

rotork®

Process Controls

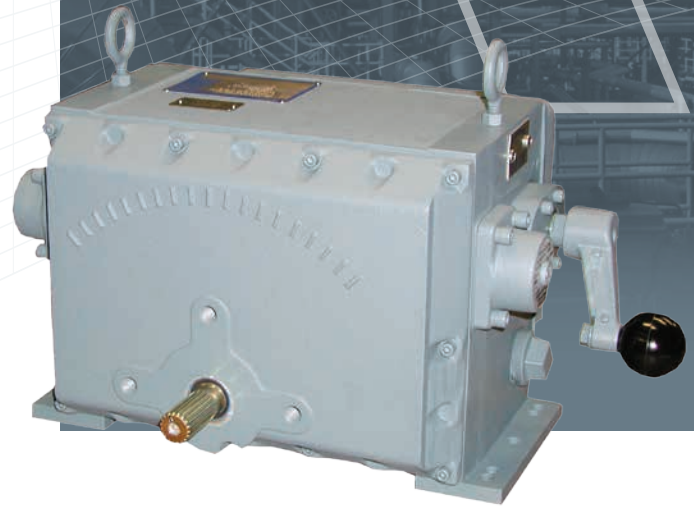
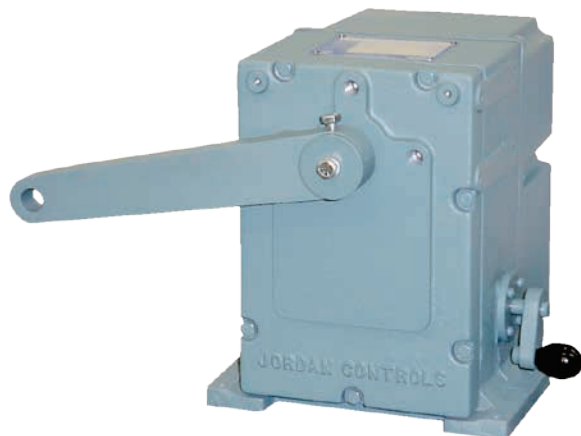
SM-1700/5000 Rotary Actuators

Rotork Process Controls designs and manufactures high quality, durable actuators designed for trouble-free performance under the most demanding conditions.

The SM-1700/5000 Series of rotary actuators are internally geared to produce up to 12,500 lbf.ft (16,950 Nm) of torque, and offer continuous modulation. They are ideally suited for dampers, vanes, valves and other process control applications requiring exact positioning control. All SM-1700/5000 Series actuators are also available with an internal amplifier (excluding SM-1740, SM-1760 and SM-5140). These amplifiers are all full-featured AC switching devices designed to work seamlessly with the actuator for closed loop control.

Features

- Torques from 50 to 12,500 lbf.ft (67 to 16,950 Nm)
- Rotation 90 degrees to 120 degrees
- Modulating duty: 2,000 starts per hour
- Manual override standard
- Automatic torque limiting
- Self locking drive system to hold in last position and prevent back driving up to torque rating.
- AC input power (single or three-phase); DC input power version for SM-1700 only.
- Temperature range from -40 to 185 °F (-40 to 85 °C).



SM-1700/5000 Series Rotary Actuators

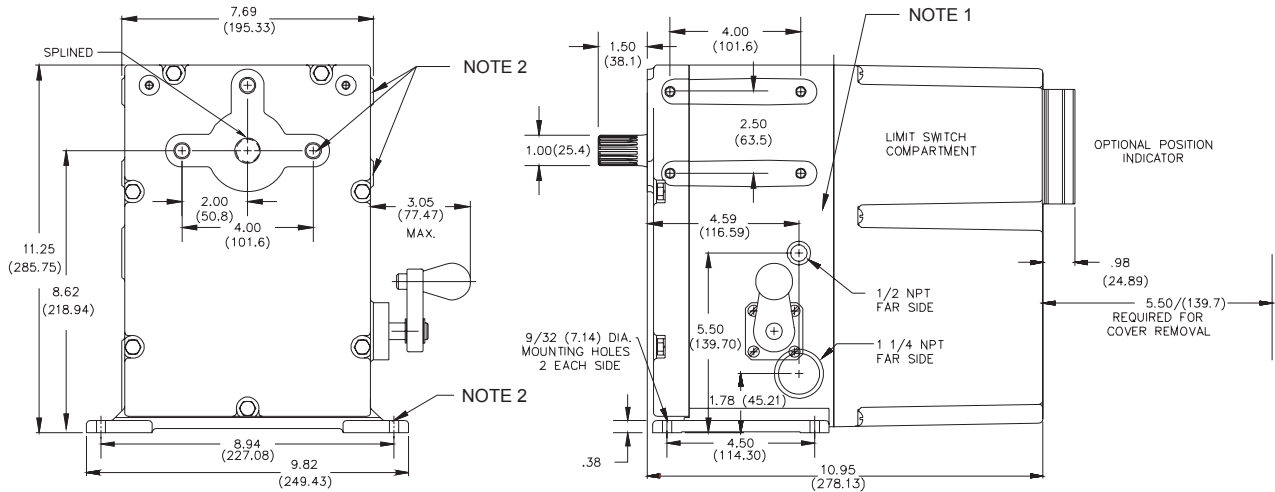


Redefining Flow Control

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Process Controls

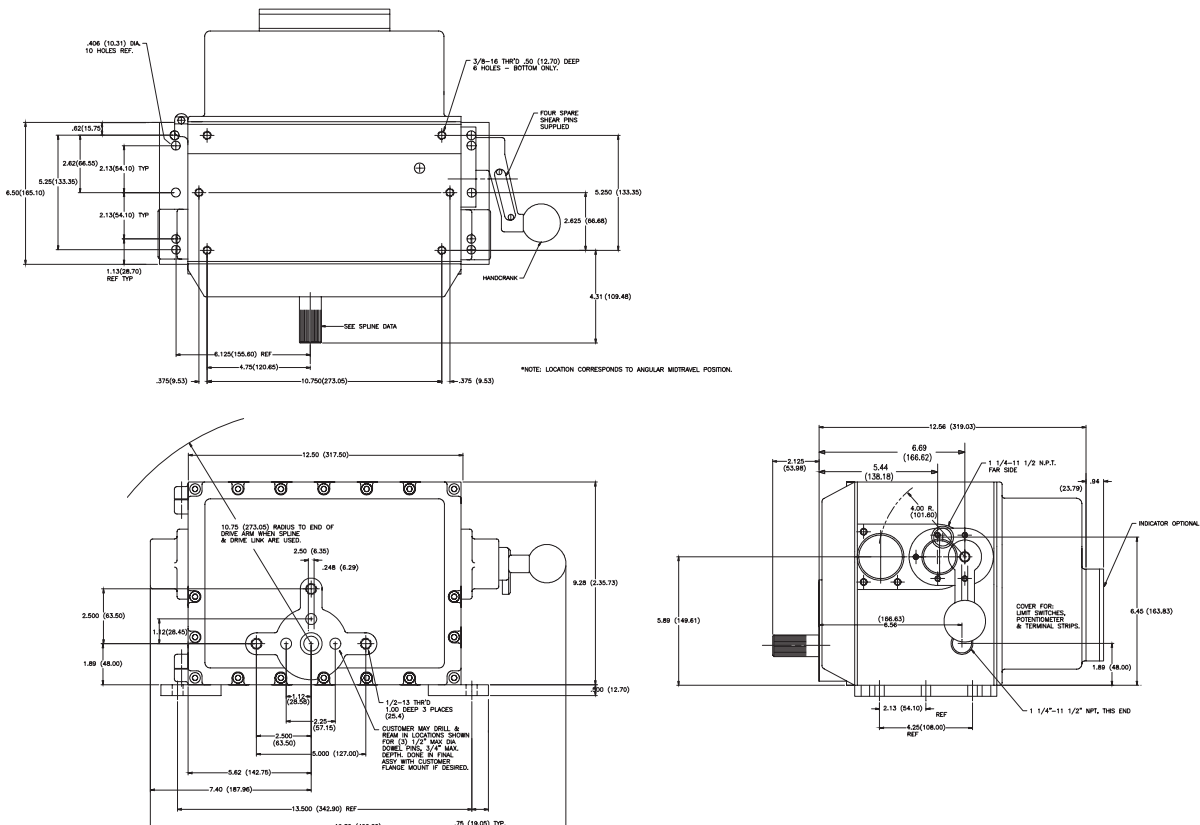
SM-1700 Major Dimensions



Notes:

1. The optional local toggle switches are located on these surfaces.
2. The SM-1700 series actuators can be foot, face or side mounted.

SM-5100 Major Dimensions



Redefining Flow Control

SM-1700 Specifications

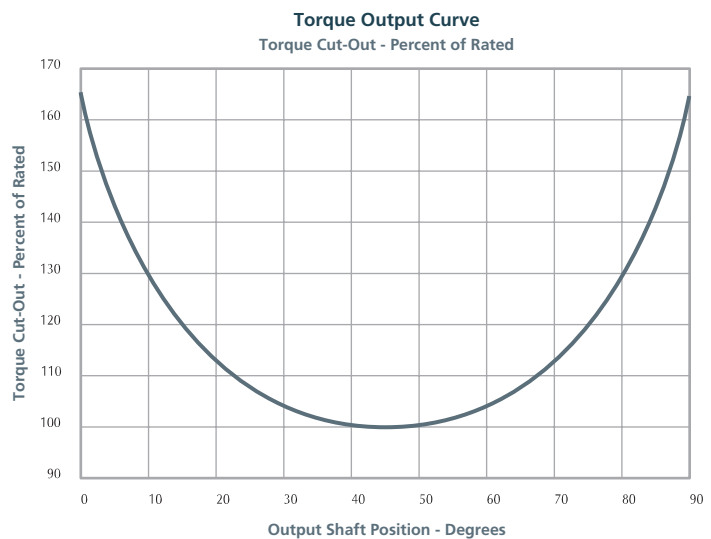
- Rotation: 0° to 360°, set at factory (Less than 90° consult factory).
- Drive Train: Spur gearing.
- Input Power: See specification chart on next page.
- Torque: Up to 2,400 lbf.in (271 Nm).
- Speed: 12 to 60 seconds for 90° rotation 48 to 240 seconds for 360° rotation For faster speeds, consult factory.
- Temperature Limits: -40 to +185 °F (-40 to +85 °C). For greater temperature ranges, consult factory.
- Enclosure: Cast aluminum.

SM-5000 Advantages:

- Allows use of smaller torque rated actuators for nonlinear loads.
- Aids in linearization of linkage driven loads.
- Allows actuators to be selected based on position related torque rather than peak plus safety factor.
- Assures high seating and unseating torque without oversizing of the actuator.

SM-5000 Series Scotch-Yoke Drive Torque Characteristics

The SM-5000 Series actuators utilize a scotch-yoke drive for transforming linear motion from a traveling nut to the rotary motion on the output shaft. The characteristics of the scotch yoke drive are such that the torque output varies with shaft position as shown below.



Performance data

| Model | Enclosure Certification | Max. Torque lbf.ft (Nm) | Seconds for quarter-turn at Max. Torque | Min. Torque lbf.ft (Nm) | Seconds for quarter-turn at Min. Torque | Max. Rotation Degrees | Manual Override | Weight lbs (kg) |
|---------|-------------------------|-------------------------|---|-------------------------|---|-----------------------|-----------------|-----------------|
| SM-1700 | IP65 CSA | 200 (271) | 60 | 50 (67) | 12 | 120 | Yes | 40 (18) |
| SM-5100 | IP65 CSA | 300 (406) | 29 | 150 (203) | 16 | 90 | Yes | 80 (36) |
| SM-5200 | IP65 | 1000 (1355) | 28 | 600 (813) | 28 | 90 | Yes | 210 (95) |
| SM-5300 | IP65 | 3200 (4338) | 47 | 1600 (2169) | 23 | 90 | Yes | 350 (158) |
| SM-5400 | IP65 | 12500 (16950) | 70 | 5000 (6779) | 40 | 90 | Yes | 565 (256) |

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