

Rotary Actuator

Contents

[Overview](#)

[Applications](#)

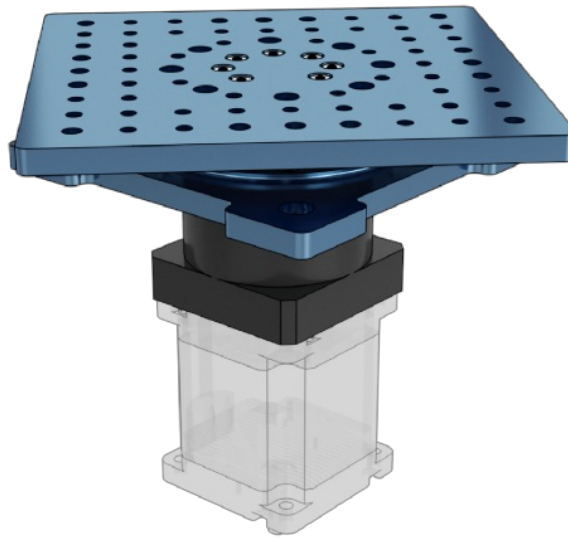
[Technical Specifications](#)

[Maximum Torque](#)

[Combinations](#)

[Specifications](#)

[Previous Version Downloads](#)



Overview

The assembly of the [Rotary Actuator v2](#) consists of a concealed 10:1 flanged gearbox between two Vention compatible plates. The bottom mounting allows for any combination of Vention's [NEMA 34 stepper servo motors](#). With a 10:1 reduction present on the actuator, multiple levels of torque can be achieved. The bottom plate also features mounting holes that interface perfectly with Vention extrusions. The top plate features multiple countersunk and threaded holes for all your mounting purposes.

Applications



There are several application for [4th Axis Palletizer](#) or a [Rotary Inspection Station for Universal Robots](#).

[Browse Open Source Design](#)

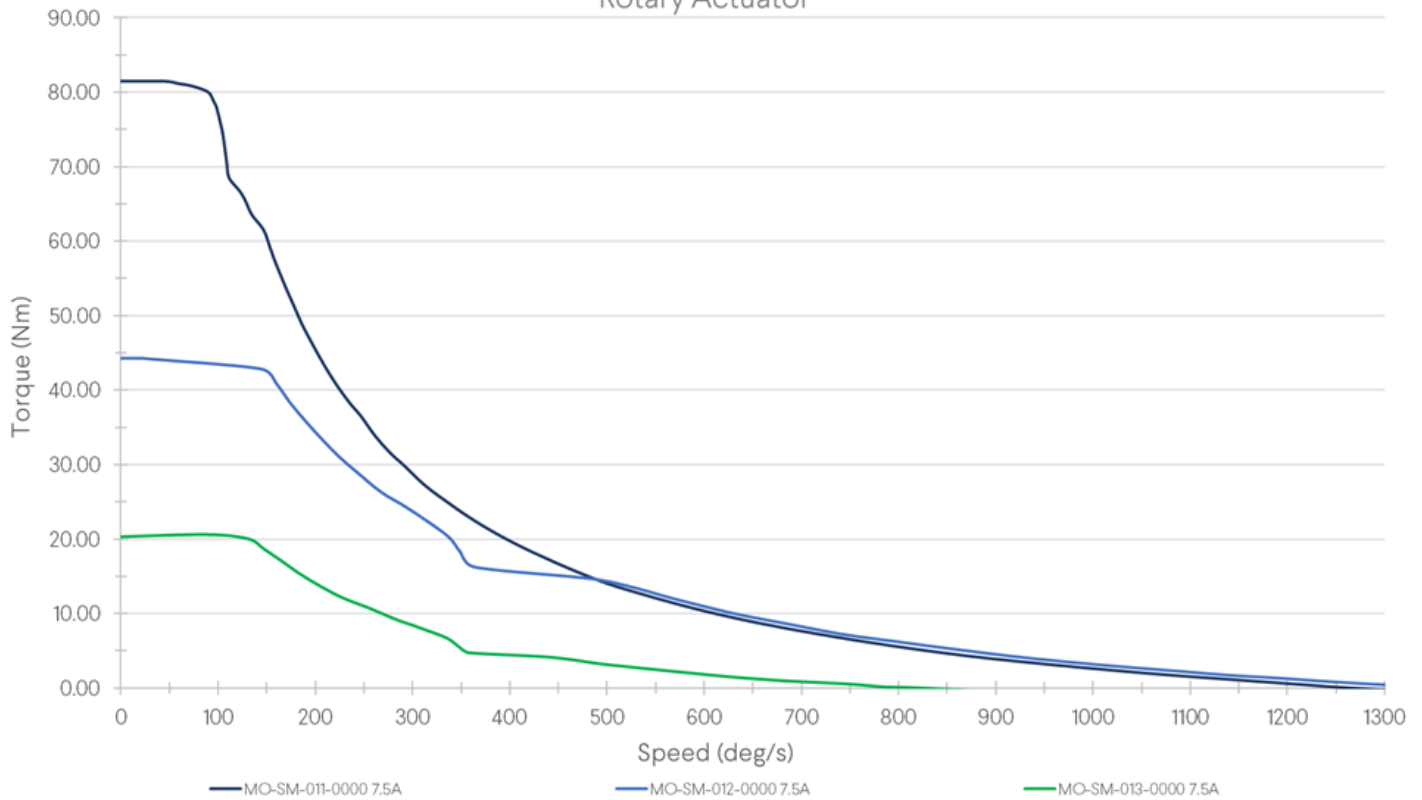
Technical Specifications

Maximum Torque Combinations

	Max Torque - Motor and Actuator [Nm]
MO-SM-011-0000	80.0
MO-SM-012-0000	45.0
MO-SM-013-0000	20.0

The below figure gives the performance of the rotary actuator torque vs speed with all of Vention's stepper motor combinations driven by MachineMotion 2.

Output Torque vs. Speed Rotary Actuator



Specifications

Nominal Backlash [arcmin]	≤13.6
Nominal Tilting Play [degrees]	±0.113
Maximum Rotational Velocity [RPM]	225 (dictated by motor maximum)
Maximum Radial Load [N]	1100
Maximum Axial Load [N]	1000
Maximum Tilting Moment [Nm]	275
Motor Compatibility	NEMA 34, 14mm shaft MO-SM-011-0000 , MO-SM-012-0000 , MO-SM-013-0000

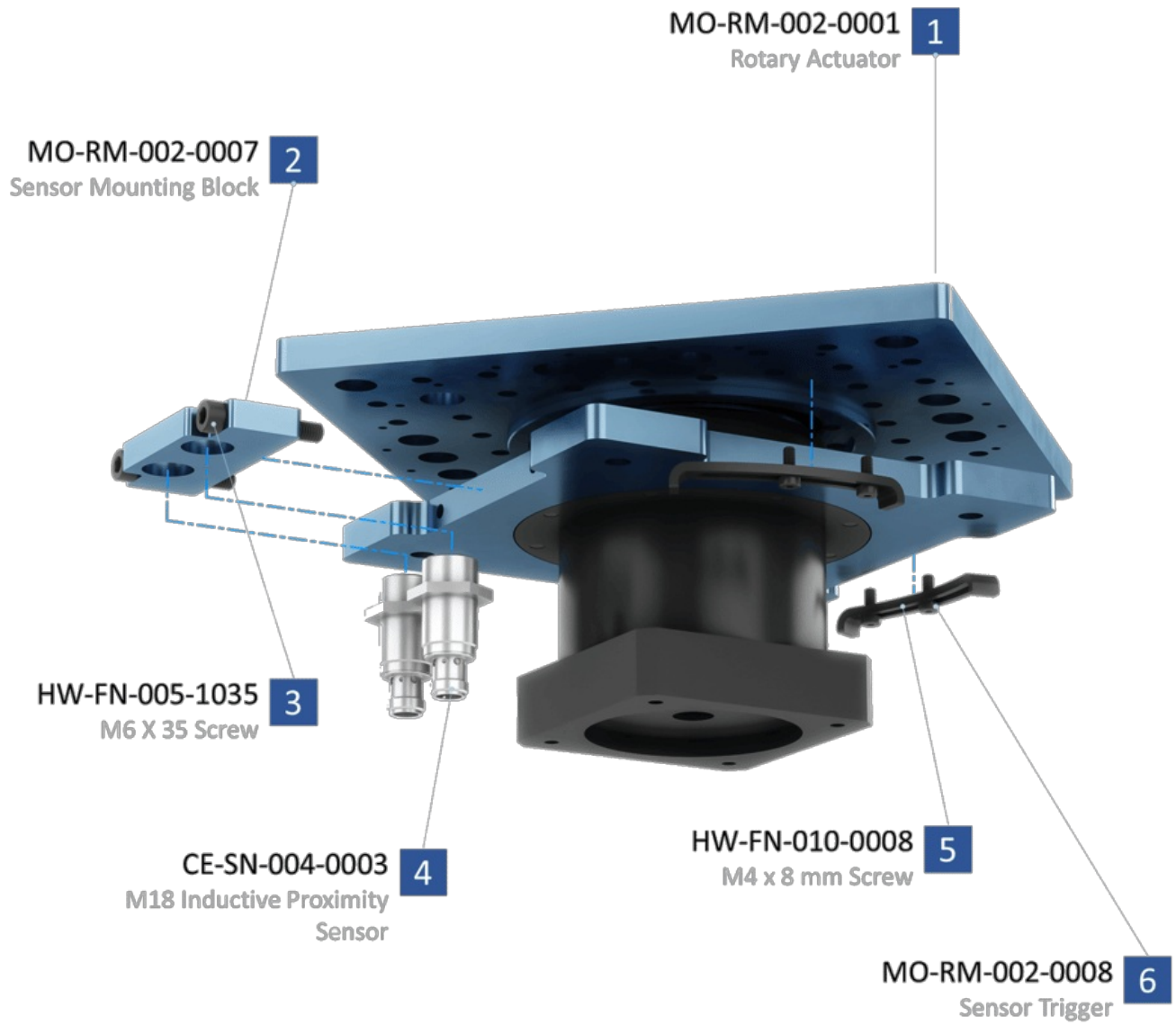
Mounting Sensors

You can add home and end sensors to a rotary actuator, and they will work the same way as home and end sensors on a linear actuator.

A home position sensor enables repeatable motion: it provides a reference point to which the actuator can “zero.” Adding both home and end position sensors means that in addition to enabling repeatable motion, you can also limit the actuator’s travel.

The home and position sensors are both inductive proximity sensors ([CE-SN-004-0003](#)). They are each mounted to a block ([MO-RM-002-0007](#)), which is itself mounted to the rotary actuator with two M6 x 35-mm screws ([HW-FN-005-1035](#)).

The sensors are activated when they approach a trigger. Two triggers—one for each sensor—are typically mounted to the underside of the top plate. Each trigger is mounted through a slot, which allows its position to be fine-tuned, with two M4 x 8-mm screws ([HW-FN-010-0008](#)).



Rotary actuator sensor mounting

Previous Version Downloads

[Rotary Actuator v1](#)