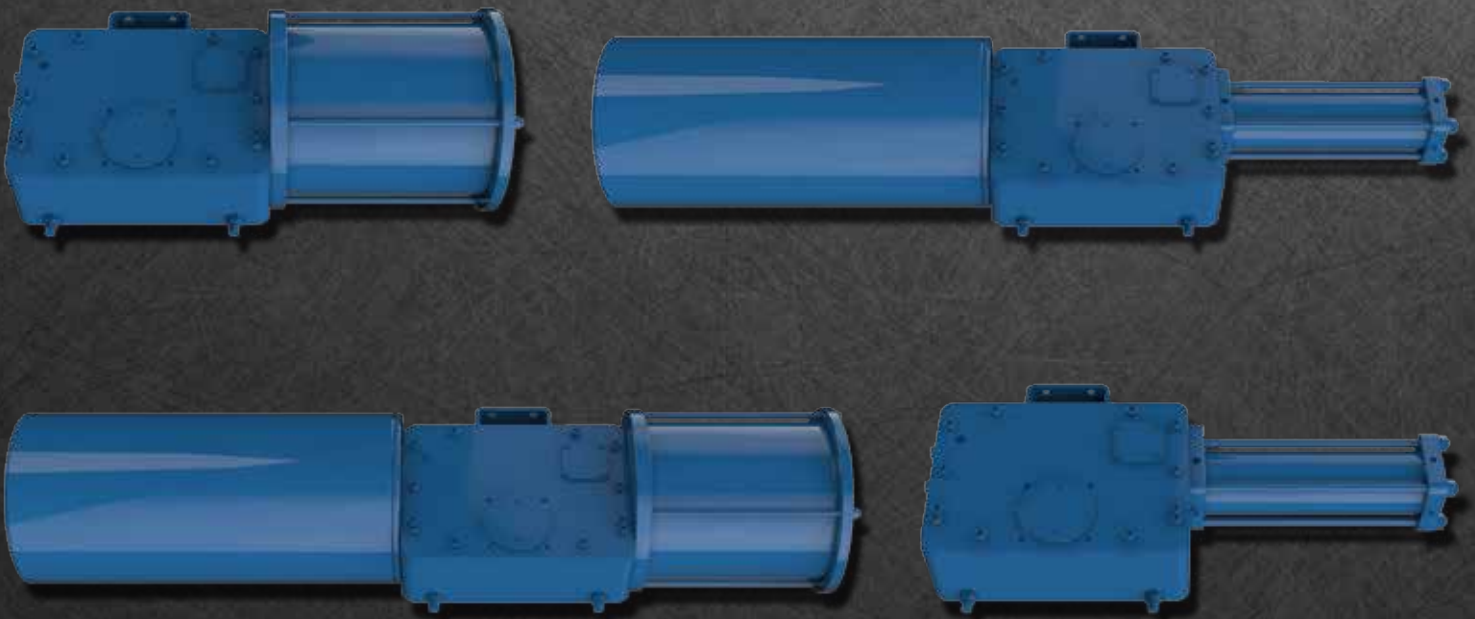


# LEDEEN GS Series

Pneumatic and Hydraulic Actuators

TECHNOLOGY



## LEDEEN® GS Series

### TYPICAL APPLICATION

For on/off or modulating control of any quarter-turn operated valve.



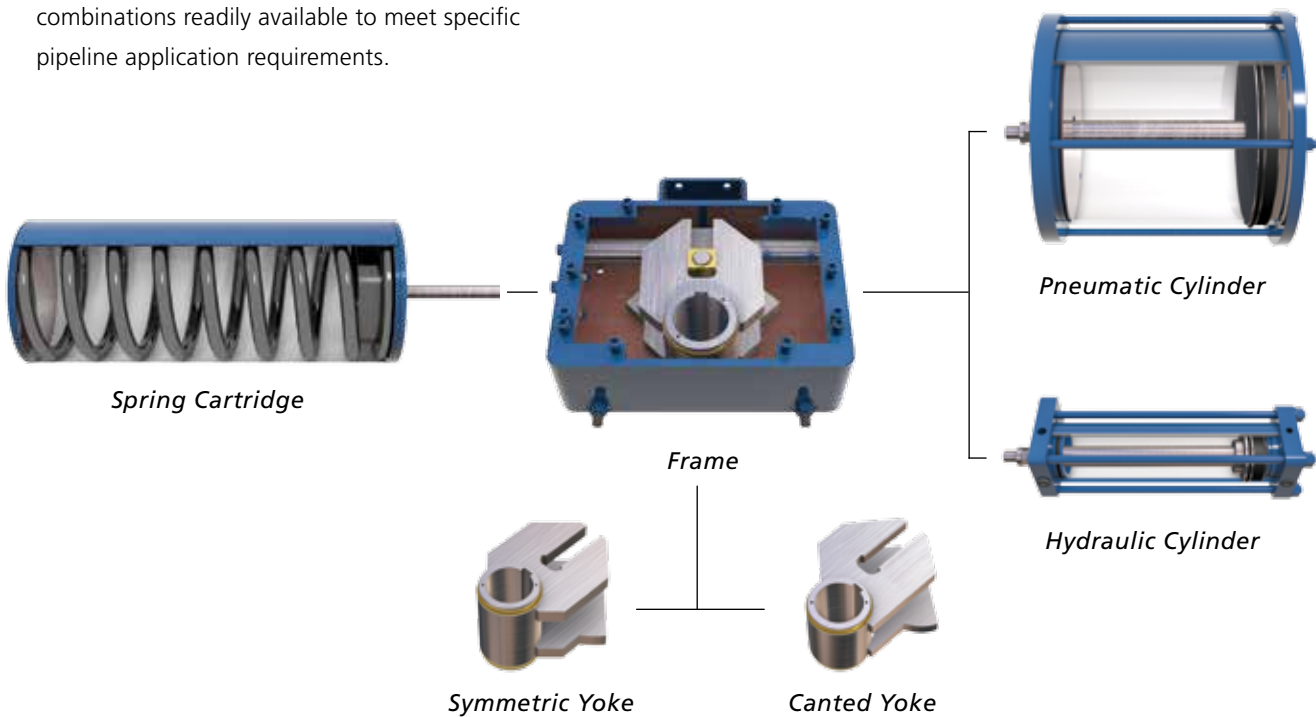
*Pneumatic Quarter-turn Actuator*



*Hydraulic Quarter-turn Actuator*

### MODULAR ASSEMBLY

Consistent engineering design and efficient modular assembly allows increased flexibility to be achieved. Double acting, single cylinder or dual cylinder are combinations readily available to meet specific pipeline application requirements.



## STANDARD FEATURES

- All models available as double acting or spring return
- Torque outputs to 57,360 in-lb (6480 N·m)
- Open and close travel stops provide  $\pm 3$  degrees minimum
- Scotch yoke mechanism generates powerful opening and closing torque outputs
- Steel fabricated frame provides rugged foundation of modular assemblies
- Chrome-plated side load bar with guide block for effective elimination of piston rod deflection
- Bronze bushing interfaces provide low-friction support of sliding and rotating components
- Aluminum bronze sliding blocks for a low-friction, low-stress pin connection
- Steel cylinder assembly provides robust pressure containment for all conditions
- Nickel-plated cylinder ID ensures sealing surface with excellent corrosion resistance
- Buna piston seal configurations specifically designed for pneumatic and hydraulic applications
- Composite guide band on piston provides low-friction guidance and support
- Steel spring cartridge is fully enclosed from environmental conditions
- Epoxy-coated prestressed springs provide consistent performance with corrosion protection
- Seal-welded design construction provides maximum personnel safety



*Pneumatic Spring Return Actuator*

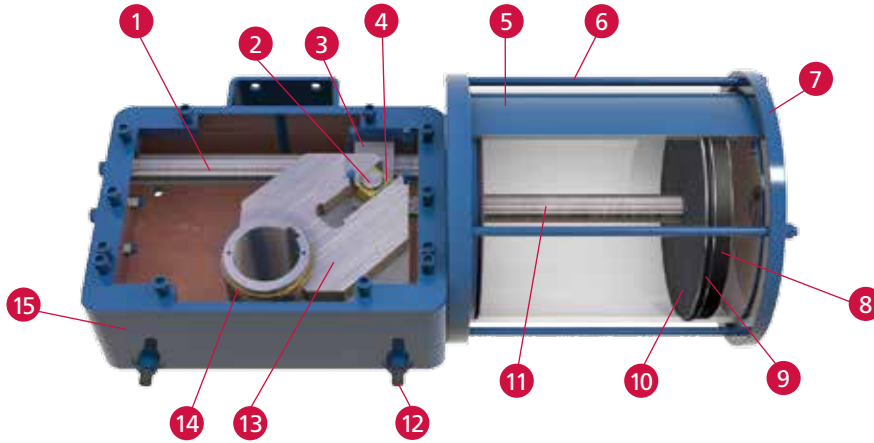


*Hydraulic Spring Return Actuator*

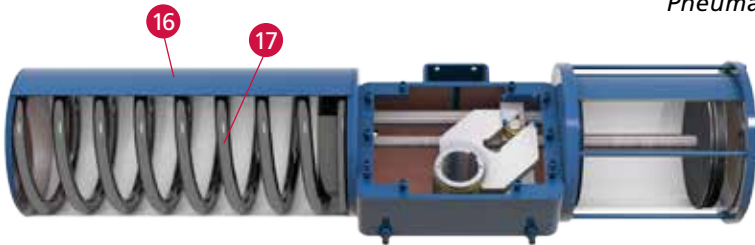
## STANDARD PRODUCT CHARACTERISTICS

TYPE	TEMPERATURE	PRESSURE
Pneumatic	-22° F to 212° F (-30° C to 100° C)	40 to 175 psig (3 to 12 barg)
Hydraulic		145 to 3000 psig (10 to 202 barg)

## PNEUMATIC ACTUATOR STANDARD CONSTRUCTION



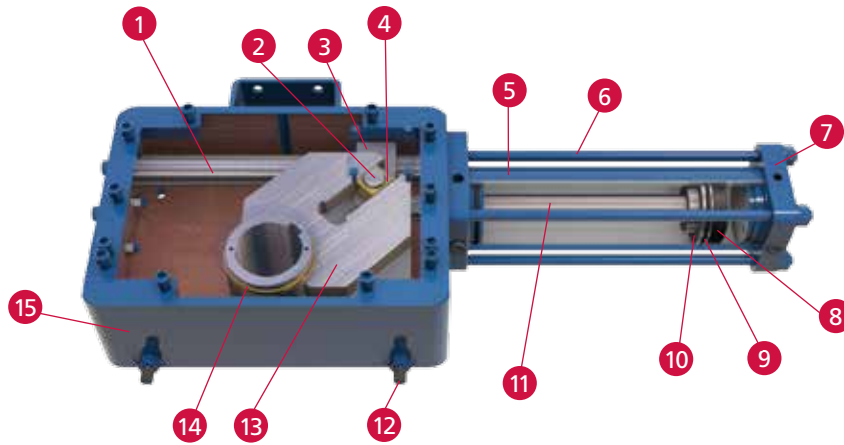
*Pneumatic Double Acting Actuator*



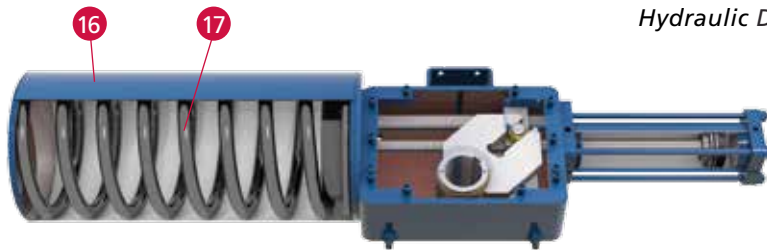
*Pneumatic Spring Return Actuator*

Item	Description	Material
1	Guide Bar	Alloy Steel/Chrome Plated
2	Pin	Alloy Steel
3	Guide Block	Carbon Steel
4	Sliding Block	Aluminum Bronze
5	Cylinder	Carbon Steel
6	Tie Rod	Alloy Steel
7	Flange	Carbon Steel
8	Guide Band	Teflon and Graphite
9	Seal	Buna O-ring
10	Piston	Carbon Steel
11	Piston Rod	Alloy Steel
12	Travel Stop	Alloy Steel
13	Scotch Yoke	Alloy Steel
14	Bushing	Bronze
15	Frame	Carbon Steel
16	Spring Cartridge	Carbon Steel
17	Spring	Alloy Steel

## HYDRAULIC ACTUATOR STANDARD CONSTRUCTION



*Hydraulic Double Acting Actuator*

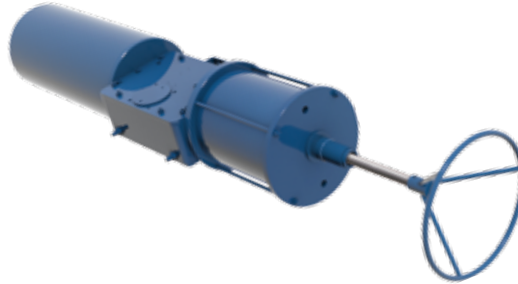


*Hydraulic Spring Return Actuator*

Item	Description	Material
1	Guide Bar	Alloy Steel/Chrome Plated
2	Pin	Alloy Steel
3	Guide Block	Carbon Steel
4	Sliding Block	Aluminum Bronze
5	Cylinder	Carbon Steel
6	Tie Rod	Alloy Steel
7	Flange	Carbon Steel
8	Guide Band	Teflon and Graphite
9	Seal	Buna Quad-ring
10	Piston	Carbon Steel
11	Piston Rod	Alloy Steel
12	Travel Stop	Alloy Steel
13	Scotch Yoke	Alloy Steel
14	Bushing	Bronze
15	Frame	Carbon Steel
16	Spring Cartridge	Carbon Steel
17	Spring	Alloy Steel

## STANDARD OPTIONS

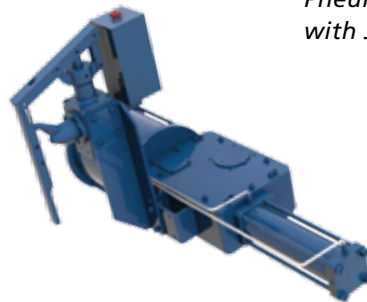
- Jackscrew override
- Hand pump override
- Fluorosilicone seals for low-temperature applications to -76° F (-60° C)
- Viton® seals for high-temperature applications to 392° F (200° C)



*Pneumatic Spring Return Actuator with Jackscrew Override*



*Pneumatic Double Acting Actuator with Jackscrew Override*

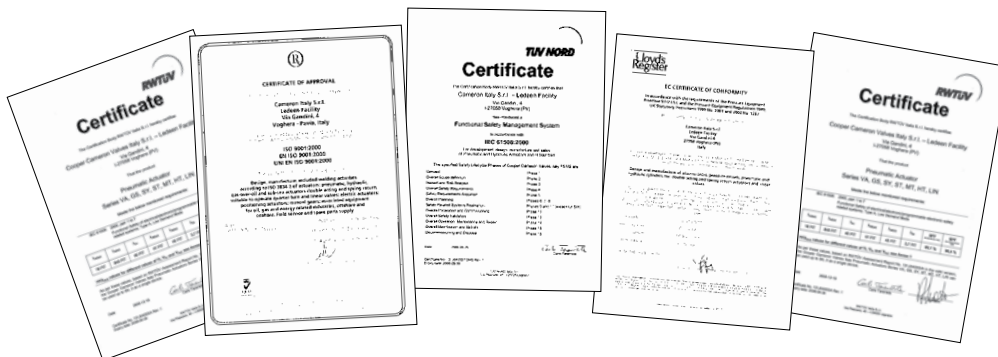


*Pneumatic Double Acting Actuator with Hand Pump Override*

## CERTIFICATIONS

Cameron's LEDEEN GS Series of actuators comply with many industry standards.

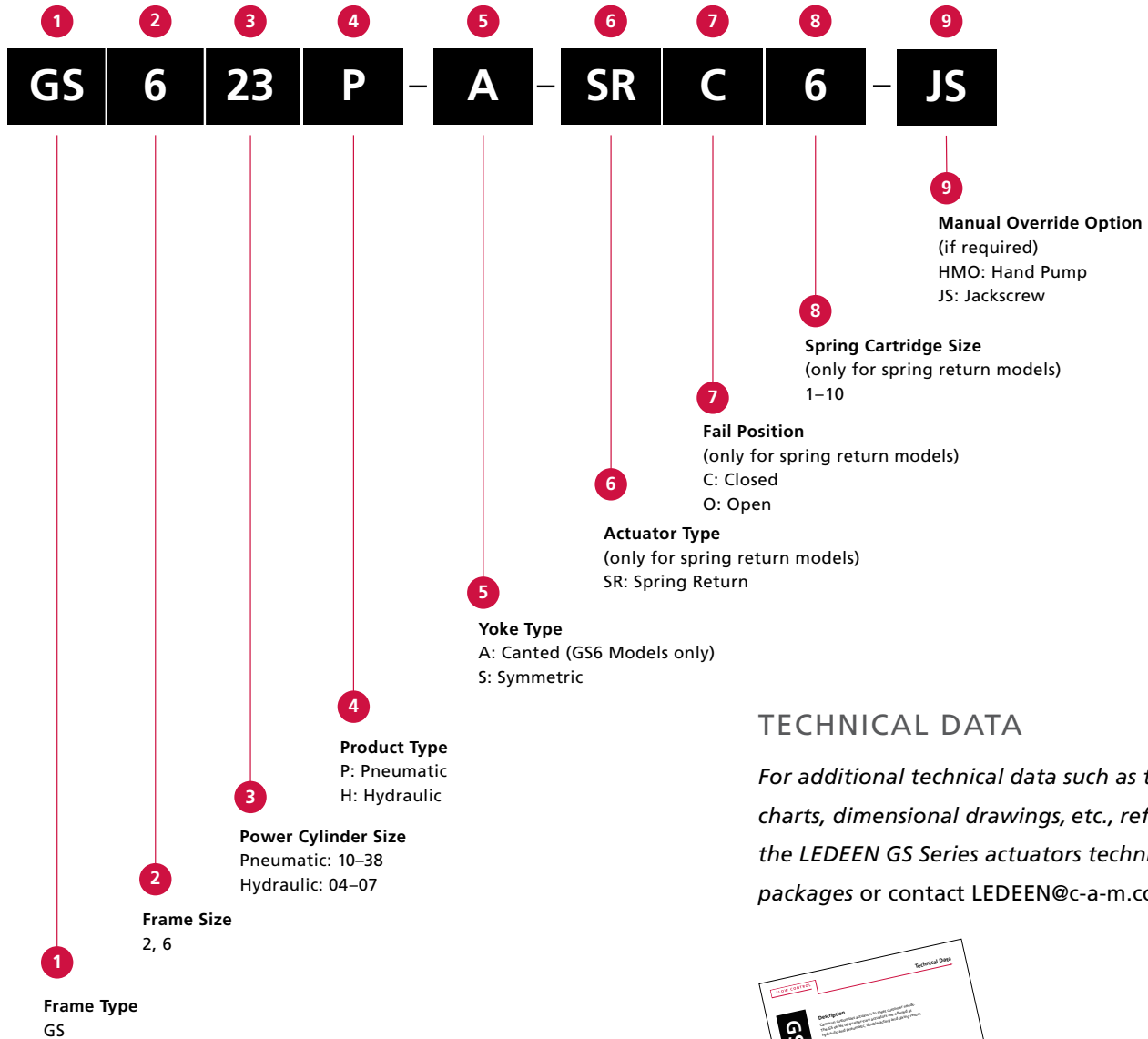
- ISO 9001:2000, Quality
- PED 97/23/EC, Design
- SI 825, Safety
- IEC 61508:2000, Integrity (TUV/SIL3)
- TR CU, Safety and Quality



## MODEL NUMBER DESIGNATION

Cameron offers customizable actuators from the frame type to the override options. A sample of the actuator selection process is shown below.

Starting with Step 1, Frame Type, the actuator components needed to fit the customer's requirements are built. An example model number is shown below, which specifically identifies each variable for selection.



## TECHNICAL DATA

For additional technical data such as torque charts, dimensional drawings, etc., refer to the LEDEEN GS Series actuators technical data packages or contact [LEDEEN@c-a-m.com](mailto:LEDEEN@c-a-m.com)



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#### HSE Policy Statement

At Cameron, we are committed ethically, financially and personally to a working environment where no one gets hurt and nothing gets harmed.