

TRITON™

Pipe Fusion System

S-FAQ-Triton



Frequently Asked Questions

Overview

1. How does the TRITON™ Pipe Fusion system work?

The TRITON™ Pipe Fusion system from Watts uses radio frequency (RF) electromagnetic technology to weld plastic pipe. The TRITON system includes a Control Unit, Fusers, and Fittings. The Control Unit plugs into a standard electric outlet and converts 110/120 VAC power to DC power, then transforms the DC power into an RF signal that travels to the Fuser. The Fuser concentrates the high-frequency radio signal into an electromagnetic field that reacts with ferrous materials in the TRITON Fitting to create heat. The heat in turn melts the plastic, creating a hermetic weld.

2. How do you know when the weld is complete?

As the Fitting is heated, the TRITON Fuse-Tel™ indicator emerges on the Fitting to signal a completed weld. The Control Unit display also indicates when the weld is complete.

Overview (continued)

3. How long does it take to complete a weld?

Estimated weld times are dependent on the size of the Fitting, the ambient temperature of the setting, and the conditions. The Control Unit adjusts the welding time automatically.

4. What happens if the welding cycle is interrupted?

The Fitting can be re-welded following the procedure outlined in the TRITON User Guide & Instruction Manual (IOM-TRITON).

5. What applications is the TRITON system suited for?

The lightweight and portable TRITON system is designed for applications utilizing flexible plastic piping. Non-potable applications include geothermal, irrigation, mining, process, and natural gas.

6. What types of Fittings are available for the TRITON system?

TRITON Fittings are offered in the following configurations:

TRITON Fittings
TR12P1 IPS MPT adapters
TR15P1 IPS couplings
TR18P1 IPS tees
TR19P1 IPS elbows
TR24P1 IPS caps

7. What types of Fusers are available for the TRITON system?

The TRITON TRFWP1 Fusers are currently available in five sizes (to standard ASTM D3035):

TRITON TRFWP1 IPS Fusers
Fuser 3/4" IPS
Fuser 1" IPS
Fuser 1 1/4" IPS
Fuser 1 1/2" IPS
Fuser 2" IPS

8. Can I use other power cords with the TRITON Control Unit?

The self-contained and self-calibrating Control Unit comes with a 10' long GFCI-protected power cord and a 20' long coaxial Fuser cable. Only Watts supplied cords should be used with the TRITON system.

9. What radio frequency does TRITON use?

The TRITON system operates on a radio frequency of 13.56 MHz which is designated as an industrial, scientific, and medical (ISM) band.

10. How is the TRITON system different from traditional pipe welding techniques?

The TRITON system eliminates the need for adhesives (and potential VOCs) as well as exposed heating elements (and the potential for burns). The system reduces the time required for welding and pressure testing from hours to minutes; the weld can be pressure tested almost immediately after completion of the weld. (Welding time will vary depending upon the size of the pipe, the ambient temperature, and the conditions). Because TRITON Fittings are joined on the outside diameter of the pipe, water can flow through unobstructed and pressure drop is greatly decreased throughout the plumbing system compared to insert fittings.

The portable TRITON system can be used in field as well as indoor applications. The TRITON Control Unit and Fusers are protected by a GFCI that cuts off electricity to the unit in the event of a ground fault situation.

Usage & Operation

11. What kind of piping works with the TRITON system?

TRITON Fittings can be used with most commercially-available polyethylene piping manufactured to CTS (copper tube size) OD specifications, or IPS (Iron Pipe Size) OD specifications depending on the application. The TRITON system does not work with PEX piping.

12. Can TRITON be used with a manifold?

Yes—copper, steel, or plastic manifolds are an ideal way to provide water to multiple branch circuits. Use the proper TRITON fitting to connect to the manifold.

13. What is the best method for thawing TRITON Fittings?

There are two acceptable techniques for thawing TRITON Fittings: Using low-voltage heat tapes and wraps or using a low-wattage hair dryer on a medium setting.

14. Do I need to sleeve TRITON Fittings for foundation use?

All plastic piping should be sleeved at the entrance and exit points to eliminate pipe abrasion due to expansion and contraction.

15. If I use TRITON Fittings in a trench, which type of backfill should I use?

Please check with applicable building and construction codes and regulations and follow required trenching procedures. If it is consistent with the required procedures, we recommend clean dirt or small-diameter river gravel with no sharp edges, or moderate to coarse grained sand.

16. Can TRITON Fittings be used in concealed spaces?

Please check with applicable building and construction codes for any special requirements. If it is consistent with the required procedures, TRITON Fittings can be used in concealed spaces and can be buried.

17. Can TRITON Fittings be embedded in or used under a concrete slab or trench?

Please check with applicable building and construction codes for any special requirements. If it is consistent with the required procedures, TRITON Fittings can be embedded in a concrete slab or in a trench.

18. Do I have to consider expansion when installing a TRITON plumbing system?

Yes, plastic pipe does expand and contract while in service. Accommodations should be made during pipe installation to allow for this.

19. Do I need a special certification or training to work with the TRITON system?

We recommend that you take a TRITON training class and become proficient in the proper use and handling of the system. Classes will be available online and through your local TRITON representative. In addition, always read and follow the TRITON User Guide & Instruction Manual (IOM-TRITON).

20. What should I do if my TRITON Control Unit fails and I can't restart it using the troubleshooting suggestions in the User Guide & Instruction Manual?

There are no user-serviceable parts on the TRITON Control Unit or Fusers. If the unit will not operate, it must be returned to the factory for evaluation, repair, and/or replacement if under warranty. Warranty information can be found in the User Guide & Instruction Manual (IOM-TRITON).

21. Does the TRITON system come with a battery pack?

No, battery packs are not available for the TRITON Control Unit at this time.

22. What happens if the GFCI activates and shuts the Control Unit off?

In the event of ground fault (such as due to power surges or wet operating conditions), a GFCI will cut off the power supply to the TRITON Control Unit. The GFCI is a Primary Safety Device, and the causes of a GFCI trip must be corrected prior to resetting the GFCI switch.

23. Will working with the TRITON system on a very cold or very hot day affect the welding process?

Unlike other pipe welding methods, the TRITON Control Unit will automatically adjust the welding cycle for differing ambient temperatures.

24. What is the recommended test method for TRITON Fitting joints?

Please check with applicable building and construction codes for the required procedures. If it is consistent with the required procedures, the TRITON Fittings can be water- or air-pressure tested (no more than 100 psi air pressure for a minimum of 15 minutes).

25. Since the TRITON Fittings have unrestricted flow, can I reduce the size of my pipe and still meet the fixture flow requirements?

That depends. Typical fixtures operate at 2.5 gpm or less. However, some high-flow fixtures require higher flow rates to operate as intended.

Features

26. Are TRITON Fittings UV protected?

Yes, TRITON Fittings are formulated with a carbon black additive and are UV stable.

27. What are the effects of scale with TRITON Fittings?

The TRITON Fittings are resistant to mineral scale accumulation on the interior surface.

28. Are TRITON Fittings freeze resistant?

TRITON Fittings are freeze resistant, but not freeze proof. Precautions should be taken to protect the Fittings and pipe from exposure to temperatures below 32°F (0°C).

29. Can TRITON Fittings be reused?

No. Fittings cannot be reused and only new Fittings should be used for fusing pipe.

30. Are TRITON Fittings recyclable?

TRITON Fittings are made from polyethylene and can be recycled with similar plastics.

31. Will TRITON Fittings increase the sound of water flowing through the plumbing system?

The TRITON Fittings are very quiet and will not increase the amount of audible noise transmitted while water is flowing through them.

32. Will water hammer affect the TRITON system?

All plastic piping greatly reduces the effects of water hammer.

33. What is the best way to secure runs of plastic pipe?

Please check with applicable building and construction codes for the required procedures. If it is consistent with the required procedures, securing the pipe at 32" intervals both in the horizontal and vertical position is suggested.

34. Can I use a threaded metal fitting with TRITON Fittings?

Yes. The threaded TRITON Fittings are designed to accommodate metal-threaded fittings.

35. Do I need to sanitize a TRITON system before I commission the building?

Please check with applicable building and construction codes for the required procedures. If it is consistent with the required procedures, a three- to five-minute flush using clean, potable water to clean the system of any debris is suggested.

36. If the plastic piping becomes kinked, can I re-form it?

We do not recommend re-forming kinked plastic pipe.

37. Are the TRITON Fittings corrosion resistant?

The TRITON Series TRP1 polyethylene Fittings are very corrosion resistant.

Please refer to the TR-19/2007 Chemical Resistance of Thermoplastics Piping Material document available in the Resources section on TritonPipeFusion.com.



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