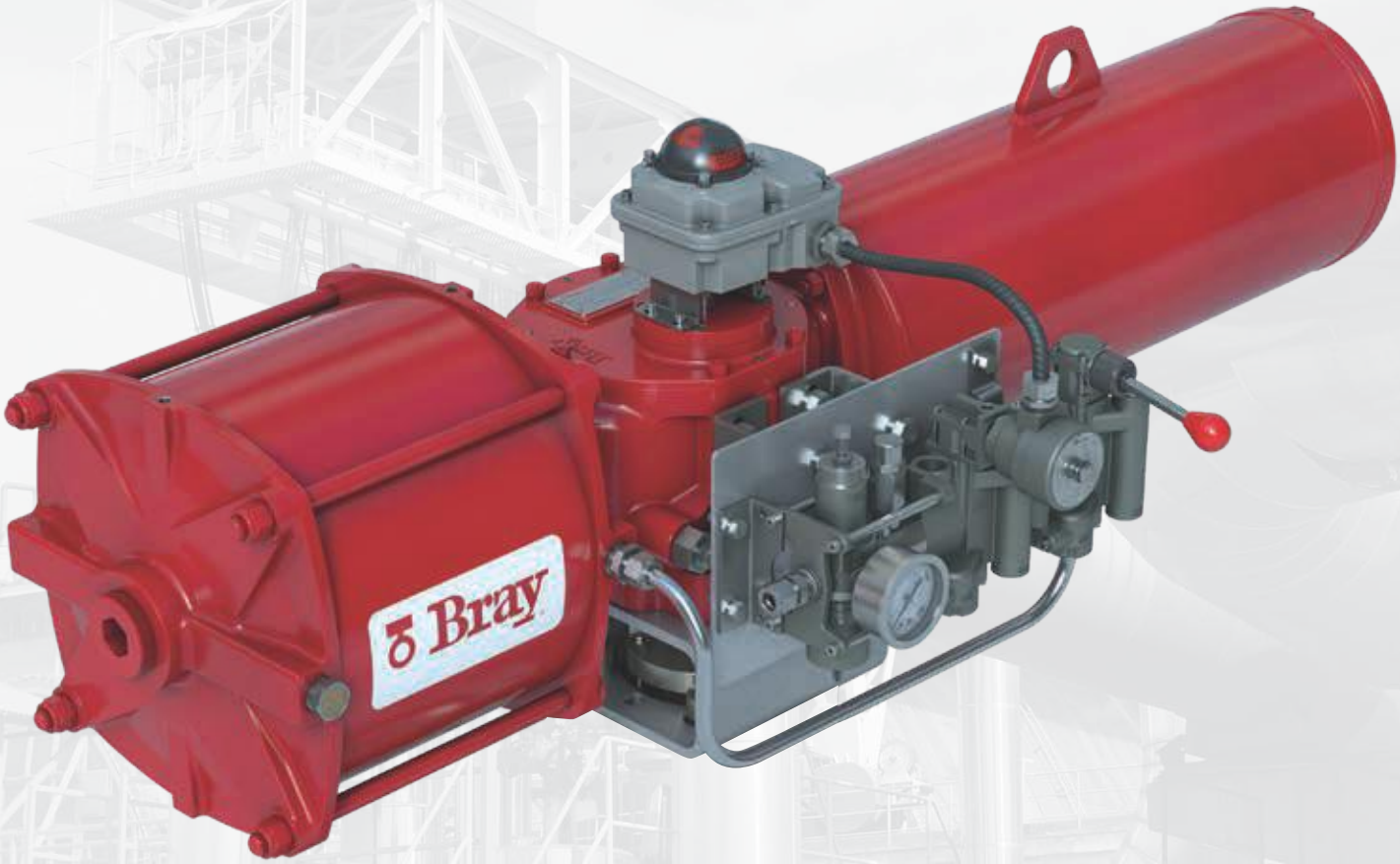
SERIES 98

PNEUMATIC SCOTCH YOKE ACTUATOR



Bray®

BRAY.COM

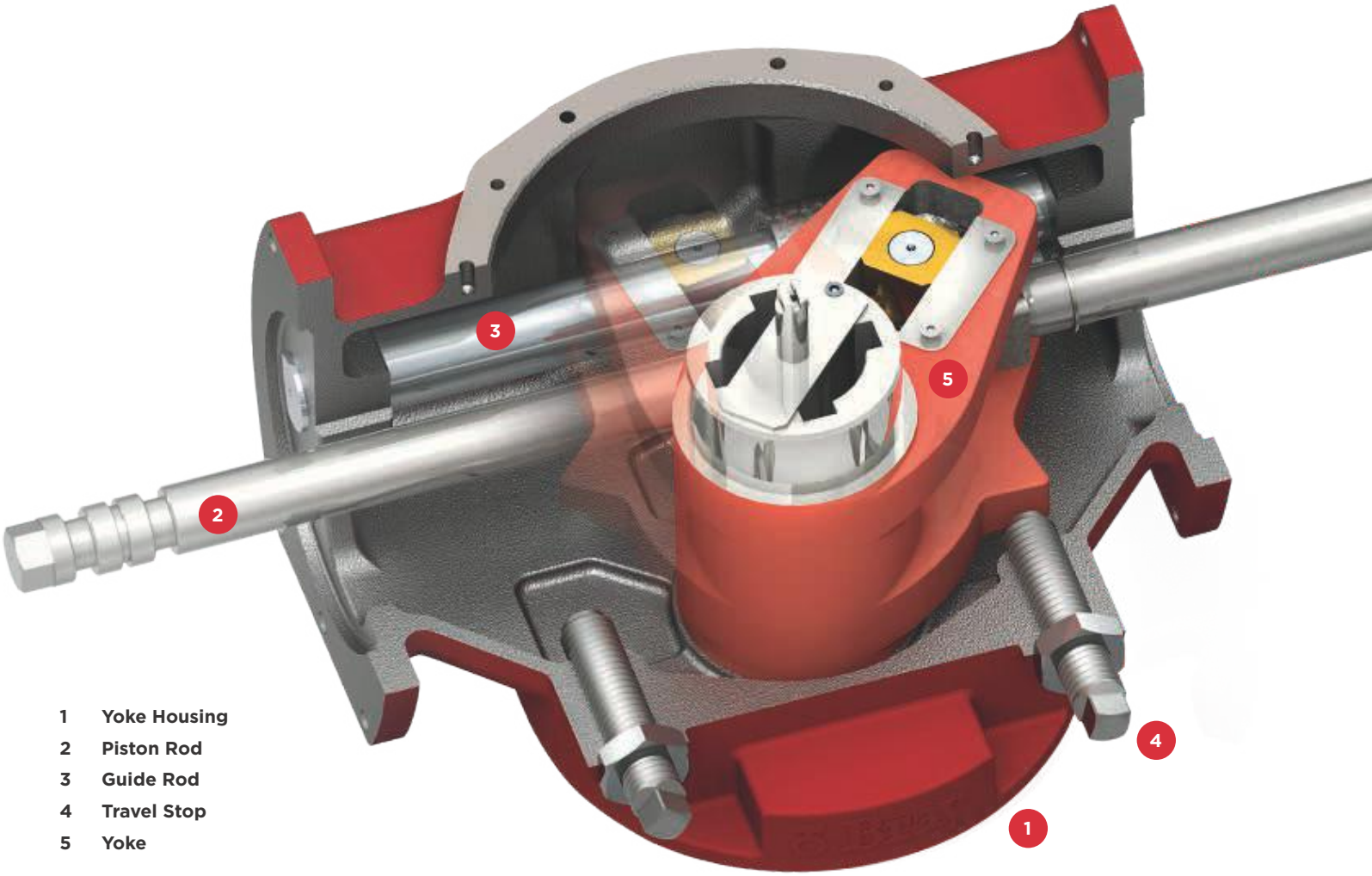
THE HIGH PERFORMANCE COMPANY

S98 SCOTCH YOKE ACTUATOR

Bray's engineering excellence and precision manufacturing have produced a modular product line optimized for mounting on Bray valves. In addition all Bray accessories are fully configurable and directly mount to the actuator – providing flexibility and efficiency at reduced cost.

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).

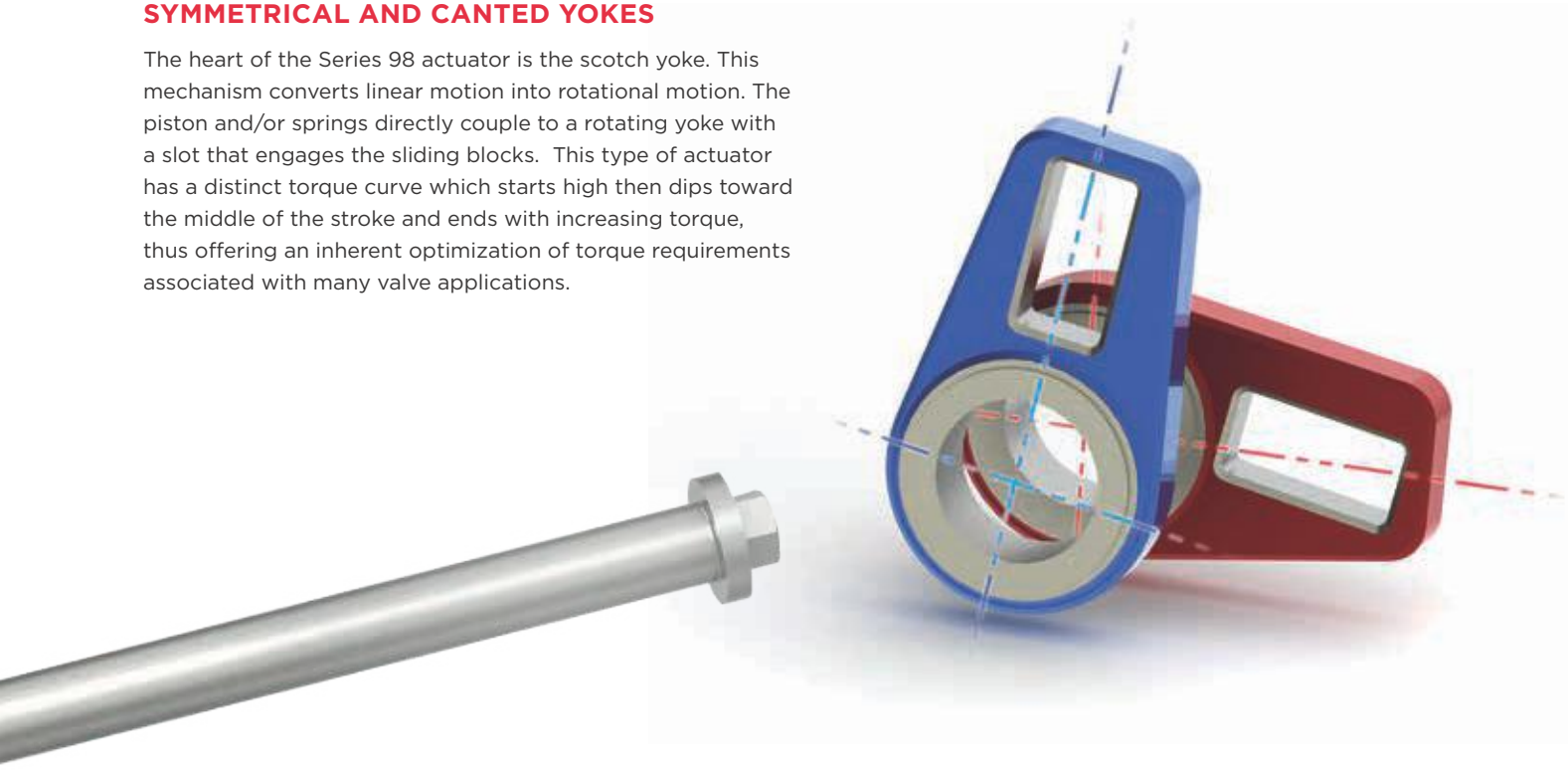
- Compact design offers a high torque-to-weight ratio
- Modular design offers easy configuration in the field
- Module alignment ensured by precision machined centering rings
- Torque output ranging from 2,744 to 885,100 lb-in (310 to 100,000 Nm)
- Spring end torque ranging from 2,744 to 445,261 lb-in (310 to 50,306 Nm)
- Premium epoxy/polyurethane coating as standard



1 **Yoke Housing**
2 **Piston Rod**
3 **Guide Rod**
4 **Travel Stop**
5 **Yoke**

SYMMETRICAL AND 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, thus offering an inherent optimization of torque requirements associated with many valve applications.

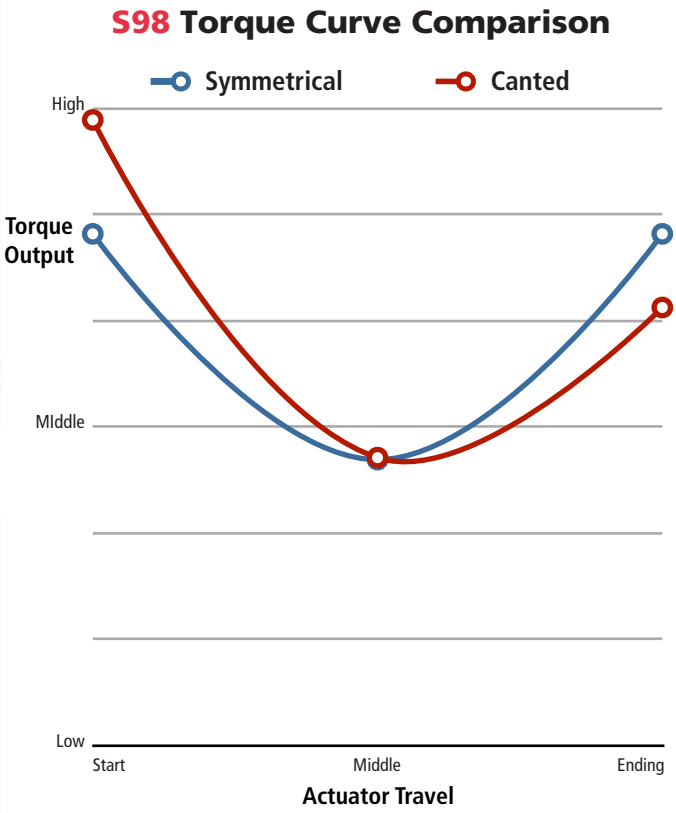


SYMMETRICAL

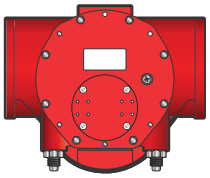
The symmetrical yoke provides a balanced torque output curve. This is the best choice in applications where the torque requirements at the seat break out and end positions are similar. As the name suggests, the output torque curve is symmetrical about the mid rotation point.

CANTED

The torque demands of some valve types are not the same at the break and end points These applications call for optimizing the torque output vs shaft angle curve. The canted yoke option shifts the torque output curve. The torque output is matched to the application requirements.



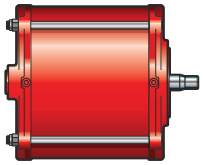
S98 TORQUE MODULE



- Integral single piece cast housing for rigidity
- Two ISO drilling patterns in base to maximize direct mounting
- Symmetrical and Canted Yoke options
- Integral travel stops
- Replaceable self lubricating metal backed PTFE bearings for enhanced service life
- NAMUR mounting for shaft driven accessories, standardized across models
- Guided drive supports side loads
- Relief vent prevents ingress and over pressurization

S98 PRESSURE MODULES

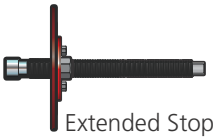
- Corrosion protected external tie rods designed for long seal life and reliability
- Honed and hard chrome plated cylinder barrel for wear and corrosion protection and enhanced seal performance
- Multiple ports available
- Quad ring and U-cup seals for dynamic sealing
- Dual wear bands for better guidance of piston



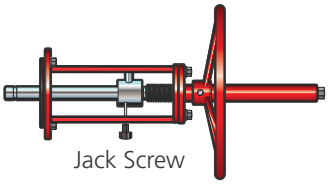
Pneumatic

Hydraulic

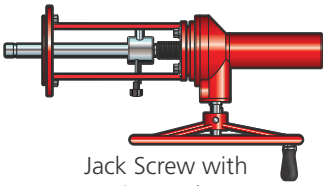
S98 DIRECT ACTING MODULES



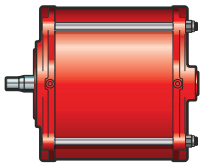
Extended Stop



Jack Screw



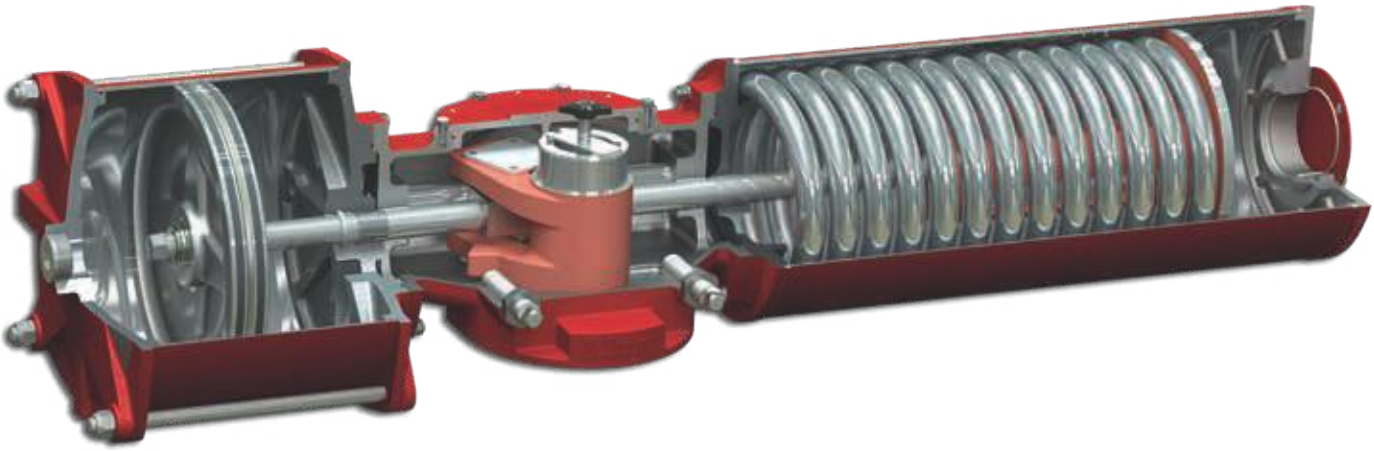
Jack Screw with Gear Drive



Pneumatic

Hydraulic Override

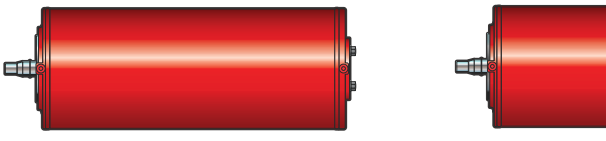
MODULAR DESIGN



S98 actuator suitable for a specific application can be configured by combining modules.

S98 SPRING MODULES

- Fully enclosed and welded design for safety
- Guided and centered springs for smooth operation
- No metal to metal contact of spring or guide
- Thrust base for mounting jackscrew and hydraulic override
- Tectyl coated springs for corrosion protection

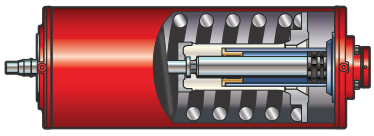


Standard

Jackscrew Direct Drive Override

Extended Travel Stop

Jackscrew Gear Driven Override



Hydraulic Override

OPERATING CONDITIONS

Pressure Range*	40 - 150 psi (2.8 - 10.3 bar)
Media	Dry Compressed Air/Inert Gas*
Temperature Range Options	Standard: -20ºF to 200ºF (-29ºC to 93ºC)
	High Temperature: Up to 300ºF (149ºC)*
	Low Temperature: Down to -50ºF (-46ºC)*

**Contact Factory for other media or non-standard temperature range.*

COMPLIANCES

Torque Base	Mounting Dimensions as per ISO 5211: 2001(E)
Accessories	Shaft Driven Accessories Mounting per NAMUR-VDE
Performance Testing	EN 15714-3:2009
Ingress Protection	IP66/IP67M per IEC 60529
Safety	ATEX, SIL 3 suitable, PED on request

SERIES 98 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.

S6A ELECTRO-PNEUMATIC POSITIONERS

- Precise, microprocessor driven advanced communication (HART, Profibus, Foundation Field Bus)
- For use with both double or single acting actuators
- Partial stroke test capable

S5A/5B/5C VALVE STATUS MONITORS

- High visibility position indicator with double seal to prevent water ingress
- Shatter and UV resistant dome
- Stainless steel captive cover bolts
- Easy access terminals
- Splined cams for easy and accurate adjustment without tools

S54 VALVE STATUS MONITORS

- Two independent sensors for open and close valve position indication
- Optimized for indoor and outdoor use
- Rugged design resistant to shock, vibration, UV and corrosion
- Hermetically sealed to protect against the ingress of liquids or solids
- Maintenance free design
- Non-contact sensor eliminates the effect of mechanical wear
- Eliminates potential switch welding, arcing and sparking
- Quick and easy installation
- LED indication for sensor power, switch and solenoid status
- AS-i sensor available for digital network solution for valve actuator interface
- DC 2-wire sensor available for hazardous area process environments

FILTER REGULATOR

- 5 micron filter designed to provide removal of solids and liquids from compressed air.

Series 6A with Integral Volume Booster

Series 6A Hazardous Enclosure

Series 5C

Series 5B

Series 5A

Series 54

Filter Regulator

BRAY FLOW CONTROL SOLUTIONS ARE AVAILABLE FOR A VARIETY OF INDUSTRIES.

ENERGY
Mining
Oil & Gas
Power / FGD
Nuclear Power

WATER
Water / Wastewater
Ultra Pure Water
Desalination
Irrigation

INDUSTRIAL
Chemical
Pulp & Paper
Textile
Marine

INFRASTRUCTURE
Beverage & Food
Transportation
Heating, Ventilation & Air Conditioning (HVAC)

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