

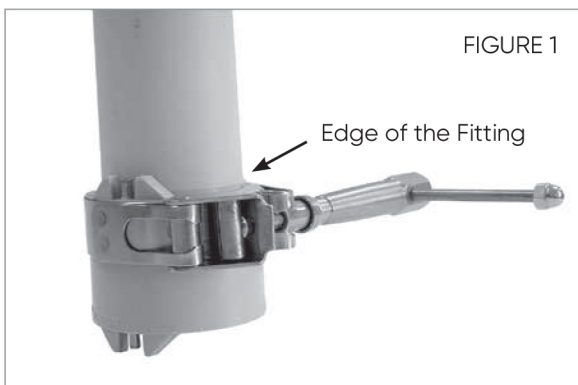
Installation

For installation in cold weather, refer to the 'Cold Weather Fusion' procedure described later in this section.

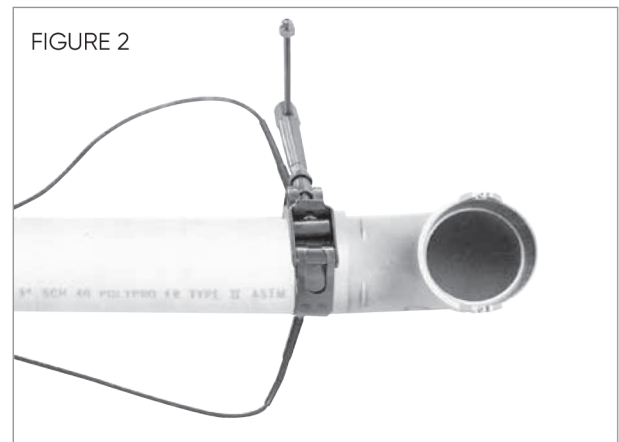
Before making the Enfield joint, it is important to check with an RMS meter, that the power source is providing between 96 and 162 volts @ 40 to 70 cycles with 11-amp capacity. The Enfusion hand held control unit provides for normal power variations, however generators should be checked to assure the correct output is always being provided.

Ensure Enfusion control unit, pipe and fittings are allowed to thermalise before beginning installation.

1. Completely unwind all cables from the Enfusion hand held machine's case before use.
2. Using a suitable mitre saw/chop saw or tube cutter designed for plastic, cut the pipe square making sure to remove all burrs and loose material. Do not chamfer.
3. Using 60-grit emery cloth, prepare the end of the pipe by removing dirt and oil (important to obtain a good bonding surface) and roughing up an area equal to 1.5 times the fitting's socket depth. Clean the roughed up area with ethyl or isopropyl alcohol to ensure complete removal of grease and residue. Once treated do not handle this area of the pipe or allow it to get dirty.
4. Insert the pipe all the way to the stop at the bottom of the socket of the fitting.
5. Decide whether single or multiple joints are being made. In case of multiple joints consult the "Multiple Joints Fusion" section that follows for cable connections and maximum allowable number of simultaneous joints.
6. Loosely fit IPEX-supplied clamp(s) only over the hub(s) of the socket(s) to be fused (Figure 1).
7. Tighten the clamp(s). A tight clamp is essential to the quality of the joint. It should not be possible to rotate the pipe inside the fitting socket when the clamp is fully tightened.
8. Turn the Enfusion hand held control unit on and observe the copyright message and the software version being displayed as the machine runs a self-diagnostic test.
9. Following the "CONNECT LEADS AND FITTINGS" instruction on the display, connect the output leads (Figure 2). If required, connect link cable for multiple fusions.



NOTE: The clamp should be positioned flush with the edge of the fitting. The clamp must be tightened sufficiently to prevent the pipe from rotating inside the fitting. Wheel handle clamps should not be used.



Submittal Data Sheet

IPEX has developed a revision to its fusion machine software. Your machine will display the software version upon start up, the most recent version being V1.19 (2014). This revision removes the need to select a size range, and automatically adjusts the fusion time based on ambient temperature. Allow time for the machine pipe and couplings to acclimatise.

10. With software UPDATE V1.19 (2014)

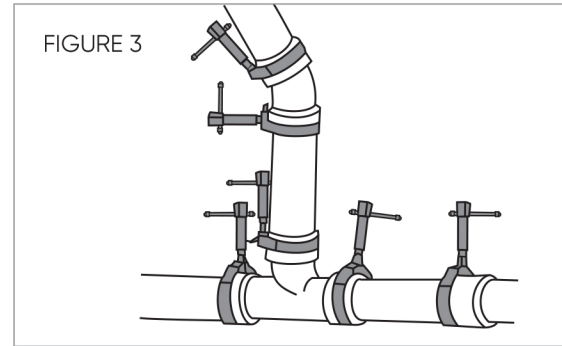
Once the leads are connected and you are ready to begin the fusion process. The machine will automatically check to ensure a connection is present and measure the ambient air temperature to set the fusion time.

Without software UPDATE

Machines that have NOT been updated will require you to "SELECT SIZE". IPEX recommends the use of the 3" to 12" size range for all fittings regardless of size. (example: 1.5" fittings should use the 3" to 12" selection)

11. To begin the fusion cycle press START. Time will begin to count down to zero.
12. Upon completion of the fusion cycle an audible alarm will sound and the message "WELD COMPLETE DISCONNECT LEADS" will be displayed. A 30 second rest period must be observed to allow the joint(s) to cool before disconnecting the leads. The Enfusion machine will automatically reset, ready for the next operation.

13. Allow five additional minutes before removing the clamps so that the joint can sufficiently cool and properly cure.



NOTE: If leads are accidentally disconnected during the fusion process "Reconnect Lead & Press Start" will appear and a 120 second countdown will begin on the Enfusion hand held control unit. Reconnect leads and press START to continue the fusion cycle fusion.

If leads are reconnected during the countdown, the fusion machine will automatically assess how long the fusion cycle must be depending on how long the leads have been disconnected. If the leads are not reconnected during the countdown the machine will sound an audible alarm and restart the fusion cycle time. Prior to re-fusing, 1-1/2" – 3" fittings should cool for 5 minutes and 4" – 12" fittings should cool for 7 minutes. The Enfusion Control Unit should be reset by shutting it off and following instructions from step 8 onwards.



V1.19 Enfusion Hand Held Control Unit

To obtain V1.19 on your hand held, please contact an IPEX representative.



L2600 (Old Style Machine) Software UPDATE

This machine cannot be reprogrammed with the software update mentioned above. Due to the age of the machine and its components IPEX can no longer support updates to the machine's components or software.

Note: It is recommended that you replace these (L2600) machines with newer models. Until such time that a machine can be purchased, all joints regardless of size must be fused using the 4" size selection. Contact your local IPEX representative.

Cold Weather Fusion

Whenever possible pipe and fittings should be stored indoors. It is always preferable to perform pipe preparation and welding in a protected environment. However, should that not be possible, during cold weather (particularly at freezing or below) it is recommended that both pipe and fittings be stored in similar ambient temperature and conditions.

In cold weather applications, the lower operating temperature limit (0°F) of the Enfusion Hand-Held Control Unit must be strictly followed.

If ambient conditions during the installation fall below 0°F, postpone installation until ambient installation temperatures have increased to fall within the Operating Temperature Range of the Enfusion Hand-Held Control Unit.

Daily, weekly or seasonal temperature fluctuations may result in thermal expansion and/or contraction of the piping system. Refer to the System Design Considerations section of this manual for suitable techniques for accommodating thermal expansion and contraction and consult the Engineer of Record.

In addition, when the actual welding takes place in freezing or sub-freezing environments, this cold weather pre fusion procedure must be followed.

NOTE: Enfusion Hand-Held Control Unit software update V1.19 will automatically adjust the fusion time as the ambient temperature changes. The following procedure is required for Enfusion Hand-Held Control Unit running software older than V1.19.

1. Follow steps 1 through 9 of Standard Enfield Electrofusion Installation.
2. When the "SELECT SIZE" prompt appears on the screen keep pushing the select button until all pipe sizes have been displayed.
3. Next will appear the first flash cycle: 1-1/2" to 2".
4. If the fitting(s) being welded is within this flash range, press START.
5. If the fitting(s) being welded is not included in this flash range, press the SELECT button one more time to display the second flash cycle: 3" through 12".
6. Press START.
7. Upon completion of the flash cycle, the display will show the "WELD COMPLETE DISCONNECT LEAD" message. Do not disconnect the leads.
8. Tighten clamps if necessary (see notes below).

9. Allow 1-1/2" to 3" joints to cool for 5 minutes, 4" to 8" joints to cool for 7 minutes and 10" to 12" joints to cool for 10 minutes before beginning the fusion cycle.
10. After cooling, continue with steps 10 through 14 of the Standard Enfield Electrofusion Installation procedure.

NOTES: Screen the joints being fused from the wind in very cold conditions to prevent heat loss.

Particular care must be taken to adequately tighten the clamps during extremely cold weather because of increased stiffness of the materials. One or two additional turns of the tightening screw might be required, above and beyond what is commonly sufficient in fair weather conditions. This is particularly true when welding large diameters.

For Enfusion Hand-Held Control units running software older than V1.19, the additional tightening of the clamps, designed to eliminate any gap between the pipe and the fitting, should be performed towards the end of the flash cycle.

However, care must be taken not to over-tighten to avoid distorting or crushing the fitting joint.

Marking of the pipe (indicating socket depth) is also recommended to assure that the pipe remains fully seated in the socket during the fusion cycle.