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Find the *Alfa Laval / Tri-Clover 761-21M-29S11/2E316L* at our website: ***Click HERE***

761VSM



Tri-Clover® Air-Actuated Valves

Series 741, 761, 762, & 771

Service & Installation Manual

Tri-Clover®

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Thank you for purchasing a Tri-Clover Product!

This manual contains disassembly and assembly instructions, maintenance procedures, and a complete parts list for all 761, 741, 762, 771 Air Actuated Valves, designed and manufactured by Alfa Laval, Inc., Kenosha, Wisconsin.

READ THIS MANUAL carefully to learn how to service these valves. Failure to do so could result in personal injury or equipment damage.

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SAFETY

IMPORTANT SAFETY INFORMATION

Safety is very important!

DO NOT attempt to modify any Tri-Clover product. To do so could create unsafe conditions and void all warranties. ***DO NOT place any Tri-Clover product in an application where general product service ratings are exceeded.***

The following DANGER, WARNING, AND CAUTION signs and their meanings are used within these instructions.



DANGER

Indicates an imminently hazardous situation which, if not avoided, ***will*** result in death or serious injury. The word Danger is used in the most extreme cases.



WARNING

Indicates a potentially hazardous situation which, if not avoided, ***may*** result in minor or moderate injury. May also be used to alert against an unsafe operating or maintenance practice.



CAUTION

Indicates a potentially hazardous situation which, if not avoided, ***could*** result in death or serious injury.

The SAFETY LABEL below is placed on every valve. Do not remove any labeling on any Tri-Clover product. Immediately replace any label that is missing.



Part Number 38-294



Part Number 38-228



Part Number 38-264
(for diaphragm actuator)

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INTRODUCTION

ABOUT THIS MANUAL

This manual is for standard valve assemblies and actuators. A separate service manual is available for the control top module option. All 700 series valves are compatible with the optional control top module that can provide valve position feedback with limit switches or proximity sensors, and an integrally mounted solenoid air control valve. Refer to the *Control Housings Service Manual (CTASM)* for more information on maintenance and components of the control top module.

IMPORTANT: Throughout this manual, instructions for all valves have been grouped by body type. Refer below to find your valve body type before continuing to any of the following sections.

SERIES 761 • 741 • 771 VALVES



Shut Off
10, 30, 90



Divert & Reverse Acting
21, 23, 27, 41, 43, 47

SERIES 762 VALVES



Series 762 Shut Off
13, 47, 48, 49, 50, 51, 52, 123



Elbow & Kettle
21, 22, 29, 31, 33, 35, 57, 58

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MAINTENANCE

VALVE DISASSEMBLY

IMPORTANT: Check your air supply before installing this valve. Air-Actuated valves require clean, filtered air to operate properly.

Commonly used air compressors can pickup moisture/humidity in the air, dirt, and oil used in the compressor itself, and pass them along throughout your system, if not filtered properly. While some newer air compressors are oil-free, many commonly used are not. In the past few years, compressor manufacturers have switched from standard petroleum based lubricating oils to SYNTHETIC OILS, as they are thought to make the compressor run more efficiently, and can be changed less often.

However, SYNTHETIC OILS, which can get into the air supply, can cause damage to valve bodies and solenoids, as well as other processing equipment, by affecting the elastomers and/or plastics that come in contact with the air supply.

Special "coalescing" filter regulators and solenoid guards are commercially available to help avert this potential problem, and remove oils and other damaging elements from the air downstream from the air compressor. These filters and other components can be installed downline from the compressor, as well as on control panels, to help minimize the problem, by further cleaning the air before it gets to your valves and system components. Filter elements should be changed at least once a year, as part of your normal plant maintenance program.

IMPORTANT: Use C-137 Thread Lubricant Tri-Clover® actuators.

These lubricants have been formulated especially to ensure trouble free assembly of Tri-Clover® actuators. C137 is a non-USDA rated lubricant that helps to prevent thread galling.

How to Use
Before reassembly of any Tri-Clover® actuator, i.e. 761, 361, 161, etc., apply a thin bead of C137 lubricant on the lower threads of the cylinder.

THE C137 LUBRICANT IS NOT INTENDED FOR USE ON VALVE STEM SEALS, BODY GASKET OR ANY PRODUCT CONTACT SURFACE.

Tri-Clover offers C137 in 1 ounce tubes. For further information refer to your Tri-Clover® Actuator Service Bulletin, or contact your Alfa Laval distributor.

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MAINTENANCE

VALVE DISASSEMBLY



⚠ CAUTION

To prevent personal injury, keep hands and tools out of and away from valve bodies and stems when applying or releasing air to an actuator. The actuator stem assembly moves with extreme force and suddenness.

SHUT OFF & DIVERT VALVES

Apply 60 psig air to the air connection on yoke. This will lift the stem from the valve seat. (Normally Closed Valves Only). Loosen clamp wing nut and remove clamp.

SHUT OFF

Separate the valve body from the valve bonnet and remove body gasket.

DIVERT

Separate the lower valve body from the upper valve body and remove body gasket.

SHUT OFF & DIVERT VALVES

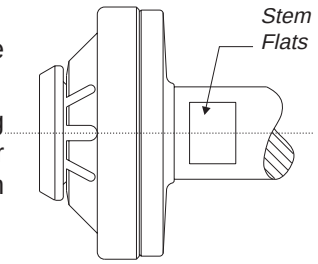
Remove air supply to actuator.

DIVERT, ELBOW & KETTLE

Apply 60 psig air to the end cap. This will extend the plug away from the valve seat.

Separate the valve stem from the actuator stem. This is done by placing an open end wrench around the valve stem flats and then turning counter clockwise. Once the threads between the two stems disengage, pull stem away from the actuator until it exits the body or bonnet.

Remove air supply to actuator.



SHUT OFF

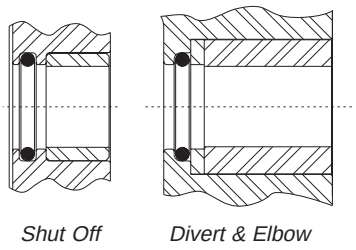
Separate bonnet from yoke by removing three bolts. Remove split bushing and o-ring from valve bonnet.

DIVERT

Separate upper valve body from yoke by removing three bolts. Remove split bushing, washer and o-ring from upper body.

ELBOW

Separate elbow valve body from yoke by removing three bolts. Remove split bushing, sleeve and o-ring from body.



Separate yoke from actuator by removing four bolts. Remove green bushing retainer and o-ring between yoke and actuator.

SHUT OFF, DIVERT, ELBOW & KETTLE VALVES

Separate green end cap from actuator by removing all four bolts. Remove the two o-rings that are between the end cap and actuator. Push the clear stem protector out of the end cap and remove o-ring. Pull off red indicator cap from actuator stem.

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VALVE COMPONENT INSPECTION

✓ **VALVE BODY SEAT(s)**

Inspect for nicks and scratches and other signs of excessive wear. Leakage past the seat(s) may result from these types of irregularities.

✓ **VALVE STEM & SEAT(S)**

Inspect rubber or PTFE seat(s) for signs of cracking, tearing, checking, or excessive wear. Note: Refer to the *TR2-Seat Replacement* section for installation of TR Seats. Inspect stem finish for galling, nicks, or scratches. Leakage may result from these irregularities.

✓ **SPLIT BUSHING**

Inspect for signs of cracks, nicks, scratches or excessive wear on inside diameter. A worn bushing will not properly align valve stem.

✓ **O-RING(S)**

Inspect for cuts, abrasions, flat spots, or other damage that would cause leakage or ineffective cleaning.

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VALVE ASSEMBLY



⚠ CAUTION

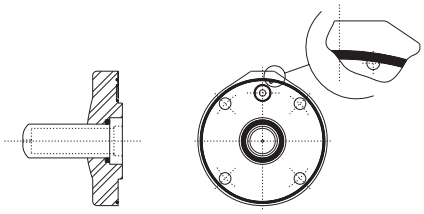
To prevent personal injury, keep hands and tools out of and away from valve bodies and stems when applying or releasing air to an actuator. The actuator stem assembly moves with extreme force and suddenness.

IMPORTANT: Replace all worn or damaged components as required. Spray stem and o-ring with Sanitary Lubricant. Make sure all valve bodies are mated properly before securing with clamps. Tighten all clamps securely to assure proper alignment. When disassembling and assembling valve, bench area should be clean to prevent marking and nicking of seats.

Place all three o-rings into green end cap grooves.

IMPORTANT: When installing largest diameter o-ring, start o-ring in groove opposite air relief notch and work it in towards notch. Be careful not to stretch o-ring.

IMPORTANT: 761-90 Y-Body Valves - stem protector assembly consist of two pieces plus o-ring.

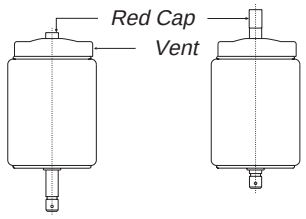


IMPORTANT: Determine valve operation (Normally Open or Normally Closed). Push red indicator cap over actuator stem thread.

Place end cap assembly over the actuator stem with red cap. Align the air port of the end cap with unthreaded thru hole in actuator.

Fasten end cap to actuator with four bolts and lock washers.

Define the vent plug location and insert in either the end cap or yoke.



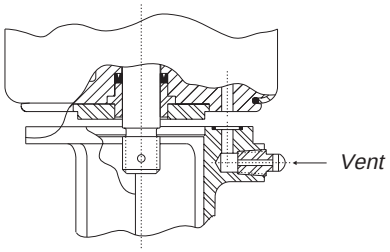
Shut Off & Divert	*Norm. Closed*	*Norm. Open*
Elbow & R. Acting	*Norm. Open*	*Norm. Closed*

Place o-ring into counter bore above air port on yoke.

Place green bearing retainer into bottom of actuator.

Place actuator onto yoke. Align yoke air port with unthreaded thru hole in actuator.

Fasten with four bolts and lock washers.



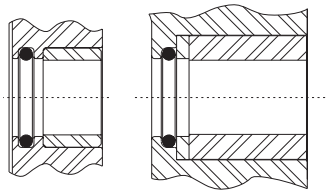
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MAINTENANCE

SHUT OFF
Lubricate o-ring with Sanitary Silicone Spray. Insert o-ring and split bushing into bonnet.

DIVERT AND ELBOW
Lubricate o-ring with Sanitary Silicone Spray. Insert o-ring into body, place required washer or sleeve on top of o-ring, place split bushing on top of this component. Fasten bonnet or body to yoke with three bolts and lock washers.

IMPORTANT: Replace nylon lock before threading valve stem onto actuator stem, see section *TYPE 10, 20 & 30 Actuator*.



Shut Off *Divert & Elbow*

DIVERT AND ELBOW
Apply 60psig air to actuator - (Normally Open Divert and Normally Closed Elbow Valves Only).

SHUT OFF, DIVERT, ELBOW & KETTLE
Push valve stem through bonnet until it meets the actuator stem. Partially thread valve stem onto actuator stem by hand until nylon lock resistance is felt. Apply an open end wrench over the valve stem flats, turn clock wise and tighten until valve stem meets actuator stem shoulder.

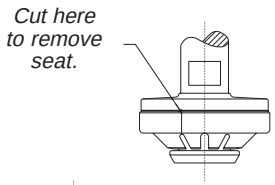
Place gasket in body groove and clamp together. Cycle valve at least 6 times. Operate all valves after assembly to be sure they are operating correctly. Inspect all air line connections for leaks.

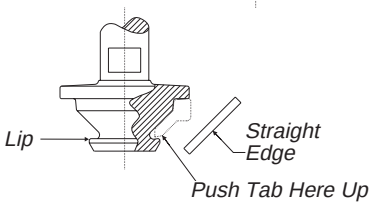
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"TR & TR2" STEM/SEAT ASSEMBLY

REMOVAL OF PTFE SNAP-ON SEAT

1. Refer to valve disassembly section to remove stem / seat assembly from valve.
2. Using a knife, partially cut through the upper ring portion of Snap-On Seat, avoiding contact with stainless steel stem. Grasp both cut ends of Snap-On Seat and force apart for removal from Stem. Since there are no slots, the TR2 seat will require cutting through sides and base of seat.





INSTALLATION OF REPLACEMENT PTFE SNAP-ON SEAT

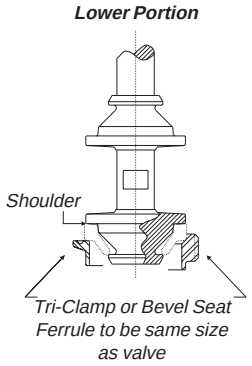
Tri-Clover's replacement Snap-On Seats do not require heat or special tools for proper installation. Snap-On Seats are installed by applying uniform pressure on all sides. Pressure can be applied by using a Tri-Clamp or Bevel Seat ferrule the same size as the valve.

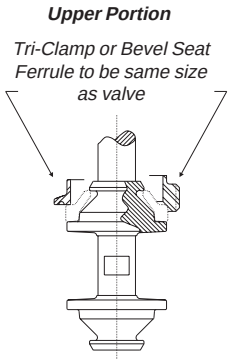
Due to the greater force required to instal the TR2 style seat, we recommend using a TR2 seat tool. This holds the seat more securely and can also be used on standard TR seat installation.

See parts list for tool numbers.

SHUT OFF VALVE OR LOWER SEAT OF DIVERT VALVE

1. Place Snap-On Seat on the lower portion of the stem.
2. Place assembly from Step 1 on Tri-Clamp or Bevel Seat ferrule, resting on a hard flat surface such as a bench or table.
3. Apply firm even downward pressure on the stem until the Snap-On Seat hits the shoulder of the stem and snaps into place.
4. Examine seat assembly to be sure each individual tab is secure under the smaller lip portion of the stem. Press tabs down with your fingers or a straight edge. Holding Stem/Seat Assembly in one hand, rotate the Snap-On Seat. For proper CIP cleaning the seat should turn freely on the stem.
5. Refer to valve assembly section for reassembly.





UPPER SEAT OF DIVERT VALVE

1. Place Snap-On Seat on the upper portion of the stem.
2. Place Tri-Clamp or Bevel Seat ferrule on top of assembly, resting on a hard, flat surface such as a bench or table.
3. Apply firm, even, downward pressure of Tri-Clamp or Bevel Seat ferrule until Snap-On Seat hits the shoulder of the stem and snaps into place.
4. Examine Seat Assembly to be sure individual tab is secure under the smaller lip portion of the stem. Press tabs down with your fingers or a straight edge. Holding Seat Assembly in one hand, rotate the Snap-On Seat. For proper CIP cleaning, seat should turn freely on the Stem.
5. Refer to valve assembly section for assembly.

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MAINTENANCE

TYPE 10, 20, AND 30 ACTUATORS

INTRODUCTION

This section covers servicing of the following actuators: Type 10L - 10S (normally open), Type 20L - 20S (Normally Closed) Long and Short, and Type 30L - 30S (Air Both Ways).

The 10 and 20 actuators are identical; with spring return operation. The change in description is for describing the mode of operation when coupled to a valve. "10" defines normally open and "20" defines normally closed operation, but physically they are the same. Type 30 is a double acting actuator that is identical to the 10/20 except it does not contain a spring. These actuators will require minimum maintenance over many years of service.



⚠ WARNING

To prevent personal injury, do not attempt to cut the actuator open. The actuator spring is compressed and under load.

IMPORTANT:

Additional air supply must be relieved when product pressure is not present. Failure to do so will result in pressure damage to the seat.

When using additional air loading it should exceed the minimum required by no more than 3 to 5 psig.

Valve Size	*Add'tl Air Pressure	Add'tl Air Pressure Maximum	Maximum Product Holding Pressure
1	1	10	200
1½	1	5	200
2	2	10	150
2½	3	20	100
3	3½	35	100
4H	5	30	100
4	15	60	100

Air pressure measured in psig.
*Additional air pressure required to hold against 10 psig product pressure.

INSTALLATION

Connect air supply to the 1/8-27 FNPT port(s) located on the green end cap or yoke. Air supply specifications: 60 to 80 psig for spring return (Type 10 & 20); 35 psig for double acting (Type 30). Refer to table at right if additional product holding pressure is required on normally closed Type 20 actuators.

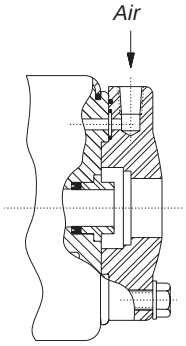
Bushing/Packing Replacement

Bushings guide the actuator stem while packings provide sealing around the stem. The bushing and packing should both be replaced if one or the other fails. Even if only one end fails both ends of the actuator should be serviced. Disconnect and remove actuator completely from valve before proceeding with the steps that follow, see *Valve Disassembly*.

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MAINTENANCE

1. Remove end cap from actuator. Separate clear stem protector from the end cap. Fasten the end cap without stem protector to one end of the actuator.





⚠ CAUTION

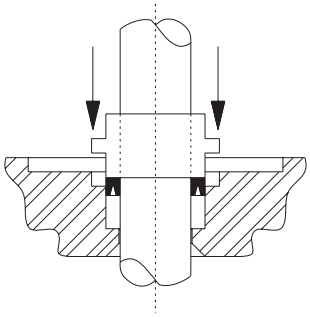
To prevent personal injury, keep hands and tools out of and away from valve bodies and stems when applying or releasing air to an actuator. The actuator stem assembly moves with extreme force and suddenness.



⚠ CAUTION

To prevent personal injury, do not attempt to remove the bushing or packing without the endcap fastened to the actuator. The packing and bushing will be forced out of the actuator under air pressure and will be trapped by the end cap.

2. Apply 60 psig air to end cap. The packing and bushing will be forced out of their counter bores, which will result in an air leak.
3. Remove air supply once the bushing and packing are forced out.
4. Remove end cap, bushing, and packing from the actuator and repeat at other end of actuator.
5. Place red indicator cap over the actuator stem threads.
6. Wipe stem clean. Lubricate new packings with Tri-Clover C137 lubricant.



7. Slide new packing over the red indicator cap/stem with the "v" side facing the actuator. Partially insert packing into smallest counter bore using a flat tool to assist the outer lip. DO NOT DAMAGE OR ROLL THE PACKING LIP DURING INSTALLATION.
8. Remove the red indicator cap. Place bushing on top of the packing. Push on the bushing until outer flange is flush with the actuator.
9. Repeat to the other end of the actuator.

ACTUATOR STEM NYLON LOCK REPLACEMENT

The Nylon Locking Pin located in the middle of the stem thread keeps the valve stem from becoming loose due to vibrations. After every disassembly, the nylon locking pin must be replaced. Punch out the old nylon pin with an $^{1}/_{8}$ inch or smaller diameter punch. Insert a new nylon locking pin.

ACTUATOR LUBRICATION

For optimum performance, lubricate once annually. Inject C137 or STP oil treatment into the unthreaded thru hole in each end of the actuator. Roll actuator on a flat surface repeatedly to obtain uniform coverage of lubricant. Do not over lubricate. This is not a remedy for actuator failure.

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TYPE 80 ACTUATOR

INTRODUCTION

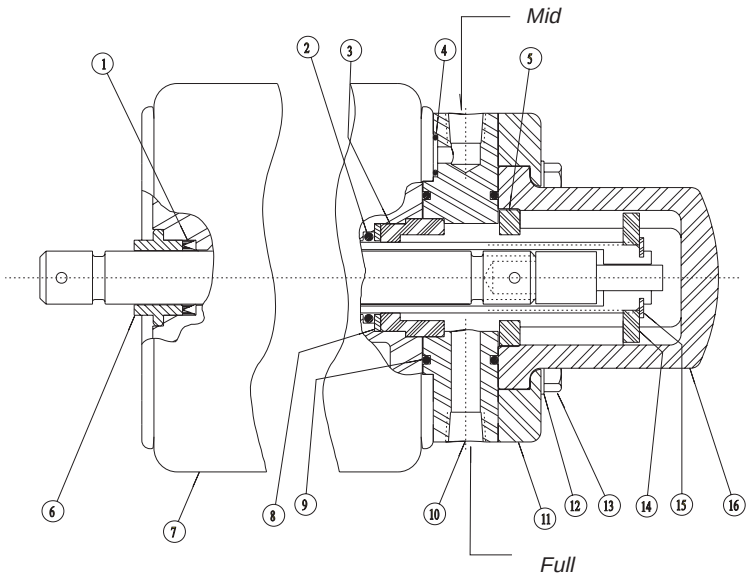
Type 80 is a three position actuator that will require minimum maintenance. It is similar to the Type 10 & 20 spring return actuators except for a mid position adjustment assembly. Installation, adjustment, maintenance, partial disassembly, and assembly instructions are covered below.

INSTALLATION

Connect air supply to the two $^{1}/_{8}$-27 FNPT ports. Each port is identified permanently to indicate operation. MID — air supply causes actuator to extend to mid position. FULL — air supply causes actuator to extend fully. Air Supply Specification: 60 - 80 psig.

Type 80 Actuator Replacement Parts

	Part Number	Qty	Description
1	17-98	1	Packing
2	17-345-U	1	O-Ring
3	25-454-06	1	Bushing
4	17-35-U	1	O-Ring
5	25-454-09-316L	1	Spacer
6	25-428-05	1	Seal Retainer
7	25-454-01-S	1	Cylinder Ass'y
8	25-454-07-S	1	Retainer
9	17-149-U	2	O-Ring
10	25-454-05-316	1	End Cap
11	25-454-10-316	1	Cover Plate
12	LWA1300-SS	4	Lockwasher
13	SC1315H-SS	4	Hex Bolt
14	13-170-S	1	Adjusting Nut
15	16-163	1	E-Ring
16	25-454-08	1	Adj. Nut Cover



ADJUSTMENT

There is one adjustment and it sets the mid position stop. This stop determines the length of mid position stroke.

1 Loosen four end cap bolts until plastic adjustment knob can be turned by hand.

2 Turn plastic knob as described below for required action. COUNTERCLOCKWISE — Increase Stroke, CLOCKWISE — Decrease Stroke

3. Tighten four end cap bolts.

BUSHING/PACKING REMOVAL

The valve end contains one bushing and packing identical to Type 10, 20, and 30 actuators. They are located on the valve end of the actuator.

1 Disassemble the actuator from the valve completely.

2 Assemble the yoke to the actuator without the green bushing retainer. Assemble the valve stem to the actuator stem.

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⚠ CAUTION

To prevent personal injury, DO NOT attempt to remove the packing and bushing without the valve stem threaded onto the actuator stem. The stem is required because the packing and bushing will be forced out of the actuator under air pressure and will be trapped by the valve stem.

3 Apply 60 psig to the yoke. The packing and bushing will be forced out which will result in an air leak. Remove air supply once the bushing and packing are forced out.

4 Remove the valve stem & yoke.

BUSHING / PACKING REPLACEMENT, NYLON LOCK REPLACEMENT AND LUBRICATION

IMPORTANT: The TYPE 80 actuator does not have a red indicating cap like the type 10, 20 or 30 actuator. Cover the actuator stem threads with tape to protect the new bushing and packing from damage during assembly. *See Type 10, 20, AND 30 Actuator Maintenance*.

Disassembly

1 Separate adjustment knob and cover plate by removing four bolts.

2 Remove E-ring and unscrew adjustment nut from actuator stem completely.

3 Remove spacer, end cap, bushing, retainer, and o-ring from actuator.

Assembly

1 Lubricate o-ring with L1011 Sanitary Silicone Spray. Insert o-ring, retainer, and bushing into actuator.

2 Install three o-rings into end cap. Place end cap over actuator stem aligning air port labeled MID with unthreaded thru hole in actuator.

3 Place spacer on top of end cap, screw adjusting nut on actuator stem, and install E-ring in groove on actuator stem.

4 Align adjustment knob slots with adjustment nut. Slide cover over spacer.

5 Place cover plate over adjustment knob and fasten with four bolts and lock washers.

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MAINTENANCE

TYPE 15 AND 25 ACTUATOR

INTRODUCTION

This actuator is a spring return diaphragm unit designed to utilizes a diaphragm for reduced friction. It can be completely disassembled and rebuilt using Tri-Clover Replacement parts. Installation, maintenance, disassembly, and assembly instructions are covered below.

INSTALLATION

Connect air supply to coupler. Air Supply Specifications: 35 - 50 psig (Normal)

DIAPHRAGM REPLACEMENT

The diaphragm can rupture. When it fails air will leak from the actuator vent plug. Follow the disassembly and assembly instructions below.

IMPORTANT: The bushing and packing must be replaced if a diaphragm fails.

BUSHING/PACKING REMOVAL

The valve end contains one bushing and packing identical to Type 10, 20, and 30 actuators.

They are located on the valve end of the actuator.

1 Disassemble the actuator from the valve completely.

2 Assemble the yoke to the actuator without the green bushing retainer. Assemble the valve stem to the actuator stem.



⚠ CAUTION

To prevent personal injury, DO NOT attempt to remove the packing and bushing without the valve stem threaded onto the actuator stem. The stem is required because the packing and bushing will be forced out of the actuator under air pressure and will be trapped by the valve stem.

3. Apply 60 psig to the yoke. The packing and bushing will be forced out which will result in an air leak. Remove air supply once the bushing and packing are forced are forced out.

4. Remove the valve stem and yoke.

BUSHING / PACKING REPLACEMENT, NYLON LOCK REPLACEMENT AND LUBRICATION

IMPORTANT: The TYPE 15/25 actuator does not have a red indicating cap like the type 10, 20 or 30 actuator. Cover the actuator stem threads with tape to protect the new bushing and packing from damage during assembly. See TYPE 10, 20, AND 30 ACTUATOR MAINTENANCE.

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DISASSEMBLY

Actuator spring is not contained. Although preload force is low, caution must be used when spring force is released. Hand pressure must be applied to the cylinder top restricting its travel. Completely remove the actuator from the valve and follow the steps below.

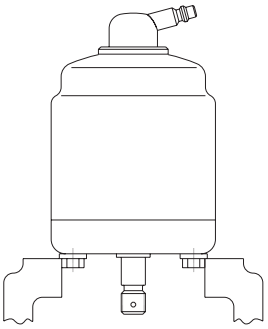


Figure 1

1 Insert four bolts into bonnet and clamp into vise as illustrated in Figure 2

2. Remove air coupler adapter and nut by turning counterclockwise.

3 Remove actuator cylinder from bonnet by applying a strap wrench to the cylinder and turn counter clockwise completely two times.



⚠ CAUTION

To prevent injury, apply constant hand pressure and unscrew completely. Spring force will push the cylinder up when threads disengage. See Figure 2.

Apply constant hand pressure when unscrewing.

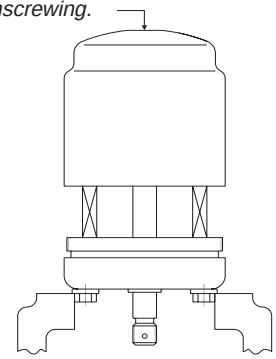


Figure 2

4 Pull cylinder assembly off the bonnet and remove spring.

5 Separate diaphragm assembly from cylinder by holding cylinder and pulling on actuator stem.

6 Place diaphragm assembly into a vise and secure Inner Diaphragm Guide as illustrated in Figure 3. Do Not over tighten. Remove stem by locating a wrench around the flats and turn counter clockwise. Remove adapter and nut. The nut may be removed by inserting a punch into the hole in its face, and tapping nut counter clockwise .

7 Remove diaphragm assembly from vise and separate.

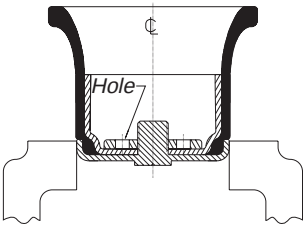
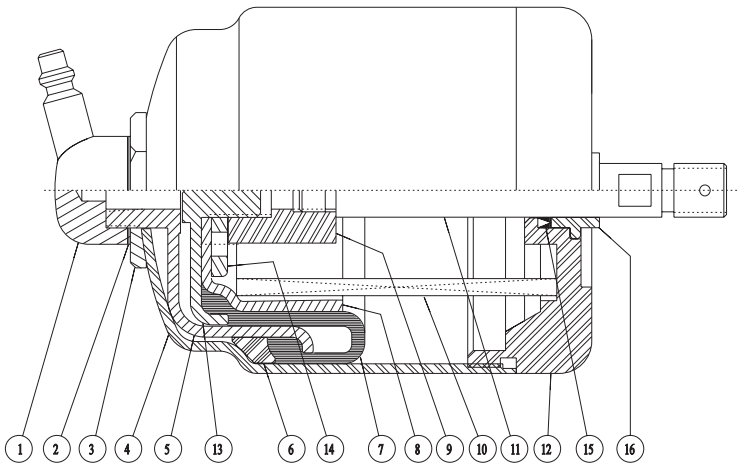


Figure 3

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Type 15/25 Actuator Replacement Parts

	Part Number	Qty	Description
1	37-5-S	1	Coupler
2	17-88	1	Gasket
3	13-78-S	1	Sealing Nut
4	25-263B-01-S	1	Body
5	36-55	1	Outer Diaphragm Clamp
6	37-88	1	Body Insert
7	35-1	1	Diaphragm
8	36-3	1	Inner Diaphragm Clamp
9	37-89-316	1	Adapter
10	4-2-S	1	Spring
11	19-1279-S	1	Stem
12	12-497-S	1	Bonnet
13	36-15	1	Inner Diaphragm Guide
14	13-15	1	Nut
15	17-98	1	Packing
16	25-428-05	1	Seal Retainer



ASSEMBLY

1 Clamp the Inner Diaphragm Guide in a vise with its threaded stud facing upward.

2 Set the diaphragm into the Inner Guide, set the Inner Diaphragm Clamp inside the diaphragm, screw on the Nut until hand tight. Thread on the adapter and tighten to 15 ft.-lbs.

3 Lubricate the diaphragm inside and outside completely with L1011 Sanitary Silicone Spray. Roll the diaphragm onto outer diaphragm clamp. Slide body insert onto outer diaphragm retainer.

4 Carefully slide diaphragm assembly into cylinder. Do Not scratch, tear or abrade diaphragm.

5 Install sealing nut, gasket and air coupler adapter.

6 Clamp bonnet into vise locating on the four mounting bolts. Place spring into bonnet.

7 Lubricate the cylinder threads with Tri-Clover C137. This will help prevent the threads from galling. Place cylinder assembly onto spring.



⚠ CAUTION

To prevent injury, compress spring by hand and thread cylinder onto bonnet for at least 3 complete turns. Apply a strap wrench to cylinder and tighten until it "bottoms" onto bonnet.

8 Remove actuator from vise. Insert packing and bushing into counter bores on bonnet.

9 Apply Removable Loctite* to the fine threads of the actuator stem. Push actuator stem through bonnet and thread into adapter. Fasten completely with a wrench using stem flats.

(*Loctite is a registered trademark of Loctite Corporation)

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PARTS LIST

761/741 SHUT OFF • DIVERT • REVERSE ACTING SHUT OFF

All orders for repair parts must contain the following data:
1. Complete model number (from name plate).
2. Serial number (from name plate).
3. Key number and description

The following exploded view and accompanying parts list facilitate order repair parts from the factory. All parts list illustrated are indexed to the parts list by key numbers.

Series 761 Available Valve Styles
Each Tri-Clover Air-Actuated Valve is identified by a model number. The model number consists of five groupings or coding as shown below:
Sample Valve Part Number:

761 - 10M - 20L - 2 - 316L
1 2 3 4 5

1 Valve Series
- 761 - Molded rubber seat(s)
- 761TR - PTFE Snap-On seat(s)
- 741 - Molded rubber seat(s)
- 741TR - PTFE Snap-On seat(s)

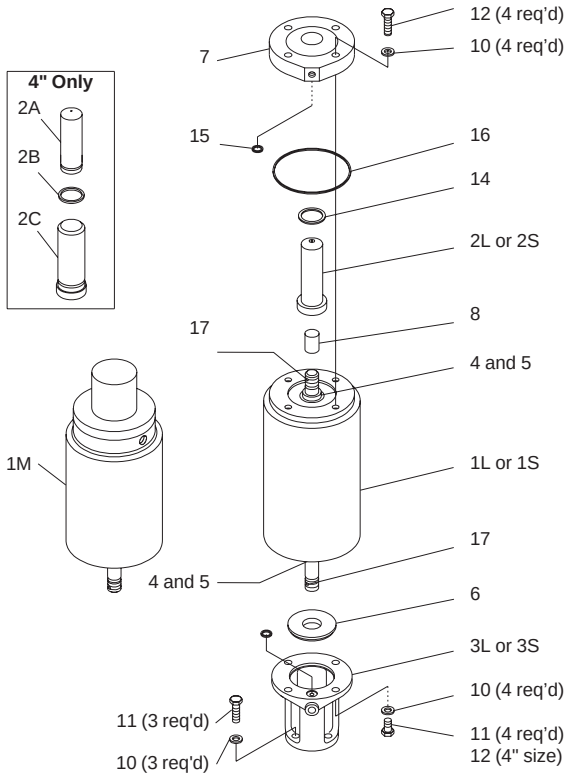
2 Body Style/Port Connection*
- 10M - Lower tee/Tri-Clamp®
- 21M - Lower tee, Upper tee/Tri-Clamp
- 23M - Lower cross, Upper tee/Tri-Clamp
- 27M - Upper tee/Tri-Clamp
- 30M - Lower cross/Tri-Clamp
- 41M - Lower cross, Upper tee/Tri-Clamp
- 43M - Lower cross, Upper cross/Tri-Clamp
- 47M - Upper cross/Tri-Clamp

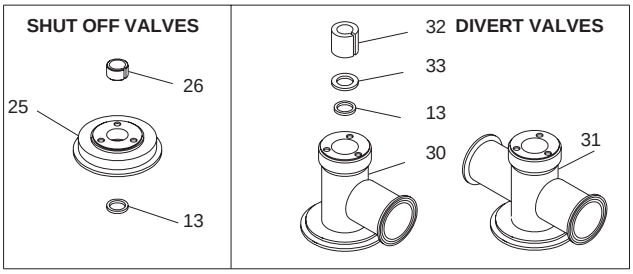
3 Actuator Types
- 10L - Long stroke, normally open
- 10S - Short stroke, normally open
- 20L - Long stroke, normally closed
- 20S - Short stroke, normally closed
- 30L - Long stroke, air both ways
- 30S - Short stroke, air both ways
- 80S - Mid-Position

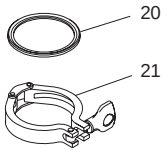
4 Port Size (tube OD)
1, 1½", 2", 2½", 3", 4"

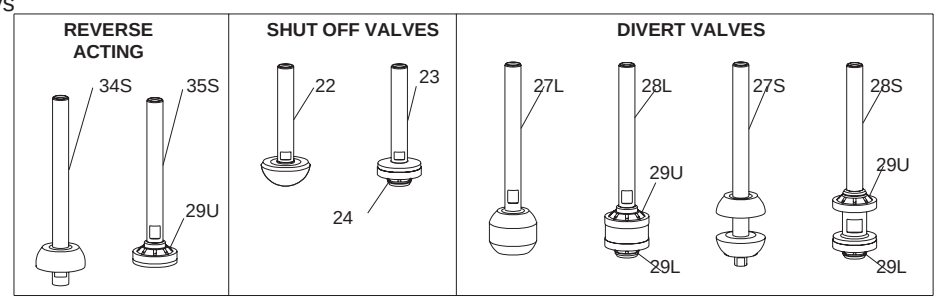
5 Material 316L Stainless Steel

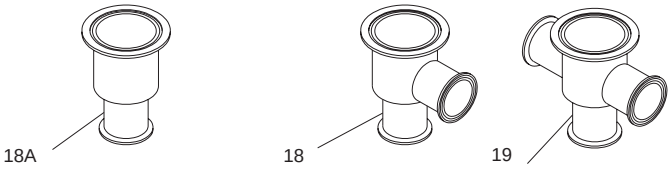
*"M" designated standard Tri-Clamp port connection. Other port connections are available upon application, e.g. Tri-Weld®, designed by "W". Specify the type of port connection required when ordering replacement bodies below.











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761/741 Shut Off • Divert • Reverse Acting

	Key #	Description	1"	1½"	2"	2½"	3"	4"
	1L	10/20 Actuator, Long	Not Available	25-428-S	25-428-S	25-428-S	25-428-S	25-467-S
	1L	30 Actuator, Long	Not Available	25-466-S	25-466-S	25-466-S	25-466-S	25-517-S
	1LHD	Light Duty 4½" Dia. Actuator, Long	Not Available	Not Available	Not Available	Not Available	Not Available	25-457-S
	1M	Mid Position Actuator	Not Available	25-454-S	25-454-S	25-454-S	25-454-S	Not Available
	1S	10/20 Actuator, Short	25-448B-S	25-436-S	25-436-S	25-436-S	25-436-S	25-497-S
	1S	30 Actuator, Short	25-475-S	25-465-S	25-465-S	25-465-S	25-465-S	25-519-S
	2A	Stem Protector, Long	Not Available	Not Available	Not Available	Not Available	Not Available	25-455-08A
	2B	Stem Protector, O-Ring	Not Available	Not Available	Not Available	Not Available	Not Available	17-158-U
	2C	Stem Protector, Spacer	Not Available	Not Available	Not Available	Not Available	Not Available	25-457-10-316L
	2L	Stem Protector, Long	Not Available	25-428-08	25-428-08	25-428-08	25-428-08	Not Available
	2S	Stem Protector, Short	25-436-08	25-436-08	25-436-08	25-436-08	25-436-08	25-428-08
	3L	Yoke, Long	Not Available	12-495-S	12-495-S	12-495-S	12-495-S	12-516-316
	3LI	Yoke, Long (741)	Not Available	12-495I-S	12-495I-S	12-495I-S	12-495I-S	12-516-316
	3S	Yoke, Short	12-496-S	12-496-S	12-496-S	12-496-S	12-496-S	12-533-316L
	3SI	Yoke, Short (741)	12-496I-S	12-496I-S	12-496I-S	12-496I-S	12-496I-S	12-533I-316L
*	4	Seal Retainer*	25-428-05	25-428-05	25-428-05	25-428-05	25-428-05	25-428-05
*	5	V-Packing*	17-98	17-98	17-98	17-98	17-98	17-98
*	5a	O-Ring to replace V-Packing	17-284-Mat'l	17-284-Mat'l	17-284-Mat'l	17-284-Mat'l	17-284-Mat'l	17-284-Mat'l
	6	Packing Retainer	25-428-04	25-428-04	25-428-04	25-428-04	25-428-04	25-428-04
	7	End Cap	25-428-06A	25-428-06A	25-428-06A	25-428-06A	25-428-06A	25-455-06
	8	Red Caplug	12-493	12-493	12-493	12-493	12-493	12-493
	9	Vent Plug (not shown)	MS-105-58A-CP	MS-105-58A-CP	MS-105-58A-CP	MS-105-58A-CP	MS-105-58A-CP	MS-105-58A-CP
	10	Lockwasher	LWA1300-SS	LWA1300-SS	LWA1300-SS	LWA1300-SS	LWA1300-SS	LWA1300-SS
	11	Screw	SC1308H-SS	SC1308H-SS	SC1308H-SS	SC1308H-SS	SC1308H-SS	SC1309H-SS
	12	Screw	SC1312H-SS	SC1312H-SS	SC1312H-SS	SC1312H-SS	SC1312H-SS	SC1312H-SS
*	13	O-Ring*	17-5-U	17-17-U	17-17-U	17-17-U	17-17-U	17-89-U
*	14	O-Ring*	17-4-U	17-4-U	17-4-U	17-4-U	17-4-U	17-4-U
*	15	O-Ring*	17-35-U	17-35-U	17-35-U	17-35-U	17-35-U	17-35-U
*	16	O-Ring*	17-109-U	17-109-U	17-109-U	17-109-U	17-109-U	17-109-U
*	17	Nylon Lock Pin*	9-223	9-300	9-300	9-300	9-300	9-300
	18	Lower Body, Tee	7-1041TM-1-316L	7-1022TM-1½-316L	7-1022TM-2-316L	7-1022TM-2½-316L	7-1022TM-3-316L	7-225TM-4-316L
	18I	Lower Body, Tee (741)	7-104ICMIA-1-316L	7-1022TMIA-1½-316L	7-1022TMIA-2-316L	7-1022TMIA-2½-316L	7-1022TMIA-3-316L	7-225TMI-4-316L
	18A	Lower Body, (27 & 47)	Not Available	7-1053M-1½-316L	7-1053M-2-316L	7-1053M-2½-316L	7-1053M-3-316L	Not Available
	19	Lower Body, Cross	7-1041CM-1-316L	7-1022CM-1½-316L	7-1022CM-2-316L	7-1022CM-2½-316L	7-1022CM-3-316L	7-225CM-4-316L
	19I	Lower Body, Cross (741)	7-1041CMIA-1-316L	7-1022CMIA-1½-316L	7-1022CMIA-2-316L	7-1022CMIA-2½-316L	7-1022CMIA-3-316L	7-225CMI-4-316L
*	20	Gasket	42MP-U-2	17-325-1½-U	17-325-1½-U	17-325-2½-U	17-325-3-U	17-62-4½-U
	21	Clamp	13MHHM-2-S	13MHHVM-3-S	13MHHVM-3-S	13MHHVM-4-S	13MHHM-5-S	H13MHHM-4-S

"I" in Key # means industrial upolished finish

* It is recommended that one of each of these items be stocked as spare parts.

• **Replacement Parts Kits**
*Refer to Service Kit Catalogue or Spare Parts CD.

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Additional Parts for Shut Off Valves - Type 10 & 30

	Key #	Description	1"	1½"	2"	2½"	3"	4"
*	22	Rubber Stem/Seat Assembly	19-1293-316L	19-1254-1½-316L	19-1254-2-316L	19-1254-2½-316L	19-1254-3-316L	19-1254A-4-316L
*	23	"TR" Stem/Seat Assembly	19TR-1293-316L	19TR-1254-1½-316L	19TR-1254-2-316L	19TR-1254-2½-316L	19TR-1254-3-316L	19TR-1254A-4-316L
*	24	"TR" Snap-On Seat	20-514-1	20-514-1½	20-514C-2	20-514C-2½	20-514C-3	20-514C-4
	25	Bonnet	12-499-316L	12-487-1½-316L	12-487-1½-316L	12-487-2½-316L	12-487-3-316L	12-515-316L
	26	Split Stem Bushing	40-68	40-63	40-63	40-63	40-63	40-73

Additional Parts for Divert & Reverse Acting Shut Off Valves - Type 21, 23, 27, 41, 43 & 47

	Key #	Description	1"	1½"	2"	2½"	3"	4"
*	27L	Rubber Stem/Seat Assy, Long	Not Available	19-1255A-1½-316L	19-1255A-2-316L	19-1255A-2½-316L	19-1255B-3-316L	19-1255A-4-316L
*	27S	Rubber Stem/Seat Assy, Short	Not Available	19-1276-1½-316L	19-1276-2-316L	19-1276-2½-316L	19-1276-3-316L	Not Available
*	28L	"TR" Stem/Seat Assy, Long	Not Available	19TR-1255-1½-316L	19TR-1255-2-316L	19TR-1255-2½-316L	19TR-1255-3-316L	19TR-1255A-4-316L
*	28S	"TR" Stem/Seat Assy, Short	Not Available	19TR-1276-1½-316L	19TR-1276-2-316L	19TR-1276-2½-316L	19TR-1276-3-316L	Not Available
*	29U	"TR" Snap-On Seat Upper	Not Available	20-514C-2	20-514C-2	20-514C-2½	20-514C-3	20-514C-4
*	29L	"TR" Snap-On Seat Lower	Not Available	20-514-1½	20-514C-2	20-514C-2½	20-514C-3	20-514C-4
*	30	Upper Body, Tee	Not Available	7-1024TM-1½-316L	7-1024TM-2-316L	7-1024TM-2½-316L	7-1024TM-3-316L	7-1024ATM-4-316L
	30I	Upper Body, Tee (741)	Not Available	7-1024TMIA-1½-316L	7-1024TMIA-2-316L	7-1024TMIA-2½-316L	7-1024TMIA-3-316L	7-1024ATMI-4-316L
	31	Upper Body, Cross	Not Available	7-1024CM-1½-316L	7-1024CM-2-316L	7-1024CM-2½-316L	7-1024CM-3-316L	7-1024ACM-4-316L
	31I	Upper Body, Cross (741)	Not Available	7-1024CMIA-1½-316L	7-1024CMIA-2-316L	7-1024CMIA-2½-316L	7-1024CMIA-3-316L	7-1024ACMI-4-316L
	32	Split Stem Bushing	Not Available	40-64	40-64	40-64	40-64	40-75
	33	Seal Retaining Washer	Not Available	15-171-316L	15-171-316L	15-171-316L	15-171-316L	15-175-316L
*	34L	Rubber Stem/Seat Assy Long (27 & 47 Only)	Not Available	Not Available	Not Available	Not Available	Not Available	19-1377-4-316L
*	34S	Rubber Stem/Seat Assy Short (27 & 47 Only)	Not Available	19-1306-2-316L	19-1306-2-316L	19-1306-2½-316L	19-1306-3-316L	Not Available
*	35L	"TR" Stem/Seat Assy Long (27 & 47 Only)	Not Available	Not Available	Not Available	Not Available	Not Available	19TR-1377-316L
*	34S	"TR" Stem/Seat Assy Short (27 & 47 Only)	Not Available	19TR-1306-2-316L	19TR-1306-2-316L	19TR-1306-2½-316L	19TR-1306-3-316L	Not Available

"I" in Key # means industrial upolished finish

* It is recommended that one of each of these items be stocked as spare parts.

- **Replacement Parts Kits**
  *Refer to Service Kit Catalogue or Spare Parts CD.

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PARTS LIST

771 THROTTLING

All orders for repair parts must contain the following data:
1. Complete model number (from name plate).
2. Serial number (from name plate).
3. Key number and description

The following exploded view and accompanying parts list facilitate order repair parts from the factory. All parts list illustrated are indexed to the parts list by key numbers.

Series 771 Available Valve Styles
Each Tri-Clover Air-Actuated Valve is identified by a model number. The model number consists of five groupings or codeing as shown below: Sample Valve Part Number:

771L - 10M - 20 - 2 - 316L
1 2 3 4 5

1 Valve Series
771L Long Stroke
771S Short Stroke

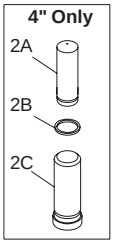
2 Body Style/Port Connection*
10M - Lower tee/Tri-Clamp®
21M - Lower tee, Upper tee/Tri-Clamp
27M - Upper tee/Tri-Clamp
30M - Lower cross/Tri-Clamp

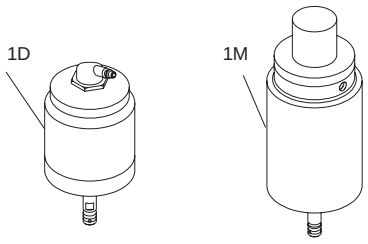
3 Actuator Types
10 - Normally open
20 - Normally closed
15 - Diaphragm (normally open)
25 - Diaphragm (normally closed)
80 - Mid-Position (short stroke only)

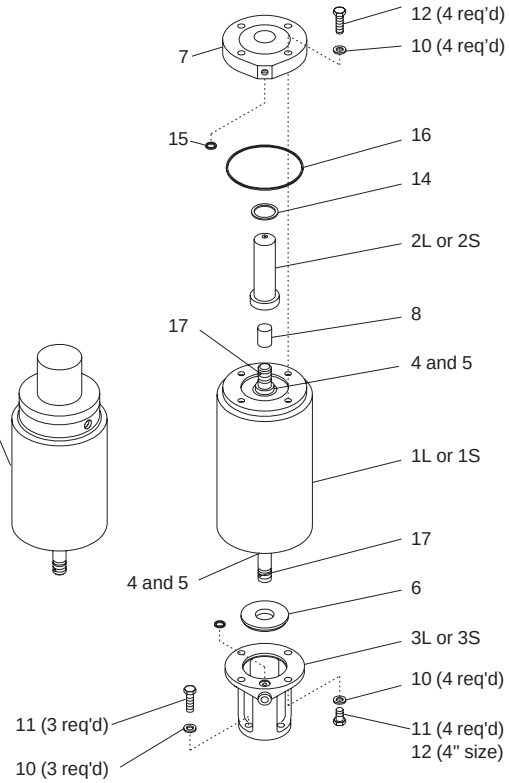
4 Port Size (tube OD) 1, 1½", 2", 2½", 3", 4"

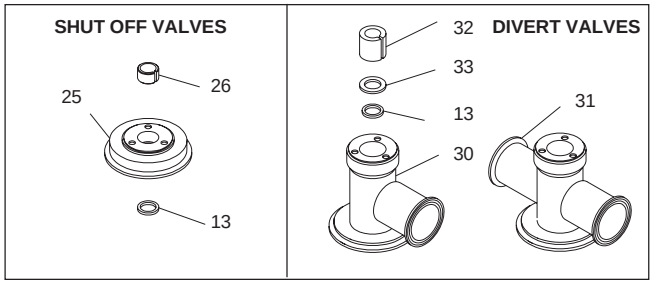
5 Material 316L Stainless Steel

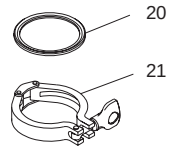
*"M" designated standard Tri-Clamp port connection. Other port connections are available upon application, e.g. Tri-Weld®, designed by "W". Specifiy the type of port connection required when ordering replacement bodies below.

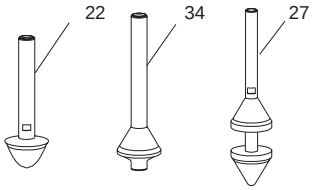


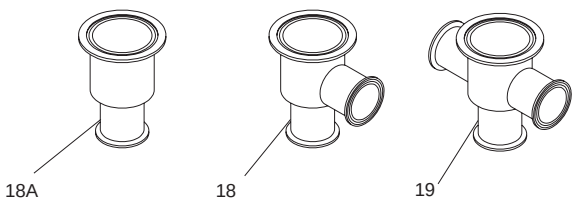












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771 Throttling

	Key #	Description	1"	1½"	2"	2½"	3"	4"
	1D	Diaphragm Actuator	25-456-S	25-445-S	25-445-S	25-445-S	25-445-S	Not Available
	1L	10/20 Actuator, Long	Not Available	25-428-S	25-428-S	25-428-S	25-428-S	25-457-S
	1M	Mid Position Actuator	Not Available	25-454-S	25-454-S	25-454-S	25-454-S	Not Available
	1S	10/20 Actuator, Short	25-448-S	25-436-S	25-436-S	25-436-S	25-436-S	Not Available
	2A	Stem Protector, Long	Not Available	Not Available	Not Available	Not Available	Not Available	25-455-08A
	2B	Stem Protector, O-Ring	Not Available	Not Available	Not Available	Not Available	Not Available	17-158-U
	2C	Stem Protector, Spacer	Not Available	Not Available	Not Available	Not Available	Not Available	25-457-10-316L
	2L	Stem Proetctor, Long	Not Available	25-428-08	25-428-08	25-428-08	25-428-08	Not Available
	2S	Stem Protector, Short	25-436-08	25-436-08	25-436-08	25-436-08	25-436-08	Not Available
	3L	Yoke, Long	Not Available	12-495-S	12-495-S	12-495-S	12-495-S	12-516-316
	3S	Yoke, Short	12-496-S	12-496-S	12-496-S	12-496-S	12-496-S	Not Available
*	4	Seal Retainer*	25-428-05	25-428-05	25-428-05	25-428-05	25-428-05	25-428-05
*	5	V-Packing*	17-98	17-98	17-98	17-98	17-98	17-98
*	5a	O-Ring to replace V-Packing	17-284-Mat'l	17-284-Mat'l	17-284-Mat'l	17-284-Mat'l	17-284-Mat'l	17-284-Mat'l
	6	Packing Retainer	25-428-04	25-428-04	25-428-04	25-428-04	25-428-04	25-428-04
	7	End Cap	25-428-06A	25-428-06A	25-428-06A	25-428-06A	25-428-06A	25-455-06
	8	Red Caplug	12-493	12-493	12-493	12-493	12-493	12-493
	9	Vent Plug (Not Shown)	MS-105-58A-CP	MS-105-58A-CP	MS-105-58A-CP	MS-105-58A-CP	MS-105-58A-CP	MS-105-58A-CP
	10	Lockwasher	LWA1300-SS	LWA1300-SS	LWA1300-SS	LWA1300-SS	LWA1300-SS	LWA1300-SS
	11	Screw	SC1308H-SS	SC1308H-SS	SC1308H-SS	SC1308H-SS	SC1308H-SS	SC1309H-SS
	12	Screw	SC1312H-SS	SC1312H-SS	SC1312H-SS	SC1312H-SS	SC1312H-SS	SC1312H-SS
*	13	O-Ring*	17-5-U	17-17-U	17-17-U	17-17-U	17-17-U	17-89-U
*	14	O-Ring*	17-4-U	17-4-U	17-4-U	17-4-U	17-4-U	17-4-U
*	15	O-Ring*	17-35-U	17-35-U	17-35-U	17-35-U	17-35-U	17-35-U
*	16	O-Ring*	17-109-U	17-109-U	17-109-U	17-109-U	17-109-U	17-109-U
*	17	Nylon Lock Pin*	9-223	9-300	9-300	9-300	9-300	9-300
	18	Lower Body, Tee	7-1041TM-1-316	7-1022TM-1½-316L	7-1022TM-2-316L	7-1022TM-2½-316L	7-1022TM-3-316L	7-225TM-4-316L
	18A	Lower Body, (27)	Not Available	7-1053M-1½-316L	7-1053M-2-316L	7-1053M-2½-316L	7-1053M-3-316L	Not Available
	19	Lower Body, Cross (10 & 30)	7-1041CM-1-316L	7-1022CM-1½-316L	7-1022CM-2-316L	7-1022CM-2½-316L	7-1022CM-3-316L	7-225CM-4-316L
*	20	Gasket	42MP-U-2	17-325-1½-U	17-325-1½-U	17-325-2½-U	17-325-3-U	17-62-4½-U
	21	Clamp	13MHHM-2-S	13MHHVM-3-S	13MHHVM-3-S	13MHHVM-4-S	13MHHM-5-S	H13MHHM-4-S

* It is recommended that one of each of these items be stocked as spare parts.

- **Replacement Parts Kits**
  *Refer to Service Kit Catalogue or Spare Parts CD.

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Additional Parts for Shut Off Valves - Type 10 & 30

	Key #	Description	1"	1½"	2"	2½"	3"	4"
*	22L	Stem Assembly, Long	Not Available	19-1312-1½-316L	19-1312-2-316L	19-1312-2½-316L	19-1312-3-316L	19-1312A-4-316L
*	22S	Stem Assembly, Short	19-1314-1-316L	19-1314-1½-316L	19-1314-2-316L	19-1314-2½-316L	19-1314-3-316L	Not Available
	25	Bonnet	12-499-316L	12-487-1½-316L	12-487-1½-316L	12-487-2½-316L	12-487-3-316L	12-515-316L
	26	Split Stem Bushing	40-68	40-63	40-63	40-63	40-63	40-73

Additional Parts for Divert & Reverse Acting Shut Off Valves - Type 21 & 27

	Key #	Description	1"	1½"	2"	2½"	3"	4"
*	27L	Stem Assembly, Long	Not Available	19-1323-1½-316L	19-1323-2-316L	19-1323-2½-316L	19-1323-3-316L	19-1323A-4-316L
*	27S	Stem Assembly, Short	Not Available	19-1324-1½-316L	19-1324-2-316L	19-1324-2½-316L	19-1324-3-316L	Not Available
	30	Upper Body, Tee	Not Available	7-1024TM-1½-316L	7-1024TM-2-316L	7-1024TM-2½-316L	7-1024TM-3-316L	7-1024ATM-4-316L
	31	Upper Body, Cross	Not Available	7-1024CM-1½-316L	7-1024CM-2-316L	7-1024CM-2½-316L	7-1024CM-3-316L	7-1024ACM-4-316L
	32	Split Stem Bushing	Not Available	40-64	40-64	40-64	40-64	40-75
	33	Seal Retaining Washer	Not Available	15-171-316L	15-171-316L	15-171-316L	15-171-316L	15-175-316L
*	34DS	Stem/Seat Assembly, Short (27 Only)	Not Available	19-1326-2-316L	19-1326-2-316L	19-1326-2½-316L	19-1326-3-316L	Not Available
*	34PS	Stem/Seat Assembly, Short (27 Only)	Not Available	19-1329-2-316L	19-1329-2-316L	19-1329-2½-316L	19-1329-3-316L	Not Available

NOTE: A variety of stem assemblies are available for Series 771 Valves - refer to key number codes for correct part number - "D" designates diaphragm actuator valves, "P" designates piston actuator valves.

***** It is recommended that one of each of these items be stocked as spare parts.

- **Replacement Parts Kits**
  *Refer to Service Kit Catalogue or Spare Parts CD.

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PARTS LIST

762 KETTLE • TANK OUTLET • TANGENTIAL

All orders for repair parts must contain the following data:

1. Complete model number (from name plate).
2. Serial number (from name plate).
3. Key number and description

The following exploded view and accompanying parts list facilitate order repair parts from the factory. All parts list illustrated are indexed to the parts list by key numbers.

Series 762 Available Valve Styles

Each Tri-Clover Air-Actuated Valve is identified by a model number. The model number consists of five groupings or codeing as shown below:

Sample Valve Part Number:

762 - 31M - 20L - 2 - 316L

1 2 3 4 5

1 Valve Series

762

2 Body Style/Port Connection*

Kettle Valves

29M - 90° Elbow-Flanged/Tri-Clamp
31M - 90° Elbow/Tri-Clamp®
33M - 45° Elbow-Flanged/Tri-Clamp
35M - 45° Elbow/Tri-Clamp

Tank Outlet Valves

13M - 90° Tee-Flanged/Tri-Clamp
21M - 90° Elbow/Tri-Clamp
22M - 90° Offset Front/Tri-Clamp
57M - 90° Elbow-Right Offset/Tri-Clamp
58M - 90° Elbow-Left Offset/Tri-Clamp
123M - 90° Tee/Tri-Clamp

Tangential Valves

47M - 90° Right Hand Outlet/Tri-Clamp
48M - 90° Left Hand Outlet/Tri-Clamp
49M - 90° Right Hand Outlet-Flanged/Tri-clamp
50M - 90° Left Hand Outlet-Flanged/Tri-Clamp
51M - Cross Body/Tri-Clamp
52M - Cross Body-Flanged/Tri-Clamp

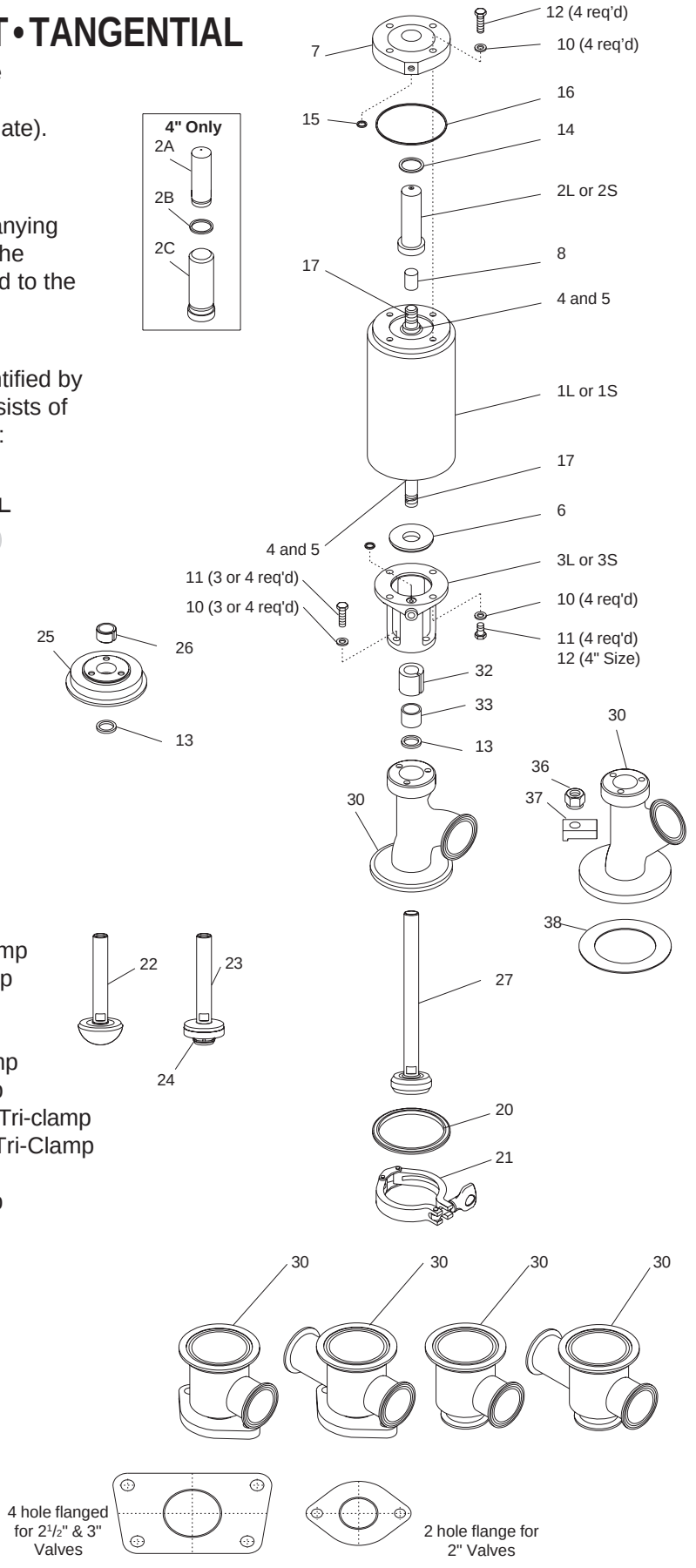
3 Actuator Types

10L - Long stroke, normally open
10S - Short stroke, normally open
20L - Long stroke, normally closed
20S - Short stroke, normally closed

4 Port Size (tube OD) 2", 2½", 3", 4"

5 Material 316L Stainless Steel

*"M" designated standard Tri-Clamp port connection. Other port connections are available upon application, e.g. Tri-Weld®, designed by "W". Specifiy the type of port connection required when ordering replacement bodies below.



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762 Kettle • Tank Outlet • Tangential

	Key #	Description	2"	2 1/2"	3"	4" 21, 22, 29, 31 33, 35, 57 & 58	4" 13, 47, 48, 49 50, 51, 52 & 123
	1L	Actuator, Long	25-428-S	25-428-S	25-428-S	25-428-S	25-457-S
	1S	Actuator, Short	25-436-S	25-436-S	25-436-S	Not Available	Not Available
	2A	Stem Protector, Long	Not Available	Not Available	Not Available	Not Available	25-455-08A
	2B	Stem Protector, O-Ring	Not Available	Not Available	Not Available	Not Available	17-158-U
	2C	Stem Protector, Spacer	Not Available	Not Available	Not Available	Not Available	25-457-10
	2L	Stem Proetctor, Long	25-428-08	25-428-08	25-428-08	25-428-08	Not Available
	2S	Stem Protector, Short	25-436-08	25-436-08	25-436-08	Not Available	Not Available
	3L	Yoke, Long	12-495-S	12-495-S	12-495-S	12-495-S	12-516-316
	3S	Yoke, Short	12-496-S	12-496-S	12-496-S	Not Available	Not Available
*	4	Seal Retainer*	25-428-05	25-428-05	25-428-05	25-428-05	25-428-05
*	5	V-Packing*	17-98	17-98	17-98	17-98	17-98
*	5a	O-Ring to replace V-Packing	17-284-Mat'l	17-284-Mat'l	17-284-Mat'l	17-284-Mat'l	17-284-Mat'l
	6	Packing Retainer	25-428-04	25-428-04	25-428-04	25-428-04	25-428-04
	7	End Cap	25-428-06A	25-428-06A	25-428-06A	25-428-06A	25-455-06
	8	Red Caplug	12-493	12-493	12-493	12-493	12-493
	9	Vent Plug (Not Shown)	MS-105-58A-CP	MS-105-58A-CP	MS-105-58A-CP	MS-105-58A-CP	MS-105-58A-CP
	10	Lockwasher	LWA1300-SS	LWA1300-SS	LWA1300-SS	LWA1300-SS	LWA1300-SS
	11	Screw	SC1308H-SS	SC1308H-SS	SC1308H-SS	SC1308H-SS	SC1309H-SS
	12	Screw	SC1312H-SS	SC1312H-SS	SC1312H-SS	SC1312H-SS	SC1312H-SS
*	13	O-Ring*	17-17-U	17-17-U	17-17-U	17-89-U	17-89-U
*	14	O-Ring*	17-4-U	17-4-U	17-4-U	17-4-U	17-4-U
*	15	O-Ring*	17-35-U	17-35-U	17-35-U	17-35-U	17-35-U
*	16	O-Ring*	17-109-U	17-109-U	17-109-U	17-109-U	17-109-U
*	17	Nylon Lock Pin*	9-300	9-300	9-300	9-300	9-300
*	20A	Gasket (13, 47, 48, 49, 50, 51, 52 & 123)	17-325-1 1/2-U	17-325-2 1/2-U	17-325-3-U	Not Available	17-62-4 1/2-U
*	20B	Gasket (21, 22, 33, 35, 57 & 58)	17-62-3-U	17-62-3-U	17-62-4 1/2-U	17-62-4 1/2-U	Not Available
	21A	Clamp (13, 47, 48, 49, 50, 51, 52 & 123)	13MHHVM-3-S	13MHHVM-4-S	13MHHM-5-S	Not Available	H13MHHM-4-S
	21B	Clamp (21, 22, 31 33, 35, 57 & 58)	H13MHHM-3-S	H13MHHM3-S	H13MHHM-4-S	H13MHHM-4-S	Not Available

* It is recommended that one of each of these items be stocked as spare parts.

- **Replacement Part Kits**
  *Refer to Service Kit Catalogue or Spare Parts CD.

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Additional Parts for Tank Outlet • Tangential Valves - Type 13, 47, 48, 49, 50, 51, 52, & 123

	Key #	Description	2"	2½"	3"	4"
*	22A	Rubber Stem/Seat Assembly (13 & 123)	19-1254-2-316L	19-1254-2½-316L	19-1254-3-316L	19-1254A-4-316L
*	22B	Rubber Stem/Seat Assembly (47, 48, 49, 50, 51 & 52)	19-1300-2-316L	19-1300-2½-316L	19-1300-3-316L	19-1254A-4-316L
*	23A	"TR" Stem/Seat Assembly (13 & 123)	19TR-1254-2-316L	19TR-1254-2½-316L	19TR-1254-3-316L	19TR-1254A-4-316L
*	23B	"TR" Stem/Seat Assembly (47, 48, 49, 50, 51 & 52)	19TR-1300-2-316L	19TR-1300-2½-316L	19TR-1300-3-316L	19TR-1254A-4-316L
*	24	"TR" Snap-On Seat	20-514C-2	20-514C-2½	20-514C-3	20-514C-4
	25	Bonnet	12-487-1½-316L	12-487-2½-316L	12-487-3-316L	12-515-316L
	26	Split Stem Bushing	40-63	40-63	40-63	40-73
	30A	Body for 762-13	7-1062-2-316L	7-1062-2½-316L	7-1062-3-316L	Not Available
	30B	Body for 762-47	7-1047RM-2-316L	7-1047RM-2½-316L	7-1047RM-3-316L	7-1047RM-4-316L
	30C	Body for 762-48	7-1047LM-2-316L	7-1047LM-2½-316L	7-1047LM-3-316L	7-1047LM-4-316L
	30D	Body for 762-49	7-1064RM-2-316L	7-1064RM-2½-316L	7-1064RM-3-316L	Not Available
	30E	Body for 762-50	7-1064LM-2-316L	7-1064LM-2½-316L	7-1064LM-3-316L	Not Available
	30F	Body for 762-51	7-1047CM-2-316L	7-1047CM-2½-316L	7-1047CM-3-316L	7-1047CM-4-316L
	30G	Body for 762-52	7-1064CM-2-316L	7-1064CM-2½-316L	7-1064CM-3-316L	Not Available
	30H	Body for 762-123	7-1052TM-2-316L	7-1052TM-2½-316L	7-1052TM-3-316L	7-1052ATM-4-316L

Additional Parts for Kettle • Tank Outlet Valves - Type 21, 22, 29, 31, 33, 35, 57 & 58

Key #	Description	2"	2½"	3"	4"
27	Rubber Stem/Seat Assy	19-1305-2-316L	19-1305-2½-316L	19-1305-3-316L	19-1305A-4-316L
30I	Body for 762-21 & 762-31	7-1046M-2-316L	7-1046M-2½-316L	7-1046M-3-316L	7-1046AM-4-316L
30J	Body for 762-22	7-1060M-2-316L	7-1060M-2½-316L	7-1060M-3-316L	7-1060AM-4-316L
30K	Body for 762-29	7-1059M-2-316L	7-1059M-2½-316L	7-1059M-3-316L	7-1059AM-4-316L
30L	Body for 762-33	7-1055M-2-316L	7-1055M-2½-316L	7-1055M-3-316L	7-1055AM-4-316L
30M	Body for 762-35	7-1054M-2-316L	7-1054M-2½-316L	7-1054M-3-316L	7-1054AM-4-316L
30N	Body for 762-57	7-1057M-2-316L	7-1057M-2½-316L	7-1057M-3-316L	7-1057AM-4-316L
30P	Body for 762-58	7-1058M-2-316L	7-1058M-2½-316L	7-1058M-3-316L	7-1058AM-4-316L
32	Split Stem Bushing	40-64	40-64	40-64	40-73
33	O-Ring Retainer	39-40	39-40	39-40	39-42
36	Nut for 762-29 & 762-33	13-38-S	13-38-S	13-38-S	13-38-S
37	Clip for 762-29 & 762-33	16-41-S	16-41-S	16-41-S	16-41-S
38	Gasket for 762-29 & 762-33	17-64-U	17-64-U	17-64-U	17-90-U
39A	Ferrule for 762-21	32-82-3-316	32-82-3-316	32-82-4-316	32-82-4-316
39B	Ferrule for (22, 57 & 58)	32-154	32-154	32-595	32-595
39C	Flange for 762-29 & 762-33	32-121	32-121	32-121	32-180
39D	Ferrule for 762-31 & 762-35	32-84-3-316	32-84-3-316	32-84-4-316	32-84-4-316

*****It is recommended that one of each of these items be stocked as spare parts.

- **Replacement Parts Kits**
  *Refer to Service Kit Catalogue or Spare Parts CD.

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PARTS LIST

761Y-BODY

All orders for repair parts must contain the following data:

1. Complete model number (from name plate).
2. Serial number (from name plate).
3. Key number and description

The following exploded view and accompanying parts list facilitate order repair parts from the factory. All parts list illustrated are indexed to the parts list by key numbers.

Series 761 Available Valve Styles

Each Tri-Clover Air-Actuated Valve is identified by a model number. The model number consists of five groupings or codeing as shown below:

Sample Valve Part Number:

761 - 90M - 20L - 2 - 316L

1 2 3 4 5

1 Valve Series

761 - Molded rubber seat(s)
761TR - PTFE Snap-On seat(s)

2 Body Style/Port Connection*

90M - Y-Body/Tri-Clamp®

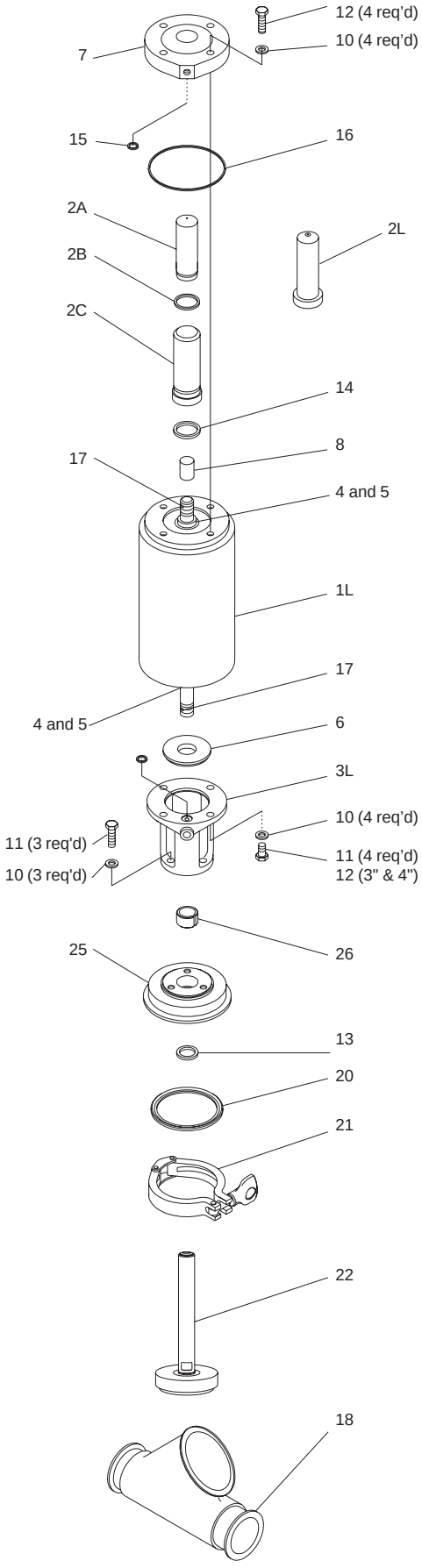
3 Actuator Types

10L - Long stroke, normally open
20L - Long stroke, normally closed

4 Port Size (tube OD) 1½", 2", 2½", 3", 4"

5 Material 316L Stainless Steel

*"M" designated standard Tri-Clamp port connection. Other port connections are available upon application, e.g. Tri-Weld®, designed by "W". Specifiy the type of port connection required when ordering replacement bodies below.



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761 Y-Body

	Key #	Description	1½"	2"	2½"	3"	4"
	1L	Actuator, Normally Closed	25-455-S	25-457-S	25-467-S	25-467-S	25-467-S
	1L	Actuator, Air to Air	25-470-S	25-468-S	25-517-S	25-517-S	25-517-S
	2A	Stem Protector	Not Available	25-455-08A	25-455-08A	25-455-08A	25-455-08A
	2B	Stem Protector, O-Ring	Not Available	17-158-U	17-158-U	17-158-U	17-158-U
	2C	Stem Protector, Spacer	Not Available	25-457-10-316L	25-457-10-316L	25-457-10-316L	25-457-10-316L
	2L	Stem Protector, Long	25-428-08	Not Available	Not Available	Not Available	Not Available
	3L	Yoke	12-495-S	12-571-316	12-501-316	12-516-316	12-516-316
*	4	Seal Retainer*	25-428-05	25-428-05	25-428-05	25-428-05	25-428-05
*	5	V-Packing*	17-98	17-98	17-98	17-98	17-98
*	5a	O-Ring to replace V-Packing	17-284-Mat'l	17-284-Mat'l	17-284-Mat'l	17-284-Mat'l	17-284-Mat'l
	6	Packing Retainer	25-428-04	25-428-04	25-428-04	25-428-04	25-428-04
	7	End Cap	25-428-06A	25-455-06	25-455-06	25-455-06	25-455-06
	8	Red Caplug	12-493	12-493	12-493	12-493	12-493
	9	Vent Plug (Not Shown)	MS-105-58A-CP	MS-105-58A-CP	MS-105-58A-CP	MS-105-58A-CP	MS-105-58A-CP
	10	Lockwasher	LWA1300-SS	LWA1300-SS	LWA1300-SS	LWA1300-SS	LWA1300-SS
	11	Screw	SC1308H-SS	SC1308H-SS	SC1308H-SS	SC1309H-SS	SC1309H-SS
	12	Screw	SC1312H-SS	SC1312H-SS	SC1312H-SS	SC1312H-SS	SC1312H-SS
*	13	O-Ring*	17-17-U	17-17-U	17-17-U	17-17-U	17-89-U
*	14	O-Ring*	17-4-U	17-4-U	17-4-U	17-4-U	17-4-U
*	15	O-Ring*	17-35-U	17-35-U	17-35-U	17-35-U	17-35-U
*	16	O-Ring*	17-109-U	17-109-U	17-109-U	17-109-U	17-109-U
*	17	Nylon Lock Pin*	9-300	9-300	9-300	9-300	9-300
	18	Lower Body, Tee	60YMMP-1½-51-S	60YMMP-2-51-S	60YMMP-2½-51-S	60YMMP-3-51-316	E60YMMP-4-51-316
*	20	Gasket	40MP-U-2½	40MP-U-3	40MP-U-4	40MO-U-5	60M-4-15B
	21	Clamp	H13MHHM-2-S	H13MHHM-2½-S	13MHHM-161-90-2½-S	16-94-S	13MHHVM-161-90-4-S
	22	Rubber Stem/Seat Assy	19-1308-1½-316L	19-1308-2-316L	19-1308-2½-316L	19-1308-3-316L	19-1308A-4-316L
	25	Bonnet	12-500-1½-316L	12-500-2-316L	12-500-2½-316L	12-500-3-316L	12-519-4-316L
	26	Split Stem Bushing	40-63	40-63	40-63	40-70	40-73

* It is recommended that one of each of these items be stocked as spare parts.

Replacement Parts Kits

*Refer to Service Kit Catalogue or Spare Parts CD.

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Terms, Warranty Provisions, Notice of Claims and Limitation of Liability

Prices and all terms and conditions of sale are established in current price sheets and are subject to change without notice. All orders are subject to acceptance by Alfa laval, Inc. at its Kenosha, Wisconsin or Distribution Center* offices only. No assignment of the purchaser's rights may be made without consent of Alfa Laval, Inc.

Each Tri-Clover item is warranted to be free from manufacturing defects for a period of one (1) year from the date of shipment, providing it has been used as recommended and in accordance with recognized piping practice, and providing it has not been worn out due to severe service, such as encountered under extremely corrosive or abrasive conditions.

This warranty is expressly in lieu of any other warranties, express or implied, including but not limited to, any implied warranty of merchantability or fitness for a particular purpose.

All claims must be in writing and must be mailed or delivered by purchaser within thirty (30) days after purchaser learns of the facts upon which such claim is based. Any claim not made in writing and within the time period specified above shall be deemed waived.

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