

Rotary Type Technical Materials

Selection Guide

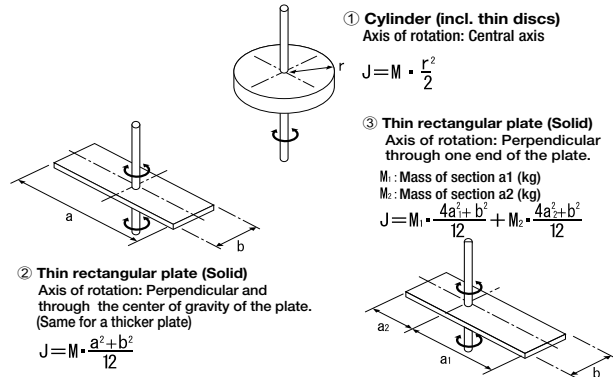
Check the following two points to confirm whether the ROBO Cylinder is compatible with your desired service conditions.

1 Inertial Moment

Inertial moment expresses the amount of inertia in a rotational motion, and corresponds to weight for linear motion. The greater the inertial moment, the more difficult it is for that object to move and stop. In other words, when choosing a rotary-type unit, a factor in that selection is whether or not it is possible to control the inertial moment of the object being rotated. Inertial moment differs with the weight and shape of the object, but refer to the calculation formula in the typical example illustrated on the right. The allowable inertial moment value for a ROBO Rotary is expressed as load inertia. A ROBO Rotary can be used if the calculated inertial moment is less than its load inertia.

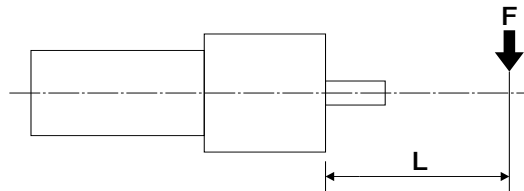
● Calculating the Moment of Inertia for Typical Shapes

J: Moment of inertia (kg·m²) / M: Mass (kg) / r: Radius (m) / a, b: Length of sides (m)



2 Load Moment

If the inertial moment is a controllable (electrical) guide, the load moment is a guide for the limit to forced (mechanical) use. Using the actuator body end of the output shaft mounting base as the reference position for moment, check whether the load moment exerted on the output axis is within the load moment tolerances in the catalog. Use in excess of the allowable load moment may cause damage and shortened service life.



Load Moment (N · m) = F (N) × L (m)

Precautions regarding range of motion and home-return

Please note that, when RCS2-RT6/RT6R/RT7R performs home-return, there are cases in which the direction or rotation in the return-home operation will differ depending on the stopping position of the axis.

In the RCS2-RT6/RT6R/RT7R home-return operation, the axis turns and the home-return sensor detects, and the home-return is completed at the position where the Z-phase is detected as inverted. At this time, the axis rotates in the counter-clockwise direction ①, seen from the direction of the axis, and rotation stops when the sensor detection is inverted ② and the Z-phase is detected ③. (See Figure 1)

However, if the axis is detected by the sensor when home-return begins, it rotates in the clockwise direction from that position ④ and stops when the Z-phase is detected ⑤.

(Figure 2)

The range of operation of the ROBO Rotary is 300 degrees, but since there is no stopper, there are cases in which the range of operation is exceeded when the axis is manually turned with the servo OFF, etc.

Please note that there are cases where the sensor will be detected when the range of operation has been exceeded.

