# INDEX

## AUTOMATED VALVE PACKAGES

<table>
<thead>
<tr>
<th>Automated Valve Packages Introduction</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIAPHRAGM ACTUATORS</td>
<td>2</td>
</tr>
<tr>
<td>DOUBLE ACTING</td>
<td></td>
</tr>
<tr>
<td>Series 84, 164 &amp; 420</td>
<td>3</td>
</tr>
<tr>
<td>DOUBLE ACTING with Manual Close Mechanism</td>
<td>4</td>
</tr>
<tr>
<td>Series 84 &amp; 164</td>
<td></td>
</tr>
<tr>
<td>DOUBLE ACTING with Two-Way Manual Mechanism</td>
<td>5</td>
</tr>
<tr>
<td>Series 84 &amp; 164</td>
<td></td>
</tr>
<tr>
<td>SPRING CLOSE</td>
<td></td>
</tr>
<tr>
<td>Series 84, 164, 167 &amp; 420</td>
<td>6</td>
</tr>
<tr>
<td>SPRING CLOSE with Two-Way Manual Mechanism</td>
<td>7</td>
</tr>
<tr>
<td>Series 84, 164 &amp; 167</td>
<td></td>
</tr>
<tr>
<td>SPRING OPEN</td>
<td></td>
</tr>
<tr>
<td>Series 85 &amp; 165</td>
<td>8</td>
</tr>
<tr>
<td>SPRING OPEN with Manual Close Mechanism</td>
<td>9</td>
</tr>
<tr>
<td>Series 85 &amp; 165</td>
<td></td>
</tr>
</tbody>
</table>

## PISTON ACTUATORS

<table>
<thead>
<tr>
<th>Double Acting</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOUBLE ACTING</td>
<td></td>
</tr>
<tr>
<td>DOUBLE ACTING with Manual Close Mechanism</td>
<td>12</td>
</tr>
<tr>
<td>Series LS-124D, LS-185D, LS-205D &amp; LS-207D</td>
<td></td>
</tr>
<tr>
<td>DOUBLE ACTING with Two-Way Manual Mechanism</td>
<td>13</td>
</tr>
<tr>
<td>Series LS-124D</td>
<td></td>
</tr>
<tr>
<td>DOUBLE ACTING with Two-Way Manual Mechanism</td>
<td>14</td>
</tr>
<tr>
<td>Series LS-267D &amp; LS-269D</td>
<td></td>
</tr>
<tr>
<td>SPRING CLOSE</td>
<td></td>
</tr>
<tr>
<td>SPRING CLOSE with Two-Way Manual Mechanism</td>
<td>16</td>
</tr>
<tr>
<td>Series LS-205D, LS-207D &amp; LS-267D</td>
<td></td>
</tr>
<tr>
<td>SPRING CLOSE with Two-Way Manual Mechanism</td>
<td>17</td>
</tr>
<tr>
<td>Series LS-124D &amp; LS-185D</td>
<td></td>
</tr>
</tbody>
</table>

## ADDITIONAL ORBIT INFORMATION

- The Company and it's Products
- Technical Reference Data
- Dimensional Data, Valves and Actuators
- Standard Instrumentation Packages
- Installation and Maintenance
- Parts List and Ordering Instructions
AUTOMATED VALVE PACKAGES

ORBIT CAN PROVIDE YOU WITH PERFECTLY MATCHED PACKAGES WHICH INCLUDE VALVE, ACTUATOR AND INSTRUMENTATION

ORBIT'S UNIQUE DESIGN MAKES AUTOMATION EASIER.
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 can provide economical, low-pressure operators and still be assured of 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 OFFERS A WIDE VARIETY OF PISTON AND DIAPHRAGM ACTUATORS.
All 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 are also available.

ORBIT OFFERS 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 are available. You may order our standard systems or 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.

ORBIT DESIGN ASSISTANCE.
ORBIT can provide design assistance and recommended 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 be easily automated in the field at a later date.
Using low pressure air supply (up to 65 psig/4.4 bars), these simple reliable diaphragm actuators are designed and built by ORBIT to match the exact needs of the smaller sizes of ORBIT valves. With valve and actuator from the same company, there is single-source responsibility for the complete package:

- Operations and maintenance advice
- Repair parts and field service
- Warranty
DIAPHRAGM ACTUATOR

DOUBLE ACTING
SERIES 84, 164 & 424

V.P.I. ROD SPACER
V.P.I. ROD ASSEMBLY
DIAPHRAGM PLATES
CAP SCREW
HEX NUT
O-RINGS
V.P.I. ROD BUSHINGS
CLAMP
ROD BOOT
SET SCREW
POINTER ASSEMBLY
V.P.I. 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
DIAPHRAGM ACTUATOR

DOUBLE ACTING WITH MANUAL CLOSE MECHANISM
SERIES 84 & 164

HANDWHEEL
COTTER PIN
JACK SCREW
SET SCREW
NUT-HANDJACK
LUBE FITTING
O-RING
UPPER DIAPHRAGM CASE ASSEMBLY
DIAPHRAGM ACTUATOR

DOUBLE ACTING WITH TWO-WAY MANUAL MECHANISM

SERIES 84 & 164

PIPE CAP
LOCK NUT
HANDWHEEL ASSEMBLY
WARNING TAG
DRIVE SCREW
O-RING
LUBE FITTING
BEARING COLLAR-UPPER
BEARING COLLAR-LOWER
STEM
SPACER (SIZE 84 ONLY)
O-RING
BEARING COLLAR-UPPER
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
DIAPHRAGM ACTUATOR

SPRING CLOSE WITH MANUAL CLOSE MECHANISM
SERIES 85 & 165

HANDWHEEL
COTTER PIN
O-RING
SET SCREW
JACK SCREW
NUT-HANDJACK
LUBE FITTING
UPPER DIAPHRAGM CASE ASSEMBLY

NOT TO SCALE
PISTON ACTUATORS

ORBIT Piston Actuators are ideal for larger size valves and are available with many types of optional equipment.

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

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

A gas over oil tank provides smooth operation, lubrication and assures 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 minimizes 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 your ORBIT Representative for mounting positions other than vertical.
PISTON ACTUATOR

DOUBLE ACTING

NOTE: “T” Suffix indicates triple stack cylinders.

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

NOT TO SCALE
PISTON ACTUATOR

DOUBLE ACTING WITH MANUAL CLOSE MECHANISM
SERIES LS-124D, LS-185D, LS-205D & LS-207D

HANDWHEEL
O-RING (WEATHER SHIELD)
RELIEF FITTING
JACK SCREW
O-RING (WEATHER SHIELD)
THRUST WASHER (LS-124D ONLY)
HEX BOLT
O-RING (JACK NUT)
O-RING (JACK SCREW)
UPPER CYLINDER HEAD
O-RING (JACK NUT)
O-RING (WEATHER SHIELD)
JACK SCREW
LUBE FITTING
JACK NUT
PISTON ACTUATOR

DOUBLE ACTING WITH TWO-WAY MANUAL MECHANISM
SERIES LS-124D
PISTON ACTUATOR

DOUBLE ACTING WITH TWO-WAY MANUAL MECHANISM
SERIES LS-267D & LS-269D
PISTON ACTUATOR

SPRING CLOSE

(FOR LS-185 & 205D ONLY)
BEARING COLLAR
BEARING
SPRING LOAD PLATE
JAM NUT
SPRING ADJUSTING SCREW

JAM NUT
EYE BOLT
SPRING ADJUSTMENT SCREW
UPPER CYLINDER HEAD ASSEMBLY
SPRING LOAD PLATE
SPRING
AIR FILTER-SILENCER
PISTON
CYLINDER
HEX NUT
STUD
JAM NUT
POSITIONING PLATE

NOT TO SCALE
PISTON ACTUATOR

SPRING CLOSE WITH TWO-WAY MANUAL MECHANISM
SERIES LS-205D, LS-207D & LS-267D

NEUTRAL POSITION INDICATOR HOUSING
ADAPTER
WIPER RING
BOLT
HEX CAP SCREW
POSITION INDICATOR ROD
GUIDE PIN
LOCK NUT
UPPER CYLINDER HEAD ASSEMBLY
SPRING
PULLER HOUSING ASSEMBLY
BOLT
HANDWHEEL
GEAR OPERATOR HOUSING
DRIVE NUT
KEY
BEARING
BEARING RETAINER
LOAD STEM
NUT
THRUST BEARING
LOAD STEM COLLAR
NUT
CYLINDER STUD NUTS
CYLINDER STUD
PISTON
PISTON ROD

NOT TO SCALE
PISTON ACTUATOR

SPRING CLOSE WITH TWO-WAY MANUAL MECHANISM
SERIES LS-124D & LS-185D

EYE BOLT
UPPER CYLINDER HEAD ASSEMBLY
RETAINING RING
HUB-SPRING LOAD PLATE
SPRING
BEARING HOUSING ASSEMBLY
LOWER BEARING COLLAR
AIR FILTER-SILENCER
JAM NUT-PISTON ROD

BEARING
SPRING LOAD PLATE
STEM-MANUAL MECHANISM
JAM NUT
HANDWHEEL
STEM-MANUAL MECHANISM
UPPER BEARING COLLAR
LOCK NUT
SOCKET HEAD CAP SCREW
SPRING POSITIONING PLATE
(JFOR LS-185D ONLY)
JAM NUT
UPPER BEARING COLLAR
BEARING
STEM-MANUAL MECHANISM
NOT TO SCALE
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