



# Installation, Operation, Maintenance Disassembly and Assembly Instructions for Models AL308P, AL309P, AL310P, AL311P Globe and Angle Valves

June 2000

Form FVC 020 - Rev. 1

**KEEP THIS DOCUMENT WITH THE PRODUCT UNTIL IT REACHES THE END USER.**

## WARNING

Before installation or removal of any globe or angle valves, the system must be purged completely of all product. Use proper safety equipment at all times. An **abundant supply** of clean water must be readily available and easily accessible as a means of providing IMMEDIATE First Aid treatment of exposure to ammonia. To insure long term safe operation, the manufacturer recommends that under normal service conditions this product should be inspected at least once every five (5) years and be repaired or replaced as required. To prevent the accidental opening of any valve, never carry or grasp a valve by its handwheel or handle.

**CAUTION:** Contact with or inhalation of Liquid Anhydrous Ammonia or LP-Gas or their vapors can cause serious injury or death. Dispersment must be in accordance with local regulations. For the proper handling and storage of Anhydrous Ammonia refer to ANSI Standard K61.1. For the proper handling and storage of Liquefied Petroleum Gas refer to NFPA Pamphlet 58.

**TOOLS REQUIRED:** Safety Equipment (i.e. gloves, goggles, and clothing), 12" Adjustable Wrench and 18" Pipe Wrench

## Removal of any Globe or Angle Valve for Repair or Replacement

**REFER TO FIGURE 1 FOR THE FOLLOWING STEPS:**

- Step 1: Safety equipment (i.e. gloves, goggles and clothing) must be worn before continuing with the next step.
- Step 2: Before removing valve from tank, place in **FULL OPEN POSITION** to insure all pressure is bled from system.  
Note: An 18" Pipe Wrench will be required. See Warning at top of page.

## Disassembly Procedure for Repair

**REFER TO FIGURE 1 FOR THE FOLLOWING STEPS:**

- Step 1: With valve secured in a bench vise, remove Bonnet (5) from the Body (17), which will expose the complete Bonnet and Stem Assembly.  
Note: It is important to inspect Disc Holder (7) rotation. If it does not rotate freely, do not use valve. Consult your local dealer for instructions. Remove old Gasket (16).
- Step 2: Secure Bonnet (5) in a bench vise and remove both Handwheel and Disc Nuts (1).
- Step 3: Remove Disc Washer (9), Disc (8), Lock Washer (10), and Handwheel (2).
- Step 4: Remove Packing Nut (4), Chevron Packing (12), Male Adapter (13), and Packing Spring (15) over end of Stem (3).
- Step 5: Rotate Stem (3) clockwise (CW) using Handwheel (2) if necessary, until stem is disengaged from Bonnet (5). Remove old Gasket (14).
- Step 6: Before reassembly, clean and inspect the valve seat at (A). Clean all metal components with solvent and wipe or blow dry with air.

## Assembly Procedure

**REFER TO FIGURE 1 FOR THE FOLLOWING STEPS:**

- Step 1: Install Disc (8), with injection marks against the Disc Holder (7), Disc Washer (9), and Disc Nut (1) to Disc Holder (7). Secure Disc Nut (1) to threads of Disc Holder (7) with center punch mark at thread interface.
- Step 2: Lubricate threads of stem with a good quality grease and install Stem (3) into Bonnet (5) until Disc Holder (7) rests against bottom of bonnet.
- Step 3: With the bonnet and stem assembly secured in a bench vise install Gasket (14) and Packing Spring (15).
- Step 4: Replace O-ring (11) in groove of Packing Nut (4).
- Step 5: Install Chevron Packing (12) and Male Adapter (13) into Packing Nut (4).
- Step 6: Lubricate exposed surface of Stem (3) with John Crane Style 279A Packing Lubricant or equal.
- Step 7: Place Packing Nut (4) with packing in place over Stem (3) and engage bonnet threads in Bonnet (5). Rotate Packing Nut (4) while making contact with bonnet threads. Tighten packing nut with torque wrench to 55 ft-lbs.
- Step 8: Secure Body (17) in vise. Place Body Gasket (16) over bonnet threads and lubricate threads with a good quality grease.
- Step 9: Install bonnet assembly into body and tighten with torque wrench to 95 ft-lbs.
- Step 10: Install Handwheel (2), Lock Washer (10) and tighten Handwheel Nut (1) on Stem (3).
- Step 11: Check stem packing and valve seat for leaks. Operate handwheel full open to full closed to insure smooth operation.

(OVER)

**REFER TO FIGURE 1 FOR THE FOLLOWING STEPS:**

- Step 1: Apply Teflon tape or sealant on the male pipe threads of mating part, and place handwheel in full open position.
- Step 2: Install valve and tighten to desired position, taking caution to not overtighten.

**Safety Tips for Shut-down and Storage****SAFETY TIPS FOR SHUT-DOWN AND STORAGE WHEN TANKS ARE NOT IN USE:**

- Step 1: Make sure all valves are closed with any exposed outlets / inlets capped to keep out debris and moisture, which will help to prevent condensation or corrosion of internal parts.
- Step 2: Store tanks in accordance with federal, state, and local codes and manufacturer's instructions. Check periodically for leakage or excessive pressure build-up. Make corrections or repairs as necessary.

20	1	WARNING LABEL	AVAILABLE KITS			
19	1	1/4" NPT HEX HD. PLUG				
18	1	RETAINING SCREW	NUMBERS		NAME & PARTS INCLUDED	ASSEMBLY PROCEDURE
17	1	BODY	AL308P OR AL309P	AL310P OR AL311P		
16	1	BODY GASKET	308-0022	310-0022	SEAL KIT 1 8 10 22 14 15	STEPS 1 THRU 11
15	1	PACKING SPRING				
14	1	GASKET				
13	1	MALE ADAPTER	308-1300	310-1300	STEM & DISC HOLDER ASSEMBLY 1 3 6 7 8 9 15	STEPS 2 THRU 11
12	2	CHEVRON PACKING				
11	1	O-RING				
10	1	LOCK WASHER				
9	1	DISC WASHER	308-1100	310-1100	BONNET ASSEMBLY 1 3 4 5 6 7 8 11 22 12 14 13 16	STEPS 8 THRU 11
8	1	DISC				
7	1	DISC HOLDER				
6	15	BALL				
5	1	BONNET				
4	1	PACKING NUT				
3	1	STEM				
2	1	HANDWHEEL				
1	2	HANDWHEEL NUT/DISC NUT				
ITEM	QTY	DESCRIPTION				

AL310P

AL311P

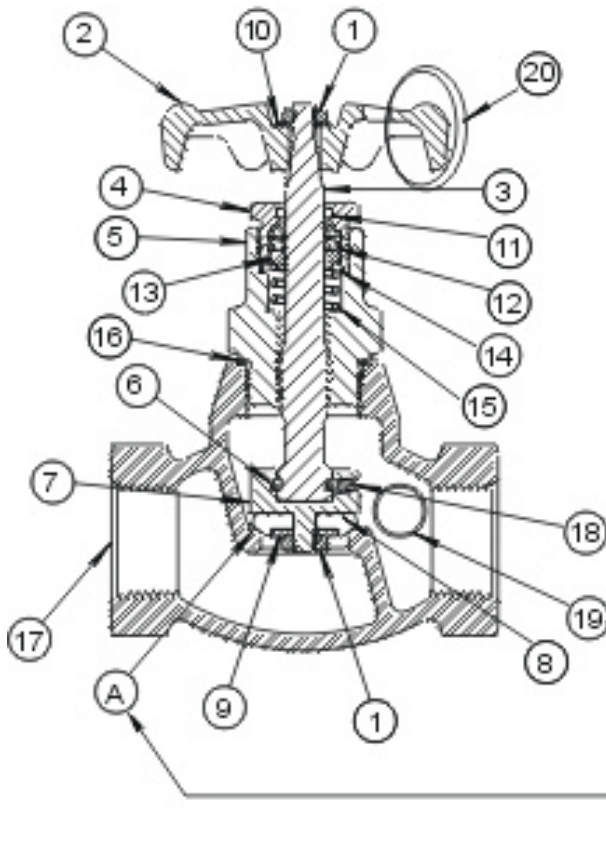
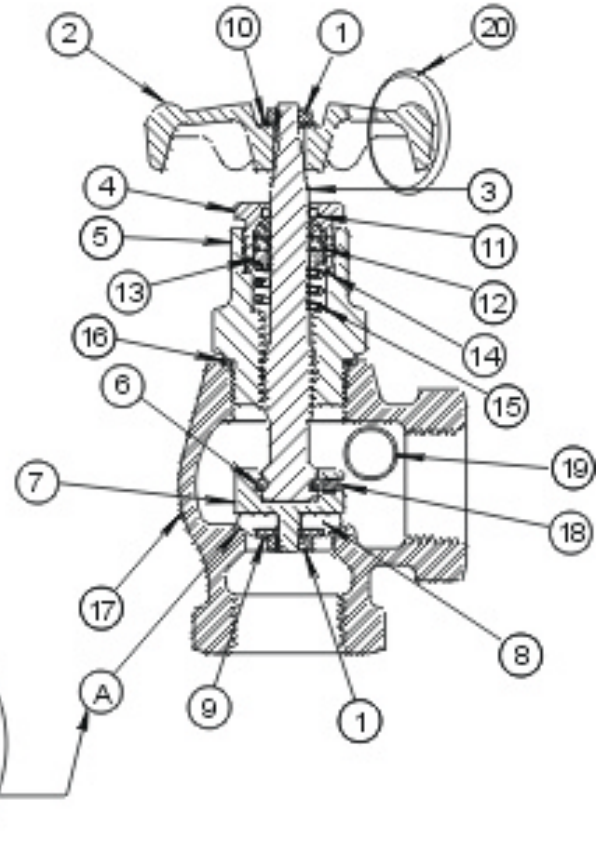


FIG. 1



SEAT DETAIL FOR AL 308 &amp; AL 309