

# Assembly Instructions for Electrofusion Couplings 1/2" CTS through 32" IPS

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**WARNING (DISCLAIMER):** IPEX's Installation Instruction MUST BE ADHERED to, subject to our TERMS & CONDITIONS OF SALE which you may find online at: <http://www.ipexna.com/usa/general-terms-and-conditions-of-sale-ipex-usa-llc/> or our Limited Warranty is null and void! IPEX requires a Qualified Technician to be on every jobsite!

**VERY IMPORTANT:** Electrofusion Safety Fittings can be fused to all PE pipes within MFR 190/5 in the range of 0.2 – 1.7 g/10 min. and pipe SDR Range 17.6 to 11. For installation on other pipe SDR please contact IPEX.

1. Verify the pipe O.D. and the ovality. The pipe O.D. must be within the tolerances of the applicable pipe standard. Make sure to check and measure pipe ends for toe-in. If pipe toe-in O.D. is smaller than nominal pipe O.D., this pipe end **MUST** be cut back before installation! If you are unsure, contact IPEX for further information. Clean pipe of rough contaminations.

**WARNING: For 24" couplings, jobsite pipe must have a MINIMUM O.D. of 24.00 inches.**

**WARNING: For 27.992" couplings, jobsite pipe must have a MINIMUM O.D. of 28.00 inches.**

2. Measure and mark the pipe insertion depth covered by the coupling with the IPEX Silver Pipe Marker. A processing allowance of approximately +0.20" in addition to the insertion depth provides proof after fusion that the oxide layer has been removed properly.
3. Scrape off the complete oxidized layer on the pipe using either a hand scraper, FWSG 63 (1/2" – 2"), FWSG 315 (3" – 12") or FWSG 630L/710L (10" – 28") scraper tool available from IPEX. Follow the operation instructions for the scraper tool! A one-time, complete removal of the oxidized layer with a min. swarf thickness of 0.006" is sufficient. Repeated scraping may be necessary, depending on the pipe O.D. tolerances. Avoid pipe O.D. smaller than nominal O.D. minus one time scraping. Chamfer the raw edges on the outside of the pipe, and place a small bevel outside. Remove any chips from the pipe interior and fusion area.
4. If the pipe out-of-roundness in the fusion area exceeds 1.5% of O.D. or > 0.12", these pipes must be re-rounded with a re-rounding clamp available from IPEX.
5. Clean pipe surface and inside of coupling liberally with an appropriate PE cleaning agent (we recommend using Isopropyl alcohol cleaning agents with alcohol percentage of at least 96.0%) in combination with absorbent, lint-free and non-dyed paper. Alternatively, appropriate PE cleaning wipes can be used. Make sure surfaces are completely dry before assembly.
6. Measure and mark again the pipe insertion depth (see step 2).
7. Install coupling to marked insertion depth on pipe. Assembly of pipe and coupling must be in as clean, supported and stress free condition as possible. Support the coupling during the fusion and cooling cycles.  
**Note:** Couplings ≤ 6" have an easily removable center-stop for slide-over installations.
8. Connect coupling to universal fusion processor, scan barcode and start fusion. Depending on the size range, couplings are to be fused simultaneously in one cycle (monofilar/Mon), or each coupling side is to be fused separately (bifilar/Bif).

## Special attention on processing of couplings ≥ 16" IPS:

Please follow the processing instructions on the reverse side of this instruction sheet!

9. Note data on pipe using an IPEX Silver Pipe Marker after end of the fusion process: end of fusion time (time of day), date, total fusion time (in seconds), cooling time (in minutes) and installer's initials.
10. Wait for indicated cooling time. Cooling times necessary before handling and pressurizing are located on the fusion processor (card "Cooling Times for FRIA-LEN® Safety Fittings"), installation instructions or barcode on fitting (only C.T. before handling).

## PREHEATING TECHNIQUE: INSTRUCTIONS FOR COUPLINGS ≥ 16" IPS

Couplings ≥ 16" IPS are equipped with an additional preheating barcode on yellow label.

- YELLOW/BLACK BARCODE = PREHEATING TIME ONLY!!! NO FUSION BOND OCCURS!!!
- WHITE/BLACK BARCODE = FUSION TIME ONLY!!! ACTUAL FUSION BOND OCCURS!!!



 **WARNING**

FRIALEN® XL Installation Instructions (friatec.com) **MUST BE ADHERED** to or our Limited Warranty is null and void! IPEX requires a Qualified Technician to be on every jobsite!

By using the preheating bar code, a larger annular gap (> 0.04", max. 0.1") can be compensated for between coupler and pipe. The use of preheating technique is

- possible for UBI 10" – 14" and required if the annular gap is larger than 0.04"
- required for UBI 16" – 32"

**Procedure:**

1. Preparation of the joining area according to instructions on reverse side of this sheet,
2. Support mounted coupler such that the annular gap is about equal across the entire circumference.
3. Close annular gap between coupler and pipe with adhesive tape to prevent loss of heat.
4. Close open pipe ends (chimney effect).
5. Standard processing:
  - I. Preheat the first coupler end; enter the yellow preheating barcode into the FRIA-MAT® fusion unit and start the process, then:
  - II. Preheat the second coupler end; enter the yellow preheating barcode into the FRIAMAT® fusion unit and start the process, then:
  - III. First coupler end: check the annular gap. If the gap is still too large, the preheating can be repeated for a maximum of two times. If ok: Start fusion of the first coupler side (white barcode), then:
  - IV. Second coupler end: check the annular gap. If the gap is still too large, the preheating can be repeated for a maximum of two times. If ok: Start fusion of the second coupler side (white barcode).

 **ATTENTION!**

A dwell time between preheat and fusion cycles must always be maintained to allow the components to warm through. This dwell time corresponds approximately to the preheating or fusion time, which depending on the dimension of the pipe is approximately 15-30 minutes. If only one coupler end is to be finished, the dwell time between preheating and fusion is to be maintained. If the dwell time is exceeded by more than twice the allowable time, the described process **MUST** be repeated.

**Information**

For UBI ≥ 28" please observe FRIALEN®–Info 42

- Processing temperature: between 32 °F – 120 °F
- Use the proper FRIATOOLS® scraper tool.
- Only process using FRIAMAT® fusion units.

IPEX offers in-house and external training seminars as well as training videos (DVD and Online). If you have not attended a training session and are not qualified as pre-scribed in Title 49 of the Code of Federal Regulations, Section 192.285, you must do so prior to the installation of this fitting (For Gas Applications Only).

**For further information and technical support, please contact us at the address below:**