

# Fuseal<sup>®</sup> II, 1½"-6" Fuseal<sup>®</sup> MJ Installation Training

+GF+

- Fuseal joint preparation
  - Setting up 1½"-6" joints
  - Further information
  - Written test
- # 236 – Fuseal II



## Pipe & Fitting Inspection & Storage

Pipe & fittings should be inspected upon arrival for obvious shipping damage.

Store pipe and fittings in a dry location, protected from direct sunlight.

If material is to be stored outside, it should be covered with a light colored tarp to be kept dry and protected from UV damage.

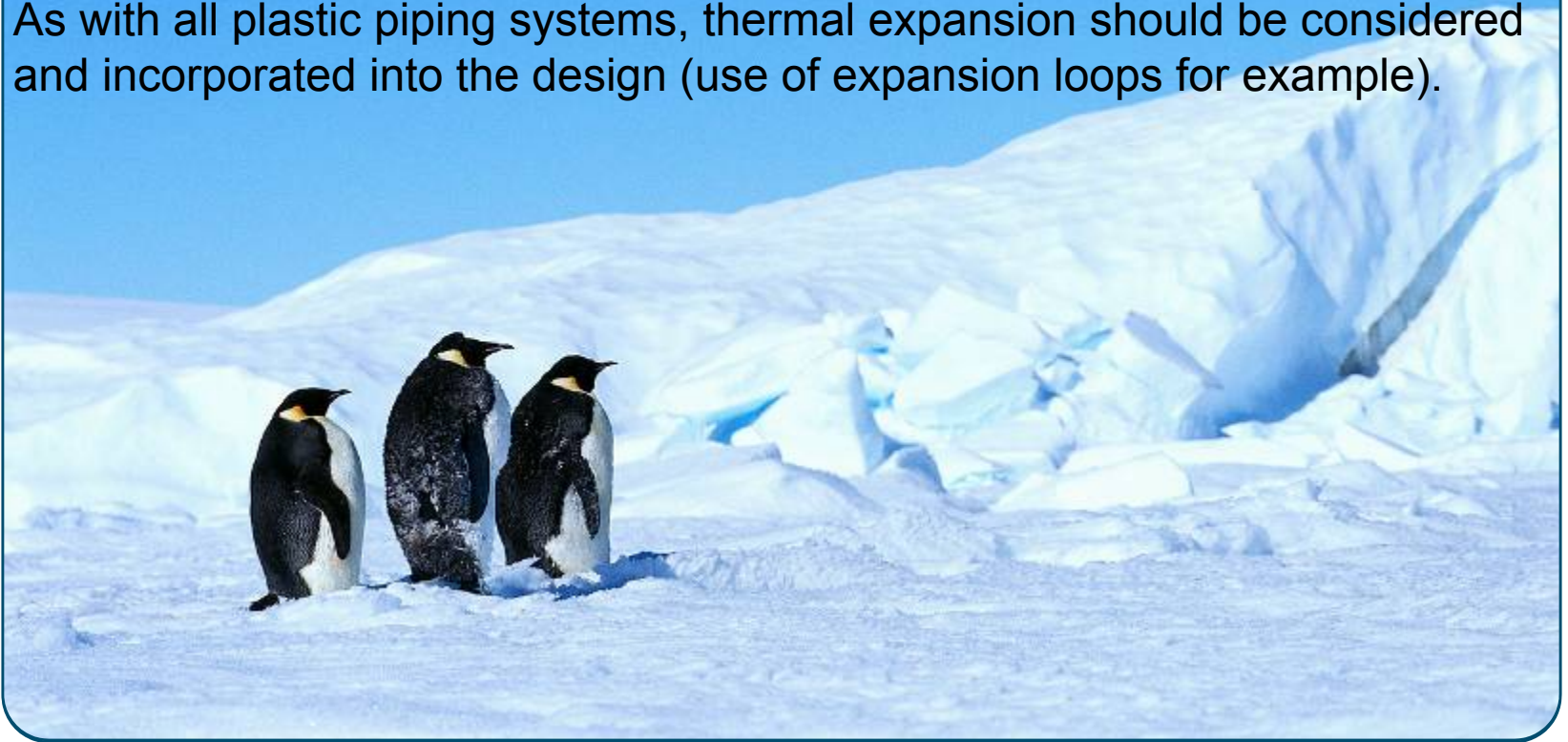
Pipe should be laid on a flat surface to prevent warping.



## Installation Environment

Material and fusion machine must be the same temperature prior to fusion. This can be achieved when components and machine are in the same environment for 2 hours.

As with all plastic piping systems, thermal expansion should be considered and incorporated into the design (use of expansion loops for example).



## Pipe Preparation 1½" - 6"

1.

### Cut pipe end square with axis of pipe!

Use a fine tooth hand saw and miter box, a power cutoff saw with blade for plastic or a wheel type pipe cutter for plastic.

**\*\*Ratchet Type pipe cutters are not recommended**

**Regardless of tool, pipe needs to remain round and square.**



2.

**Chamfer the pipe end to ease insertion of the pipe and to prevent the fusion coil from being damaged.**

For 6" only:  
The shown chamfering tool is from Noga Deburring System [www.noga.com](http://www.noga.com) which can be purchased from your distributor.



For 1½"-4":  
The shown chamfering tool is from Reed Mfg. Co. [www.reedmfgco.com](http://www.reedmfgco.com) Part no. 3,807,258. Which can be purchased from your distributor.





## Pipe & Socket Preparation 1½" - 6"

**3.**

Vigorously **sand the outside surface of the pipe** where it enters the fitting socket.

**Must use 60 grit abrasive cloth!**

**4.**

**Clean sanded pipe surface and inside of fitting socket with Isopropyl Alcohol (\*IPA).**

The alcohol concentration has to be at least 70%!

Do not handle the freshly cleaned surfaces before assembling.

If the fittings have become excessively dirty due to the atmosphere, collars should be carefully removed and fittings hub and collar cleaned of debris and dirt. Care should be used when removing collar.

\*(For proper use and safety regulations of IPA, please see supplier's Material Safety Data Sheets)

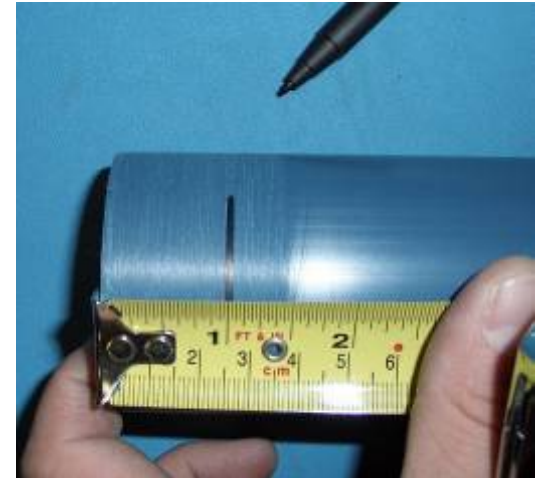


# Pipe & Socket preparation 1½" - 6"

5.

Mark socket depth on the pipe.

Fitting	Socket depth
1½"	7/8" / 2.2 cm
2"	1" / 2.5 cm
3"	1-1/16" / 2.7 cm
4"	1-1/16" / 2.7 cm
6"	1-9/32" / 3.3 cm

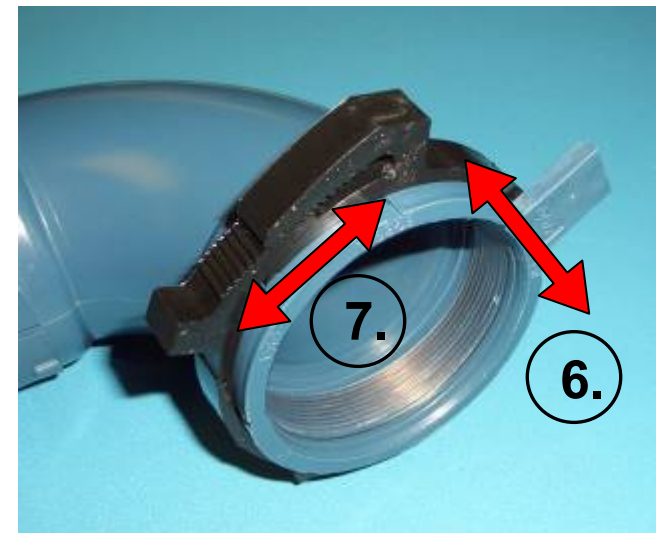


6.

Rotate the fusion collar for easy access to the duplex receptacle.

7.

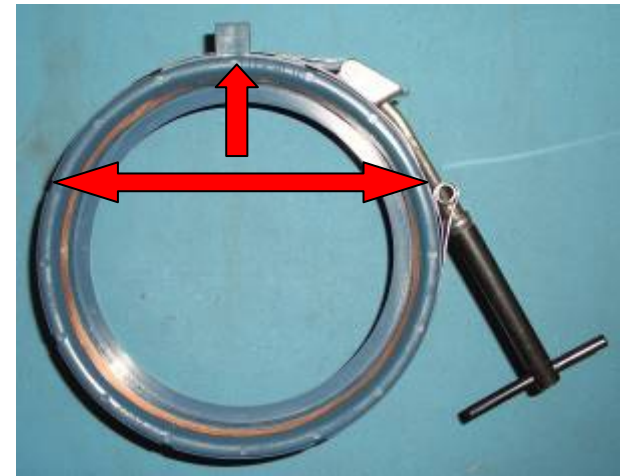
Rotate the plastic clamp to orient the ratchet closure to the right or left of the duplex receptacle.



## Setting up 1½" - 6" joints

7.1

For 6" joints only, fit the steel band clamp to orient the T-handle on the right or left side of the duplex receptacle.



8.

**Insert the pipe into the fitting and push to the pipe stop. The pipe must be fully inserted into the fitting socket to the pipe stop. Rotate the collar so the socket depth mark is visible when looking at the duplex receptacle.**

**Check socket depth mark to be sure the pipe is fully inserted.**



## Setting up 1½"-6" joints

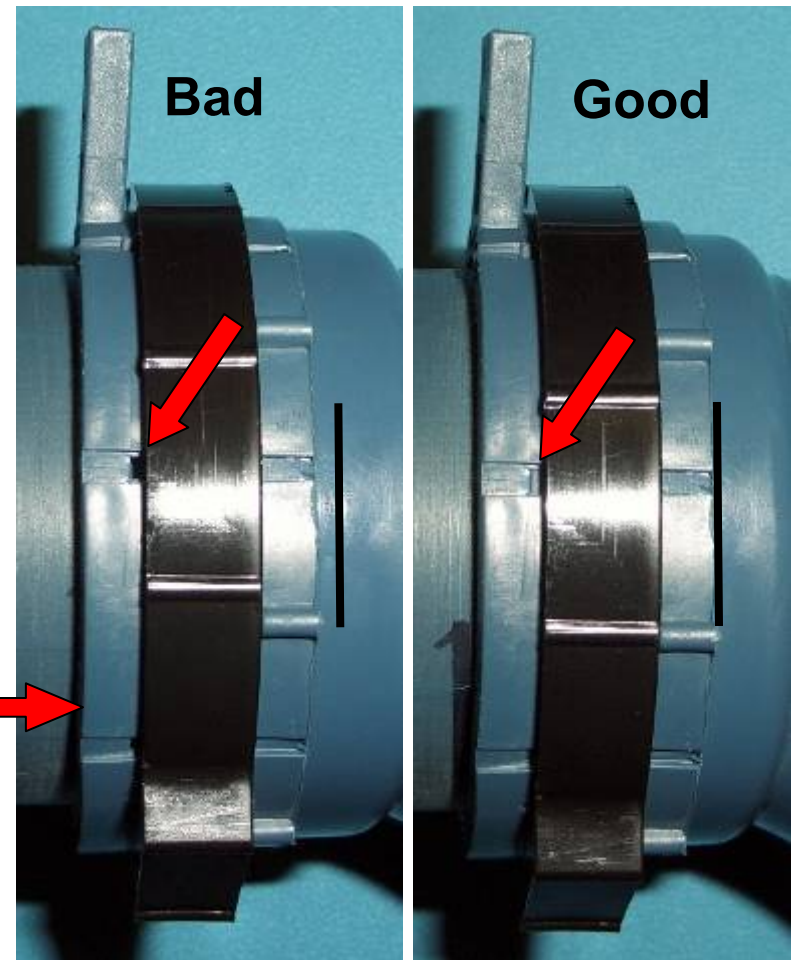
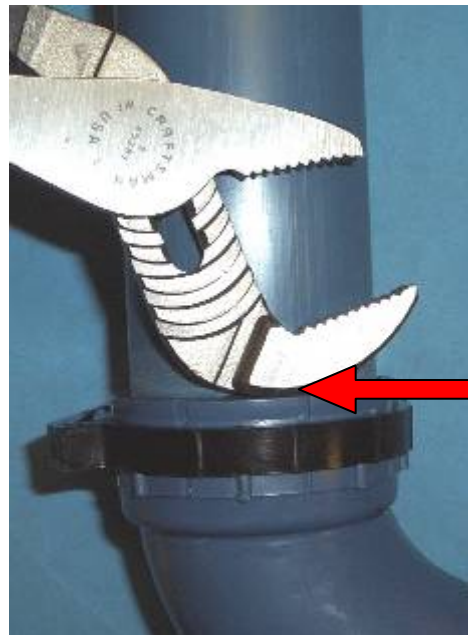
9.

**The fusion collar must be fully seated on the hub of the fitting socket.**

This can be easily checked visually if there is a gap between the fusion collar and the fitting. Tap the fusion collar carefully on the top, for example with a channel lock pliers, if it's not fully seated in the fitting!

A mark can be applied to the bottom of the collar to verify proper seating.

The gap is not visible on 6" fusion collars with steel band clamps so the mark is required.





## Setting up 1½"-6" joints

10.

**Tighten the clamp.** Proper clamp tightness will result when the pipe can not be easily rotated in the fitting socket.

Use a channel lock #440 for 1½"-3" plastic clamps and a channel lock #460 for 4" plastic clamps.



For 6" only: Tighten the steel band clamp using the T-handle.



**Note:** Clamp does not prevent pipe from being pulled out during handling.

## Setting up 1½"-6" joints

11.

**Check the continuity of every fusion collar with the continuity tester before fusing.**

A green light will indicate a good fusion collar.



**MSA250**



**Electro Plus®**

12.

**Connect the factory-supplied fusion cables to the duplex receptacle of the fusion collars.**

Check how many joints are possible per fusion cycle.



13.

**See the Instructions for the Electro Fusion Machine Trainings.**

MSA250-SE or -EX Multi  
Training # 236 – MSA250



Electro Plus®  
Training # 236 – Electro Plus



## After the Joint Fusion

**14.**

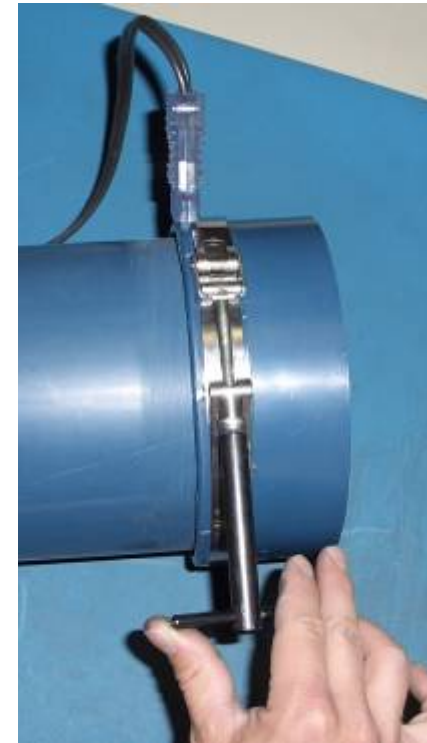
**Tighten the band clamps within 30 seconds after the fusion cycle is finished!**

For 1½"-4", compress the ratchet clamp closure on the band clamp; do not exceed 1 to 2 clicks.

If the clamp breaks, replace immediately.



For 6" only: Tighten the steel band clamp approximately one full turn.





## End of the Installation

**15.**

**Allow the joint to cool to the touch before testing.**



**End of the Installation**

**The plastic clamps for 1½"- 4" can stay on the fittings.** If you must remove them, wait for the joint to cool and remove with caution as the clamp is under pressure and may fracture.

**The steel band clamp on the 6" fittings can be removed after a cooling time of 10 minutes.**

### Testing

**Joints may be pressure tested 10 minutes after completion of fusion. Test in accordance with local plumbing codes. All selections of the system can be tested with up to 30 feet head of water.**

**It is a good plumbing practice to test a small section (20 fittings) of the fused piping system first, to ensure proper installation procedures are being performed before continuing with the completion of the system.**

**To re-fuse a leaking joint, drain any liquid from the area surrounding the joint and allow it to dry, then repeat steps 10 through 15, using a new plastic clamp for sizes 1½" through 4". If this does not fix the leak, it is recommended that you cut out the leaking joint and replace. Multiple re-fusions are not recommended.**

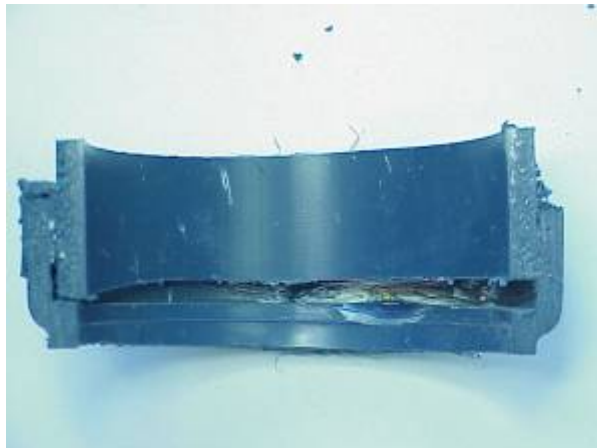
# Main causes of a systems failures!



**Pipe was not full inserted to the pipe stop!**



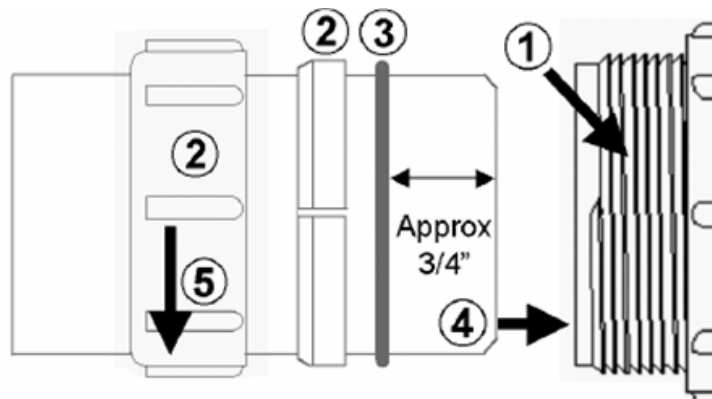
**Pipe and fitting were not cleaned!**



**Pipe was not cut square!**

# Fuseal® MJ Installation Instructions

- ① Lubricate threads of fitting with a silicone based lubricant such as Dow Corning 111.
- ② Slide nut and grabber ring over pipe, with tapered side of grabber ring facing the nut.
- ③ Slide o-ring over pipe, approx.  $\frac{3}{4}$ " from end.
- ④ Insert pipe into socket bottom, then slide grabber ring against o-ring.
- ⑤ Tighten nut by hand, then with our spanner wrench (P/N 8100 for 1½"-2", P/N 8101 for 3"-4") until joint is securely tightened. This is achieved when the spanner wrench "pops" off the nut ridges.





## Further Information



If you have any questions regarding the Fuseal System contact your **+GF+ Area Sales Manager.**

For further information about the fusion units, see the instruction manuals.  
**The machines need to be calibrated and serviced every year according to the service label on the machine.**

For specific questions about the fusion units, contact our Machine Service Department.  
Address for Machine Service and technical questions:

**George Fischer Inc.  
Machine Service Department  
2882 Dow Avenue  
Tustin, CA 92780**

**Phone: (714) 368-4284  
Fax: (714) 731-9056**

Place business card here!!

