

EVSCO INC.

ELLIPTIC VALVES

**Pneumatic Automation
and Controls Catalog**

**DOUBLE ACTING AND
SPRING RETURN**

NAMUR ACCESSORY PAD

**BI-DIRECTIONAL TRAVEL
STOPS WITH 50 OVERTRAVEL**



**CORROSION RESISTANT
HARD ANODIZED ALUMINUM**

BLOW-OUT PROOF PINION

REPLACEABLE BEARINGS

Introduction

Evsco RA Series pneumatic rack & pinion actuators are designed for economical actuation of our elliptic valves. Evsco actuators are manufactured to the latest international interface standards: DIN, VDI/VDE 3845, NAMUR. These standards decrease the total cost for an automated valve package with controls.

Advantages

Corrosion Resistant The body of the Evsco RA series actuators are made from hard anodized aluminum for superior corrosion and wear resistance. The hard anodizing is applied after all other machining to ensure that all surfaces are fully protected from hostile environments.

End caps are polyester powder coated, providing excellent corrosion protection.

All external metal fasteners are 300 series stainless steel.

NAMUR - VDI/VDE Mounting - RA Series actuators are made to the latest NAMUR and VDI/VDE 3845 standards allowing direct mounting of positioners, switchboxes and other accessories that are designed to the NAMUR standard. The air supply ports also meet the NAMUR standard for interfacing with solenoid valves, block & bleed valve, flow controls and other accessories that will adapt to the NAMUR mounting pad.

Travel Stops for Both Directions - Evsco RA Series actuators have pinion travel stops in both directions. Side located stops allow a full 5° of overtravel adjustment. The actuator full travel can be adjusted between 80° to 100°. These travel stops

are designed to absorb the maximum rated torque of the actuator and the maximum impact loads associated with recommended stroke speed.

Replaceable Bearings The RA Series actuators have replaceable pinion and piston bearings made from nylon. The bearing significantly extend the cycle life, wear resistance and efficiency.

Blow-out Proof Pinion In addition to the stainless steel retaining ring, the pinion features a unique internal safety ring.

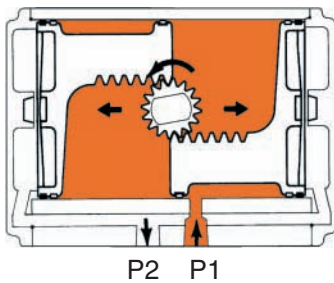
Serviceability Evsco rack pinion actuators are designed to be safe, simple and reliable. Unlike other rack and pinion actuators, servicing the actuator does not require special tools.

ISO/DIN Mounting Interface The output drive features a female, double square (eight point pattern) as standard. The ISO centering interface or female groove is standard on all models. The centering ring is available as an option.

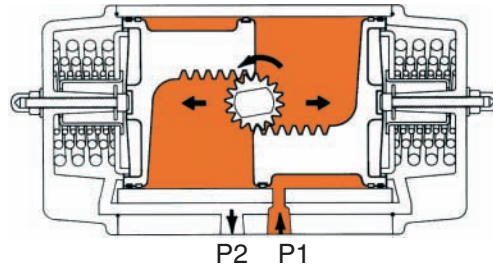
Operating Ranges - RA Series double acting actuators produce guaranteed minimum torque outputs up to 16,500 In-Lbs (1865 Nm). The spring return units produce spring start torques up to 10,200 In-Lbs (1159Nm).

The RA Series pneumatic actuators are suitable for continuous operation at pressures ranging from 40 to 120 PSIG while exposed to temperatures of -40°F to 180°F. Optional temperature trims extend the range to 350°F

Double-Acting
(TOP View)



Spring-Return
(TOP View)



Double-Acting - Standard Configuration

For counterclockwise output rotation, apply pressure to Port 1, driving the pistons apart.

When required, the pistons can be inverted in the housing resulting in a clockwise rotation when pressure is applied to Port 1.

Spring-Return - Standard Configuration

Actuator to Fail Clockwise

For counterclockwise pressure rotation, apply pressure to Port 1, driving the pistons apart and compressing the springs. During this pressure stroke, the volume on the spring side of the pistons is vented/exhausted at Port 2.

Spring force rotates the actuator clockwise when the pressure is vented/exhausted at Port 1. The Evsco Solenoid valve, when used, directs some of the exhaust gas to the spring side of the piston, creating a closed purge system. This helps to prevent corrosive outside contaminants from entering the spring chamber and can greatly extend the service life in hostile environments.

Actuator to Fail Counterclockwise

When fail counterclockwise is required, the pistons must be inverted in the housing.

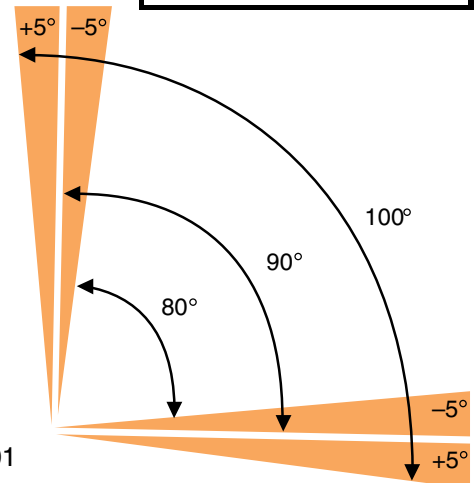
Bi-directional Travel Stop Illustration

Evsco RA Series actuators feature bi-directional pinion travel stops. Side located stops allow a true $\pm 5^\circ$ of valve travel adjustment, giving a *guaranteed range of adjustment between 80° and 100° of actuator travel*. These travel stops are designed to absorb the maximum rated torque of the actuator and the maximum impact loads associated with recommended stroke speed.

Standard Assembly

Adjustment of the counterclockwise and clockwise rotation limits are accomplished by turning the respective left and right stop adjustment screws to reduce or increase output rotation.

Model	Torque
RA4	125inlbs
RA5	250inlbs
RA6	450inlbs



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