

Pneumatic & Hydraulic
Actuator Systems
for Valves and Dampers



WORLDWIDE AUTOMATION SOLUTIONS



oil power gas marine

Camtorc Types A, S & SX Hydraulic & Pneumatic



The Camtorc series of actuators provides highly reliable, pneumatic or hydraulic actuation for 90° valves and dampers. The unique design utilizes a profiled cam that ensures a constant torque is generated throughout the entire stroke of the actuator. In addition, the lack of internal gearing means that backlash is eliminated, making the Camtorc actuator an excellent choice for modulating control applications.

The Camtorc series is available for pneumatic and hydraulic applications in either double acting or spring return configurations with a full range of control accessories. Materials of construction include bodies in either aluminium (Type A) or steel (Type S) or 316SS (Type SX) spring cylinders and internal components are of steel or 316SS construction with drive shafts of 316 or 17-4PH stainless steel.



Actuator Design Criteria

Rotation

0° to 95° rotation with adjustable end stops.

Torque Range

Double Acting: 10 to 30,000 Nm / Spring Return: 10 to 20,000 Nm (Spring End).

Supply Pressure Range

Pneumatic Actuators: 2 to 10 barg*.

Hydraulic Actuators: Low - 3 to 10 barg* / High - 10 to 210 barg*.

Optional – Higher pressure versions up to 400 barg available on request.

(*Routine overpressure test of 1.5 times the maximum operating pressure).

Ambient Temperature Range

Nitrile Seals: -20°C to +60°C (T6) / Viton Seals: -20°C to +130°C (T3) / EPDM 70 Seals: -40°C to +130°C (T4).

Optional – High (+170°C) / low (-45°C) temperature versions available on request.

Operating Media

Pneumatic Actuators: Air (dry or lubricated) or non-corrosive gas operating media.

Hydraulic Actuators: Mineral oil or equal operating fluid.

Ingress Protection

Weatherproof to IP65 / 66.

Hazardous Certification

ATEX II 2 G IIC c T* (*Dependent on seal materials).

Features and Benefits

• Cam Design

The unique cam design offers simple, backlash free operation providing extended life of seals and components.

• High Integrity Construction

Type S actuators only utilize steel and stainless steel materials for all actuator components (no iron) and are fully tested on assembly to provide superior operational life.

• Paint Finish

Standard paint finish for Type S actuators is offshore 2-pack epoxy (other paint specifications available on request).

• Full Torque Output.

The pneumatic spring return version at the beginning of the spring stroke has a 15% increase in torque output, providing extra power for the break torque and at the end of spring, the torque output is the same as that of the double acting actuator.

• Compact Dimensions.

The high torque output of the pneumatic spring return version allows for the use of smaller size actuators than is normally the case with conventional actuator designs.

• Long Spring Life.

All springs are stress relieved after forming to ensure a long life.

• Whole Life Cost

Camtorc actuators are exceptionally low wearing providing low maintenance and the optimum Whole Life Cost solution for the customer.

Camtorc Types CS & CX Pneumatic

The Camtorc series Type CS & Type CX actuators provide highly reliable, pneumatic or hydraulic actuation for 90° valves and dampers based on the simplicity and reliability of the proven cam mechanism. The modular design of the Type CS & Type CX allow for the simple removal of the pneumatic piston cylinder and / or spring cylinder for routine maintenance without having to disconnect the actuator from the valve. The cover of the main actuator body can also be removed to allow easy access to the cam mechanism for inspection or preventative maintenance.

The Camtorc series is available for pneumatic applications in either double acting or spring return configurations with a full range of control accessories. Materials of construction include in either steel construction (Type CS) or 316 stainless steel construction (Type CX) with drive shafts of 316 or 17-4PH stainless steel. Product reliability and ease of maintenance is the hallmark of the Camtorc series actuator.

Actuator Design Criteria

Rotation

0° to 95° rotation with adjustable end stops.

Torque Range

Double Acting: 75 to 10,000 Nm / Spring Return: 30 to 5,000 Nm (Spring End).

Supply Pressure Range

2 to 10 barg*.

(*Routine overpressure test of 1.5 times the maximum operating pressure).

Ambient Temperature Range

Nitrile Seals: -20°C to +60°C (T6) / Viton Seals: -20°C to +130°C (T3) / EPDM 70 Seals: -40°C to +130°C (T4).

Optional – High (+170°C) / low (-45°C) temperature versions available on request.

Operating Media

Air (dry or lubricated) or non-corrosive gas operating media.

Ingress Protection

Weatherproof to IP65 / 66.

Hazardous Certification

ATEX II 2 G IIC c T* (*Dependent on seal materials).

Features and Benefits

• Cam Design

The unique cam design offers simple, backlash free operation providing extended life of seals and components.

• High Integrity Construction

All actuators only utilize steel and stainless steel materials for all actuator components (no iron) and are fully tested on assembly to provide superior operational life.

• Modular Design

The simple removal of the pneumatic piston cylinder and / or spring cylinder allows for routine maintenance without having to disconnect the actuator from the process valve.

• Paint Finish

As standard, Type CS steel actuators are finished with an offshore 2-pack epoxy paint finish (other paint specifications available on request) and Type CX 316 stainless steel actuators are supplied in a natural finish.

• Long Spring Life.

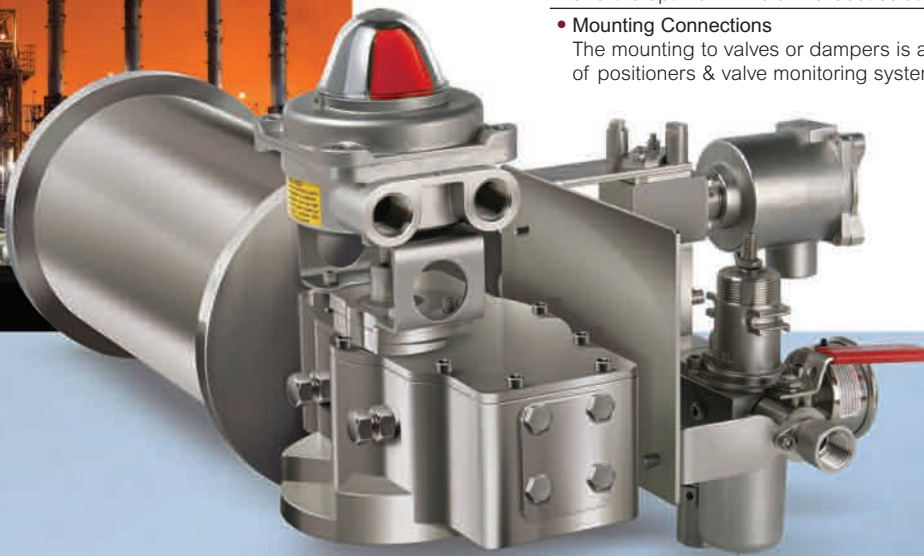
All springs are stress relieved after forming to ensure a long life.

• Whole Life Cost

Camtorc actuators are exceptionally low wearing providing low maintenance and the optimum Whole Life Cost solution for the customer.

• Mounting Connections

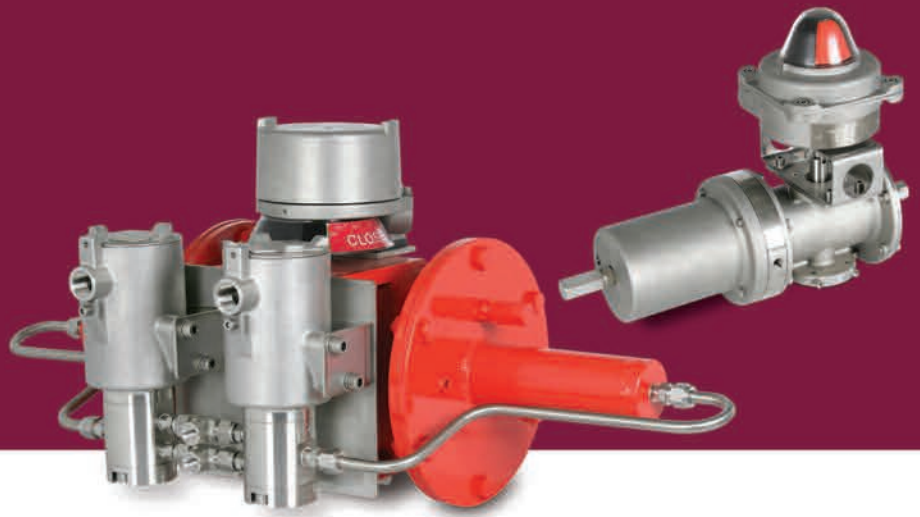
The mounting to valves or dampers is according to ISO 5211 and the fitting of positioners & valve monitoring systems is according to VDI / VDE 3845.



Pneumatic & Hydraulic Actuator Systems for Valves and Dampers



Camtore



Control Systems

The control systems for actuators are of fundamental importance for providing actuator performance, functionality and reliability. Our engineers have considerable experience in this field and can supply bespoke control systems for valve actuation to satisfy all of the end client's operational requirements.

These include:

- BDV (Blow Down Valve) systems.
- ESD (Emergency Shut Down) systems.
- PST (Partial Stroke Test) systems.
- Modulating systems.
- Solenoid Control - 3/2-Way Single Coil, 5/2-Way Single or Dual Coil versions in both General Purpose and Hazardous Area Options (ATEX Certified Ex ia, Ex d & Ex m).
- Position Feedback Monitors - Mechanical or Proximity End of Travel Switch / Sensor, 4 to 20 mA Feedback or Bus Communication versions in both General Purpose and Hazardous Area Options (ATEX Certified Ex ia & Ex d).
- Positioner Control - Pneumatic, Electro-Pneumatic or Digital versions in both General Purpose and Hazardous Area Options (ATEX Ex ia & Ex d).
- Miscellaneous Controls - Speed Control, Pilot Valves, Quick Exhaust Systems, Partial Closing Test Systems, Pressure Relief Valves and Others.

Automation Centre

Our engineers work with the latest SolidWorks 3D CAD system, producing accurate detailed and 'As Built' general arrangement drawings. For those customers requiring technical drawings, certain drawings are available in a SolidWorks .easm format that enables full 3-D viewing of our products using Free Downloadable Software.

Refurbishment Services

Actuators that are in need of repairs or overhaul can be sent to MATIC, where trained engineers carry out all necessary work. This important service from MATIC enables our customers to maximise the working life of product purchased.



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