



I. O. & M. Manual

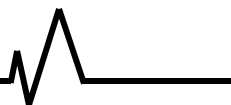
Installation

Operation

Maintenance

**.187 and .375 Orifice
Valves and Manifolds with
OS&Y (Outside Stem & Yoke)
Bonnetts**

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I. I. O. & M. INSTRUCTIONS

For .187 and .375 Orifice Valves and Manifolds with OS&Y(Outside Stem & Yoke) Bonnets

1.0 INTRODUCTION

This valve/manifold is supplied with either a soft seat or a hard seat sealing option. The packing is field adjustable and positioned below the threads for long service life.

2.0 INSTALLATION

2.1 Remove the valve/manifold from the shipping box and make sure the body stamping matches the number on the box.

2.2 Prior to valve/manifold installation, check the piping to which the valve or manifold is to be connected for cleanliness and remove any foreign debris.

2.3 Thread Valve Installation

2.3.1 All pipe or fitting connections must be made tight. NPT pipe joints depend on a good, smooth engagement between the male and female pipe threads, usually with the use of a thread sealant. Typically, Grafoil tape is used in high temperature applications. For low temperature applications, Teflon tape or other standard pipe thread sealants may be used.

2.3.2 Check the threads on both the valve/manifold and the mating pipe for cleanliness.

2.3.3 Do not use excessive wrenching force on an NPT pipe joint. Refer to the chart below for the proper torque for your NPT pipe connection fitting.

PIPE OR TUBE ANSI/ASME B1.20.1 NOMINAL INCH	TIGHTENING TORQUE		
	INCH-POUNDS	FOOT-POUNDS	METER-NEWTONS
	IN-LBS	FT-LBS	M-N
1/4	600	50	68
3/8	700	58	79
1/2	850	71	96
3/4	1,000	83	113
1	1,200	100	136

3.0 OPERATION

3.1 Hand valves which have been reasonably matched to a typical service application and properly installed in its piping system can be expected to have a long service life with minimum attention. However, valves have moving and wearing parts and depend on long term preservation of highly finished surfaces on certain working parts for satisfactory performance.

3.2 The handle of the valve has been designed to provide an adequate seating force to seal the valve against the maximum pressure of the valve without the use of additional mechanical advantage. The use of a "cheater" to operate the valve is **not necessary, not recommended, and can cause valve damage.**

3.3 All valves have rising stems with right-hand thread. Rotate the handle counter-clockwise to open and clockwise to close.

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3.0 OPERATION (cont'd)

- 3.4 Valves with rising stems are provided with a backseat. The backseat is a shoulder on the stem or other part of the stem-disk assembly which engages a corresponding seat shoulder on the inner side of the bonnet.

It has become generally recognized that the use of the stem backseat for stem sealing may mask unsatisfactory condition of the stem seal. For this reason, the use of the backseat for normal operation stem sealing is NOT recommended. The backseat in rising stem valves should be regarded simply as a "stop" to prevent overtravel when opening the valves. Normal practice should be to unseat the backseat slightly.

If it is necessary to use the backseat for stem sealing, it should be recognized that backseats are usually smaller than the main seat and care should be taken to avoid applying excessive stem force in backseating.

4.0 VALVE / MANIFOLD MAINTENANCE

- 4.1 The important performance parameters are "pressure boundary integrity", "actuating force required", and "internal leak tightness". Maintenance should logically address the importance of preserving these performance parameters.
- 4.2 Valves which remain in one position for long periods of time may be subject to some loss of operability due to the loss of effective lubricants in threads, aging of packing surface, corrosion of moving parts, or accumulation of harmful solids. In some applications, it may be desirable to schedule periodic partial or full cycle operation of those valves.
- 4.3 Stem seal leakage usually results from seal wear and can usually be corrected by adjusting the stem packing or adding new packing.

4.4 Instructions for Adjusting Stem Packing

NOTE: This operation may be performed safely with the valve under full line pressure.

Refer to Section III on page 5, for PACKING ADJUSTMENT INSTRUCTIONS.

4.5 Instructions for Adding Stem Packing

CAUTION

REMOVE ALL PRESSURE FROM THE VALVE BEFORE SERVICING.

Refer to Section IV on page 6, for INSTRUCTIONS TO ADD STEM PACKING.

5.0 POST ASSEMBLY INSPECTION

Turn the handle to fully open and close the valve. Check for binding, rubbing or any resistance to smooth operation.

II. COMPONENT IDENTIFICATION

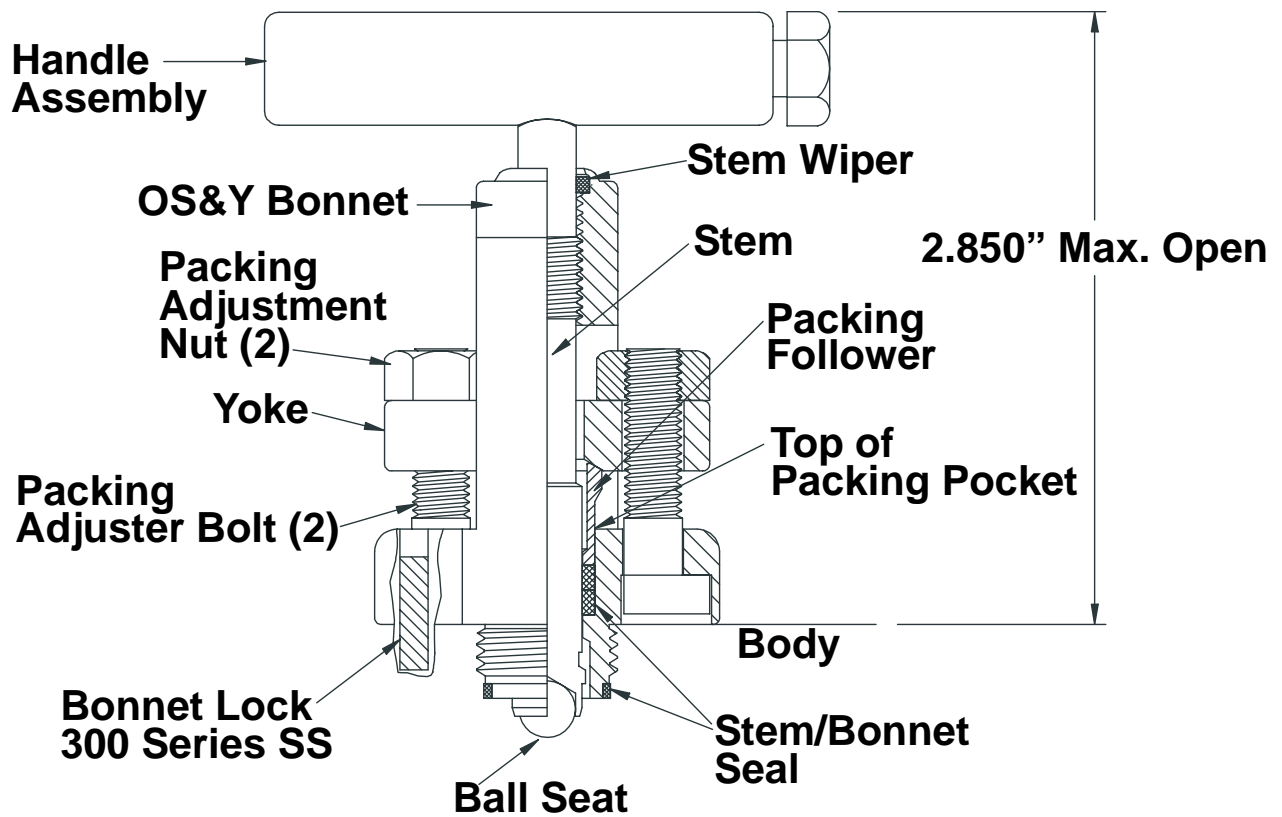


Figure 1

III. PACKING ADJUSTMENT INSTRUCTIONS

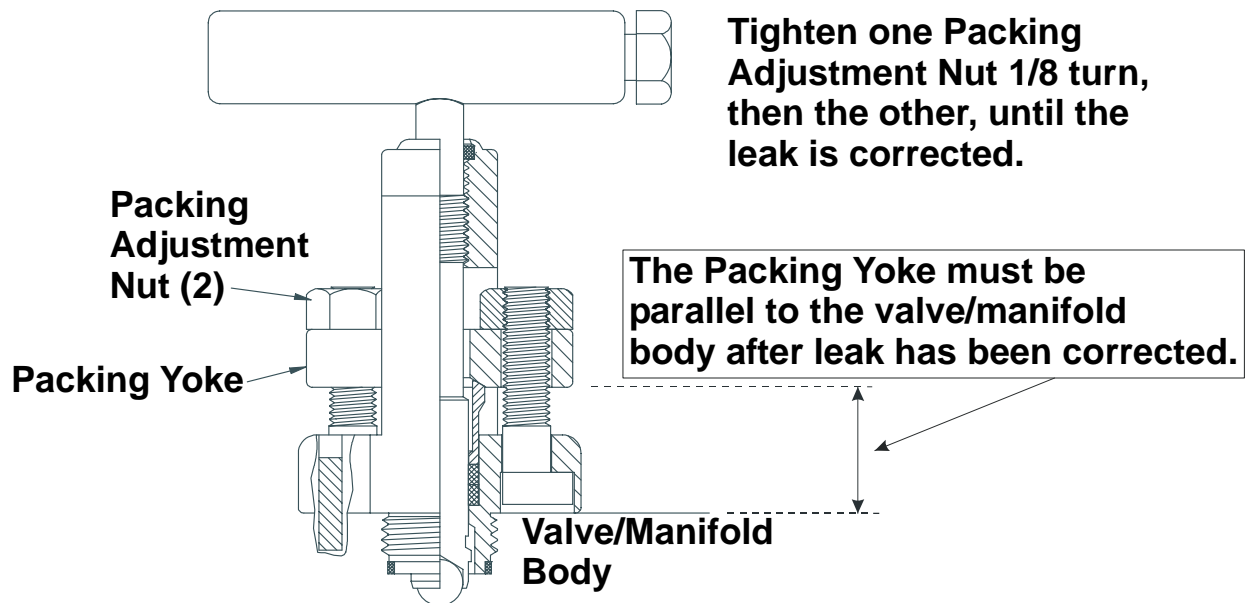
Tools Needed: 7/16" Open-End Wrench

NOTE: The stem packing adjustment can be performed safely while the valve or manifold is under full line pressure.

NOTE: The stem packing is never "replaced". If the following procedure does not correct the leak, the stem packing has been depleted and new packing must be added. See Section IV, beginning on page 6, for INSTRUCTIONS TO ADD PACKING.

To adjust the stem packing, tighten one Packing Adjustment Nut 1/8 of a turn, then the other, until the leak is corrected.

Both nuts must be tightened equally, so that the Packing Yoke remains parallel to the valve/manifold body.



IV. INSTRUCTIONS TO ADD PACKING

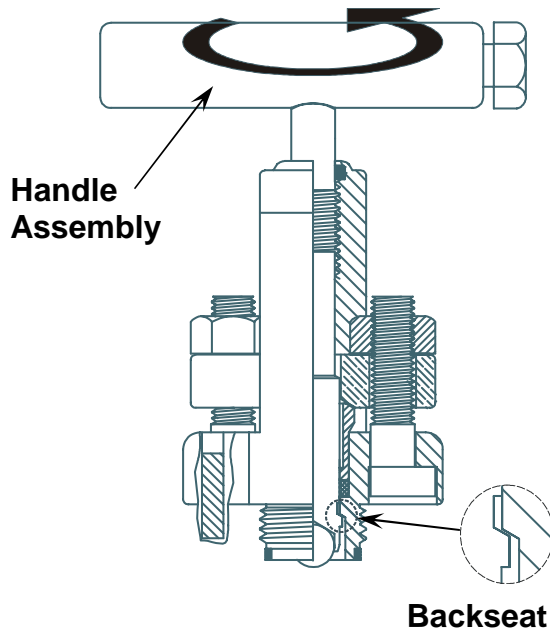
Tools Needed: 7/16" Open-End Wrench, Needle-Nosed Pliers, Knife

1.

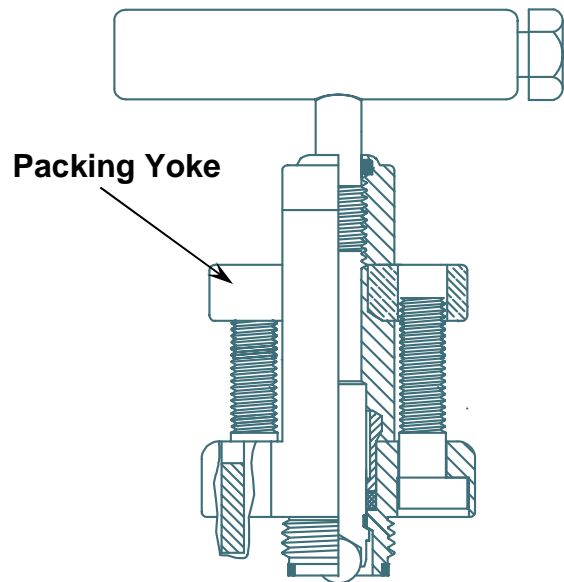
CAUTION

**REMOVE ALL PRESSURE FROM THE VALVE BEFORE SERVICING.
FAILURE TO DO SO MAY RESULT IN SERIOUS INJURY OR DEATH.**

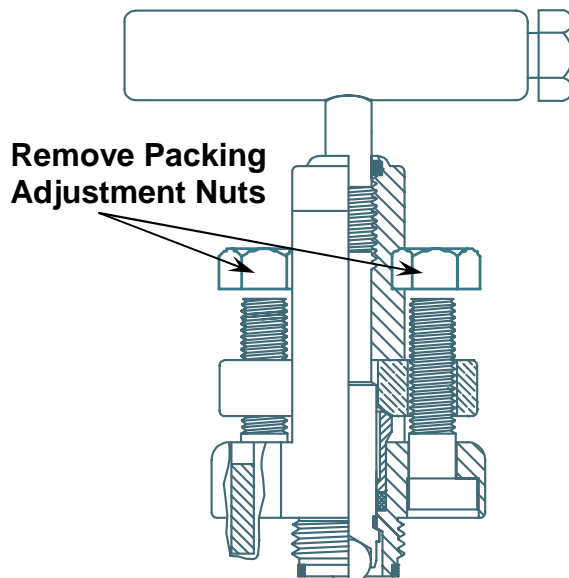
2. Backseat the Stem by turning the Handle Assembly counter-clockwise.



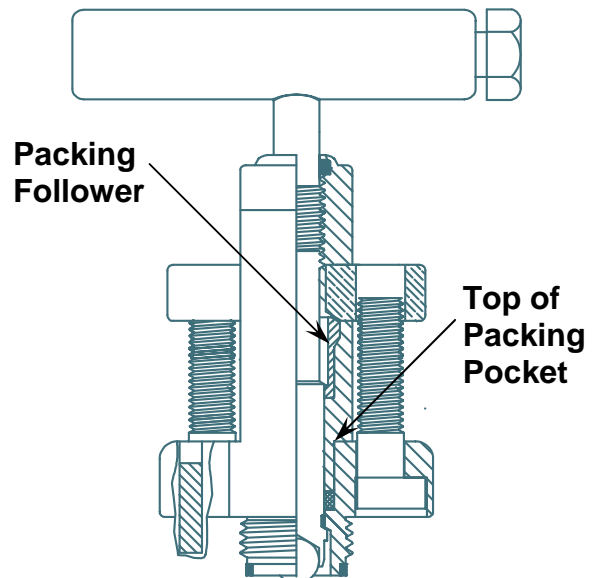
4. Pull Packing Yoke up as far as possible.



3. Using the 7/16" open-end wrench, remove both Packing Adjustment Nuts.



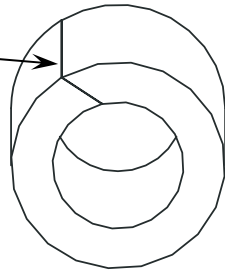
5. Using the needle-nosed pliers, pull the Packing Follower up as far as possible to expose the top of the Packing Pocket.



IV. INSTRUCTIONS TO ADD PACKING

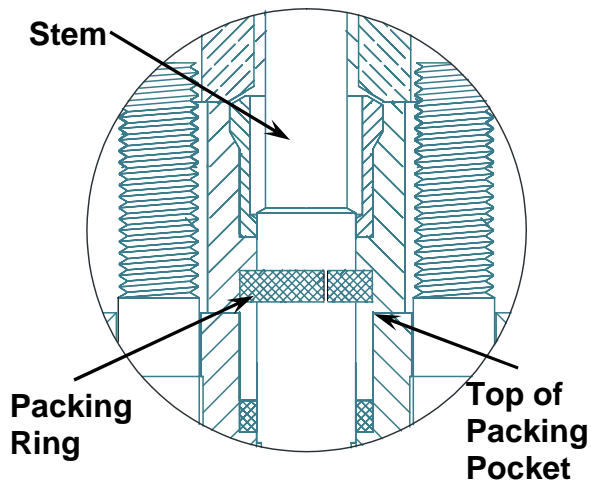
6. Use the knife to cut Packing Rings on an angle, as shown below.

Cut Packing Rings on an angle

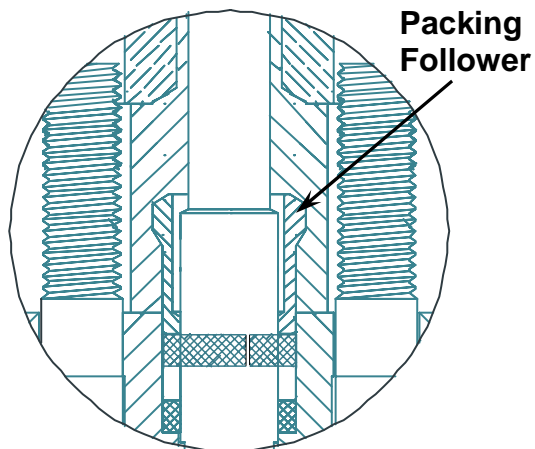


7. Open the Packing Ring and place it around the Stem at the Top of the Packing Pocket.

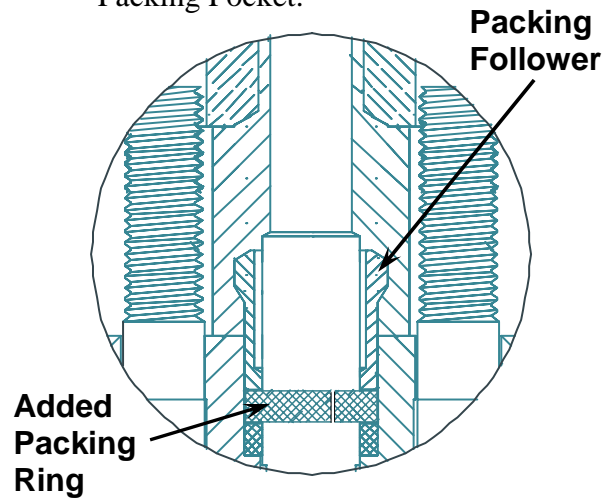
NOTE: Add only one ring at a time and do not try to add more than two rings total.



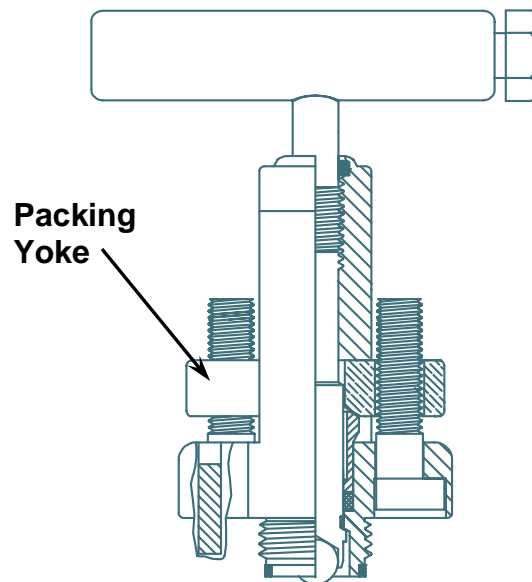
Tamp the Packing Ring into the pocket using the Packing Follower.



8. Using the Packing Follower, tamp all added rings below the top of the Packing Pocket.



9. Lower the Packing Yoke into position, engaging the Packing Adjuster Bolts.

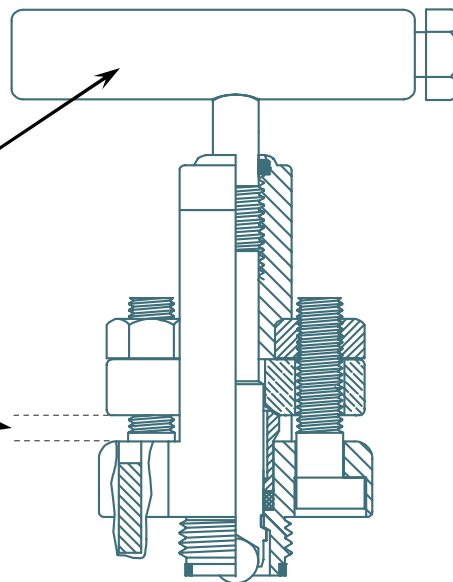


IV. INSTRUCTIONS TO ADD PACKING

10. Install both Packing Adjustment Nuts snug. While operating the Stem, evenly tighten both Adjusting Nuts in 1/8 turn increments, until a smooth but firm packing drag is obtained.

Operate Stem while tightening Nuts evenly.

NOTE: Both nuts must be tightened equally, so that the Packing Yoke remains parallel to the valve/manifold body.



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11. Pressure the unit and check for leaks. If leaks are detected, evenly tighten both Adjusting Nuts in 1/8 turn increments, until corrected.
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12. Once no leaks are detected, your valve/manifold is ready for normal operation. Place the Stem in the desired operating position.