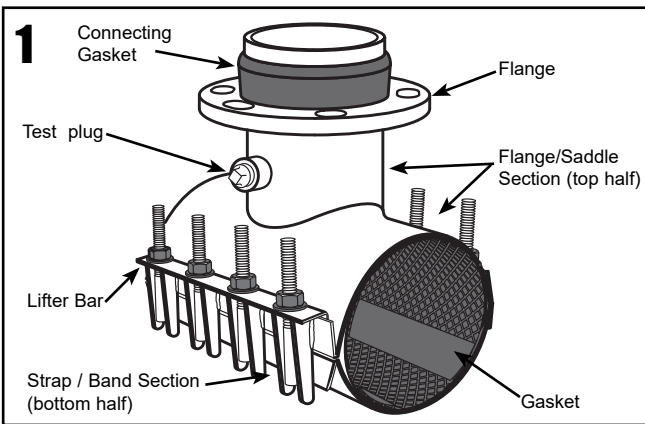


Installation Instructions for the Ford FAST-MJ Tapping Sleeve

Refer to the Ford website (<http://www.fordmeterbox.com>) for additional and most recent installation instructions and product information.

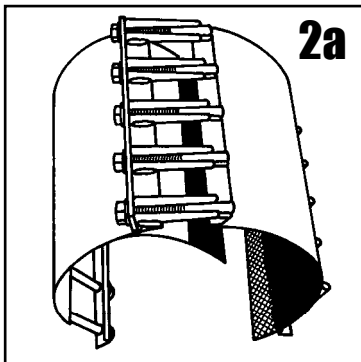


1. Your FAST Tapping Sleeve is warranted to be free of defects at time of shipment. Please visually inspect before installing to ensure no damage has occurred during shipment or storage. **Note: The supplied connecting gasket is NOT a standard mechanical joint gasket. Ensure that it is in good condition and the long tapered end is toward the tapping sleeve and the concave sealing lip is facing the valve.**

Clean any dirt, corrosion, or foreign material from pipe, measure the outside diameter, and check it against the FAST range printed on the tapping sleeve to ensure you have the correct size. Lubricate pipe under and beyond the gasket contact area with a thin coating of pipe joint lubricant. **Note:** Extra attention must be given to the lubrication of AC pipe due to its rough and absorbent nature. If it becomes absorbed, apply more lubricant to AC pipe.

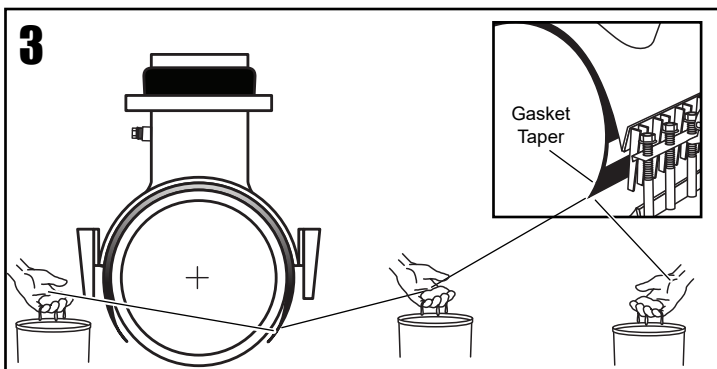
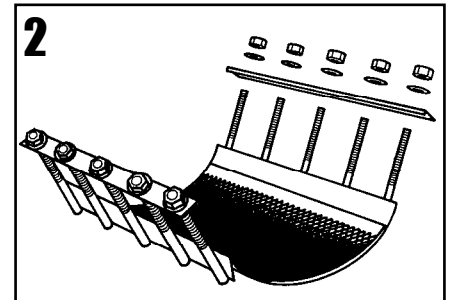


2. Disassemble the tapping sleeve and remove the nuts, washers, and lifter bar from one side of the bolt section. Back the nuts to extreme end of bolts on the other side. **Note:** Units for 4" nominal pipe require removal of nuts on both sides.

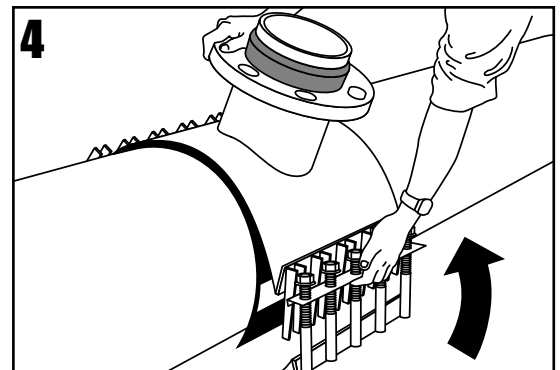


2a. Alternate instructions for 3-section design.

Large diameter sleeves are designed so the two strap sections may be loosely fastened together for easier installation. Assemble the two sections together leaving the nuts at the extreme end of the bolts. **DO NOT COMPLETELY TIGHTEN THE NUTS UNTIL STEP 7.**



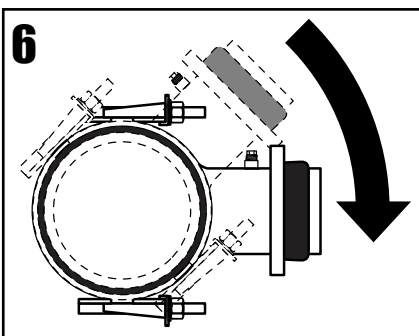
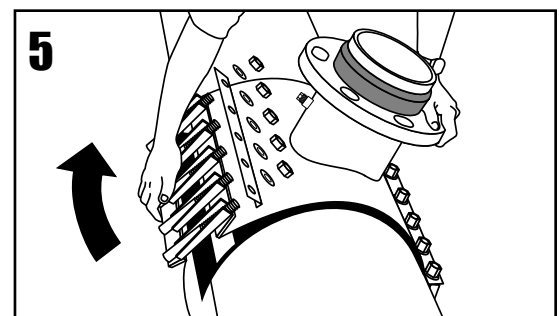
3. Set the flanged section on the top of the pipe. (This will help support the weight of the unit.) Lightly lubricate the outside surface of the gasket tapers. On some sizes, the tapers will overlap each other to completely encircle the pipe.



4. Attach the lifter bar end of the strap section to one side of the flange section. Do not tighten at this time.

Make sure tapered ends of gasket are not folded or rolled against pipe.

5. Pull the other end of strap section (the end with nuts and lifter bar removed) around the pipe, making sure no foreign material is trapped between the pipe and gasket. Position the bolts in the lugs on the saddle section and install the lifter bar, washers, and nuts. Do not tighten nuts. The lifter bar should be hooked over the lug/side bar assembly.



6. With **PIPE AND GASKETS LUBRICATED**, carefully rotate the outlet to the desired angle and check with a level to ensure flange is perfectly vertical and in line with the intended lateral. Make sure that all gaskets are flat against the pipe. Hand tighten several nuts at each location to secure the unit in place.

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7. Beginning with the center bolts joining each section, partially tighten the bolts to reduce the gaps between sections. Work outwardly to each end, partially tightening bolts to maintain an even gap between sections and from end to end.

To achieve proper torque and gaps, partially tighten each bolt several times using the stated sequence. (Work from the middle bolt to the ends, and repeat this process on other sections before increasing torque.) Do not completely close up the gap on one section and attempt to apply proper torque to the other sections.

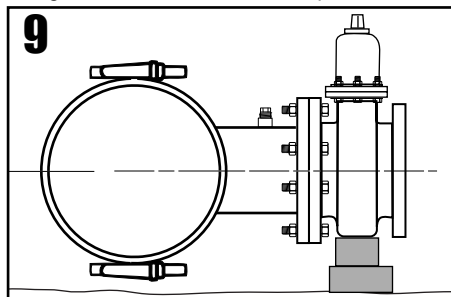
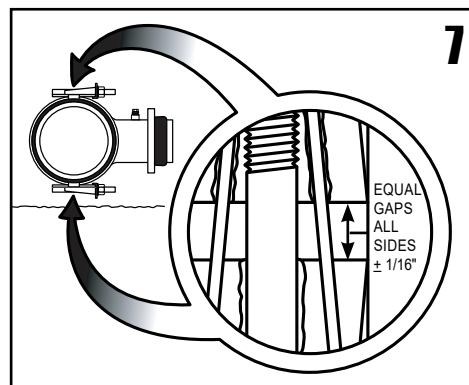
Continue to tighten the bolts to the recommended torque stated in the table below.

RECOMMENDED TORQUE VALUES

STUD SIZE (Nom.)	5/8"		3/4"
FLANGE SIZE (Nom.)	3" - 10"	12"	All Sizes
TORQUE (ft-lb)	75	90	110

At final torque, gaps between sections must be the same, within 1/16" tolerance, at each location and equal from end to end.

Final torque must also be checked several times, including after the tap is made, because the gasket will continue to compress until it is fully seated.



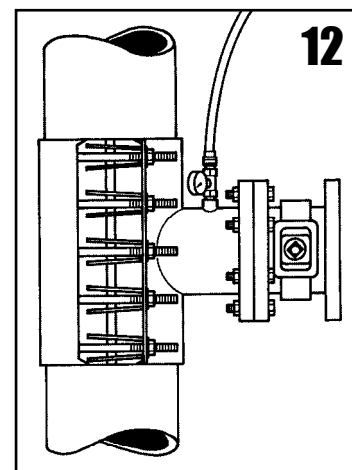
8. Make sure the flange face on the tapping sleeve and the contact area on the MJ valve are clean and free of dirt or debris. Inspect the face of the MJ valve for a smooth, even surface to ensure it will provide proper alignment with the tapping sleeve.
9. Apply a soap-based pipe lubricant to the exposed connecting gasket.
10. Place the open cavity of the valve onto the MJ outlet of the tapping sleeve and align the bolt holes. Note it may be necessary to insert some of the fasteners into certain valves prior to making the connection. Apply blocks and shims to support the valve's suspended weight.

11. Insert the fasteners into the bolt holes. Place flat washers and nuts onto the exposed bolt threads.

12. Evenly and alternately tighten the outlet fasteners with the appropriate wrench to maintain an even spacing as the components are drawn together. Continue to tighten the fasteners until the tapping sleeve flange and MJ valve face make solid contact around the outlet. The flange is designed to come face-to-face with the valve.

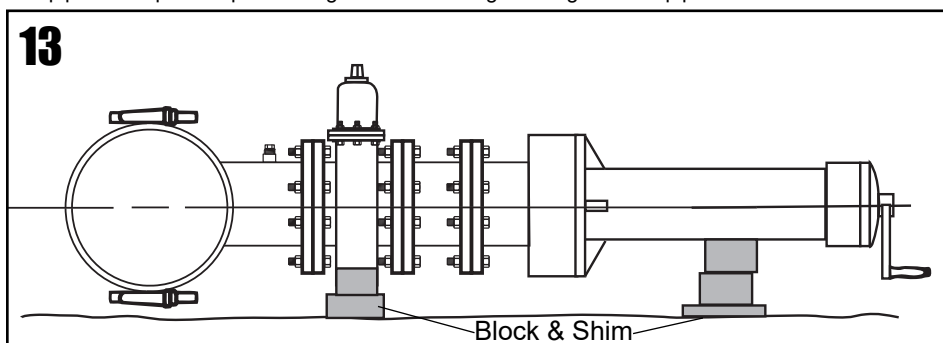
13. Close valve, test valve and sleeve assembly using the tapping sleeve test plug. AWWA C223 recommends "...the installer hydrostatically [water] test the seal between the gasket and pipe. For personal safety reasons, do not use a compressible fluid medium (such as air) to check for water tightness." If a leak is observed, relieve the pressure and re-tighten the bolts to the recommended torque. If the leak continues, remove the tapping sleeve, re-clean the pipe and repeat steps 2 through 7 to reset the gasket against the pipe surface. Maximum recommended torque is

shown in the following table.



MAXIMUM TORQUE VALUES

STUD SIZE (Nom.)	5/8"		3/4"
FLANGE SIZE (Nom.)	3" - 10"	12"	All Sizes
TORQUE (ft-lb)	100	115	135



14. Attach drilling machine to the valve. It is important to check for proper mating and alignment between the valve and the machine. Use blocks and shims.

15. Make the following checks before proceeding with tap.

- a. Gaps between each Tapping Sleeve section are equal from side to side and from end to end.
- b. All clamping bolts are tightened to the proper torque.
- c. All blocking is in place and secure.
- d. Tapping Sleeve, valve, and tapping machine are properly aligned.
- e. Tapping Sleeve outlet and valve face are in full contact.
- f. Correct size cutter has been selected for job.
(FAST Tapping Sleeves allow a full size cutter.)

RECOMMENDED TORQUE VALUES

STUD SIZE (Nom.)	5/8"		3/4"
FLANGE SIZE (Nom.)	3" - 10"	12"	All Sizes
TORQUE (ft-lb)	75	90	110

16. Re-check tapping sleeve bolt torque after tap and before backfilling. Stresses induced during tapping may relax bolt torque. **The use of a torque wrench is recommended and required to ensure proper torque.**

17. To prevent undue stress on the tapping sleeve and valve assembly, make sure the new water main will rest on a well compacted bed with its center line axis matching the center line axis of the valve.

