

Installation, Operation & Maintenance Instructions for Models AL407P & AL409P Vapor or Liquid Service Valves

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Form FVC 023 - Rev 02

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

WARNING

Use proper safety equipment at all times.

Before installation or removal of any service valve, the system must be purged completely of all product. An abundant supply of clean water must be readily available and easily accessible as a means of providing IMMEDIATE First Aid treatment for exposure to ANHYDROUS AMMONIA. To prevent the accidental opening of any valve, never grasp or carry a valve by its handwheel or handle.

This equipment must be installed, operated and maintained in accordance with federal, state and local codes, and manufacturer's instructions. In addition, in most states the installation must also comply with ANSI K61.1 standards. Only personnel trained in the proper procedures, codes, standards and regulations should install, inspect repair and/or replace this equipment. Failure to follow these instructions or to properly install and maintain this equipment could result in property damage and/or personal injury or death.

To ensure 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.

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), Bench-Mounted Vise, 18" Pipe Wrench, 12" Adjustable Wrench, Medium-sized Flat Blade Screwdriver, Torque Wrench (to 55 ft./lbs.)

Removal of any Service Valve for Repair or Replacement

- Step 1: Safety equipment (i.e. gloves, goggles, and clothing) must be worn before proceeding to the next step.
- Step 2: Before removing the valve from the tank, place the valve in the **FULL OPEN POSITION** to ensure all pressure is bled from the system. See WARNING at the top of this page.

Disassembly Procedure for Repair (Refer to Figure 1 for Item Numbers)

- Step 1: With the valve secured in a bench-mounted vise, remove the Bonnet ① from the Body ②, which will expose the complete Bonnet and Stem Assembly.
NOTE: It is important to inspect the Disc Holder ③ rotation. If it does not rotate freely, do not use the valve. Consult your local dealer for instructions.
- Step 2: Remove the old Gasket ④ from the Bonnet ①.
- Step 3: Remove the Screw ⑤, the Washer ⑥, and the Handwheel ⑦.
- Step 4: Remove the Packing Nut ⑧ and the Hat Gasket ⑨ over the end of the Stem ⑩.
- Step 5: Rotate the Stem clockwise (using the Handwheel, if necessary) until the Stem is disengaged from the Bonnet.
- Step 6: Before re-assembly, clean and inspect the valve seat at ④. Clean all metal components with solvent and wipe or blow dry with air.

Assembly Procedure (Refer to Figure 1 for Item Numbers)

- Step 1: Insert the Disc ⑪ with the injection marks against the Disc Holder ③, followed by the Disc Washer ⑫, and Disc Nut ⑬. (Secure the Disc Nut to the threads of the Disc Holder with the center-punch mark at the thread interface.)
- Step 2: Lubricate the threads of the stem with a good quality grease and install the Stem ⑩ into the Bonnet ① until the Disc Holder ③ rests against the bottom of the bonnet.
- Step 3: Secure the Bonnet/Stem Assembly in the bench-mounted vise and install the Hat Gasket ⑨, with the small end first, over the stem.
- Step 4: Replace the O-Ring ⑭ in the groove of the Packing Nut ⑧.
- Step 5: Lubricate the exposed surface of the Stem ⑩ with John Crane Style 279A Packing Lubricant or an equivalent.
- Step 6: Place the Packing Nut ⑧ over the Stem and engage the bonnet threads. Tighten the Packing Nut with a torque wrench to 55 ft.-lbs.
- Step 7: Secure the Valve Body ② in the vise, place the Body Gasket ④ over the bonnet threads and lubricate the threads with a good quality grease.
- Step 8: Install the bonnet assembly into the body and tighten with the torque wrench to 55 ft.-lbs.
- Step 9: Install the Handwheel ⑦ the Lock Washer ⑥, and tighten the Screw ⑤ on the Stem.
- Step 10: Check the stem packing and valve seat for leaks. Operate the handwheel FULL OPEN to FULL CLOSED to ensure smooth operation.

Installation of New or Repaired Service Valves

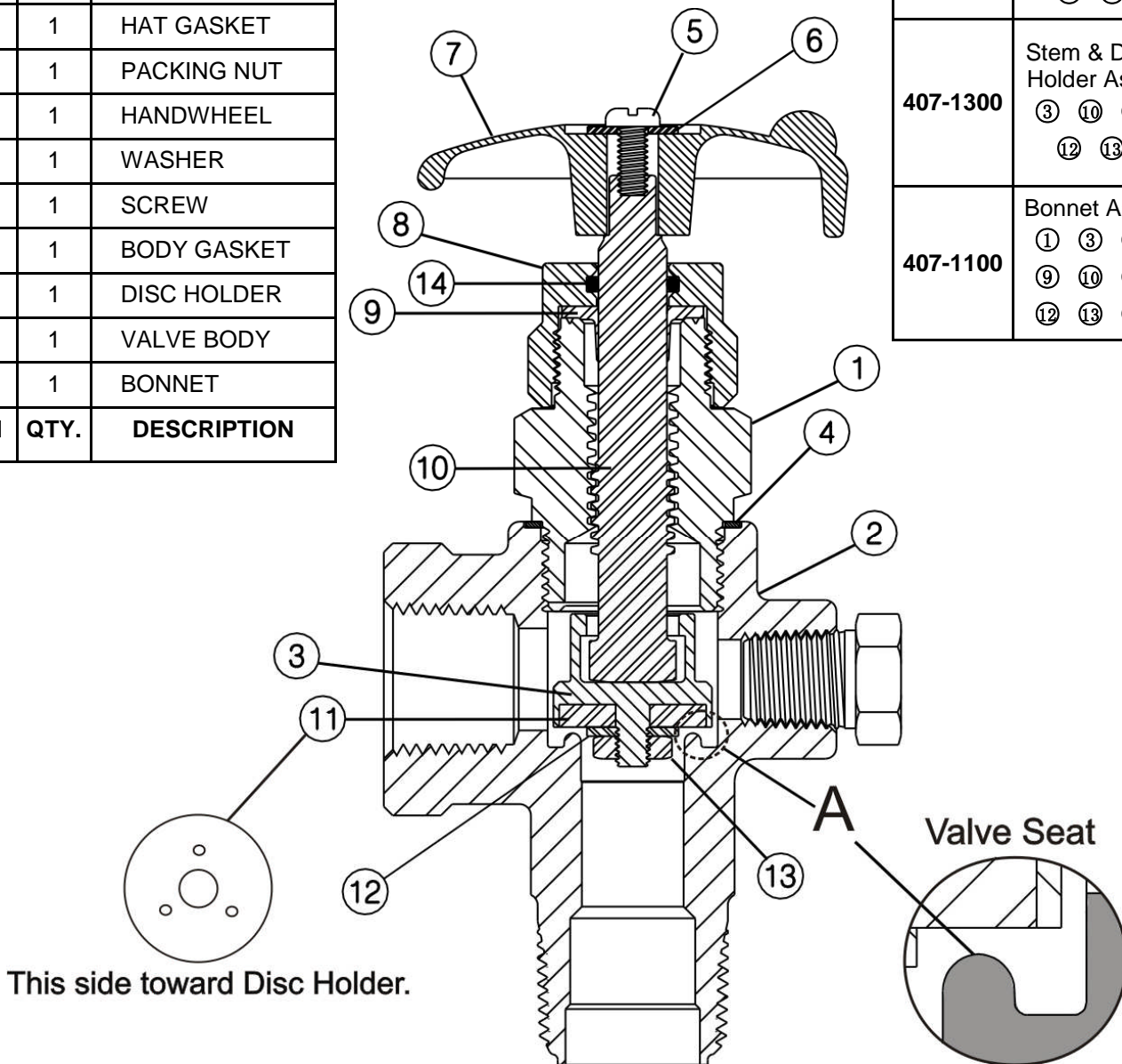
- Step 1: Apply Teflon® tape or sealant to the 3/4" male NPT threads at the bottom of the valve, and place the handwheel in the FULL OPEN position.
- Step 2: Install the valve and tighten it to the desired position, taking care to not over-tighten.

Safety Tips for Shut-Down and Storage WHEN TANKS ARE NOT IN USE

- Step 1: Make sure all valves are CLOSED and any exposed outlets/inlets are capped to keep out debris and moisture, which will help 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.

14	1	O-RING
13	1	DISC NUT
12	1	DISC WASHER
11	1	DISC
10	1	STEM
9	1	HAT GASKET
8	1	PACKING NUT
7	1	HANDWHEEL
6	1	WASHER
5	1	SCREW
4	1	BODY GASKET
3	1	DISC HOLDER
2	1	VALVE BODY
1	1	BONNET
ITEM	QTY.	DESCRIPTION

AVAILABLE KITS		
Number	Name/Parts Included	Assembly Procedure
407-0021	Seal Kit ④ ⑨ ⑪ ⑬ ⑭	Steps 1 thru 10
407-1300	Stem & Disc Holder Assy ③ ⑩ ⑪ ⑫ ⑬	Steps 2 thru 10
407-1100	Bonnet Assy ① ③ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭	Steps 7 thru 10



MODEL AL407P & AL409P