

Air Actuated Dispense Valve

312782D

EN

To dispense plural component fluids and solvents. For professional use only.

Part No. 15X303

High Pressure Dispense Valve

3000 psi (21 MPa, 207 bar) Maximum Fluid Working Pressure

100 psi (0.7 MPa, 7 bar) Maximum Air Working Pressure

Part No. 15X304

Low Pressure Dispense Valve

300 psi (2.1 MPa, 21.0 bar) Maximum Fluid Working Pressure

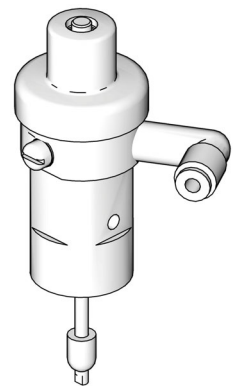
100 psi (0.7 MPa, 7 bar) Maximum Air Working Pressure



Important Safety Instructions

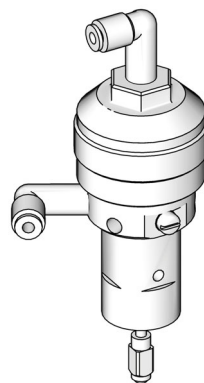
Read all warnings and instructions in this manual. For complete warnings and instructions see your proportioning system manual. Hazard symbols refer to specific procedure risks. Save all instructions.

15X304 Low Pressure Valve



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15X303 High Pressure Valve



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Related Manuals

See the following manuals for additional information on the dispense valves.

Manual	Description
312775	ProMix 2KS Manual System Installation
312776	ProMix 2KS Manual System Operation
312777	ProMix 2KS Manual System Repair-Parts
312778	ProMix 2KS Automatic System Installation
312779	ProMix 2KS Automatic System Operation
312780	ProMix 2KS Automatic System Repair-Parts
312781	Fluid Mix Manifold
312782	Dispense Valve
312783	Color and Catalyst Change Valve Stacks
312787	Color Change Module Kit

Installation

FIG. 2 shows the dispense valves installed in an electronic 2-component proportioning system. In this example, the dispense valves are used as dose valves for components A and B (DVA, DVB), an air purge valve (APV), and a solvent purge valve (SPV).

FIG. 3 shows a pneumatic schematic of a complete 2-component proportioning system, in which the dispense valves are also used as A and B dump valves, and color change valves.

Connect the Air Lines

Clean all lines and connections of dirt, burrs, etc., and blow them out with clean air before connecting them to the system. The air supply line should contain an air filter to remove harmful dirt and moisture from the compressed air.

Use a normally closed 4-way air solenoid valve to control the dispense valve. Attach 5/32 in. (4 mm) OD air supply lines from the 4-way valve to the air inlets of the dispense valve.

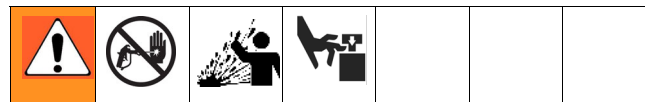
Connect the Fluid Lines

Connect a grounded fluid line from the pump or meter to the 1/4 npt fluid inlet of the dispense valve adapter.

If fluid is supplied by a pump, install a fluid pressure regulator upstream of the dispense valve. A fluid regulator enables you to control fluid pressure more accurately than by regulating air pressure to the pump.

Install a fluid filter to remove particles and sediment which may clog the nozzle.

Accessories



Two accessories are required in your system: a bleed-type master air valve and a fluid drain valve. These accessories help reduce the risk of serious injury including fluid injection, splashing in the eyes or on the skin, and injury from moving parts if you are adjusting or repairing the pump.

The bleed-type master air valve is required only with air-powered pumps. It relieves air trapped between this valve and the pump after the air regulator is shut off. Trapped air can cause the pump to cycle unexpectedly. Locate the valve close to the pump.

The fluid drain valve helps relieve fluid pressure in the displacement pump, hose, and dispense valve; triggering the valve to relieve pressure may not be sufficient.

Grounding



To reduce the risk of static sparking, ground the pump and all other components used or located in the dispensing area. Check your local electrical code for detailed instructions for your area and type of equipment and be sure to ground all of these components.

- *Fluid hoses:* use only electrically conductive hoses with a maximum of 500 feet (150 m) combined hose length to ensure grounding continuity.
- *Dispense valve:* obtain grounding through connection to a properly grounded fluid hose and pump.

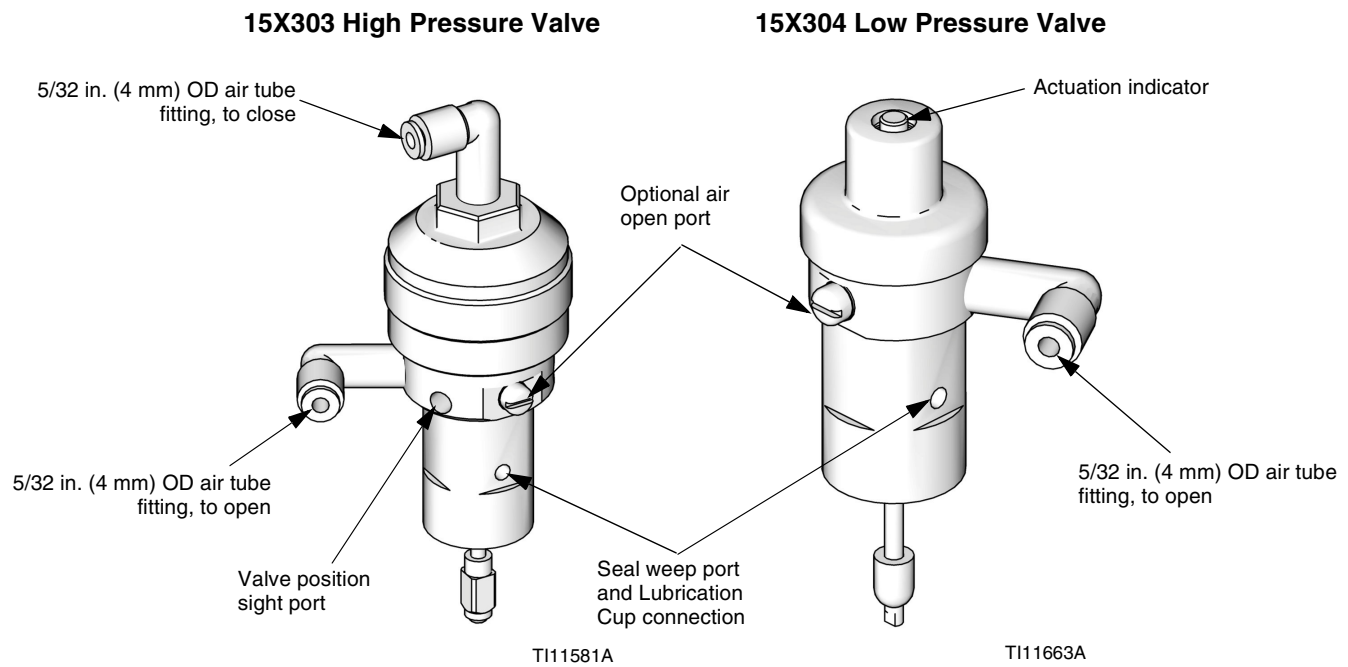


FIG. 1. Valve Air Ports

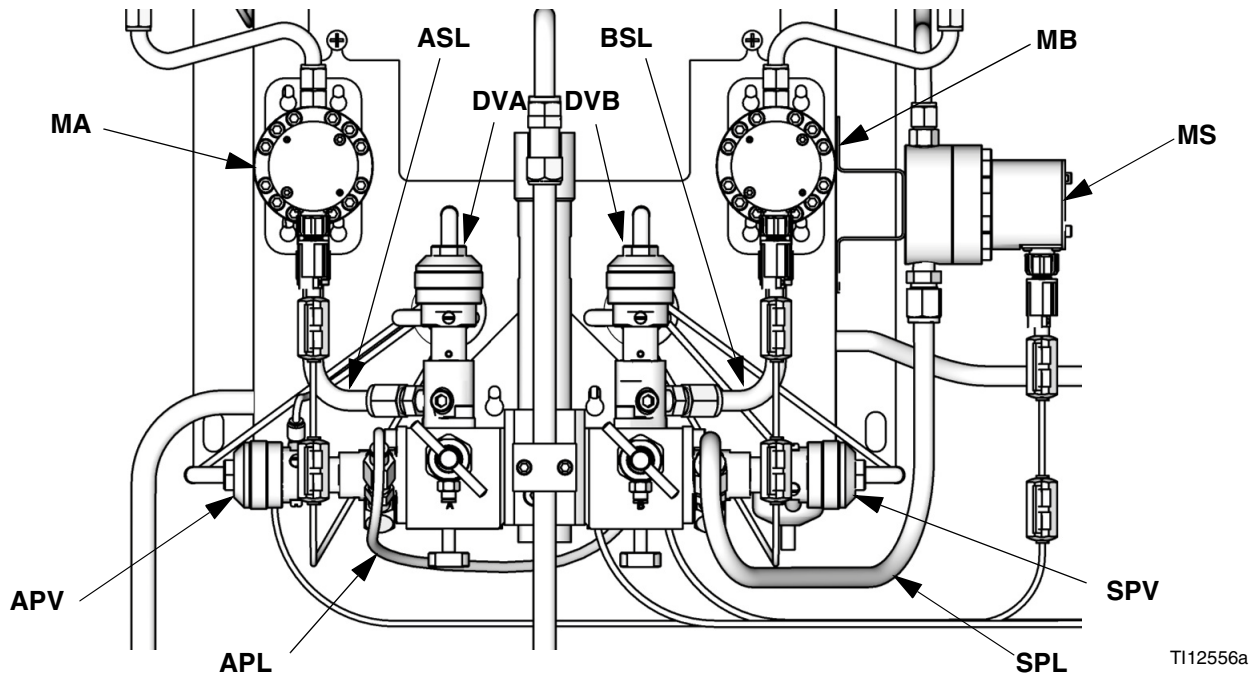


FIG. 2: Typical Installation

Key:

- | | |
|-------------------------------|--------------------------------|
| MA Component A Meter | APV Air Purge Valve |
| DVA Component A Dose Valve | ASL Component A Supply Line |
| MB Component B Meter | BSL Component B Supply Line |
| DVB Component B Dose Valve | APL Air Purge Line |
| MS Solvent Meter | SPL Solvent Purge Line |
| SPV Solvent Purge Valve | |

System Pneumatic Schematic (used with ProMix 2KS)

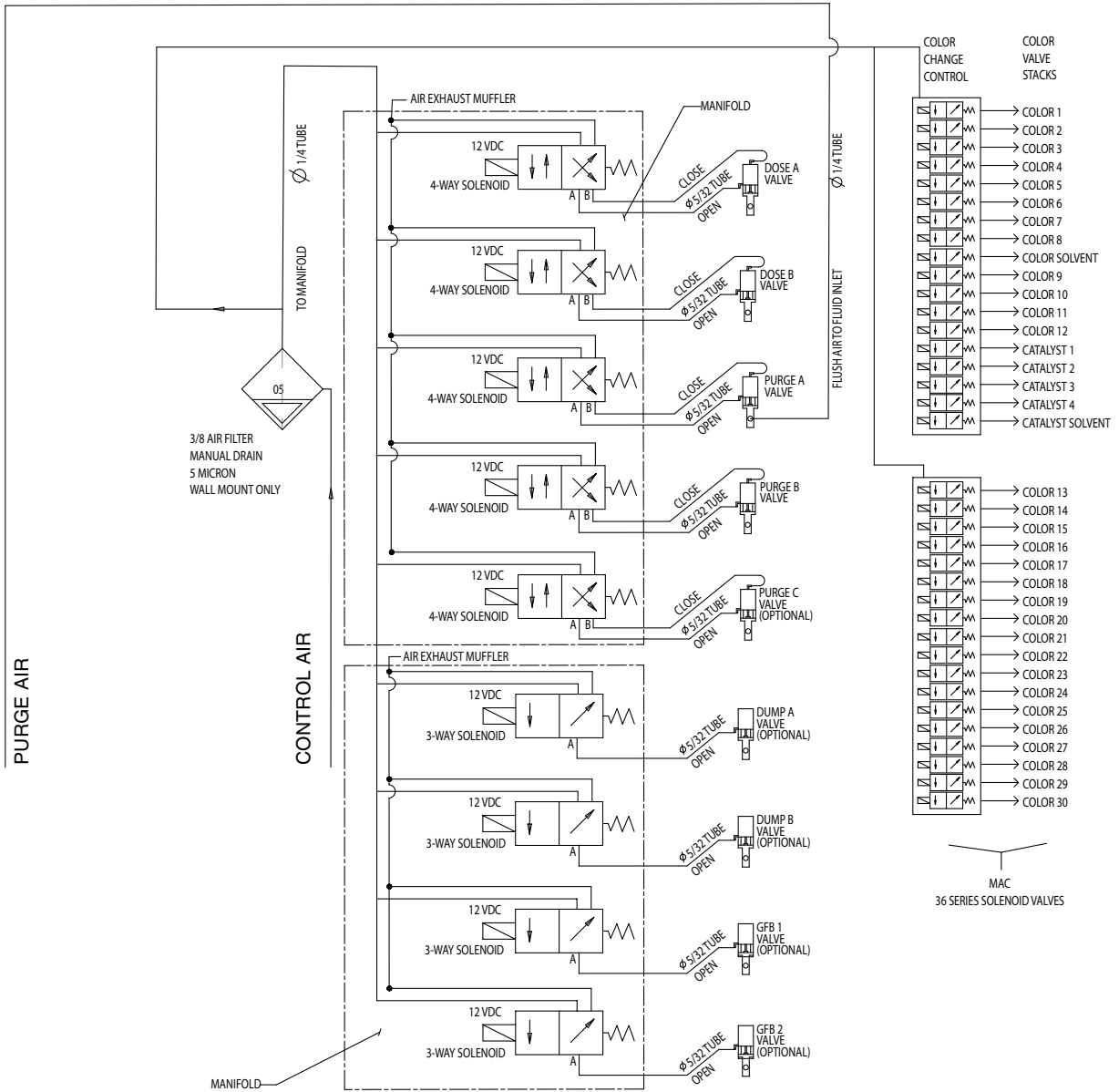


FIG. 3. System Pneumatic Schematic

Operation

Settings and Adjustments

Set the actuating air to at least 75 psi (0.52 MPa, 5.2 bar) and start the pump. Adjust the pump speed and pressure to obtain the desired flow rate. Always use the lowest pump speed necessary to get the results you want.

To decrease needle travel, turn the cap (11, see pages 9 and 10) clockwise; to increase, turn counterclockwise. The valve is factory set at one open turn. **The maximum setting is four turns open.**

Pressure Relief Procedure



1. Shut off the fluid supply to the dispense valve.
2. Actuate the dispense valve to relieve fluid pressure in the valve.
3. Relieve fluid pressure upstream and downstream of the dispense valve. See your system operation manual.
4. If you suspect the spray tip or hose is clogged or that pressure has not been fully relieved after following the steps above, **very slowly** loosen tip guard retaining nut or hose end coupling to relieve pressure gradually, then loosen completely. Clear hose or tip obstruction.

Maintenance

Clean the Dispense Valve Daily



NOTICE

Be sure the solvent used is compatible with the fluid being dispensed, to avoid clogging the valve's fluid passages.

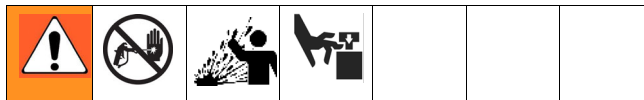
An important part of the care and maintenance of your automatic dispense valve is proper flushing. Flush the valve daily with a compatible solvent until all traces of fluid are removed from the valve passages. **Relieve the pressure** before flushing.

Clean the outside surfaces of the valve by wiping with a soft cloth dampened with a compatible solvent.

NOTICE

Never immerse the entire dispense valve in solvent. Immersing in solvent removes lubricants and may damage the o-rings.

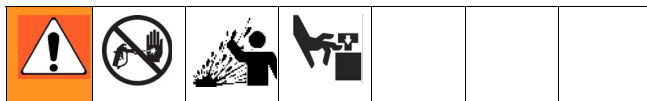
Flushing



Before flushing, be sure the entire system and flushing pails are properly grounded. Refer to **Grounding** on page 3. **Relieve the pressure.** Always use the lowest possible fluid pressure, and maintain firm metal-to-metal contact between the dispense valve and the pail during flushing to reduce the risk of fluid injection injury, static sparking, and splashing.

Start the pump and flush the system with a compatible solvent as explained in the instructions for your pump. Check the system under pressure for leaks; if any are found, **relieve the pressure** and repair the leaks. Pressurize the system again and make sure the leaking has stopped.

Troubleshooting



Before servicing this equipment always make sure to **relieve the pressure**.

NOTE: Check all possible causes and solutions before disassembling.

Problem	Cause	Solution
Valve will not close.	Fluid needle binding.	Clean, repair.
	Piston o-rings binding.	Repair.
	Obstructed or worn needle or seat.	Clean or replace.
Valve will not open.	Fluid needle binding.	Clean or repair.
	Piston o-rings binding.	Repair.
	No trigger or actuator pressure.	Check, clean all lines.
	Worn or dry piston o-rings.	Replace.
Valve will not dispense.	Fluid supply source is not operating.	Check on fluid supply source.
	Fluid line clogged.	Clear.
	Fluid valve closed.	Open.
	Clogged orifice or needle seat.	Clean.

Repair

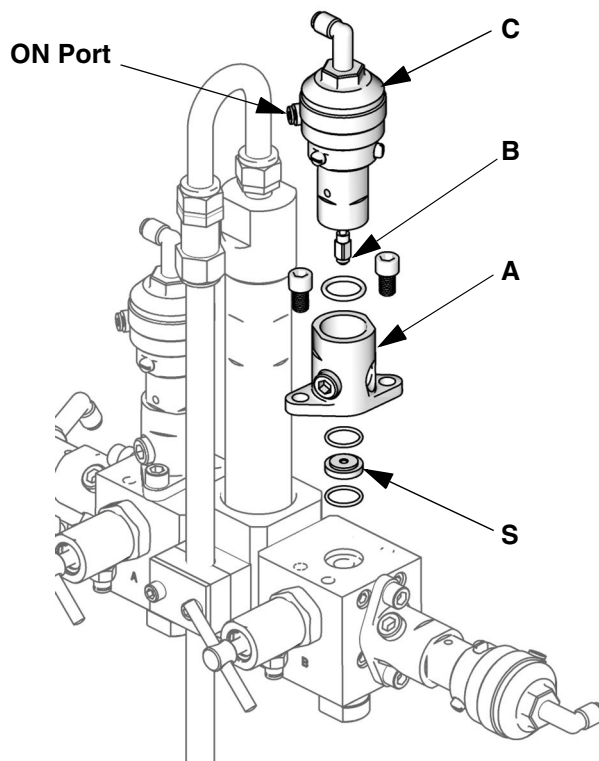
Disassembly

1. Relieve the pressure.
2. Flush the valve with a compatible solvent.
3. Relieve the pressure after flushing and disconnect the fluid and air hoses.
4. Unscrew the cap (C) to remove spring pressure on the valve.

NOTE: Another method of removing spring pressure is by applying air to the ON port, to lift the valve needle off the seat.

5. Unscrew the dispense valve from the adapter (A). Inspect the needle ball (B). Also inspect the seat (S) in the adapter for damage. The seat is reversible. See FIG. 4.

NOTE: See Fluid Mix Manifold Manual 312781 for seat replacement instructions and part numbers.



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FIG. 4. Valve Adapter and Seat

NOTE: See the parts drawings on pages 9 and 10.

6. Unscrew valve cap (11). Remove the spring (12).
7. Hold the needle flats with a wrench to keep it from turning. Unscrew the piston (9, high pressure valves) or retainer (10, low pressure valves) from the needle.
8. Remove the o-rings (7, 8) from the piston (9).
9. Push the needle (22) from the top while pulling it from the bottom of the fluid body (3).

NOTE: Needle may be hard to remove.

10. Unscrew the needle ball assembly (23) from the needle (22).
11. Unscrew the fluid body (3) from the air body (6). Remove the packing (19), bearing (5), and u-cup (4) from the fluid body.
12. On high pressure valves, remove the o-ring (17) from the air body (6).
13. Clean, inspect, and replace parts as needed.

Reassembly

NOTE: Seal Kits 15U933 (for high pressure dispense valve 15X303) and 15W621 (for low pressure dispense valve 15X304) are available to replace the seals. Parts included in the kit are marked with an asterisk, for example (4*). For best results, use all the parts in the kit.

NOTE: Use the 262028 Seal Installation Tool (supplied with the ProMix 2KS) to ensure proper installation of the u-cup (4).

1. Using the 262028 Installation Tool, install the u-cup (4*) into the fluid body (3) with the lips facing down. Install the bearing (5*) and packing (19*).
2. Slide the needle (22*) into the fluid body (3) **from the top**, down through the packing (19), bearing (5), and u-cup (4).
3. Apply thread sealant and screw the needle ball assembly (23*) onto the needle (22*).
4. Apply thread sealant and screw the fluid body (3) onto the air body (6).

5. On high pressure valves, install the o-ring (17*) on the air body (6).
6. Install the o-rings (7*, 8*) on the piston (9). Lubricate the o-rings.
7. Reinstall the piston (9):
 - a. *On high pressure valves*, apply thread sealant to the top threads of the needle (22*). Holding the needle (22) steady by its flats, screw the piston (9) onto the needle (22*).
 - b. *On low pressure valves*, slide the piston (9) onto the needle (22*). Apply thread sealant to the top threads of the needle. Holding the needle (22) steady by its flats, screw the retainer (10) onto the needle.
8. Before performing step 9, screw the dispense valve securely into the adapter (A, FIG. 4).
9. Install the spring (12) and valve cap (11).

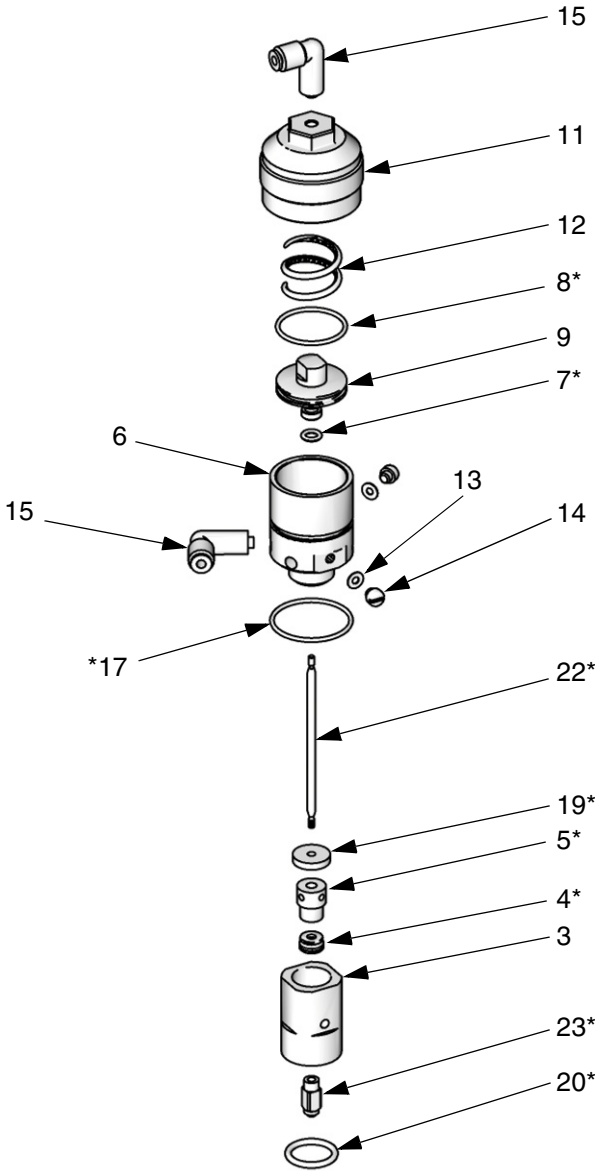
NOTE: *On high pressure valves*, screw the valve cap (11) onto the air body (6) only until slight resistance is felt as the cap contacts the o-ring (17*). **Do not tighten the valve cap (11) at this time.**

10. Screw the valve cap (11) down onto the air body (6) until additional resistance is felt and the cap is tight with the body.
11. Unscrew the valve cap (11) one complete turn for the factory needle setting, or unscrew cap to setting prior to repair.

NOTE: To decrease needle travel, turn the cap (11) clockwise; to increase, turn counterclockwise. The valve is factory set at one open turn. **The maximum setting is four turns open.**

Parts

15X303 High Pressure Valve



Ref. No.	Part No.	Description	Qty
3	---	BODY, fluid	1
4*	---	SEAL, u-cup, spring applied; uhmwpe	1
5*	---	BEARING, needle	1
6	---	BODY, air	1
7*	---	O-RING, shaft, piston; buna-N	1
8*	---	O-RING, body, piston; buna-N	1
9	15T413	PISTON	1
11	---	CAP, valve	1
12	15T454	SPRING, compression	1
13	104640	GASKET; buna-N	2
14	104644	PLUG, screw	2
15	109193	ELBOW, tube fitting; 10-32 x 5/32 in. (4 mm) OD tube	2
17*	---	O-RING, body, air; buna-N	1
19	---	PACKING; uhmwpe	1
20*	---	O-RING; ptfe	1
22*	---	SHAFT, needle	1
23*	---	BALL ASSEMBLY, needle	1
24	15V818	VENT, breather; not shown; remove (15) and install breather vent in (11) when valve is used as dump valve or color change valve	1
25‡	17B969	SPRING, compression (not shown)	1

* Parts included in Seal Kit 15U933 (purchase separately).

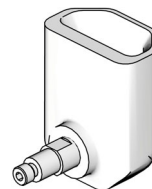
--- These parts are not available separately.

‡ Remove (12) and replace with this spring (marked with black stain) when valve is used as a dump valve or color change valve.

15V737 Valve Lubricator Cup (Option)

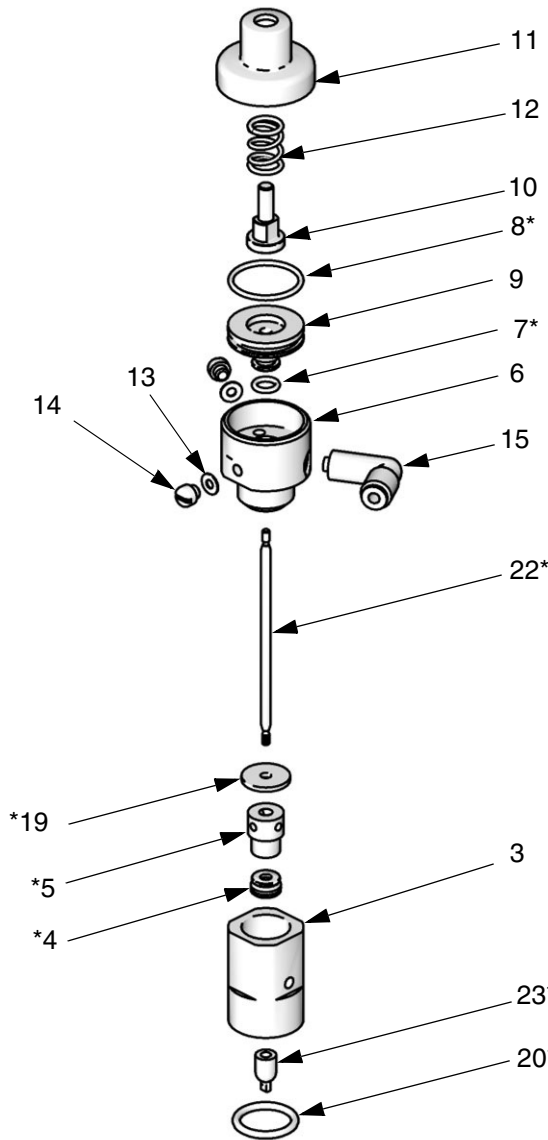
Install in fluid body (3) to lubricate seal (4).

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15X304 Low Pressure Valve



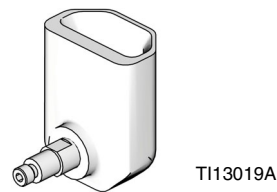
Ref. No.	Part No.	Description	Qty
3	---	BODY, fluid	1
4*	---	SEAL, u-cup, spring applied; uhmwpe	1
5*	---	BEARING, needle	1
6	---	BODY, air	1
7*	---	O-RING, shaft, piston; buna-N	1
8*	---	O-RING, body, piston; buna-N	1
9	180538	PISTON	1
10	15T452	RETAINER, piston	1
11	180612	CAP, valve	1
12	108017	SPRING, compression	1
13	104640	GASKET; buna-N	2
14	104644	PLUG, screw	2
15	109193	ELBOW, tube fitting; 10-32 x 5/32 in. (4 mm) OD tube	1
19*	---	PACKING; uhmwpe	1
20*	---	O-RING; ptfе	1
22*	---	SHAFT, needle	1
23*	---	BALL ASSEMBLY, needle	1

* Parts included in Seal Kit 15W621 (purchase separately).

--- These parts are not available separately.

15V737 Valve Lubricator Cup (Option)

Install in fluid body (3) to lubricate seal (4).



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Technical Data

Air Specifications

- Maximum Air Input Pressure 100 psi (0.7 MPa, 7 bar)
- Minimum Air Pressure 75 psi (0.52 MPa, 5.2 bar)
- Air Inlet Fitting Size 5/32 in. (4 mm) OD tube

Fluid Specifications

- Maximum Fluid Working Pressure Model 15X303: 3000 psi (21 MPa, 207 bar)
Model 15X304: 300 psi (2.1 MPa, 21 bar)
- Wetted Parts 303 SST, 17-4PH SST, Tungsten Carbide (with nickel binder), UHMWPE

- Weight Model 15X303: 0.5 lb (0.23 kg)
Model 15X304: 0.3 lb (0.14 kg)

Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

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For patent information, see www.graco.com/patents.

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