

General

The actuator shall be pneumatically operated, traveling a minimum of 90° in each direction and be able to overtravel at 3° more in each direction past 90°. The actuator shall be totally enclosed and contained in a single enclosure with no external moving parts. All pneumatic passageways must be integral to the actuator housing eliminating the need for external tubing. Actuator shall be rack and pinion design with output torque linear throughout travel. Actuator shall be provided with 2 pistons having acetal guide rings thus greatly extending actuator life and reducing friction to the minimum. Actuator must be supplied with end of travel adjustments integral within actuator end caps. The actuator shall be provided with a mechanical visual position indicator, and the indicator must be able to be easily removed thus exposing the output shaft for the use of manually overriding actuator when needed. The output shaft and pinion must be one piece and manufactured from hardened alloy steel and zinc plated for corrosion protection. Actuator shall be able to mount in any position without loss of performance. The actuator shall bolt directly to Bray valve mounting flange without need for brackets.

Actuator housing shall be of anodized aluminum with all external fasteners made of zinc-plated carbon steel or stainless steel. Springs shall be coated spring steel, with zinc-plated retaining hardware for corrosion protection. All seals shall be of BUNA-N (nitrile) and bushings of acetal resin. The actuator shall be factory lubricated. Actuator design must have smooth housing lines for self-draining capabilities. The actuator shall be factory tested to ensure proper operation.

Spring Return - Modular Design

The Spring Return System for fail-safe services must be installed in the same housing as the double acting actuator, with no additional housing extensions required, therefore saving weight and space. The spring system must be supplied as a self-contained spring cartridge system. This is a safety feature that ensures disassembly of the actuator without danger of spring release when end caps are removed. Actuator shall be Bray Series 90 or 91 or approved equal.

Standard Materials shall be:

Body:	Aluminum alloy, extruded and anodized
End Caps:	Diecast, aluminum alloy with corrosion-resistant epoxy coating
Output Shaft:	Carbon Steel, zinc-plated (yellow)
Piston Guides:	Acetal
Fasteners:	Carbon Steel, zinc-plated (yellow) or stainless steel
Spring Cartridge:	Coated Steel springs and yellow zinc-plated hardware
O-Ring Seals:	BUNA-N (Nitrile)

Service Data:

Actuators shall be designed for pneumatic operation up to a maximum pressure of 140 PSIG (10 Bar) and for temperature ranges of -13°F (-25°C) to +200°F (+95°C). Filtered air is recommended but not required. The units shall be able to operate with other media such as hydraulic oil or water with appropriate materials of construction. All double acting and spring return units shall be suitable for both on/off and throttling applications.

Optional Equipment

Solenoid control module for electrical operation of actuator on/off requirements -- The solenoid shall be supplied in NEMA 4 waterproof and NEMA 7 explosion-proof enclosures. Solenoid shall be provided with manual override built into the body. Solenoid shall have a 1/4" NPT pneumatic port and a 1/2" NPT electrical connection and operate at 120 Volts AC, 50/60 HZ. Two-way speed controls shall be provided as options and shall be adjustable in each direction of actuator travel.

Limit Switch Control Module for electrical signal indication of actuator and valve position -- The limit switch shall be mounted directly to the top of the Bray actuator. The housing shall be NEMA 4 waterproof or NEMA 7 explosion-proof construction with two SPDT switches with two separately adjustable cams which can be adjustable through 90° of travel. The switch must be rated at 15 amps for 125 or 250 Volts A.C. Additional switches can be added when specified. The switches must be pre-wired to a terminal strip that is built into switch housing. The conduit entry shall be minimum 1/2" NPT.

Pneumatic Positioner Module for Control Valve Services -- The standard positioner input signal shall be 3 - 15 PSI. It shall function for both double acting and spring return actuator requirements, and it must be capable of being reversible and work in split range requirements. The positioner shall function in applications with maximum air supply of 150 PSI. The positioner maximum air consumption shall not exceed 0.8 Standard Cubic Feet per Minute (SCFM) in balanced condition with 80 PSI air supply pressure. Positioner shall direct mount to the top of Bray actuator housing.