SQUIBB TAYLOR
(214) 357-4591 INCORPORATED (800) 345-8105
DALLAS TEXAS
MANUFACTURED BY PGI INTERNATIONAL

Installation, Operation & Maintenance Instructions for Model A1599P Liquid Fill Valve with back Check

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

WARNING

Before installation or removal of any tank 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 for exposure to ANHYDROUS AMMONIA. **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. To prevent the accidental opening of any valve, never grasp or carry 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. Dispersement 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, 7/16" Open End Wrench, 18" Pipe Wrench, Torque Wrench

REFER TO FIGURE 1 FOR EACH OF THE FOLLOWING PROCEDURES.
THE DEGREE OF DISASSEMBLY/ASSEMBLY REQUIRED WILL VARY, DEPENDING ON THE TYPE OF REPAIR PERFORMED.

Removal of Tank Valve for Repair or Replacement

Step 1: Safety equipment (i.e. gloves, goggles, and clothing) must be worn before continuing with the next step.

Step 2: Before removing the valve from the tank, place the valve in FULL OPEN POSITION to ensure all pressure is bled from the system.

NOTE: An 18" Pipe Wrench will be required. See WARNING at the top of this page.

Disassembly Procedure for Repair

Step 1: With the valve secured in a bench vise, remove the Bonnet ⑤ from the Body ⑲, which will expose the Bonnet and Stem Assembly. Remove the old Gasket ⑱.

Step 2: **It is very important to inspect the Disc Holder ⑨ rotation. If it does not rotate freely, do not put the valve back in service, but consult your local dealer for instructions.**

Step 3: Secure the Bonnet ⑤ in a bench vise and remove the Handwheel Nut and the Disc Nut ① from each end of the assembly.

Step 4: Remove the Disc Washer ⑪, Disc ⑩, Handwheel ②, and Info-Disc ⑫.

Step 5: Remove Packing Nut ④, Chevron Packing ⑭, Male Adapter ⑮, and Packing Spring ⑰ over the end of the Stem ③.

Step 6: Rotate the Stem ③ clockwise, using the Handwheel if necessary, until the Stem is disengaged from the Bonnet ⑤. Remove the old Gasket ⑯.

Assembly Procedure

Step 1: Install the Disc ⑩, Disc Washer ⑪, and Disc Nut ① to the Disc Holder ⑨. Secure the Disc Nut ① to the threads of the Disc Holder ⑨ with a center punch mark at thread interface.

Step 2: Lubricate the threads of the Stem ③ with a good quality grease and install it into the Bonnet ⑤ until the Disc Holder ⑨ rests against the bottom of the Bonnet.

Step 3: With the Bonnet and Stem Assembly secured in a bench vise, install the Gasket ⑯ and Packing Spring ⑰.

Step 4: Replace the O-Ring ⑬ in the groove of the Packing Nut ④.

Step 5: Install the Chevron Packing ⑭ and the Male Adapter ⑮ into the Packing Nut ④.

Step 6: Lubricate the exposed surface of the Stem ③ with John Crane Style 279A Packing Lubricant or equal.

Step 7: Place the Packing Nut ④ (with the Packing) onto the Stem ③ and install into the Bonnet threads. Tighten the Packing Nut ④ with a torque wrench to 55 ft-lbs.

Step 8: Secure the Valve Body ⑲ in a vise. Place the Body Gasket ⑱ onto the Bonnet and lubricate the threads with a good quality grease. Install the Bonnet Assembly into the Valve Body and tighten with a torque wrench to 95 ft-lbs.

Step 9: Install the Handwheel ②, Info-Disc ⑫, and Handwheel Nut ① onto the Stem ③.

Step 10: Check the stem packing and valve seat for leaks. Operate the Handwheel full "OPEN" to full "CLOSED" to ensure smooth operation.

Inspection and/or Replacement of the Back Check Assembly

Step 1: The Back Check Assembly is a safety device designed to limit liquid or vapor flow to one direction. It is of utmost importance that this assembly operates properly.

a) TO INSPECT: Pull the Check Stem (24) until the Seal carrier (22) touches the Yoke (23). Release the Check Stem and observe the spring return stroke. If the Back Check Assembly does not move freely toward the Body Seat Ⓐ or exhibit a snap action on the spring return stroke, **it must be replaced.**
Back Check Assembly Kit Part Number: **S1599-1102**

b) TO REMOVE: Secure the valve body in a bench vise and, using a 12" adjustable wrench, rotate the Yoke (23) counter-clockwise to remove it from the valve body.

c) TO REPLACE: Clean the internal body threads with a wire brush or solvent and wipe or blow dry with air. Apply the Loctite thread adhesive, part #TL 29005 (provided with Back Check Assembly kit), to the Yoke (23) and body threads. Install the new Back Check Assembly into the body and tighten with the 12" adjustable wrench.

CAUTION: Do not allow the Loctite to contact the Stem or Check Disc. Allow 30 minutes to dry and inspect as instructed in Step 1a) above.

Step 2: Before reassembly, clean and inspect the Valve Seat at Ⓑ. Clean all metal components with solvent and wipe or blow dry with air.

Installation of New or Repaired Tank Valves

Step 1: Holding the valve in hand, pull and release the Check Stem (24) to ensure that it is operating smoothly.
Step 2: Apply Teflon tape or other thread sealant on the 1-1/4" NPT Threads and place the Handwheel ② in full "OPEN" position.
Step 3: Install the valve into the threaded tank fitting and tighten to the desired position, but do not over-tighten.

CAUTION: Do not damage the Check Stem (24) while installing the valve.

Installation of New or Repaired Tank Valves

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 debris and moisture out, which could cause 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.

ITEM	QTY	DESCRIPTION
30	1	WARNING LABEL
29	1	GASKET
28	1	WASHER
27	1	SEAL
26	1	1/4 NPT HEX HD. PLUG
25	1	SPRING
24	1	STEM
23	1	YOKE
22	1	SEAL CARRIER
21	1	SPRING GUIDE
20	1	RETAINING SCREW
19	1	BODY
18	1	BODY GASKET
17	1	PACKING SPRING
16	1	GASKET
15	1	MALE ADAPTER
14	2	CHEVRON PACKING
13	1	O-RING
12	1	INFO-DISC
11	1	DISC WASHER
10	1	DISC
9	1	DISC HOLDER
8	15	BALL
7	1	ACME CAP
6	1	LOCTITE PACKAGE N/S
5	1	BONNET
4	1	PACKING NUT
3	1	STEM
2	1	HANDWHEEL
1	2	HANDWHEEL NUT/DISC NUT

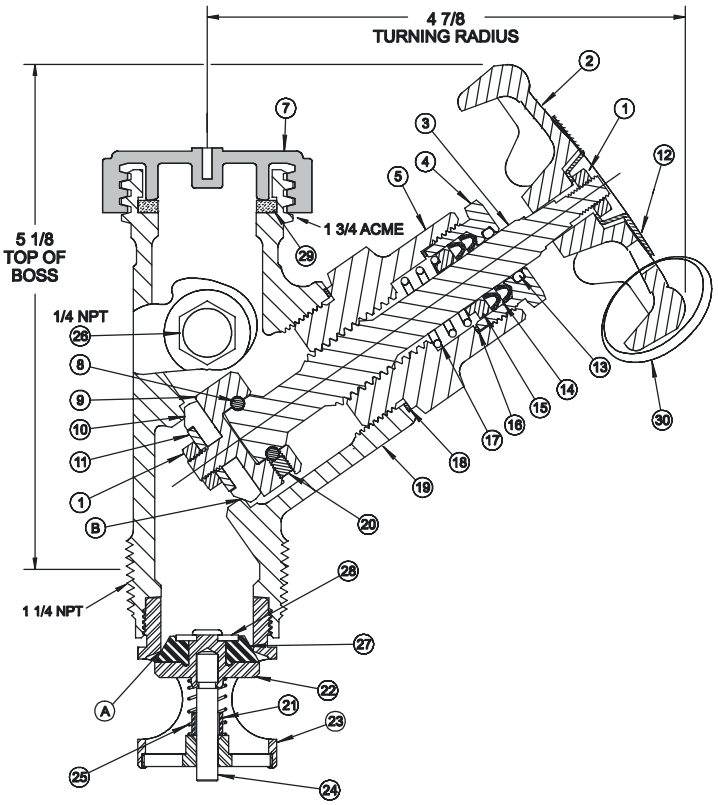

FIG. 1

AVAILABLE KITS

NUMBER	NAME & PARTS INCLUDED	ASSEMBLY PROCEDURE
310-0022	SEAL KIT ①⑩⑬⑭⑯⑱	STEPS 1 THRU 10
310-1300	STEM & DISC HOLDER ASSEMBLY ①③⑧⑨⑩⑪⑳	STEPS 2 THRU 10
310-1100	BONNET ASSEMBLY ①③④⑤⑧⑨⑩⑪⑬⑭⑮⑯⑰⑳	STEPS 8 THRU 10
S1599-1102	BACK CHECK ASSEMBLY ⑥㉑㉒㉓㉔㉕㉗㉘	SEE DIRECTIONS FOR BACK CHECK REPLACEMENT