

RT-SERIES GEAR DRIVEN ROTARY STAGES



RT-5, RT- 3 and RT-2

PRODUCT SUMMARY

RT-series of precision, gear-drive rotary positioning stages are ideal for today's high performance technology environment. They are found in virtually all industries where intermittent part indexing, skew adjustment or precise angular alignment is required and are well suited to holding position.

- Low Profile Gear-drive Rotary Stage
- High Load Capacity up to 100kg
- Integrated Precision Worm Gear Drive
- High Rotary speed to 45 RPM Resolution 3 arc sec
- Clean Room. Vacuum and Seled Versions Available

RT-Series Background

RT-series open frame, through bore, low profile rotary stages are available in a standard precision and high performance grade. The rotary top features a precision tolerance central aperture hub supported with two large diameter, preloaded precision bearings for increased stability.

The stage can be driven by either a servomotor or stepper motor, and the precision anti-backlash worm gear drive supports table rotation up to 45 rpm. RT series rotary tables can be mounted in any orientation, and attach readily to end-user equipment or directly to other NUTEC stages to form multi-axis positioning systems in an array of the architectures.

Features & Benefits

NUTEC's RT-series, line of rotary stages offer high resolution and repeatability. These rotary stages are suitable for a wide number of uses ranging from lightweight positioning of optics to light duty machine tool applications.

All NUTEC rotary stages are machined from 6061 aluminum alloy finished with hard coat anodize providing a light and stiff stable structure. The design optimizes table performance by utilizing a preload thrust bearing in combination with the main hub bearing. This design approach offers excellent stability and low cost. These stages are offered with different gear ratio options. A gear preload system insures zero backlash in the gear train.

Applications

RT-series rotary positioning stages are designed for precise motor driven rotary positioning and indexing. These tables are intended to function independently or in conjunction with other positioning components used in high precision and automation applications. The low-profile design minimizes stacking height in multi-axis configurations and enables RT-series stages to fit where other motorized devices cannot.

RT-series models are available with 67, 98 and 136 mm hub diameters with a several resolution options, determined by encoder and gear ratio selected, to match speed and positioning requirements of your application.

| Specifications | ALLRT-Series |
|----------------------|---|
| Travel | 360° Continuous |
| Drive Elements | Heat Treated Steel worm Bronze Ring Gear |
| Drive Type | Precision Preloaded worm gear |
| Reduction Ratio | 80:1 |
| Accuracy | +/- 2 arc minutes |
| Repeatability | ≤ 30 arc sec |
| Flatness of Rotation | ≤ 20 microns |
| Concentricity | ≤ 20 microns |

RT-Series Accessories

A range of specialized configuration rotary positioning stages are available based on the essential components of the RT-series stages. Variants of these rotational stages can be adapted for use in either clean rooms, vacuum chambers or sealed for operation in harsh environments while preserving all of their desirable high performance characteristics. These positioning stages can be factory equipped, tuned and tested with user supplied or custom fabricated payloads and tooling including a variety of work-holding collets or 3-jaw chucks.

RT-Series Capacities

| Capacities | RT-2 | RT-3 | RT-5 |
|--|-------------|----------------------|-------------|
| <i>Payload Axial (kg)</i> | 25 | 35 | 50 |
| <i>Payload Radial (kg)</i> | 15 | 45 | 100 |
| <i>Motor Size</i> | NEMA #17 | NEMA #17 NEMA #23 | NEMA #23 |
| <i>Velocity (RPM) 80:1 gear 3600 RPM drive motor</i> | 45 | 45 | 45 |