Storage

Valves are palletized when shipped, which provides suitable protection from weather and sunlight during storage. If palletizing is disbanded and valves removed, remaining valves should be suitably covered or stored elsewhere with the valve stem vertical.

- Always store valves fully closed.
- When possible, keep valves out of the weather.
- In cold climates, keep the inside of the valve drained of any water to prevent freezing.
- Whenever possible, cover valves with a waterproof covering.
- Protect all parts of the valve at all times

Inspection Before Installation

- Check to make sure that the valve end connections are clean and that the valve is not damaged.
- Check opening direction and other details against specification.
- Open and close the valve to make sure it works properly.
- Clean the inside of the valve to remove all contaminants that may affect water system purity.

  Keep the valve closed when placing in trench.

Installation

1. Handle the valve carefully.
2. **Check all bolts for tightness.** Gaskets may shrink during storage and might leak if the bolts are not retightened.
3. Prepare pipe ends in accordance with pipe manufacturer's instructions.
4. Install the valve as per appropriate instructions for the specified joint (flanged, mechanical joint, PVC, etc.)

   NOTE: Only use 1/8" thick rubber "ring" type gaskets Do not use composition or flat full-face gaskets.
5. **Be sure that the water main is properly supported to avoid line stress on the valve. Make sure the valve is properly supported and that no stress is transferred to the adjoining pipeline. Due to the exponential increase in the weight of larger size valves, proper installation bedding and support is essential. Failure to make provisions for the weight of the valve can result in design and/or installation failure.**
6. In buried applications, make sure that the valve box does not transmit traffic loads or other stress to the valve.
7. Do not use valves to force a pipeline into position. Do not deflect any valve/pipe joint.

Reference Material

These reference materials are available and should be helpful in the installation and testing of gate valve products.

ANSI/AWWA C515	Reduced-Wall, Resilient-Seated Gate Valves
ANSI/AWWA C500	Metal-Seated Gate Valves - 3" - 48"
ANSI/AWWA C600	Installation of Ductile-Iron Water Mains
ANSI/AWWA M23	PVC Pipe - Design and Installation.

All installation, operation and maintenance instructions issued by the manufacturer of the pipe and the valves.

Valve user guides as published by MSS.

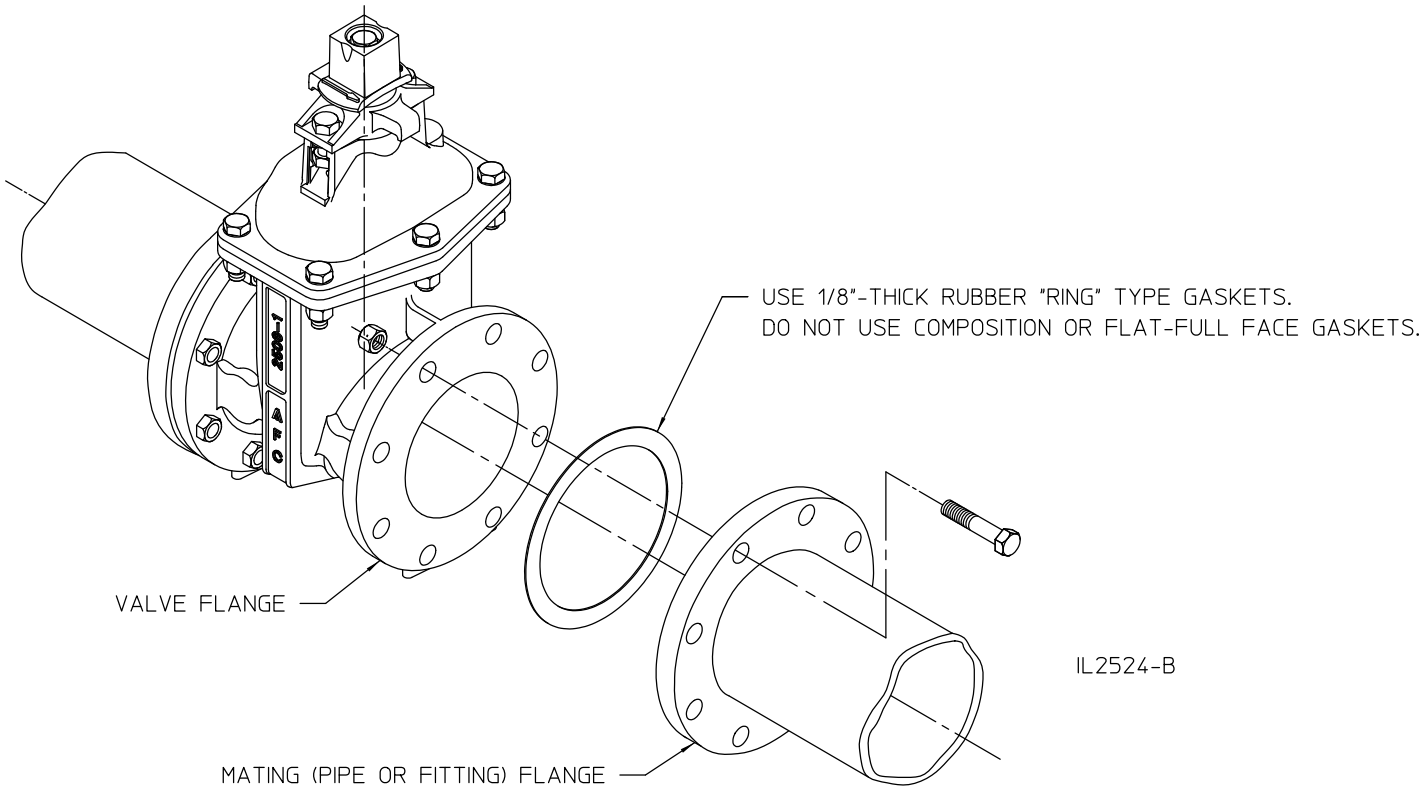
NFPA-24	Private Fire Service Mains and Their Appurtenances

These industry practices have been listed to help you make a safe and acceptable installation of a gate valve.

Testing Procedure

1. Check to see that all valve joints and pressure containing bolting are tight.
2. Valves should never be tested beyond the rated working pressure.
3. After testing, steps should be taken to relieve any trapped pressure in the body of the valve.

SERIES 2500 - CLASS 125 FLANGED VALVE INSTALLATION, 4"–12" SIZES



ALPHA™ Restraint Joint Installation Instructions

Read installation instructions first before installing. Check parts to ensure that no damage has occurred during transit and that no parts are missing.

ALPHA restraint joints will accommodate the following pipe types and sizes:

ALPHA

- Ductile iron per AWWA C151
- PVC per ASTM D1785 (Schedule 40 and 80)
- PVC per ASTM D2241 (SDR 21)
- PVC per AWWA C900
- HDPE per AWWA C906 (SDR 9, 11, 13.5, and 17)

ALPHA XL

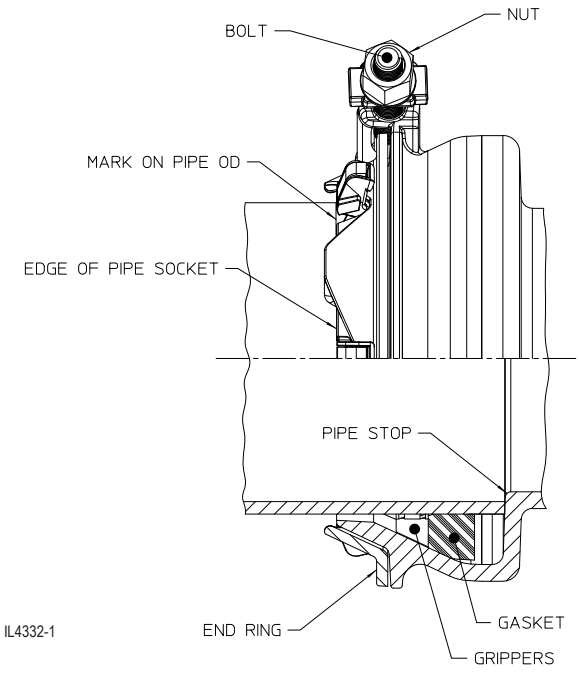
- Gray iron (Class A, B, C, and D)

Nominal Size (in)	ALPHA OD Range (in)	ALPHA XL OD Range (in)
4	4.50 - 4.90	4.80 - 5.10
6	6.60 - 7.00	6.90 - 7.10
8	8.60 - 9.10	9.05 - 9.40
10	10.75 - 11.20	11.10 - 11.45
12	12.75 - 13.30	13.20 - 13.60

1. Compare diameter of pipe with those listed above to ensure that the correct size joint has been selected.
2. Remove any scale or debris that could interfere with the grippers' engagement with the pipe. Clean the pipe surface wherever the gasket will come in contact with the pipe, and check to see that the pipe surface is smooth (no depressions, projections, gouges, etc.) where the gaskets seal against the pipe. Also verify that the pipe is round within the OD limits described in step 1 and that the pipe cut is square.
3. Mark the OD of the pipe as a means of verifying full insertion in the joint. The pipe should be marked at the following locations as measured from the end of the pipe.

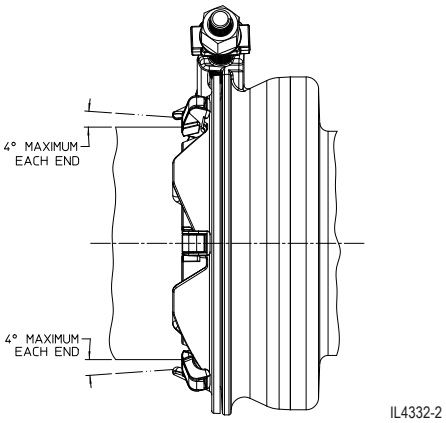
Nominal Size (in)	Distance From the End of Pipe (inches)	
	ALPHA	ALPHA XL
4	3.50	4.25
6	3.75	4.00
8	5.00	5.50
10	5.13	5.63
12	5.38	6.00

4. Lubricate the gasket and pipe surface with a suitable gasket lubricant.
5. With the nut unthreaded to the end of the bolt and the end ring rotated as far counterclockwise as possible, insert pipe into the ALPHA socket until it contacts the pipe stop. The mark applied to the pipe OD in step 3 should be aligned with the edge of the pipe socket.



6. Set the desired pipe deflection angle (4° maximum). ALPHA XL installations on pipe at the top of the OD range may have limited deflection (2° maximum).

Note: Do not deflect pipe joint after installation.



7. Tighten nut until the gasket contacts the pipe and the pipe is snugly held in place. This should happen after applying approximately 10-15 ft-lbs of torque.

8. Tighten the nut to the torque value shown in the table below and confirm that the grippers are contacting the pipe.

Nominal Size (in)	Torque (ft-lbs)
4	30
6	30
8	45
10	45
12	45

Note: Do not overtorque or retighten. If a good seal is not achieved after tightening nut to the torque value shown in the table above, check condition of pipe (Step 2), verify maximum pipe deflection is not exceeded (Step 6), and ensure pipe is fully inserted into the socket and contacting the pipe stop.

9. Confirm proper installation by pressurizing the line and checking for leaks.

10. Backfill and compact carefully around the pipe and joint.

PRECAUTIONS

1. Make sure no foreign material is trapped between the gasket and pipe, between the grippers, or in the end ring mechanism.
2. Carefully inspect gasket for damage and ensure that the cut end of the pipe has been sufficiently deburred to prevent damage to the gasket during installation.
3. Keep bolt threads free of debris to allow proper tightening.
4. To ensure proper nut tightening, use of a torque wrench with a 1-1/16-inch deep-well socket is recommended. Do not overtorque. Do not use an impact wrench.
5. Do not strike or pry on the joint with hammers, shovels, or other equipment.
6. Operating pressure shall not exceed whichever is lower; the rated working pressure of the pipe, or that of the adjoining valve or hydrant.
7. When used with HDPE pipe, application shall be limited to service with water temperature between 32° F and 85° F.
8. For cold weather conditions (below 40° F), performance can be improved by warming the joint and gasket.
9. Per ANSI/AWWA C605, which governs the installation of PVC pipe, the factory bevel on PVC pipe may need to be removed or shortened to ensure gasket contact when used with fittings, valves, hydrant and other appurtenances.
10. The use of ALPHA restraint joints on valves and fire hydrants shall be limited to buried (non-exposed) applications.
11. ALPHA is not intended for use on the plain end of a fitting, or other similarly hard material.