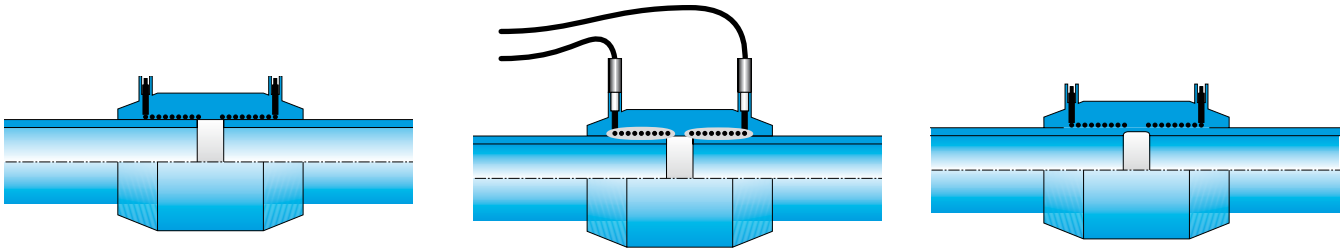
ELECTROFUSION

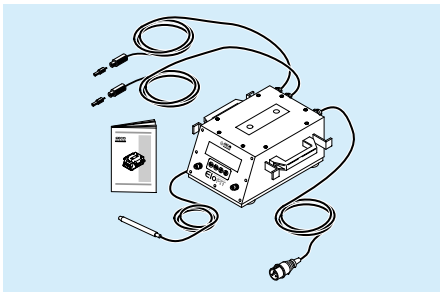
Electrofusion melting is a jointing technique performed on pre-assembled pipes and fittings having the same-diameter by applying heat obtained via a resistor contained in the fitting. The energy produced by resistor heating, thanks to the Joule effect, will soften the contact parts which melt into each other then re-crystallise during cooling.

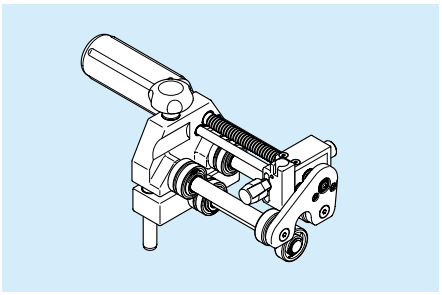


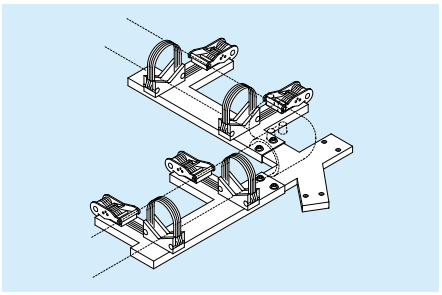
NUPIGECO was the first company in the world to produce a complete range of PPR electrofusion COUPLINGS, 45° ELBOW, 90° ELBOW and TEE.

To be able to use this innovative jointing technique, the following equipment must be available:

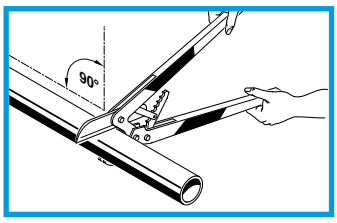
- Welding machine
- Scraper
- Aligner





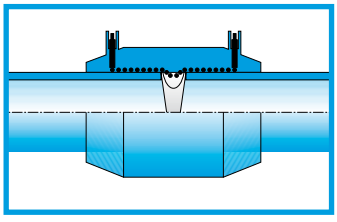


PIPE AND FITTING PREPARATION

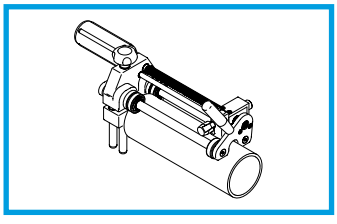


1 **CUTTING**

Cut the pipes at right angles with special nippers



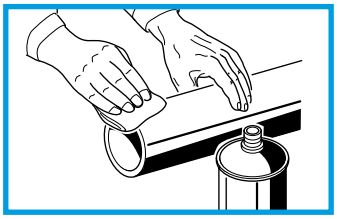
- If the cut is not at right angles, there may be molten material dripping into the electric part and blocking the passage.



2 **SCRAPING**

Scraping is essential for cleaning purposes because sealing is obtained by heat transmission from the fitting to the pipe.

- **Scrape the entire pipe surface which is to undergo welding with special scrapers** to remove the oxidised surface layer caused by atmospheric impurity catalising.

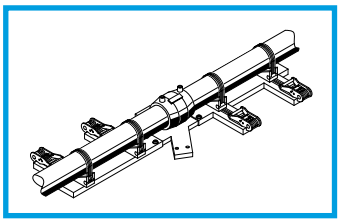


3 **CLEANING**

By using a clean cloth, degrease the parts that had previously been scraped with liquid detergent.

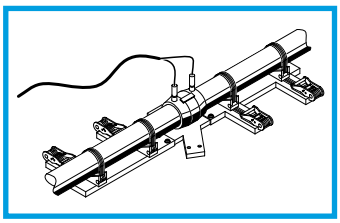
Do not use synthetic fibre cloths, glossy paper or dirty rags; do not use petrol or similar fluids as detergents. **Do not touch** the cleaned parts with your hands, to prevent leaving a greasy film.

JOINTING



4 **ASSEMBLY**

- Insert the pipes all the way into the electric coupling. This will prevent material dripping and possible clogging.
- Lock the pipes and fitting with the special aligner.



5 **ELECTROFUSION**

- Connect the two terminals to the pin on the coupling.
- Turn on the machine and follow the instructions on the interactive display.
- Finally, let the welded part cool down without moving it for the time specified in the bar code (cooling time).

ENVIRONMENTAL CONDITIONS

Checks to carry out on site

- The power source must have at least 3KW/h available. Universal bar code reading machines must be able to use
  3 – 4KW/h. If a generator is used, be sure that it is of the asynchronous type with minimum power of 3KW.
- The job site electric control panel must be of the asynchronous type and in compliance with the safety regulations in force in the country of use.
- The electric outlet in which the welder is plugged must be protected by a differential cutout switch and equipped with suitable grounding connection. The minimum protection class of the outlets on the panel must be at least IP44.
- Extensions (if any) must have a suitable cable cross section (see the welder operating manual).

Warning:

- Carefully follow any instructions contained in the operating manuals, especially as far as industrial safety is concerned.
- NIRON electric couplings have an adhesive label containing a 24 character bar code suitable for universal optic pen machine reading and specifying the welding voltage, welding time in seconds and cooling time in seconds.
- Electrofusion information is stored in the machine memory and can be either printed out immediately via a special printer or transferred to a computer.
- It is advisable to carry out heat fusion and/or electrofusion operations in a dry place sheltered from adverse weather conditions (rain, wind, dampness) at ambient temperature comprised between +5 and +40°C.