

## OVERVIEW

The Series 98 actuators were designed primarily for pneumatic operation to a maximum pressure of 150 psi (10.3 Bar) and for temperature ranges of -50°F to 300°F (-46°C to 149°C).

- > Compact design offers a high torque-to-weight ratio
- > Modular design offers easy configuration in the field
- > Module alignment ensured by precision machined centering rings
- > Torque output ranging from 2,038 to 885,100 lb-in (230 to 100,000 Nm)
- > Spring end torque ranging from 2,744 to 445,261 lb-in (310 to 50,307 Nm)
- > Premium epoxy/polyurethane coating as standard



## SPECIFICATIONS

|                                  |                                                                                                                             |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Media</b>                     | Dry Compressed Air/Inert Gas/Natural Gas                                                                                    |
| <b>Pressure Range</b>            | 40 - 150 psi (2.8 - 10.3 bar)                                                                                               |
| <b>Temperature Range Options</b> | Standard: -20°F to 200°F (-29°C to 93°C)<br>High Temperature: Up to 300°F (149°C)<br>Low Temperature: Down to -50°F (-46°C) |

Contact factory for other media or non-standard temperature range.

## COMPLIANCES

|                            |                                                  |
|----------------------------|--------------------------------------------------|
| <b>Torque Base</b>         | Mounting Dimensions as per ISO 5211: 2001(E)     |
| <b>Accessories</b>         | Shaft Driven Accessories mounting per NAMUR-VDE  |
| <b>Performance Testing</b> | EN 15714-3:2022                                  |
| <b>Ingress Protection</b>  | IP66/IP67M per IEC 60529                         |
| <b>Safety</b>              | ATEX, SIL 3 suitable<br>On request: PED, API 6DX |

## SYMMETRICAL OR CANTED YOKES

The heart of the Series 98 actuator is the scotch yoke. This mechanism converts linear motion into rotational motion. The piston and/or springs directly couple to a rotating yoke with a slot that engages the sliding blocks.

This type of actuator has a distinct torque curve, which starts high, then dips toward the middle of the stroke, and ends with increasing torque — offering an inherent optimization of torque requirements associated with many valve applications.



### SYMMETRICAL YOKE

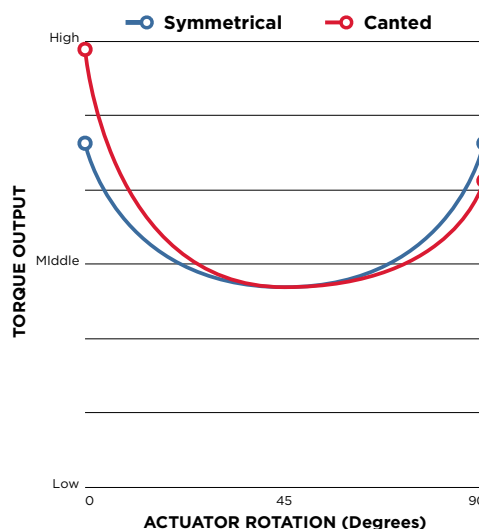
- > Torque output curve is balanced.
- > Torque demands are similar at seat break and end positions.



### CANTED YOKE

- > Applications call for optimizing the torque output vs shaft angle curve.
- > Torque output curve is shifted.
- > Torque demands are not the same at seat break and end positions.

## S98 TORQUE CURVE COMPARISON



## MODULAR DESIGN

### PRESSURE MODULE

- > Pneumatic

### TORQUE MODULE

- > Symmetrical or Canted Yoke

### HAND PUMP

- > Hand Pump for Hydraulic Override

### DIRECT ACTING OR SPRING RETURN MODULES

- > Jackscrew Direct Drive Override
- > Jackscrew Gear Driven Override
- > Hydraulic Override
- > Extended Travel Stop
- > Hydraulic Damper
- > Partial Stroke Testing/Locking Device



## OPTIONS

### DAMPER

- > Provides self contained hydraulic cushioning at the end of high speed stroke, preventing slamming and seat damage to the valve, as well as shock to the piping. (Available for Double Acting or Spring Return.)



### EMERGENCY SHUTDOWN CAPABILITY

- > Fast Acting (less than one second)
- > Rugged Design
- > Customizable Configurations
- > Manual and Automatic Release Options
- > Certified Safety Integrity Level 3 (SIL) per IEC 61508

### PARTIAL STROKE DEVICE

- > Allows ESD valve function verification without disrupting the running process.



## ACCESSORIES

Add to the versatility of the S98 by choosing the applicable accessories from Bray's complete line of positioners, status monitors and solenoids.

The combination of actuators and accessories offer the best compatibility, economy and quality performance in the flow control industry.



**VALVE STATUS  
MONITORS**  
Series 5A | 5B | 5C



**PROXIMITY SENSORS**  
Series 54



**POSITIONER**  
Series 6A