ORBIT Automated Valve Packages
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ORBIT Automated Valve Packages

INTRODUCTION

Cameron’s ORBIT® brand can provide you with perfectly matched packages that include valves, actuators and instrumentation.

Unique Design Makes Automation Easier

Our ORBIT valves are ideal for automation by the very nature of their operating principle. Many automated valves remain open or closed for extended periods of time. This and other environmental and process conditions can cause higher breakaway torque in valves with friction between their sealing surfaces.

The mechanical camming action of an ORBIT valve retracts the core from its seat as it opens. The core is then rotated to the open position without scraping the seat. This reduces the need for the high-torque actuators found on many other valves, which scrape their seating surfaces together during opening and closing. By eliminating the opening and closing friction, ORBIT valves can provide economical, low-pressure operators and still ensure sufficient thrust to open and close the valve.

ORBIT Actuators are Specially Designed for Use Exclusively on ORBIT Valves

ORBIT actuators provide reliable, trouble-free, on/off operation, and are especially suitable for simple or extensive instrumentation.

ORBIT Valves Offers a Wide Variety of Piston and Diaphragm Actuators

ORBIT valves can be equipped with perfectly matched ORBIT linear actuators. Many capabilities can be added to the basic double acting actuator. Models are available with spring return to open or close. Manual override mechanisms also are available.

A Full Range of Instrumentation Capabilities

A variety of instrumentation capabilities can be provided to meet your system’s needs. Many common systems are available as economical standard packages. Pneumatically or electrically activated systems also are available. You can order our standard systems or purchase custom systems designed to your specifications. Standard packages include combinations for spring return or double acting actuators, with signals to open or close and provisions for fail open, fail close, or fail in last position on loss of signal or pneumatic supply.

Design Assistance

Cameron can provide design assistance and recommend proven systems, or you may prefer to specify your own design and have our factory mount and test it for you. Most ORBIT valves can easily be automated in the field at a later date.
Using low-pressure air supply (up to 65 psi [4.4 bars]), these simple, reliable diaphragm actuators are designed and built to match the exact needs of the smaller sizes of ORBIT valves.

With both valve and actuator from the same company, there is a single-source responsible for the complete package:

- Operations and maintenance advice
- Repair parts and field service
- Warranty
DOUBLE ACTING
SERIES 84, 164 AND 424

VPI Rod Spacer
VPI Rod Assembly
Diaphragm Plates
Capscrew
Hex Nut
O-rings
VPI Rod Bushings
Clamp
Rod Boot
Set Screw
Pointer Assembly
VPI Collar
Snubber (When Fitted)
Upper Diaphragm Case
Stem/Actuator End
Eye Nut
Diaphragm
Stem/Valve End
Lower Diaphragm Case
Retaining Ring
Sealing Gland
Flat Key
Lube Fitting
Hex Bolt or Stud
Not to scale
DOUBLE ACTING WITH MANUAL CLOSE MECHANISM
SERIES 84 AND 164

Handwheel

Cotter Pin

Jack Screw

Set Screw

Handjack Nut

Lube Fitting

O-ring

Upper Diaphragm Case Assembly

Not to scale
DOUBLE ACTING WITH TWO-WAY MANUAL MECHANISM
SERIES 84 AND 164

Pipe Cap
Lock Nut
Handwheel Assembly
Warning Tag
Drive Screw
O-ring
Lube Fitting
Lower Bearing Collar
Stem
Spacer (Size 84 Only)
O-ring

Upper Bearing Collar
Bearing
Square-Head Set Screw
Hex Nut
Weather Shield
Jack Screw
Handjack Nut
Thumb Screw
Bearing
Relief Fitting/Air
Set Screw
Upper Diaphragm Case Assembly

Not to scale
SPRING CLOSE
SERIES 84, 164 AND 167

Spring Adjustment Screw
Relief Fitting/Air
Positioning Ring
Upper Diaphragm Plate
O-rings
VPI Rod Spacer
VPI Rod Assembly
Hex Nut
O-ring
VPI Rod Bushing
Clamp
Rod Boot
Indicator Plate
Self-Tapping Screw
Set Screw
Pointer Assembly
VPI Collar
Indicator Bracket

Jam Nut
Upper Diaphragm Case Assembly
Positioning Plate
Spring
Warning Tag
Drive Screw
Lock Nut
O-ring
Sealing Gland
Capscrew
Diaphragm
Lower Diaphragm Plate
Retaining Ring
Stem/Actuator End
Lube Fitting
Stem/Valve End
Hex Bot or Stud
Key
Lower Diaphragm Case
Hex Nut

Not to scale
SPRING CLOSE WITH TWO-WAY MANUAL MECHANISM
SERIES 84, 164 AND 167
SPRING OPEN WITH MANUAL CLOSE MECHANISM
SERIES 85 AND 165

Not to scale
Cameron’s ORBIT piston actuators are designed for larger sized valves and are available with many types of optional equipment.

These actuators provide the required opening or closing force using air, gas or hydraulic pressure. On/off operation is efficient and consumes very little power.

The actuators use two cylinders, one on top of the other, with double acting pistons joined to a common central shaft or stem to generate sufficient linear thrust from a compact unit.

A gas-over-oil tank provides smooth operation, lubrication and ensures many years of trouble-free operation. The piston and rod seals operate against polished surfaces, coated with molybdenum disulfide, a dry film lubricant that also reduces wear.

A variety of accessories can be mounted at various locations on the actuator.

NOTE: Some mounting applications may require bracing to support the cylinder actuator. Consult Cameron for mounting positions other than vertical.
DOUBLE ACTING
AND LS-2611T

NOTE: “T” suffix indicates triple-stack cylinders.

NOTE: Piston stack can be double as illustrated, or triple.

Not to scale
DOUBLE ACTING WITH MANUAL CLOSE MECHANISM
SERIES LS-124D, LS-185D, LS-205D AND LS-207D

Handwheel
Relief Fitting
Jack Screw
O-ring (Weather Shield)
Thrust Washer (LS-124D Only)
Hex Bolt
O-ring (Jack Nut)
Upper Cylinder Head
O-ring (Jack Screw)
O-ring (Weather Shield)
O-ring (Jack Nut)
Lube Fitting
Jack Nut
O-ring (Jack Nut)
DOUBLE ACTING WITH TWO-WAY MANUAL MECHANISM
SERIES LS-124D

Weather Shield
Relief Fitting
Jack Nut
Jack Screw
O-rings
Needle Bearings
Capscrew
Roll Pin
Jack Nut Housing

Handwheel
Spring
Pin
Roll Pin
Handle
Bracket
Bearing Race
Bearing Ring
O-ring

Not to scale
DOUBLE ACTING WITH TWO-WAY MANUAL MECHANISM
SERIES LS-267D AND LS-269D

Not to scale

(For LS-185 and 205D Only)

Spring Adjusting Screw
Bearing Collar
Bearing
Spring Load Plate

Jam Nut
Hex Nut
Stud
Positioning Plate

Eye Bolt
Spring Adjustment Screw
Upper Cylinder Head Assembly

Not to scale
SPRING CLOSE WITH TWO-WAY MANUAL MECHANISM
SERIES LS-205D, LS-207D AND LS-267D
SPRING CLOSE WITH TWO-WAY MANUAL MECHANISM
SERIES LS-124D AND LS-185D

(For LS-185D Only)
- Jam Nut
- Upper Bearing Collar

Spring Load Plate
- Bearing
- Stem/Manual Mechanism

Eye Bolt
- Handwheel
- Jam Nut
- Stem/Manual Mechanism
- Upper Bearing Collar

Upper Cylinder Head Assembly
- Retaining Ring
- Hub/Spring Load Plate
- Spring
- Bearing Housing Assembly
- Lower Bearing Collar
- Air Filter/Silencer
- Jam Nut/Piston Rod

Not to scale
Global Network and Local Support
Cameron is well-positioned to deliver total aftermarket support, quickly and efficiently, with unmatched OEM expertise. Our highly skilled engineers and technicians are available around the clock, seven days a week, to respond to customer queries, troubleshoot problems and offer reliable solutions.

Easily Accessible Parts and Spare Valves
- OEM spare valves, actuators and parts (including non-Cameron brands)
- Handling, storage, packaging and delivery
- Dedicated stocking program

Comprehensive Aftermarket Services Portfolio
- Parts and spare valves
- Repair
- Field services
- Preventative maintenance
- Equipment testing and diagnostics
- Remanufacturing
- Asset preservation
- Customer property management
- Training and recertification services
- Warranty

Customized Total Valve Care™ (TVC) Programs
Customized asset management plans that optimize uptime, availability and dedicated services.
- Engineering consultancy
- Site management
- Flange management
- Startup and commissioning
- Spare parts and asset management
- Operational support
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.