

# MUELLER<sup>®</sup> GAS

## Shur Stop™ Electrofusion Fitting

4" – 12"

SDR 11 - 11.5 - 13.5

Form 14960 - Rev 10/24

**⚠ WARNING:**

1. Read and follow instructions carefully. Proper training and periodic review regarding the use of this equipment is essential to prevent possible serious injury and/or property damage. The instructions contained herein were developed for using this equipment on fittings of Mueller manufacturer only, and may not be applicable for any other use.
2. Do not exceed the pressure ratings of any components or equipment. Exceeding the rated pressure may result in serious injury and/or property damage.
3. Safety goggles and other appropriate protective gear should be used. Failure to do so could result in serious injury.
4. Pressure test, check for and repair leaks in all fittings and components each time one is installed or any joint or connection is broken. Failure to find and repair a leak from any source in the fittings, bypass lines or equipment could result in an explosion and subsequent serious injury and/or property damage.
5. MUELLER<sup>®</sup> Drilling Machines and Equipment have been carefully designed and engineered to work together as a unit. The use of equipment manufactured by someone other than Mueller Co. may cause excessive wear or a malfunction of the MUELLER machines.

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All warranties, expressed or implied, for Mueller Drilling Machines are rendered null and void if the machines are used with shell cutters or equipment manufactured by someone other than Mueller Co.

# MUELLER Shur Stop™ Electrofusion Fitting

## INSTALLATION GUIDE

Mueller Shur Stop Electrofusion fittings with part number H-27255 in sizes 4", 6", 8" and 12" are specifically designed to be used with the Mueller Shur Stop Line Stopping system of Machines. This guide is a reference to ensure proper installation of these fittings.

As a general reference it is good practice to follow the Generic Electrofusion User Guide for Field Joining of Polyethylene Gas Piping TR-49 2020 published by the Plastics Pipe Institute.

These recommendations closely resemble information contained in TR-49 2020 with specific information added for Mueller Shur Stop Fittings.

Pipe preparation is perhaps the most important and least understood aspect of making a sound electrofusion joint. Improper pipe preparation is overwhelmingly the leading cause of unsuccessful electrofusion joint installation because the installer may not completely understand the goal of pipe scraping, which is to remove a thin layer of the outer pipe surface (see trouble-shooting section for more details) to expose clean virgin material beneath. Additionally, contamination is the second leading cause of failures. Installers must appreciate the vital need to keep all surfaces of the pipe and the electrofusion absolutely clean and free of contamination or other foreign mater.

Proper installation techniques, installer understanding of and training to these techniques, and effective examination before installation are key to a successful installation.

Mueller Shur Stop Electrofusion fittings are designed for use on pipe made to standard diameters.

Pipe in dimensions for Iron Pipe Size (IPS) Pipe that is outside of the diameter tolerance band of the appropriate pipe standard should not be used. The following tables include diameters and tolerances from ASTM D2513 and can be used for reference when measuring gas distribution pipe diameter to ensure that is within tolerance and compatible with Mueller Shur Stop Line Stopper Fittings.

**Table 1:**  
**Standard Pipe Dimensions -**  
Iron Pipe Size (IPS) ASTM D2513

Nominal Pipe Size	Nominal Diameter (inches)	Tolerance (+/-)
4 IPS	4.500	0.009
6 IPS	6.625	0.011
8 IPS	8.625	0.013
12 IPS	12.750	0.017

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### Roundness

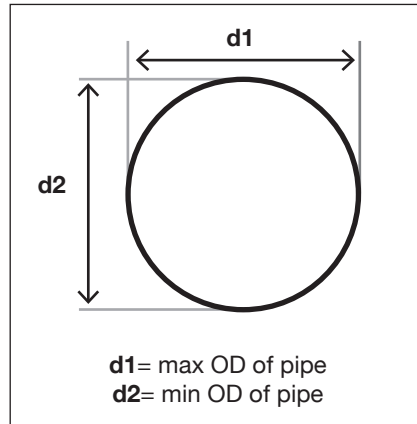
Polyethylene is a flexible material. Although pipe may be round at the time of manufacture, pipe roundness can be affected by a number of conditions to include coiling, storage/stacking, bending, and soil load if buried. The following information can be used to determine if a pipe is suitable for electrofusion joining without the use of re-rounding devices.

The condition of pipe roundness can be expressed in two ways; “out of roundness” and “ovality”. While both are referencing the same basic condition.

Out-of-roundness is the difference in the maximum measured diameter minus the minimum measured diameter. The pipe can be measured with a tape measure or calipers to find the maximum (d1) and minimum (d2) diameter points. The out-of-roundness is calculated as  $d1 - d2$  as measured in the field.

Ovality is the difference between the maximum and minimum measured outside diameters expressed as a percentage. Ovality is calculated as  $(d1 - d2) / D$  average  $\times 100$ .

Pipe out-of-roundness can have a negative effect on electrofusion joint quality. If the pipe is out-of-round and is not corrected, the amount of gap between the pipe and fitting can be too large for the melt expansion to close and for proper heat transfer to occur between the fitting and the pipe. An out-of-round pipe can also increase the difficulty clamping the fitting onto the pipe.



Re-rounding clamps may be needed on either side of Shur Stop electrofusion fittings to ensure that the gap between the pipe and fitting is not too large. The table below can be used for guidance when re-rounding clamps are used.

PIPE SIZE	d1 - d2
4 IPS	.0625 or 1/16"
6 IPS	.125 or 1/8"
8 IPS	.125 or 1/8"
12 IPS	.125 or 1/8"

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### Ambient and Pipe Surface Temperature

Mueller Shur Stop 4", 6", 8" and 12" electrofusion line stopper fittings may be installed down to a minimum outside ambient temperature of 14°F and a maximum outside ambient temperature of 110°F.

Actual pipe surface temperature should not exceed 110°F during electrofusion.

If pipe surface temperature is above 110°F, use methods such as tents to reduce pipe surface temperature to below 110°F.

Pipe Preparation – Reference Generic Electrofusion User Guide for Field Joining of Polyethylene Gas Piping TR-49 2020 for proper pipe preparation and cleaning before electrofusion.

The Mueller Shur Stop Centering Clamp is used to properly align the Electrofusion Fittings to the pipe during the fusion process. It is designed to evenly distribute the clamping force applied by the operator. After the Centering Clamp is installed properly per Mueller Instructions it is important to check for proper compression of the Shur Stop fitting to the top of the pipe.

This can be accomplished by using the Mueller supplied .3mm metal feeler gauge to check for proper tightness between the pipe and fittings.

Begin with slight compression on the Centering Clamp Handle.

Ensure feeler gauge is cleaned with alcohol wipes before using to prevent any contamination of the electrofusion zone.

Start at the 12 o'clock position and work down to the 9 and 3 o'clock positions. If any of these checks allow the .3mm metal feeler gauge to move fully underneath the fitting continue to tighten the Centering Clamp ½" turn and check again. Stop once the feeler gauge does not go under fittings.

See following pictures. Do this on both sides of the fitting.

**Figure 1.**  
**Guage Checks for Shur Stop 4"-12" Fittings (0.3mm Metal Feeler Guage**



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Once proper compression is verified, stop and begin electrofusion procedure. Do not overtighten as this could cause excessive compression leading to improper electrofusion. If proper compression is not verified by using .3mm feeler gauge the fitting should not be installed.

Mueller Shur Stop fittings are designed to allow some movement of the cold zone pad underneath the fitting. In all Shur Stop fitting sizes the maximum allowable pad movement of the cold zone is ½” from the outside body of the fitting.

Pad migration of more than ½” from the side of the fitting could infer improper compression caused by pipe abnormalities, temperature extremes outside of the recommended limits or excessive compression of the Centering Clamp. The fitting should not be used if pad migration is more than ½” from the side of the fitting.

