth, rattle-free power transfer. High-accuracy and high-strength rollers are subjected to elastic deformation prior to assembly, achieving high pressure force. Additionally, by introducing traction grease that becomes highly viscous under high pressure, it is possible to achieve excellent power transfer while securing lubricity.

Principle and Structure

Traction force $T = \mu P$

$\mu$: Traction coefficient

$P$: Pressure force

Reduction ratio $i = \frac{D+d}{d}$

$D$: Stationary ring bore diameter

$d$: Sun shaft outer diameter

Backlash has been eliminated and friction reduced by adjusting the internal clearance of the ball bearings in the planetary roller.

Compact Type

The compact design incorporates a bushing in the planetary roller.

Application Examples

- Printers
- Machine tools
- FPD manufacturing equipment
- ROBOT
- And more

Eliminate speed irregularity of feeding drum

Contributes to improving image quality

Specification Examples

- No Backlash Type
  - Backlash has been eliminated and friction reduced by adjusting the internal clearance of the ball bearings in the planetary roller.

- Compact Type
  - The compact design incorporates a bushing in the planetary roller.

Customization according to customer requests is available, so please do not hesitate to contact us.

Application of JTEKT Core Technologies

- Taking bearing technologies accumulated over many years under the KOYO brand and applying them to traction drive units.

  - Materials, heat treatment technology
  - High-precision machining technology
  - Tribology technology
  - Analysis technology
  - High-strength material
  - Optimal heat treatment
  - Optimal contact surface characteristics
  - High-precision machining
  - Lubrication theoretical analysis (Highly viscous traction grease)
  - Optimal surface pressure calculation
  - EHL theoretical analysis

Rotation stability | No backlash | Low noise, low vibration

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Eliminate speed irregularity of feeding drum

Contributes to improving image quality
Reducer with a Minimal Rotation Irregularity Unachievable Using Gears

Features

Comparison with planetary gear

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<td>✗</td>
<td>✗</td>
<td>✗</td>
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Measurement examples

1 Rotation irregularity

Reduced by 80%

Measurement method
Run the motor at a set speed measuring rotating speed of the output shaft using the rotary encoder.

2 Backlash

No Backlash

3 Noise

Gear noise eliminated!

Measurement method
Measure the torsion angle of the output shaft when the motor shaft is fixed and torque is applied to the output shaft clockwise and counter-clockwise.

4 Vibration

Vibration reduced by approx. 90%

Measurement method
Run the motor at a set speed measuring rotating speed of the output shaft using the rotary encoder.