

300 and 350 Series Ball Valve

MANUAL AND PNEUMATIC ACTUATORS

FORM NO.: 95-03097 REVISION: 10/2020

READ AND UNDERSTAND THIS MANUAL PRIOR TO OPERATING OR SERVICING THIS PRODUCT.



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Revision Date: 10/2020

Publication: 95-03097



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Warranty

LIMITED WARRANTY: Unless otherwise mutually agreed to in writing, (a) SPX FLOW US, LLC (SPX FLOW) goods, auxiliaries and parts thereof are warranted to the Buyer against defective workmanship and material for a period of twelve (12) months from date of installation or eighteen (18) months from date of delivery, whichever expires first, and (b) SPX FLOW services are warranted to Buyer to have been performed in a workman-like manner for a period of ninety (90) days from the date of performance. If the goods or services do not conform to the warranty stated above, then as Buyer's sole remedy, SPX FLOW shall, at SPX FLOW's option, either repair or replace the defective goods or re-perform defective services. If Buyer makes a warranty claim to SPX FLOW and no actual defect is subsequently found, Buyer shall reimburse SPX FLOW for all reasonable costs which SPX FLOW incurs in connection with the alleged defect. Third party goods furnished by SPX FLOW will be repaired or replaced as Buyer's sole remedy, but only to the extent provided in and honored by the original manufacturer's warranty. Unless otherwise agreed to in writing, SPX FLOW shall not be liable for breach of warranty or otherwise in any manner whatsoever for: (i) normal wear and tear; (ii) corrosion, abrasion or erosion; (iii) any good or services which, following delivery or performance by SPX FLOW, has been subjected to accident, abuse, misapplication, improper repair, alteration (including modifications or repairs by Buyer, the end customer or third parties other than SPX FLOW), improper installation or maintenance, neglect, or excessive operating conditions; (iv) defects resulting from Buyer's specifications or designs or those of Buyer's contractors or subcontractors other than SPX FLOW; or (v) defects resulting from the manufacture, distribution, promotion or sale of Buyer's products; (vi) damage resulting from the combination, operation or use with equipment, products, hardware, software, firmware, systems or data not provided by SPX FLOW, if such damage or harm would have been avoided in the absence of such combination, operation or use; or (vii) Buyer's use of the goods in any manner inconsistent with SPX FLOW's written materials regarding the use of such product. In addition, the foregoing warranty shall not include any labor, dismantling, re-installation, transportation or access costs, or other expense associated with the repair or replacement of SPX FLOW goods. THE WARRANTIES CONTAINED HEREIN ARE THE SOLE AND EXCLUSIVE WARRANTIES AVAILABLE TO BUYER AND SPX FLOW HEREBY DISCLAIMS ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ANY PERFORMANCE OR PROCESS OUTCOME DESIRED BY THE BUYER AND NOT SPECIFICALLY AGREED TO BY SPX FLOW. THE FOREGOING REPAIR, REPLACEMENT AND REPERFORMANCE OBLIGATIONS STATE SPX FLOW'S ENTIRE AND EXCLUSIVE LIABILITY AND BUYER'S EXCLUSIVE REMEDY FOR ANY CLAIM IN CONNECTION WITH THE SALE AND FURNISHING OF SERVICES, GOODS OR PARTS, THEIR DESIGN, SUITABILITY FOR USE, INSTALLATION OR OPERATIONS.

Shipping Damage or Loss

If equipment is damaged or lost in transit, file a claim at once with the delivering carrier. The carrier has a signed Bill of Lading acknowledging that the shipment has been received from SPX FLOW in good condition. SPX FLOW is not responsible for the collection of claims or replacement of materials due to transit shortage or damages.

Warranty Claim

Warranty claims must have a **Returned Material Authorization (RMA)** from the Seller or returns will not be accepted. Contact 800-252-5200 or 262-728-1900.

Claims for shortages or other errors must be made in writing to Seller within ten (10) days after delivery. This does not include transit shortage or damages. Failure to give such notice shall constitute acceptance and waiver of all such claims by Buyer.

Safety

READ AND UNDERSTAND THIS MANUAL PRIOR TO INSTALLING, OPERATING, OR SERVICING THIS EQUIPMENT

SPX FLOW recommends users of our equipment and designs follow the latest Industrial Safety Standards. At a minimum, these should include the industrial safety requirements established by:

1. Occupational Safety and Health Administration (OSHA)
2. National Fire Protection Association (NFPA)
3. National Electrical Code (NEC)
4. American National Standards Institute (ANSI)

⚠ WARNING

Severe injury or death can result from electrical shock, burn, or unintended actuation of equipment. Recommended practice is to disconnect and lockout industrial equipment from power sources, and release stored energy, if present. Refer to the National Fire Protection Association Standard No. NFPA70E, Part II and (as applicable) OSHA rules for Control of Hazardous Energy Sources (Lockout-Tagout) and OSHA Electrical Safety Related Work Practices, including procedural requirements for:

- Lockout-tagout
- Personnel qualifications and training requirements
- When it is not feasible to de-energize and lockout-tagout electrical circuits and equipment before working on or near exposed circuit parts

Before putting SPX FLOW equipment into operation, the operator shall analyze the application for all foreseeable risks, their likelihood to occur and the potential consequences of the identified risks as per ISO 31000 and ISO/IEC 31010 in their actual current version.

Locking and Interlocking Devices: These devices should be checked for proper working condition and capability of performing their intended functions. Make replacements only with the original equipment manufacturer's OEM renewal parts or kits. Adjust or repair in accordance with the manufacturer's instructions.

Periodic Inspection: Equipment should be inspected periodically. Inspection intervals should be based on environmental and operating conditions and adjusted as indicated by experience. At a minimum, an initial inspection within 3 to 4 months after installation is recommended. Inspection of the electrical control systems should meet the recommendations as specified in the National Electrical Manufacturers Association (NEMA) Standard No. ICS 1.3, Preventative Maintenance of Industrial Control and Systems Equipment, for the general guidelines for setting-up a periodic maintenance program.

Replacement Equipment: Use only replacement parts and devices recommended by the manufacturer to maintain the integrity of the equipment. Make sure the parts are properly matched to the equipment series, model, serial number, and revision level of the equipment.

Warnings and cautions are provided in this manual to help avoid serious injury and/or possible damage to equipment:

⚠ DANGER

Immediate hazards which WILL result in severe personal injury or death.

⚠ WARNING

Hazards or unsafe practices which COULD result in severe personal injury or death.

⚠ CAUTION

Hazards or unsafe practices which COULD result in minor personal injury or product

Care of Component Materials

NOTE: SPX FLOW recommends the use of an FDA-approved anti-seize compound on all threaded connections.

⚠ WARNING

Failure to comply with the Care of Component Materials could lead to bodily injury.

Stainless Steel Corrosion

Corrosion resistance is greatest when a layer of oxide film is formed on the surface of stainless steel. If film is disturbed or destroyed, stainless steel becomes much less resistant to corrosion and may rust, pit or crack.

Corrosion pitting, rusting and stress cracks may occur due to chemical attack. Use only cleaning chemicals specified by a reputable chemical manufacturer for use with stainless steel. Do not use excessive concentrations, temperatures or exposure times. Avoid contact with highly corrosive acids such as hydrofluoric, hydrochloric or sulfuric. Also avoid prolonged contact with chloride-containing chemicals, especially in presence of acid. If chlorine-based sanitizers are used, such as sodium hypochlorite (bleach), do not exceed concentrations of 150 ppm available chlorine, do not exceed contact time of 20 minutes, and do not exceed temperatures of 104°F (40°C).

Corrosion discoloration, deposits or pitting may occur under product deposits or under gaskets. Keep surfaces clean, including those under gaskets or in grooves or tight corners. Clean immediately after use. Do not allow equipment to set idle, exposed to air with accumulated foreign material on the surface.

Corrosion pitting may occur when stray electrical currents come in contact with moist stainless steel. Ensure all electrical devices connected to the equipment are correctly grounded.

Elastomer Seal Replacement Following Passivation

Passivation chemicals can damage product contact areas of this equipment. Elastomers (rubber components) are most likely to be affected. Always inspect all elastomer seals after passivation is completed. Replace any seals showing signs of chemical attack. Indications may include swelling, cracks, loss of elasticity or any other noticeable changes when compared with new components.

Introduction

General Information

Information in this manual should be read by all personnel involved in installation, setup, operation and maintenance.

Always use installation tools and lubricants recommended by SPX FLOW. SPX FLOW products are subject to intensive intermediate and final leakage and functional tests.

Factory Inspection

Each Waukesha Cherry-Burrell brand valve is shipped completely assembled, lubricated and ready for use.

Models and Specifications

The Waukesha Cherry-Burrell brand 300 Series 2-Way Ball Valve is available with a manual handle, rack and pinion actuator, or linear actuator.

The Waukesha Cherry-Burrell brand 350 Series 3-Way Ball Valve is available with a manual handle or rack and pinion actuator.

Materials

- Ball: 316L Stainless Steel
- Body: 316/316L Stainless Steel
- Actuator yoke and coupling: 304 Stainless Steel
- Seat: PTFE

Equipment Serial Number

For Waukesha Cherry-Burrell brand valves with actuators, the valves are identified by a serial number found on the label on the actuator cylinder. Valves with a manual handle are not labeled with a serial number.

Operating Parameters

Temperature Range

- 300 Series 2-Way Ball Valve: 0° to 300°F (-17° to 148°C)
- 350 Series 3-Way Ball Valve: 0° to 350°F (-17° to 175°C)
- Short-term steam exposure: 320°F (160°C)

Solenoid valves may not be used in the control module in room environments below 32°F (0°C) and over 140°F (60°C), as function cannot be guaranteed.

Pressure Range

Maximum operating pressure for both the 300 Series 2-Way Ball Valve and the 350 Series 3-Way Ball Valve is 150 psi (10 bar).

Installation

Air Supply

Install the valves using dry, filtered air. Lubrication is not required. If using lubricated air, refer to the solenoid manufacturer's specifications.

The air supply requirements are as follows:

- Linear Actuator: 87 psi (6 bar) minimum; 145 psi (10 bar) maximum.
- Rack & Pinion Actuator: 40 psi (3 bar) minimum; 120 psi (8 bar) maximum.

Pipeline Support

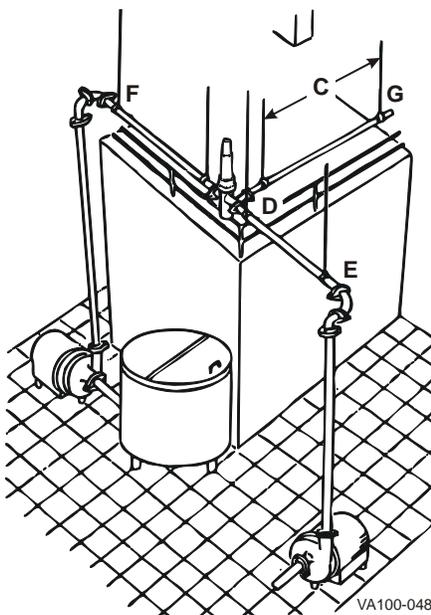


Figure 1 - Pipeline Support

As a general rule, support pipelines in such a way that they "float." This is particularly important when lines contain automatic valves. Temperature changes in the lines may cause expansion and contraction that can distort valve bodies, causing leaks.

Install adequate supports to prevent strain on the fittings, valves and equipment connections.

1. Install supports at least every 10 feet on straight runs of piping. (Figure 1, item C).
2. Install supports on both sides of the valves as close as possible to the connections. (Figure 1, item D).
3. Install supports at each change of pipeline direction. (Figure 1, item E and F).
4. For pipelines passing through walls, floors or ceilings, provide at least 1 inch (25 mm) of clearance around the pipe to allow for expansion and contraction. (Figure 1, item G).

CAUTION

Before attempting to butt-weld an automatic valve into a line, disassemble the body from the actuator. Dissipate heat away from the valve body to prevent warping.

Installing butt-weld end ball valves

Using good piping practices, these valves can be installed in any orientation or position.

300 series butt-weld ball valves must be disassembled and PTFE seats and seals removed, to prevent heat damage during welding of the connection flanges. After the soft PTFE goods have been removed, reassemble the valve connection flanges and body for temporary fitment into the process line, then tack-weld the ends to the piping to ensure proper alignment. Once the tack welds are complete, remove the bolts and valve body to complete the weld of the connection flanges.

When the welds are cool to the touch, assemble the valve and reinstall the PTFE seats and seals into the valve body as described in the "Maintenance" section, starting on page 9.

NOTE: Take care when removing and installing the PTFE seats and seals. Make sure that they are clean and undamaged, and replace any seat or seal with visible damage.

Maintenance

Maintenance Intervals

Maintain adequate stock of replacement parts. See the items listed under "Replacement Kits" on page 19 for 300 Series 2-Way Ball Valves, and page 23 for 350 Series 3-Way Ball Valves.

Maintenance intervals should be determined by the user and specific application, based on the following conditions:

- Daily operation period
- Switching frequency
- Application parameters, such as temperature, pressure, and flow
- Product type

Inspection

Inspect the following on a regular basis:

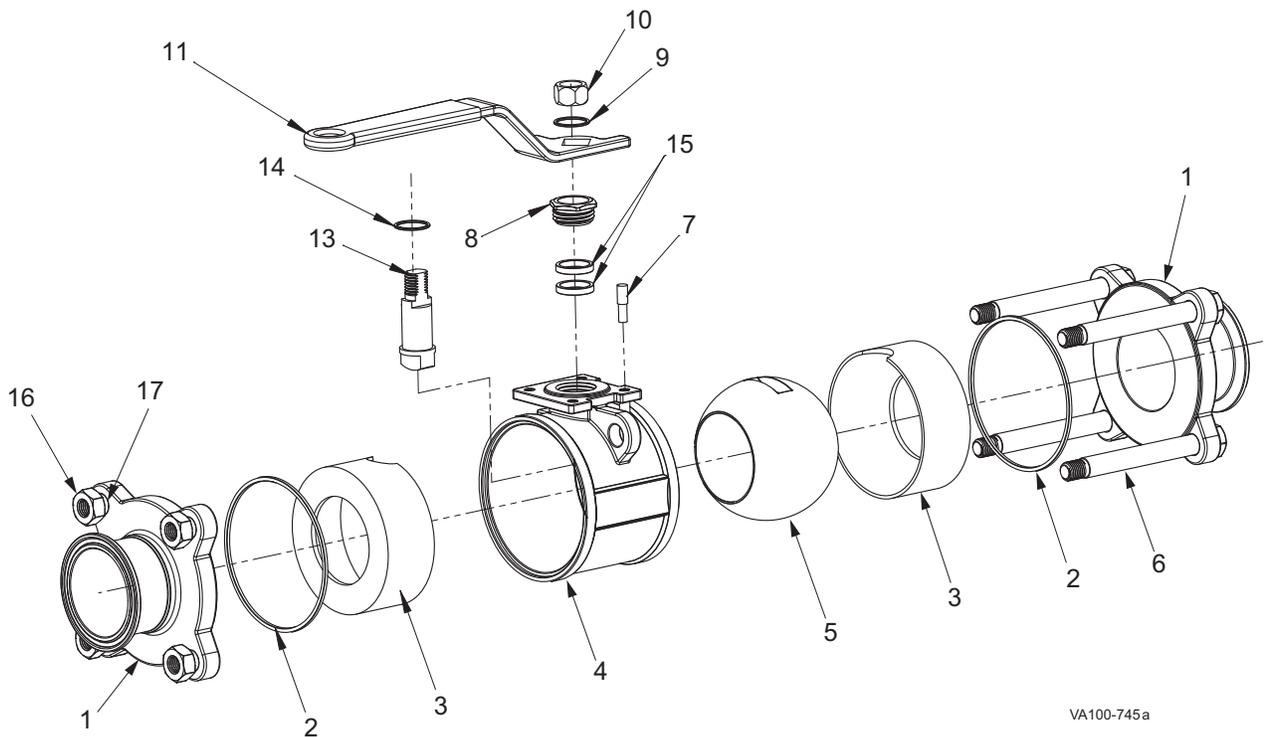
- Valve body gaskets and ball seats
- Pneumatic connections:
 - Air pressure at supply connection
 - Air lines for kinks and leaks
 - Threaded connections for tight fit
 - Clean air filter at regular intervals
- Electrical connections secure on control module:
 - Wire connections tight on terminal strip
 - Electrical connections to control module
 - Threaded strain relief for tight fit.

Lubrication

No lubrication is required other as than noted in the disassembly and assembly procedures. (Use food grade non-petroleum (silicone) grease on seals and o-rings.)

Apply Bostik Never-Seez® White Food Grade with PTFE or equivalent to all bolts and threaded stem parts.

300 Series 2-Way Ball Valve Disassembly



VA100-745a

Figure 2 - 300-Series 2-Way Ball Valve

Table 1: Callouts for Figure 2

1. Tail Piece
2. Gasket
3. Ball Seat
4. Body
5. Ball Seat
6. Bolt
7. Stopper Pin
8. Gland
9. Washer
10. Nut
11. Handle
13. Stem
14. Thrust Washer
15. Stem Packing
16. Bolt Nut
17. Bolt Washer

1. Remove the nut and washer (Figure 2, items 9 and 10) and slide off the manual handle (item 11).
2. Place the handle (item 11) back on the stem (item 13) and turn the handle to close the valve.
3. Remove the handle (item 11) and gland hex nut (item 8), then tip the valve upside down to retrieve the stem packing (item 15).
4. Remove the bolt nuts and washers (items 16 and 17). Pull off the flange tail pieces (item 1).
5. Rotate and push the ball (item 5) toward the ball seats (item 3), creating some movement on the seats. Once one of the ball seats (item 3) moves out of the valve body (item 4), press the ball seat out of the valve body with your fingers.
6. The ball (item 5) should now fall out of the body. Push the remaining ball seat (item 3) out of the valve from the open end.
7. Push the stem (item 13) down from the top into the valve, and remove it with the thrust washer (item 14).
8. The valve is now fully disassembled.

300 Series 2-Way Ball Valve Assembly

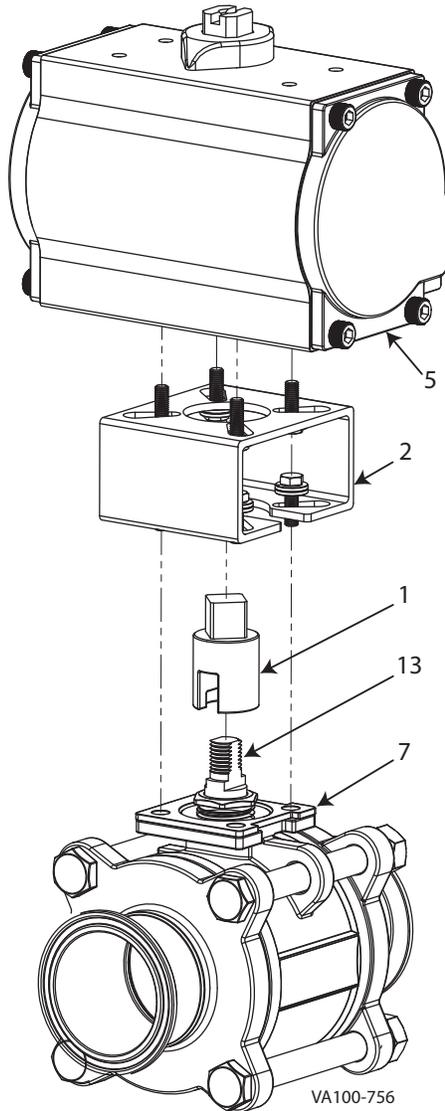
1. See Figure 2 on page 10. Slide the thrust washer (item 14) over the stem (item 13). Holding the stem threads up, guide the stem from inside the body (item 4) up through the center hole. Turn the stem to align the key along the flow direction.
2. Drop the stem packing washers (item 15), then the gland hex nut (item 8) onto the stem from the top. Hand-tighten the gland hex nut (item 8) while making sure the stem key remains in position.
3. Slide the ball (item 5) into the valve, making sure the slot on the ball centers on the stem key. Press one ball seat (item 3) into the body. Place the Teflon™ gasket (item 2) on the body (item 4).
4. Align the first valve flange tail piece (item 1) with the bolt holes of the valve body, on the same side that the ball seat (item 3) was inserted in step 3.
5. Flip the sub assembly over, placing the clamp face of the first flange tail piece (item 1) down on a flat surface. Slide the opposite side ball seat (item 3) into the valve body. Place the Teflon™ gasket (item 2) on the body (item 4).
6. Align the opposite valve flange tail piece (item 1) with the bolt holes of the valve body (item 4). Slide the bolts (item 6) through the top valve flange to the bottom flange. Hand-tighten the washers and nuts (items 17 and 16) onto the bolts (item 6).
7. Tighten down the gland hex nut (item 8) and bolts (item 6). See Table 2.
8. Drop the handle (item 11) down onto the stem. Thread in the stopper pin (item 7) onto the mounting pad of valve. Drop the washer (item 9) on the stem over the handle, then thread the hex nut (item 10) onto the stem (item 13).
9. Turn the handle and inspect the ball to ensure the proper open and close positions. The handle should hit the stopper pin (item 7) in fully open and fully closed positions.

NOTE: To install the appropriate actuator for this valve, see pages 12 and 13.

Table 2: Torque Values for 300 Series Ball Valve Assembly

Size	Stem Gland in-lb (n-m)	Body Bolts in-lb (n-m)
1/2"	80 (9.04)	100 (11.30)
3/4"	80 (9.04)	110 (12.43)
1"	100 (11.30)	120 (13.56)
1 1/2"	250 (28.25)	270 (30.51)
2"	250 (28.25)	280 (31.64)
2 1/2"	300 (33.90)	390 (44.06)
3"	500 (56.49)	560 (63.27)
4"	700 (79.09)	750 (84.74)

300 Series 2-Way Ball Valve Actuator Assembly



Mounting a Rack & Pinion actuator on the 300 Series 2-Way Manual Ball Valve

1. Per the instructions in step 1 on page 10, remove the handle nut and handle from the ball valve.
2. See Figure 3. Determine the actuator and valve shaft orientation, then slide the coupling adapter (item 1) onto the valve shaft (item 13).
3. Attach the mounting bracket (item 2) to the mounting pad (item 7) of the valve with hex bolts and flat and lock washers.
4. Insert the square end of the coupling adapter (item 1) into the actuator (item 5), then bolt the actuator on the mounting bracket (item 2) with hex bolts and flat and lock washers. See page 20 for parts lists, including bolts and washers.

NOTE: A double square actuator insert may be required between the coupling adapter and the actuator. See parts list on page 20.

Figure 3 - Mount Rack & Pinion Actuator

Mounting a Linear actuator on the 300 Series 2-Way Manual Ball Valve

1. Per the instructions in step 1 on page 10, remove the handle nut and handle from the ball valve.
2. See Figure 4. Determine the actuator and valve shaft orientation, then slide the coupling adapter (item 1) onto the valve shaft (item 13).
3. Attach the mounting bracket (item 2) to the mounting pad (item 7) of the valve with hex bolts and flat and lock washers.
4. Insert the actuator stem (item 8) into the coupling adapter (item 1), then bolt the actuator on the mounting bracket (item 2) with hex bolts. See page 21 for parts lists, including bolts and washers.

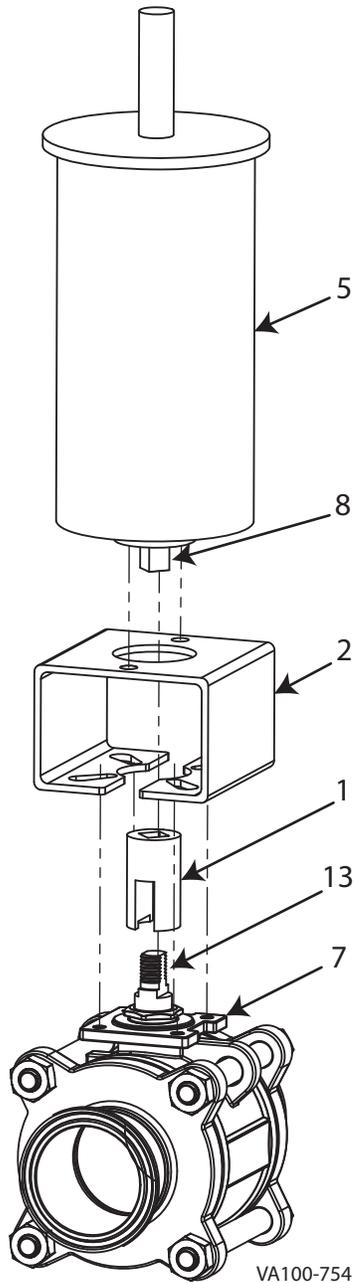


Figure 4 - Mount Linear Actuator

350 Series 3-Way Ball Valve Disassembly

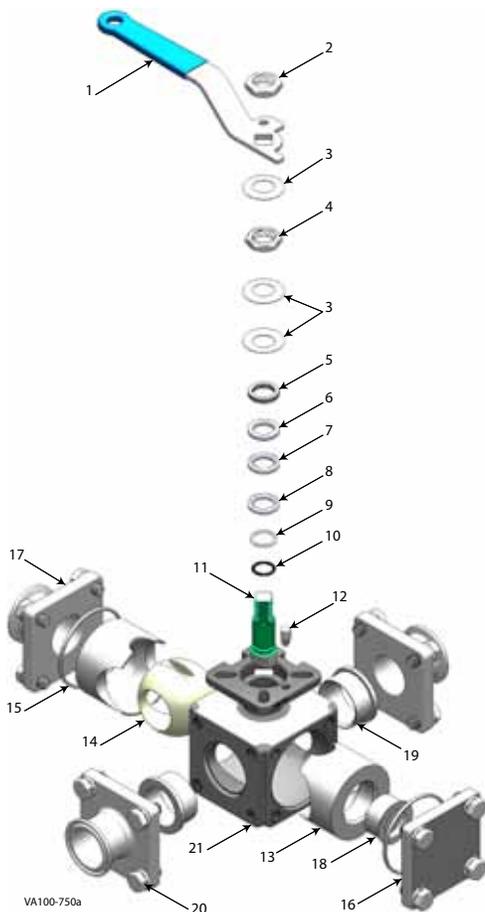


Figure 5 - 350-Series 3-Way Ball Valve

Table 3: Callouts for Figure 5

1. Handle
2. Handle Nut
3. Bevel Washer
4. Lock Nut
5. Stainless Ring
6. Female Bevel Washer
7. Double Bevel Washer
8. Bevel Washer
9. Teflon™ Ring
10. Stem O-Ring
11. Stem
12. Stop Pin
13. Ball Seat #2
14. Ball
15. Gasket
16. No Flow Cap
17. Ferrule Cap
18. Seat Cap
19. Ball Seat #1
20. Bolt with Lock Washer
21. Valve Body

1. Remove the handle nut (item 2) and slide off the manual handle (item 1).
 2. Using a socket wrench, remove the lock nut (item 4), then tip the valve upside down to retrieve the bevel washer (item 3) and stainless ring (item 5).
 3. Remove bolts and washers (items 20) from all 4 sides. Remove the no flow cap (item 16) and ferrule caps (item 17).
 4. Rotate and push the ball (item 14) towards the ball seats (items 13 and 19), creating some movement on the seats.
 5. Once one of the ball seats moves out of the valve body (item 21), press the ball seat out of the valve body with your fingers. Continue this for all four ball seats.
- NOTE:** Note: Ball seat #1 (item 19) does not have to be completely removed to extract the ball.
6. Once the two ball seats (item 13) have been removed and opposite ball seats (item 19) have been slid out of the way, remove the ball from the body.
 7. From the top, push the stem (item 11) down into the body of the valve. The stem o-ring and Teflon™ ring (items 9 and 10) will remain on the stem.
 8. The valve is now fully disassembled.

NOTE: For part numbers and a larger image of Figure 5, see page 22.

350 Series 3-Way Ball Valve Assembly

Please refer to Figure 5 on page 14.

1. With the Teflon™ ring and stem O-ring (items 9 and 10) installed on the stem (item 11), insert the stem through the inside of the body through the gland port, facing the exposed threads away from the product contact area. Orient the stem inside the body so that the pin and ball default to the preferred direction of flow when assembly is complete.
2. Over the threaded portion of the stem, install the bevel washer (item 8), followed by the double bevel washer, and the female bevel washer (items 7 and 6), so that they fit down into the gland.
3. Next install the stainless ring (item 5) followed by (qty. 2) bevel washers (item 3), followed with the lock nut (item 4). Finger-tighten the lock nut.
4. Position the ball (item 14) in the valve body so the groove on the top of the ball and the stem (item 11) have a loose fit.
5. With the ball in the valve body, insert (qty. 2) of ball seat # 1 (item 19) until it is flush with the housing (item 21) and holds the ball (item 14) in position.
6. Next install (qty. 2) ball seat # 2 and (qty. 2) gaskets (items 13 and 15), so that the large gussets of ball seats # 2 slide into the body and mate with ball seat # 1 (item 19). The smaller gusset should be oriented on top to provide clearance for the stem (item 11).
7. Prior to installation of the back plate (item 16), install the seat cap (item 18) into the ball seat # 2 (item 13), located where the back plate (item 16) will be installed.
8. Starting with the back plate (item 16), install the bolts and lock washers finger-tight, followed by the other 3 connection covers (item 17).
9. Tighten down the gland lock nut (item 4) to the specified torque value (see Table 4). Then tighten the body bolts on all connection covers (item 15) and back plate (item 16).
10. Install the bevel washer (item 3), handle (item 1), and handle nut (item 2), and tighten.

Table 4: Torque Values for 350 Series Ball Valve Assembly

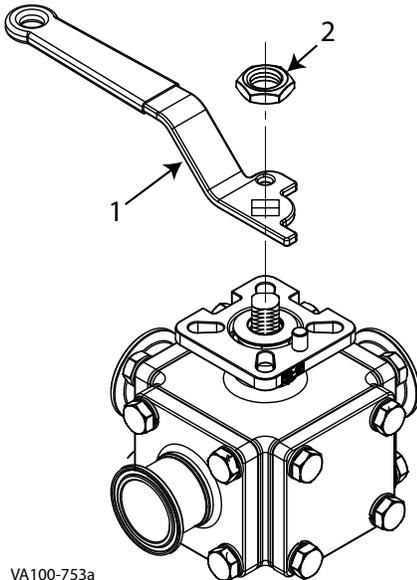
Size	Stem Gland in-lb (n-m)	Body Bolts in-lb (n-m)
1/2"	40 (4.52)	80 (9.04)
3/4"	40 (4.52)	80 (9.04)
1"	50 (5.65)	100 (11.30)
1 1/2"	125 (14.12)	280 (31.64)
2"	125 (14.12)	400 (45.19)
2 1/2"	200 (22.60)	400 (45.19)
3"	200 (22.60)	580 (65.53)
4"	250 (28.25)	800 (90.39)

NOTE: (To install the appropriate actuator for this valve, see "Mounting an actuator on the 350 Series 3-Way Manual Ball Valve" on page 16.)

350 Series 3-Way Ball Valve Actuator Assembly

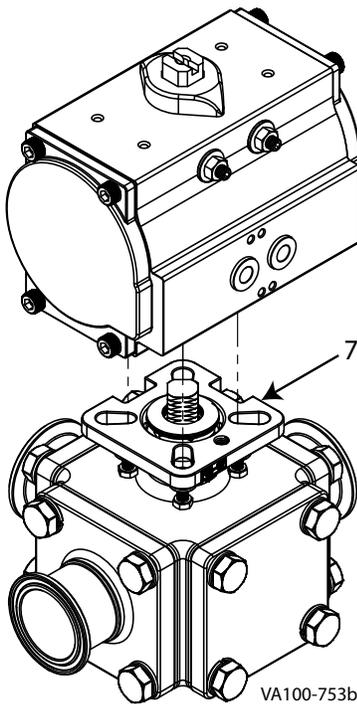
Mounting an actuator on the 350 Series 3-Way Manual Ball Valve

1. See Figure 6. Remove the handle nut (item 2), then remove the handle (item 1) from the ball valve.
2. Determine the actuator and valve shaft orientation.



VA100-753a

Figure 6 - Remove Handle



VA100-753b

Figure 7 - Bolt on Actuator

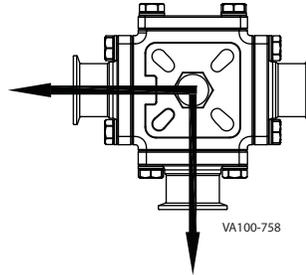
3. See Figure 7. Place the actuator on the mounting pad (item 7), then bolt on the actuator with hex bolts and flat and lock washers. See page 25 for parts lists, including bolts and washers.

NOTE: A double square actuator insert may be required between the coupling adapter and the actuator. See parts list on page 25.

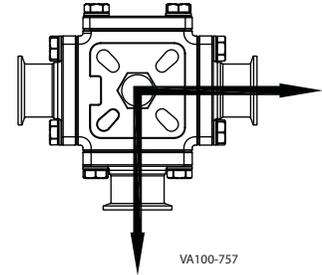
Air/Spring Rack & Pinion actuator factory setting orientations with no air on the valve

L-Port Valves

Normally Open (NO)

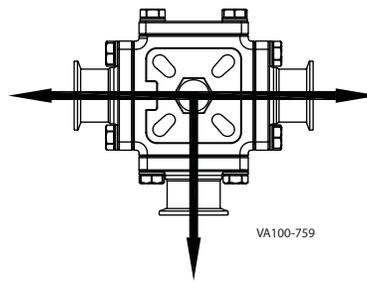


Normally Closed (NC)

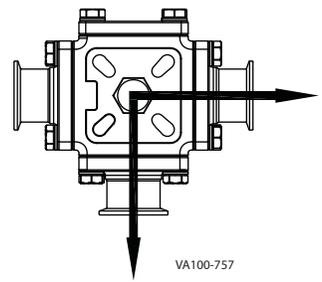


T-Port Valves

Normally Open (NO)

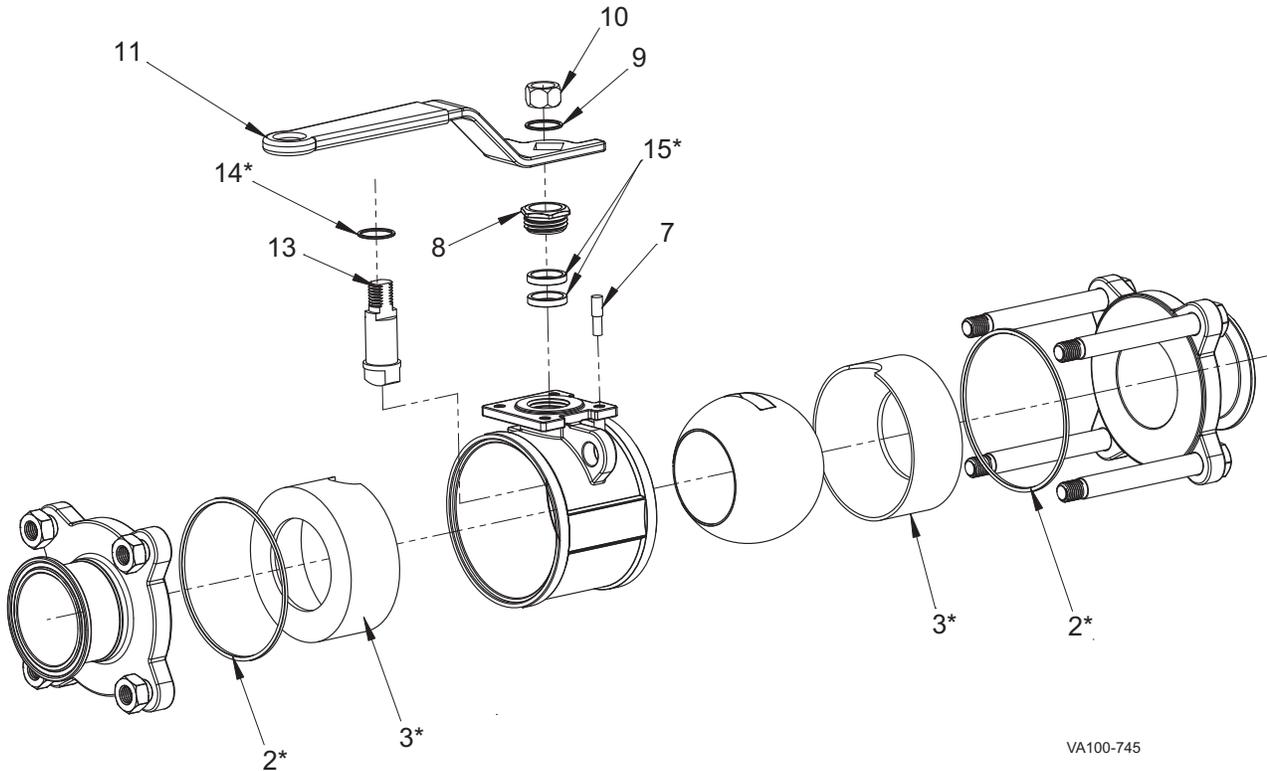


Normally Closed (NC)



Parts Lists

300 Series 2-Way Ball Valve with Manual Handle



VA100-745

* included in Repair Kit

Components not identified in the illustration above are not available individually. See "Complete (Assembled) Valve with Handle" part numbers, below.

Complete (Assembled) Valve with Handle		
Valve size	S-Line	Buttweld
1/2"	WBV30000001	WBV30000002
3/4"	WBV30000003	WBV30000004
1"	WBV30000005	WBV30000006
1 1/2"	WBV30000007	WBV30000008
2"	WBV30000009	WBV30000010
2 1/2"	WBV30000011	WBV30000012
3"	WBV30000013	WBV30000014
4"	WBV30000015	WBV30000016

PL5027-CH173

Repair Kits	
Valve size	Part Number
1/2"	2500000EKIT
3/4"	2500000FKIT
1"	25000001KIT
1 1/2"	25000002KIT
2"	25000003KIT
2 1/2"	25000004KIT
3"	25000005KIT
4"	25000006KIT

PL5027-CH172

Kit includes items 2, 3, 14, and 15 (marked with *)

300 Series 2-Way Ball Valve with Manual Handle

Item #	Qty.	Part Description	Valve Size				Note
			1/2"	3/4"	1"	1 1/2"	
*	2	Gasket	See Repair Kit				
*	2	Ball Seat	See Repair Kit				
	1	Stopper Pin	07RP2395025		07RP2395050		
	1	Gland	07RP2384020	07RP2384025	250PN081520		
	1	Washer	07RP2396025		07RP2396050		
	1	Nut	07RP2397025		07RP2397050		
	1	Handle	250000F00H		250000100H	250000300H	
	1	Stem	07RP2366015	07RP2366020	07RP2366025	250L073STEM	
*	1	Thrust Washer	See Repair Kit				
*	2	Stem Packing	See Repair Kit				

Item #	Qty.	Part Description	Valve Size				Note
			2"	3 1/2"	3"	4"	
*	2	Gasket	See Repair Kit				
*	2	Ball Seat	See Repair Kit				
	1	Stopper Pin	07RP2395050	07RP2395080		07RP2395100	
	1	Gland	250PN081520	07RP2384080	250GLAND604		
	1	Washer	07RP2396050	07RP2396080	07RP2396100		
	1	Nut	07RP2397050	07RP2397080	07RP2397100		
	1	Handle	250000300H	250000500H	250000600H		
	1	Stem	250L073STEM	250L075STEM	250L076STEM		
*	1	Thrust Washer	See Repair Kit				
*	2	Stem Packing	See Repair Kit				

PL5027-CH170

* included in Repair Kit

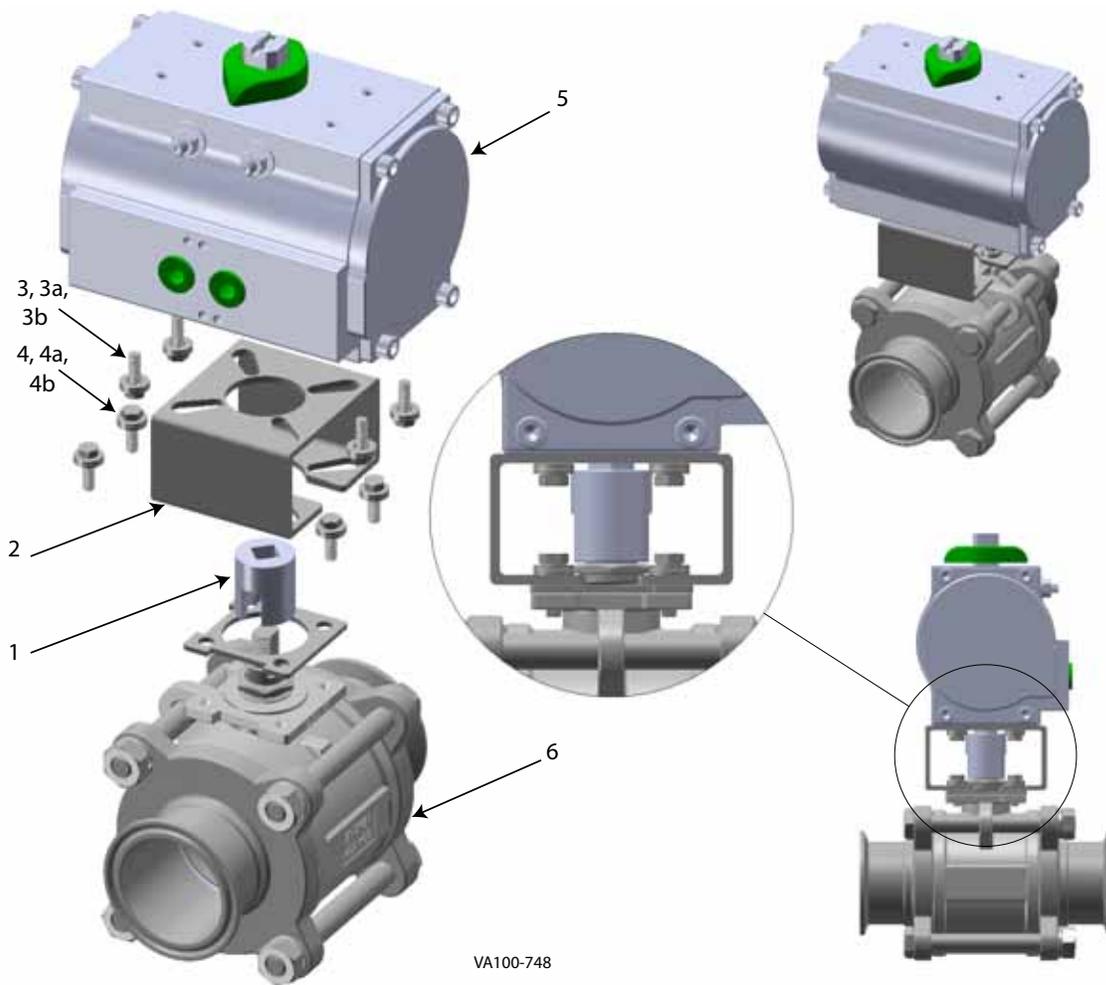
Components not identified in the illustration are not available individually.

Manual Handle Kit	
Part Description	Part Number
Valve Handle, 1/2" & 3/4"	132964+
Valve Handle, 1"	132965+
Valve Handle, 1-1/2" & 2"	132966+
Valve Handle 2-1/2" & 3"	132967+
Valve Handle 4"	132968+

PL5027-CH171

Kit includes items 7, 9, 10, & 11.

300 Series 2-Way Ball Valve with Rack and Pinion Actuator

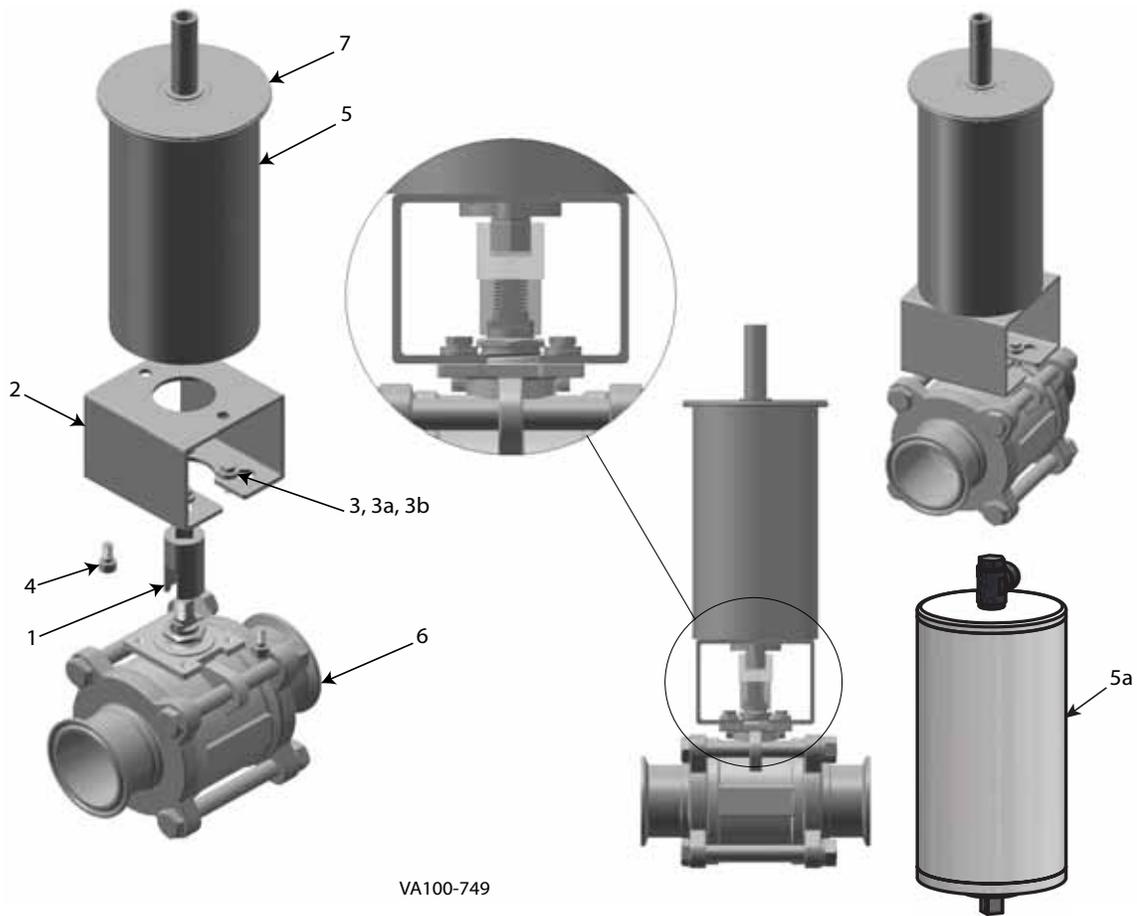


Item #	Part Description	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"
1	Coupling Adapter	130540+		130541+		130542+		130543+	130544+
2	Mounting Bracket	130536+		130537+		130538+		130539+	
3	Valve Side Bolts (4 pieces)	10-24 x .50" (P/N 130811+)			1/4"-20 x .625" (P/N 30-181)		5/16"-18 x .75" (P/N 30-151)		3/8"-16 x 1.0" (P/N 30-30)
3a	Valve Side Flat Washers (4 pieces)	#10 WIDE (P/N 130812+)			1/4" (P/N 43-27)		5/16" (P/N 43-14)		3/8" (P/N 43-30)
3b	Valve Side Lock Washers (4 pieces)	#10 (P/N 43-21)			1/4" (P/N 43-22)		5/16" (P/N 43-15)		3/8" (P/N 43-28)
4	Actuator Side Bolts (4 pieces)	M5-0.8 x 12mm (P/N 130813+)		M6-1.0 x 12mm (P/N 130814+)		M8-1.0 x 16mm (P/N 30-633)	M10-1.5 x 20mm (130815+)		
4a	Actuator Side Flat Washers (4 pieces)	#10 WIDE (P/N 130812+)		1/4" (P/N 43-27)		5/16" (P/N 43-14)		3/8" (P/N 43-30)	
4b	Actuator Side Lock Washers (4 pieces)	#10 (P/N 43-21)		1/4" (P/N 43-22)		5/16" (P/N 43-15)		3/8" (P/N 43-28)	
5	Actuator (Air/Air)	130551+		130552+		130553+	130554+		130555+
	Actuator (Air/Spring)	130545+ (Insert 11M9)		130546+ (Insert 14M11)		130547+ (Insert 17M14)	130548+ (Insert 22M17)	130549+ (Insert 27M17)	130550+ (Insert 27M22)
6	Manual Valve	See note below							

PL5027-CH175

NOTE: For item 6, see page 18.

300 Series 2-Way Ball Valve with Linear Actuator



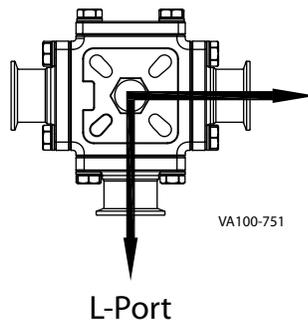
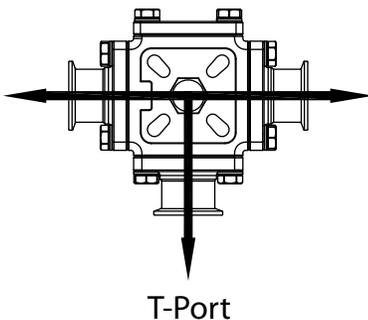
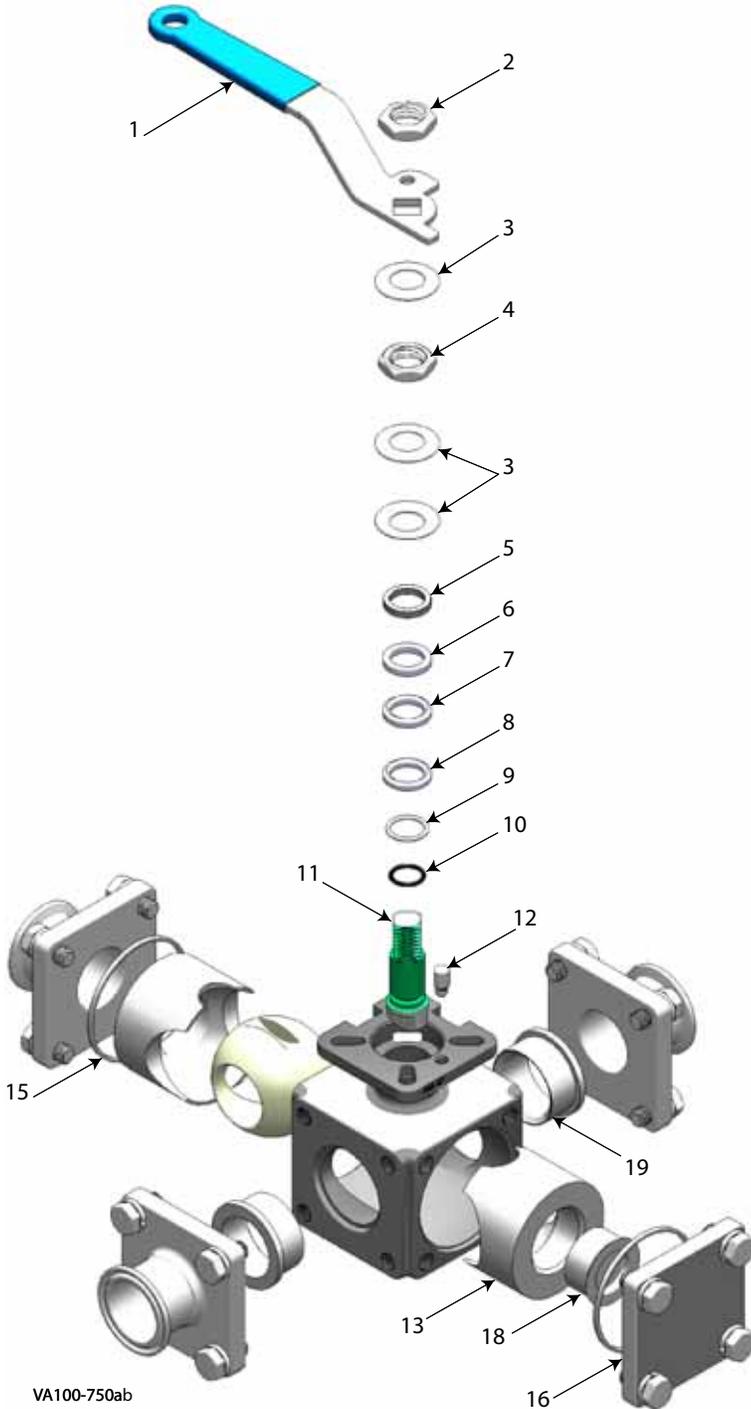
VA100-749

Item #	Part Description	Qty	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"
1	Coupling Adapter	1	130498+	130499+	130500+	130501+		130503+		
2	Mounting Bracket	1	130494+	130495+	130496+					
3	Valve Side Bolts	4	10-24 x .50" (P/N 130811+)		1/4"-20 x .625" (P/N 30-181)		5/16"-18 x .50" (P/N 30-163)		3/8"-16 x 1.0" (P/N 30-30)	
3a	Valve Side Flat	4	#10 WIDE (P/N 130812+)		1/4" (P/N 43-27)		5/16" (P/N 43-14)		3/8" (P/N 43-30)	
3b	Valve Side Lock Washers	4	#10 (P/N 43-21)		1/4" (P/N 43-22)		5/16" (P/N 43-15)		3/8" (P/N 43-28)	
4	Actuator Side Bolts	2	M8 x 12mm (P/N 130809+)				M10 x 14mm (P/N 130810+)			
5	Actuator (Air/Air) for control unit	1	H328357				H328358		H328359	
	Actuator (Air/Spring) for control unit	1	H203918				H328353		H320354	
5a	Actuator (Air/Air)	1	H328360				H328361		H328362	
	Actuator (Air/Spring)	1	H203917				H328355		H328356	
6	Manual Valve	1	See note below							
7	O-ring (for use with item 5)	1	H143352							

PL5027-CH174

NOTE: For item 6, see page 18.

350 Series 3-Way Ball Valve with Manual Handle



Complete (Assembled) Valve with Handle		
Size	Style	S-Line
1/2"	L-Port	WBV35000001
	T-Port	WBV35000002
3/4"	L-Port	WBV35000003
	T-Port	WBV35000004
1"	L-Port	WBV35000005
	T-Port	WBV35000006
1 1/2"	L-Port	WBV35000007
	T-Port	WBV35000008
2"	L-Port	WBV35000009
	T-Port	WBV35000010
2 1/2"	L-Port	WBV35000011
	T-Port	WBV35000012
3"	L-Port	WBV35000013
	T-Port	WBV35000014
4"	L-Port	WBV35000015
	T-Port	WBV35000016

PL5027-CH180

Manual Handle Kit	
Part Description	Part Number
Valve Handle, 1/2" & 3/4"	132969+
Valve Handle, 1"	132970+
Valve Handle, 1-1/2" & 2"	132971+
Valve Handle, 2-1/2"	132972+
Valve Handle, 3" & 4"	132973+

PL5027-CH182

Kit includes items 1, 2, 3 & 12.

350 Series 3-Way Ball Valve with Manual Handle

Item #	Qty.	Part Description	Valve Size				Note
			1/2"	3/4"	1"	1 1/2"	
1	1	Handle	131675+	131675+	131676+	131677+	
2	1	Handle Nut	07RP24114020		07RP24114025	07RP24114050	
3	3	Bevel Washer	07RP24124020		07RP24124025	07RP24124050	
4	1	Lock Nut	07RP24134020		07RP24134025	07RP24134050	
5	1	Stainless Ring	07RP24144020		07RP24144025	07RP24144050	
* 6	1	Female Bevel Washer	See Replacement Kit				
* 7	1	Double Bevel Washer	See Replacement Kit				
* 8	1	Bevel Washer	See Replacement Kit				
* 9	1	Teflon™ Ring	See Replacement Kit				1
* 10	1	Stem O-Ring	See Replacement Kit				1
11	1	L-Style Stem	07RP24096015	07RP24096020	07RP24096025	07RP24096050	1
		T-Style Stem	07RP24096515	07RP24096520	07RP24096525	07RP24096550	
12	1	Stop Pin	07RP24154025			07RP24154050	
* 13	2	Ball Seat # 2	See Replacement Kit				
* 15	2	Gasket	See Replacement Kit				
* 18	1	Seat Cap	See Replacement Kit				
* 19	2	Ball Seat # 1	See Replacement Kit				

Item #	Qty.	Part Description	Valve Size				Note
			2"	3 1/2"	3"	4"	
1	1	Handle	131677+	130618+	130619+	130619+	
2	1	Handle Nut	07RP24114050	07RP24114065	07RP24114100		
3	3	Bevel Washer	07RP24124050	07RP24124065	07RP24124100		
4	1	Lock Nut	07RP24134050	07RP24134065	07RP24134100		
5	1	Stainless Ring	07RP24144050	07RP24144065	07RP24144100		
* 6	1	Female Bevel Washer	See Replacement Kit				
* 7	1	Double Bevel Washer	See Replacement Kit				
* 8	1	Bevel Washer	See Replacement Kit				
* 9	1	Teflon™ Ring	See Replacement Kit				1
* 10	1	Stem O-Ring	See Replacement Kit				1
11	1	L-Style Stem	07RP24096050	07RP24096065	07RP24096100		1
		T-Style Stem	07RP24096550	07RP24096565	07RP24096600		
12	1	Stop Pin	07RP24154050	07RP24154065	07RP24154100		
* 13	2	Ball Seat # 2	See Replacement Kit				
* 15	2	Gasket	See Replacement Kit				
* 18	1	Seat Cap	See Replacement Kit				
* 19	2	Ball Seat # 1	See Replacement Kit				

PL5027-CH178

* Included in Replacement Kit

- Items 9, 10, and 11 are inside the valve body when assembled.
- Components not identified in the illustration are not available individually. See "Complete (Assembled) Valve with Handle" part numbers list on page 22.
- For replacement kits, see page 24.

Replacement Kits - 350 Series 3-Way Ball Valve with Manual Handle

Replacement Kits		
Valve size	Part Number	
	Old Style (pre-May 2015)	New Style (starting May 2015)
1/2"	350000EKIT	350000EKIT-1
3/4"	350000FKIT	350000FKIT-1
1"	3500001KIT	3500001KIT-1
1 1/2"	3500002KIT	3500002KIT-1
2"	3500003KIT	3500003KIT-1
2 1/2"	3500004KIT	3500004KIT-1
3"	3500005KIT	3500005KIT-1
4"	3500006KIT	3500006KIT-1

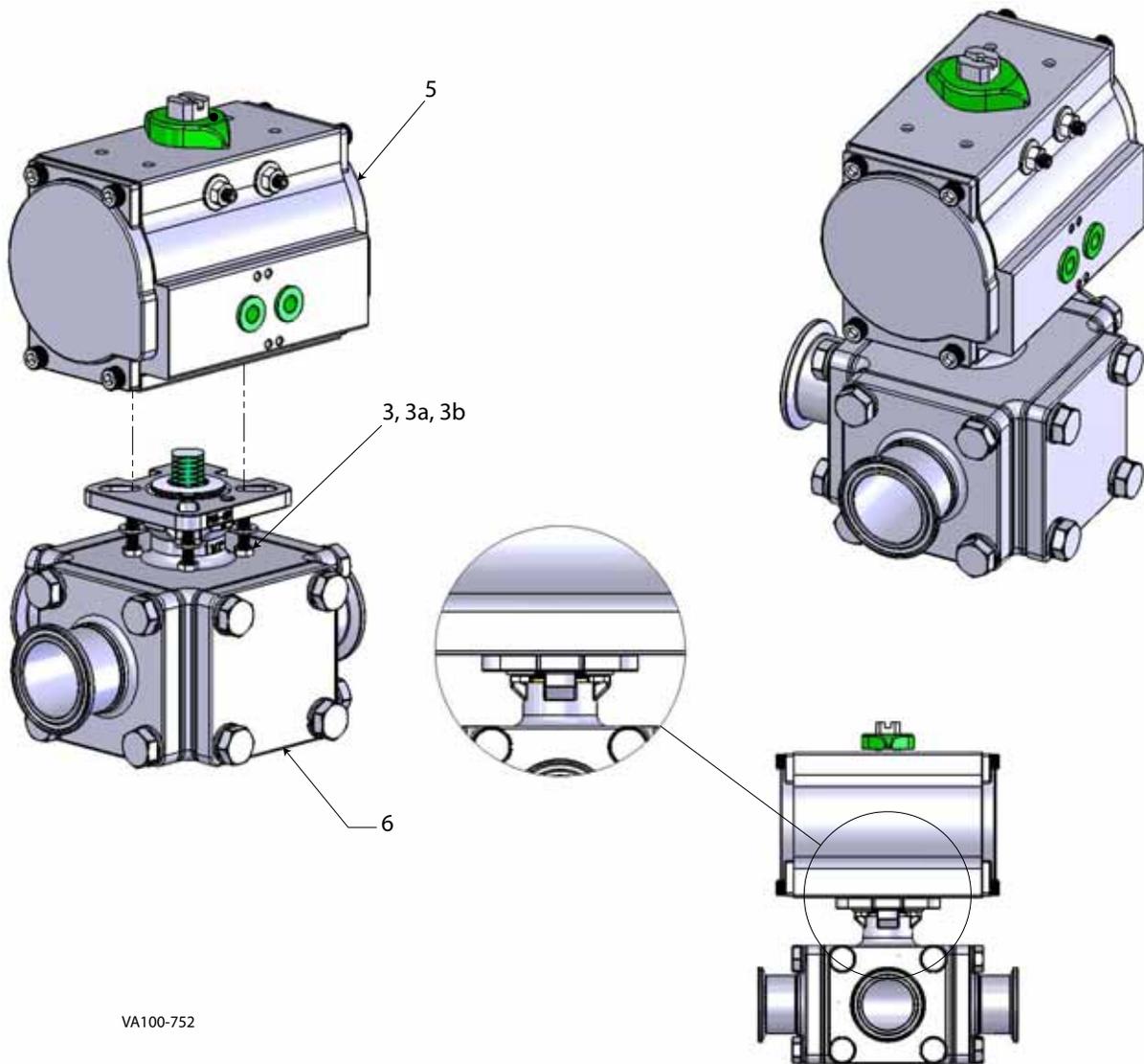
PL5027-CH179

Kits include items marked with * in the parts list on page 23.

Valves manufactured starting May 2015 use the "New" style repair kits. "New" style is indicated on the valve with an asterisk (*) as shown in the photo below. "Old" style valve housings will not have an asterisk.



350 Series 3-Way Ball Valve with Rack and Pinion Actuator



VA100-752

Item #	Part Description	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"
3	Bolts (4 pieces)	M5-0.8 x 12mm (P/N 130813+)		M8-1.0 x 16mm (P/N 30-633)					
3a	Flat Washers (4 pieces)	#10 WIDE (P/N 130812+)		5/16" (P/N 43-14)					
3b	Lock Washers (4 pieces)	#10 (P/N 43-21)		5/16" (P/N 43-15)					
5	Actuator (Air/Air)	130551+		130552+	130553+	130554+	130555+		
	Actuator (Air/Spring)	130545+ (Insert 11M9)		130545+ (no insert)	130547+ (Insert 17M14)	130547+ (no insert)	130548+ (no insert)		
6	Manual Valve	See note below							

PL5027-CH181

NOTE: For item 6, see page 23.

Notes

Triplex Sales
1-847-839-8442
www.triplexsales.com



300 and 350 Series Ball Valve

MANUAL AND PNEUMATIC ACTUATORS

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