

The Moog Animatics ROT1 rotary actuator is a belt-driven rotary stage with low backlash and high positional accuracy. This family of rotary actuator products is ideal for high-speed indexing as well as precision rotation. With the Moog Animatics ROT1 series of rotary actuators, you will have a turnkey, easy-to-use solution for all rotary-table applications requiring moderate to high loads. These rotary stages are available with through holes from 16 mm to 100 mm, and with optional cleanroom-compliant grease. The ROT1 rotary actuator is shipped preassembled with the Moog Animatics SmartMotor™ of your choice.\* The motor can be mounted on either side of the stage to accommodate the space requirements of your application.

*\*Due to inertial mismatch, SmartMotor models SM23165D and SM23165DT are not recommended for direct drive of the ROT1 rotary actuators. The addition of a gearhead may be required for any application exceeding a 10:1 load to motor mismatch.*

## Key Features

- Preloaded duplex angular contact bearings
- Open through-hole
- Integrated belt reduction
- Aluminum construction

## Key Benefits

- High load capacity, long service life
- Wire/material pass-through
- Low backlash, high positional accuracy
- Strong but lighter weight than cast iron tables

## Technical Specifications



ROT1 Size and Data

|  | ROT1-0016                        |  | ROT1-0050 |  | ROT1-0025             |  | ROT1-0100   |  |
|--|----------------------------------|--|-----------|--|-----------------------|--|-------------|--|
| Type                                     | 3:1 Belt Drive Rotary            |  |           |  | 5:1 Belt Drive Rotary |  |             |  |
| Bearing Type                             | Preloaded Duplex Angular Contact |  |           |  |                       |  |             |  |
| Stage Diameter/Height, mm                | 100 / 50                         |  | 100 / 54  |  | 165 / 54              |  | 165 / 60.6  |  |
| Through-Hole                             | 16.0 mm                          |  | 50.8 mm   |  | 25.4 mm               |  | 101.6 mm    |  |
| Accuracy (± arc-sec)                     | 108                              |  |           |  | 65                    |  |             |  |
| Kinematic Wobble (± arc-sec)             | 8                                |  |           |  | 16                    |  |             |  |
| Kinematic Radial Runout (µm TIR)         | 13                               |  |           |  | 20                    |  |             |  |
| Table Top Parallelism To Base (µm TIR)   | 80                               |  |           |  | 80                    |  |             |  |
| Bidirectional Repeatability (± arc-sec)  | 120                              |  |           |  | 40                    |  |             |  |
| Unidirectional Repeatability (± arc-sec) | 30                               |  |           |  | 12                    |  |             |  |
| Table Resolution                         | 12000 ct/rev                     |  |           |  | 20000 ct/rev          |  |             |  |
| Speed Limit (RPM)                        | 1300                             |  |           |  | 800                   |  |             |  |
| Load Capacity Axial/Radial (kN)          | 14.0 / 26.0                      |  | 8.6 / 7.7 |  | 48.0 / 39.0           |  | 14.0 / 11.7 |  |
| Max. Moment (N-m)                        | 480                              |  | 120       |  | 1150                  |  | 370         |  |
| Rotational Inertia (kg/m <sup>2</sup> )  | 0.00048                          |  | 0.00051   |  | 0.0033                |  | 0.006       |  |
| Stage Weight (kg, without motor)         | 1.55                             |  | 1.32      |  | 3.2                   |  | 2.8         |  |
| Recommended Payload Maximum (kg)         | 10                               |  |           |  | 25                    |  |             |  |

For more details, see [www.animatics.com/rot1](http://www.animatics.com/rot1)

Also, see the Part Number Generator at [www.animatics.com/pngenerator](http://www.animatics.com/pngenerator)

Overview

Software

C5 D-Style

C5 M-Style

C6 M-Style

C6 Low-Cost

Cables, Etc.

Actuators

Gearheads

Power Supplies