CAMERON

CAMERON Compact Actuators – HS Series

Minimum space. Maximum performance.

TECHNOLOGY

wegman

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CAMERON Compact Actuators – HS Series

CUSTOMER-FOCUSED SOLUTIONS

- Save valuable space with one of the smallest compact actuators on the market.
- Get the best power transmission technology with the high-performance helical spline.
- Precision-set the valve position with external adjustable travel stops.
- Experience the convenience of single-source integrity with Cameron's automated valves.
- Positively identify every actuator for the life of the product with RFID tags.
- Keep your equipment in peak performance with Cameron's global aftermarket service, CAMSERV™.

Hydraulic Double Acting Actuator

Hydraulic Spring Return Actuator

SOLID ENGINEERING AND MANUFACTURING EXCELLENCE

- Cameron's Valve Automation Center of Excellence is located in Italy, with an actuation heritage dating back to 1948.
- Because Cameron designs and manufactures valves, actuators and control solutions, our customers benefit from a single point of accountability.
- The CAMERON® Compact Actuator incorporates proven technology first developed in 1966 with Cameron's Power Piston, many of which are still in operation today.

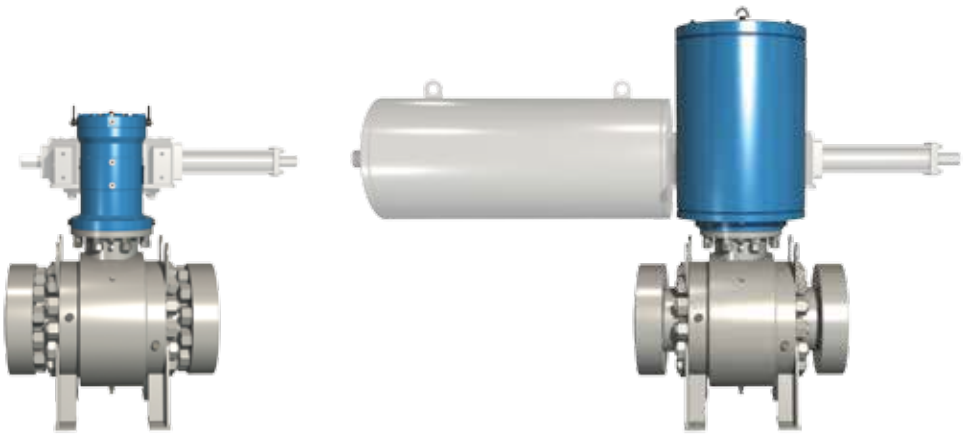
Cameron's Power Piston with torque outputs developed to 1.5 MM in-lb (photo circa 1966)

What Sets the CAMERON Compact Actuator Apart

SPACE SAVINGS

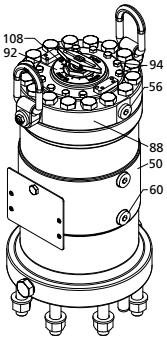
- Save valuable space with the CAMERON Compact Actuator
- Significantly reduce piping and support structures in new manifold designs

Double Acting Actuators *Spring Return Actuators*



Size comparison – equivalent scotch yoke actuator on 8" 2500 ball valve

INDEPENDENTLY ADJUSTABLE TRAVEL STOPS



Cameron's experienced engineers designed an integrated adjustable travel stop subassembly for precise valve positioning (patent pending).

- Independently adjustable open and close travel stops
- Set the valve position with precision to fully open to optimize flow and to fully closed to ensure a positive shut-off position
- External access to travel stop adjustment
- Setting retention is achieved with an integrated locking mechanism

RADIO FREQUENCY IDENTIFICATION (RFID) TAGS

Rely on Cameron for customer-focused solutions that help you better manage your assets:

- Durable RFID tagging is securely affixed to every actuator
- Positively identify each individual actuator assembly over the life of the product
- Eliminate concern of missing, damaged or unreadable product tags

CAMERON Compact Hydraulic Actuators – HS Series

TYPICAL APPLICATION

The CAMERON Compact Hydraulic Actuator is a quarter-turn actuator ideal for space-constrained installations:

- FPSOs, platforms, offloading buoys, etc.
- Drilling diverters, CO_2 and liquid mainlines, etc.
- Mining

STANDARD FEATURES

- Available as double acting or spring return
- Torque outputs to 340,000 in-lb (38,500 N·m)
- Open and close travel stops provide ± 3 degrees minimum
- Helical spline torque-generating mechanism
- Low-friction spline coating
- Rugged alloy steel frame
- Buna piston seals
- Fully welded spring cartridge subassembly
- Epoxy-coated springs
- Local position indicator
- Adaptable to any quarter-turn valve topworks
- RFID tag for positive identification and life-of-product tracking

AVAILABLE OPTIONS

- Hand pump or gearbox overrides
- Mechanical partial stroke test device (local or remote operation)
- Flurosilicone seals for low-temperature applications to -76° F (-60° C)
- Viton® seals for high-temperature applications to 392° F (200° C)

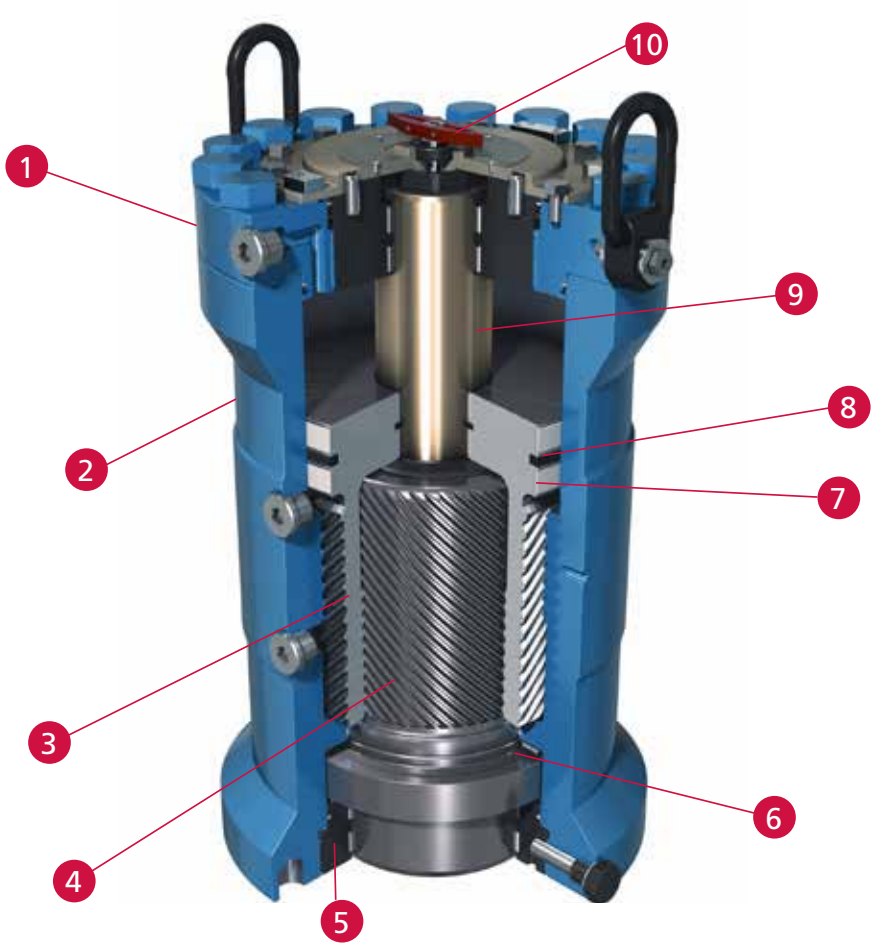
Hydraulic Double Acting Actuator

Hydraulic Spring Return Actuator

STANDARD PRODUCT CHARACTERISTICS

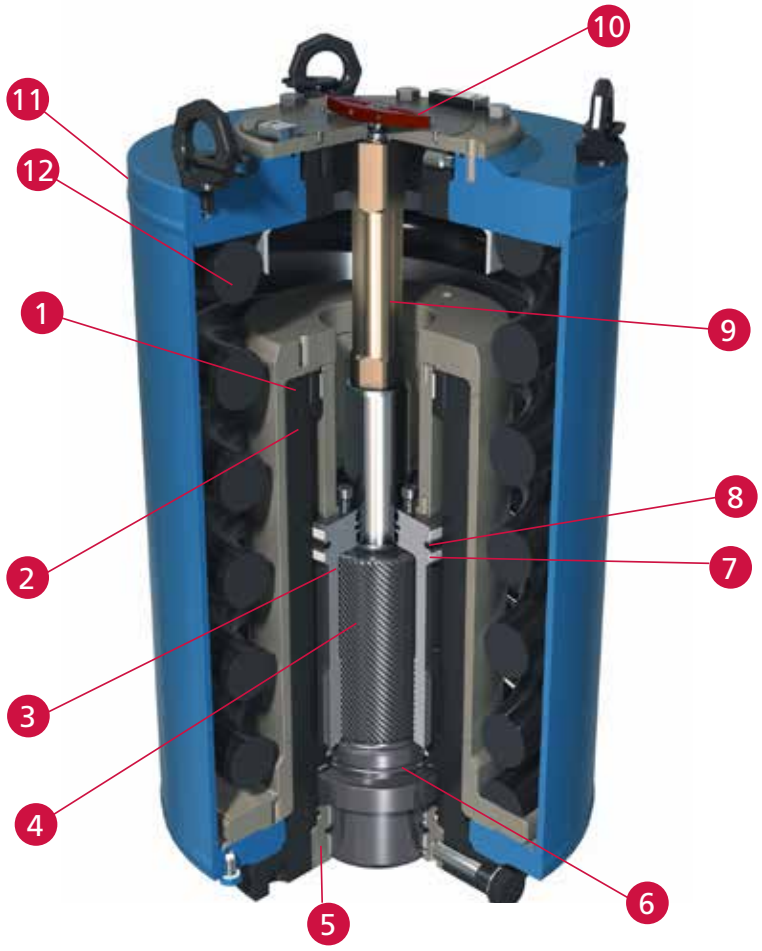
ACTUATOR MODEL	TEMPERATURE RANGE	PRESSURE RANGE
HS Hydraulic	-22° F to 212° F (-30° C to 100° C)	145 to 3000 psig (10 to 207 barg)

CAMERON COMPACT ACTUATOR STANDARD CONSTRUCTION – HYDRAULIC DOUBLE ACTING ACTUATOR



Item	Description	Material
1	Top Flange	Alloy Steel
2	Frame	Alloy Steel
3	Piston	Alloy Steel
4	Torque Hub	Alloy Steel
5	Bottom Flange	Alloy Steel
6	Bearing	Alloy Steel
7	Guide Band	Teflon® PTFE
8	Seal	NBR + PTFE
9	Travel Stop	Alloy Steel
10	Position Indicator	Stainless Steel

CAMERON COMPACT ACTUATOR STANDARD CONSTRUCTION – HYDRAULIC SPRING RETURN ACTUATOR



Item	Description	Material
1	Top Flange	Alloy Steel
2	Frame	Alloy Steel
3	Piston	Alloy Steel
4	Torque Hub	Alloy Steel
5	Bottom Flange	Alloy Steel
6	Bearing	Alloy Steel
7	Guide Band	Teflon PTFE
8	Seal	NBR + PTFE
9	Travel Stop	Alloy Steel
10	Position Indicator	Stainless Steel
11	Spring Cartridge	Carbon Steel
12	Spring	Spring Steel

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 components of the actuator needed to fit the customer's requirements is built. An example model number is shown below, which specifically identifies each variable for selection.

1	2	3		4	5	6		7
HS	3.5	H	–	SR	C	A	–	HMO

1 FRAME TYPE
HS

2 FRAME SIZE
3.5 to 38.5

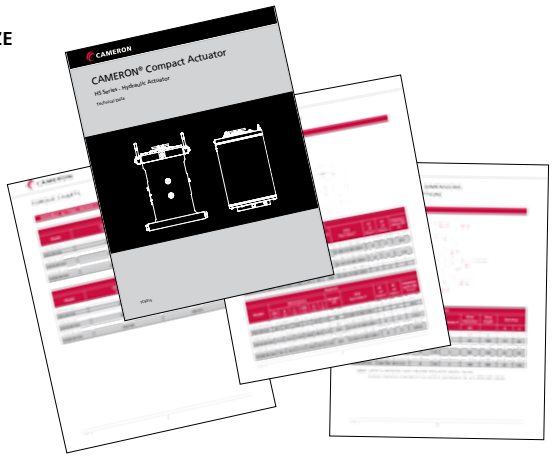
3 PRODUCT TYPE
H: Hydraulic

4 ACTUATOR TYPE
SR: Spring Return
DA: Double Acting

5 FAIL POSITION
(Only for Spring Return Models)
C: Closed
O: Open

6 SPRING
(Only for Spring Return Models)
Size A

7 MANUAL OVERRIDE OPTION
(Only if Required)
HMO: Hand Pump
GB: Gearbox



CERTIFICATIONS

The CAMERON Compact Actuator complies with the following industry standards:

- Tested to Shell DEP requirements
- ISO 9001:2000
- SI 825, Safety

TECHNICAL DATA

For additional data such as torque charts, dimensional drawings, etc., refer to the CAMERON Compact Actuator – HS Series technical data package.

CAMERON

3250 Briarpark Drive, Suite 300
Houston, TX 77042
USA
Toll Free 1 800 323 9160
Tel 1 281 499 8511

Via Gandini 4
27058 Voghera, PV
Italy
Tel 39 0383 343311

Learn more about CAMERON Compact Actuators – HS Series at:
www.c-a-m.com/valveautomation
or email valveautomation@c-a-m.com

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.

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