

## BRAY RECOMMENDED SPECIFICATIONS

# Series 92/93 Pneumatic Actuators

### Actuator Type:

Bray Series 92 (Direct Acting) or 93 (Spring Return)  
Pneumatic Actuator or approved equal.

### General:

- The actuator shall be pneumatically operated and must travel a minimum of 95° in each direction to allow for over travel adjustment.
- The actuator shall be rack and pinion design and the output torque shall be linear throughout travel.
- The actuator shall be totally enclosed in a single enclosure with no external moving parts.
- The actuator shall be factory lubricated with no field lubrication required.
- The actuator shall be able to mount in any position without loss of performance.
- All actuators (double acting or spring return) shall be suitable for both on-off and throttling applications.

### Housing and End Caps:

- Housing design must have smooth lines to provide for self-drain capability.
- Housing shall be extruded, anodized aluminum alloy and all external fasteners shall be zinc plated carbon steel.
- All pneumatic passageways must be integral to the actuator housing to eliminate the need for external tubing.
- End caps shall be die cast aluminum alloy with corrosion resistant polyester coating.
- All seals shall be Buna-N and bearings shall be manufactured out of lubricated acetal resin.

### Pistons:

- Shall be die cast aluminum alloy.
- Shall be provided with acetal piston guides and rings to extend the life of the actuator and reduce friction.

### Output Shaft and Pinion:

- Must be manufactured out of hardened alloy steel and zinc plated for corrosion protection.
- Shall be a one piece design.
- The output shaft shall be provided with a mechanical, high visibility position indicator.

### Travel Stops:

- The actuator must be supplied with two independent travel stop adjustments (one on each end of travel)
- Each end of travel (0° and 90°) shall have a minimum of +5° to -5° adjustment.



### Spring Return System:

- Must be installed in the same housing as the double acting actuator with no additional housing extensions.
- Must be furnished as a self-contained spring cartridge system to assure safe disassembly of the actuator.
- Springs shall be coated spring steel for corrosion protection.

### Service Requirements:

- Actuators shall be designed for pneumatic operation for the following service conditions:
- Pressure up to a maximum of 140 psig
- Available temperature ranges of -40°F (-40°C) to +300°F (+149°C)
- Filtered air is recommended but not required.
- Optional units shall be available to operate with hydraulic oil or water if specified.

### Testing:

- All actuators shall be factory tested to ensure proper operation.

### Mounting:

- All actuators shall mount directly to the valve mounting flange and stem without the need for any brackets or couplings

### Approvals & Certifications:

- SIL Certification
- ABS Certification
- Bureau Veritas Certification