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# Installation, Operation, Maintenance Assembly, and Disassembly Instructions for Models AL320P, AL321P Globe and Angle Valves

March 2014

Form FVC028 Rev 02

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

## WARNING!

1. Contact with or inhalation of Liquid Anhydrous Ammonia (NH<sub>3</sub>) or of LP Gas, can cause **SERIOUS INJURY OR DEATH**.
2. Before installation or removal of any tank valve, the system must be purged of all product.
3. Personal Protective Equipment (PPE), safety gloves, goggles and clothing should be worn.
4. For proper handling and storage of NH<sub>3</sub> and Liquefied Petroleum Gas, refer to ANSI Standard K61.1 and NFPA Pamphlet 58.
5. An abundant supply of fresh water should be available to provide immediate first aid treatment for exposure to NH<sub>3</sub> and LP Gas.
6. To prevent the accidental opening of any valve, never grasp or carry a valve by its Hand wheel ② or handle.
7. To ensure a long term and safe operation, the manufacturer recommends that under normal service conditions this product should be inspected at least once every year and be repaired or replaced as required.

## TOOLS REQUIRED

Safety Equipment (i.e. gloves, goggles, and clothing), 12" Adjustable Wrench, Bench Vise, & 24" Pipe Wrench.

## REMOVAL OF ANY GLOBE OR ANGLE VALVE FOR REPAIR OR REPLACEMENT

1. Before removing the valve from the tank, place the valve in the **FULL OPEN POSITION** to ensure all pressure is bled from the system.  
NOTE: See Warning at top of page.

## DISASSEMBLY PROCEDURE FOR REPAIR

1. With the valve secured in a bench mounted vise, remove the four (4) Hex Bolts ⑱. Remove the complete Bonnet ⑤ and Stem Assembly. NOTE: It is important to inspect the Disc Holder ⑦ rotation. If it does not rotate freely, do not use the valve but consult your local dealer for instructions. Remove the old Body Gasket ⑮.
2. Secure the Bonnet ⑤ in a bench vise and remove the Hand wheel Nut ①, Hand wheel Washer ⑳, and Hand wheel ②.
3. Remove the Disc Nut ⑨ and the Disc ⑧.
4. Remove the Packing Nut ④, Chevron Packing ⑩, Male Adapter ③, Packing Spring ⑭, and Packing Nut Gasket ⑬, over the end of the Stem ③.
5. Rotate the Stem ③ clock wise using the Hand Wheel ② if necessary, until the Stem ③ is disengaged from the Bonnet ⑤.
6. Before reassembly, clean and inspect the Valve Seat. Clean all metal components with solvent and wipe or blow dry with air.

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## ASSEMBLY PROCEDURE

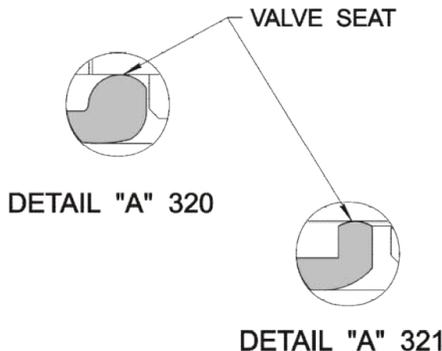
1. Install Disc ⑧ and Disc Nut ⑨, (with the injection marks of the Disc ⑧), against the Disc Holder ⑦. Secure the Disc Nut ⑨ to the threads of the Disc Holder ⑦, with the center punch mark at the thread interface.
2. Lubricate the threads of the Stem ③ with a good quality grease and install the Stem ③ into the Bonnet ⑤, until the Disc Holder ⑦ rests against the bottom of the Bonnet ⑤.
3. With the Bonnet ⑤ and Stem Assembly secured in a bench vise, install the Packing Nut Gasket ⑬ and the Packing Spring ⑭.
4. Replace O-Ring ⑩ in the groove of the Packing Nut ④.
5. Install the Chevron Packing ⑪ and the Male Adapter ⑫ into the Packing Nut ④.
6. Lubricate the exposed surface of the Stem ③ with John Crane Style 279A Packing Lubricant or equal.
7. Place a block under the Disc Holder ⑦ to keep the Stem ③ and the Disc Holder Assembly from backing out when installing the Packing Nut Assembly to the Bonnet ⑤. Place the Packing Nut ④ with the packing in place over the Stem ③ and engage the Bonnet threads in the Bonnet ⑤. Rotate the Packing Nut ④ while making contact with the Bonnet threads. Tighten the Packing Nut ④ with a torque wrench to 55 ft-lbs.
8. Secure Body ⑬ in a vise. Place the Body Gasket ⑮ onto the body.
9. Place the Bonnet Assembly on top of the Body ⑬ making sure that all four bolt holes line up. Install the four Bolts ⑯ and tighten the bolts ⑯ with a torque wrench to 55 ft-lbs.
10. Install the Hand wheel ②, Hand wheel Washer ⑰, and the Hand wheel Nut ①. Tighten the Hand wheel Nut ① on the Stem ③.
11. Check the Stem Packing and Valve Seat for leaks. Operate the Hand Wheel ② full open to full closed to insure a smooth operation.

## INSTALLATION OF NEW OR REPAIRED SERVICE VALVES

1. Apply PTFE tape or sealant on the male pipe threads of the mating part, and place the Hand wheel ② in full open position.
2. Install the Valve and tighten to the desired position, taking caution to not over tighten.

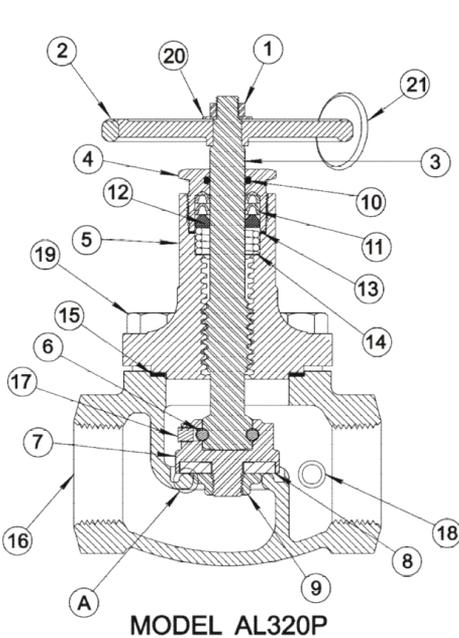
## SAFETY TIPS FOR SHUT DOWN AND STORAGE WHEN TANKS ARE NOT IN USE

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.
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.

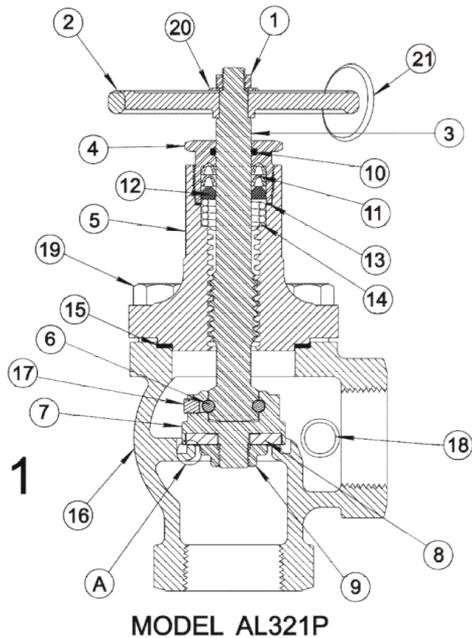


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| ITEM             | DESCRIPTION                                           | QTY.               | AVAILABLE KITS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
|------------------|-------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|---------|-----------------------|--------------------|------------------|--------------------------|-----------------|----------|-----------------------------------------------|-----------------|----------|-------------------------------------------------------|-----------------|
| 1                | HANDWHEEL NUT                                         | 1                  | <table border="1"> <thead> <tr> <th>NUMBERS</th> <th>NAME &amp; PARTS INCLUDED</th> <th>ASSEMBLY PROCEDURE</th> </tr> </thead> <tbody> <tr> <td>AL320P OR AL321P</td> <td>SEAL KIT<br/>⑧ ⑩ ⑪<br/>⑬ ⑮</td> <td>STEPS 1 THRU 11</td> </tr> <tr> <td>320-0022</td> <td>STEM &amp; DISC HOLDER ASSEMBLY<br/>③ ⑥ ⑦ ⑧<br/>⑨ ⑰</td> <td>STEPS 2 THRU 11</td> </tr> <tr> <td>320-1300</td> <td>BONNET ASSEMBLY<br/>③ ④ ⑤ ⑥<br/>⑦ ⑧ ⑨ ⑩<br/>⑪ ⑫ ⑬ ⑭<br/>⑰</td> <td>STEPS 8 THRU 11</td> </tr> </tbody> </table> |  |  | NUMBERS | NAME & PARTS INCLUDED | ASSEMBLY PROCEDURE | AL320P OR AL321P | SEAL KIT<br>⑧ ⑩ ⑪<br>⑬ ⑮ | STEPS 1 THRU 11 | 320-0022 | STEM & DISC HOLDER ASSEMBLY<br>③ ⑥ ⑦ ⑧<br>⑨ ⑰ | STEPS 2 THRU 11 | 320-1300 | BONNET ASSEMBLY<br>③ ④ ⑤ ⑥<br>⑦ ⑧ ⑨ ⑩<br>⑪ ⑫ ⑬ ⑭<br>⑰ | STEPS 8 THRU 11 |
| NUMBERS          | NAME & PARTS INCLUDED                                 | ASSEMBLY PROCEDURE |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| AL320P OR AL321P | SEAL KIT<br>⑧ ⑩ ⑪<br>⑬ ⑮                              | STEPS 1 THRU 11    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 320-0022         | STEM & DISC HOLDER ASSEMBLY<br>③ ⑥ ⑦ ⑧<br>⑨ ⑰         | STEPS 2 THRU 11    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 320-1300         | BONNET ASSEMBLY<br>③ ④ ⑤ ⑥<br>⑦ ⑧ ⑨ ⑩<br>⑪ ⑫ ⑬ ⑭<br>⑰ | STEPS 8 THRU 11    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 2                | HANDWHEEL                                             | 1                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 3                | STEM                                                  | 1                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 4                | PACKING NUT                                           | 1                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 5                | BONNET                                                | 1                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 6                | BALL                                                  | 18                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 7                | DISC HOLDER                                           | 1                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 8                | DISC                                                  | 1                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 9                | DISC NUT                                              | 1                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 10               | O-RING                                                | 1                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 11               | CHEVRON PACKING                                       | 2                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 12               | MALE ADAPTER                                          | 1                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 13               | GASKET                                                | 1                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 14               | PACKING SPRING                                        | 1                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 15               | BODY GASKET                                           | 1                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 16               | BODY                                                  | 1                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 17               | RETAINING SCREW                                       | 1                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 18               | 1/4"NPT HEX HD. PLUG                                  | 1                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 19               | 1/4-13X1 1/4" HEX HD BOLT                             | 4                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 20               | HANDWHEEL WASHER                                      | 1                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |
| 21               | WARNING LABEL                                         | 1                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |         |                       |                    |                  |                          |                 |          |                                               |                 |          |                                                       |                 |



**FIG. 1**



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## **USER SAFETY RESPONSIBILITY STATEMENT FOR ALL PARKER PRODUCTS**

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