

Electrofusion Welding

a. Marking the pipe for cutting

The pipe must be free of dirt and dust.

- 1. Use a plastic marking tape long enough to go around the pipe circumference.
- 2. Mark the welding location around the pipe with a marker.



b. Cutting the pipe

- 1. Use a cutting tool for plastic pipes up to diameter 160mm. From diameter 180mm and higher use a JigSaw cutter, with a suitable plastic saw.



c. Rounding of the pipe and scraping the oxidized layer

- 1. Round the pipe prior to scraping it.
- 2. Place the rounding device on the pipe so that the distance from the pipe to the rounder is equal to the depth insertion of the pipe into the fitting plus 4 centimeters.
Note: To ensure perfect, symmetric roundness of the pipe, make sure that the rounding device is placed in such a way that the screws will be on the flattened sides of the pipe (on the narrow axis of the oval) and fasten them until perfect roundness of the pipe is reached.
- 3. Use the universal rotational scraper according to the instructions.



d. Pipe Preparation

- 1. The pipe must be marked to prepare insertion of the fitting.
- 2. Move the rounding device until the marking of the full insertion.
- 3. It is absolutely necessary to clean entire welding surface. This is performed with a special cleaning solution of 95% ethanol (or equivalent) and new clean paper wipers to ensure that no fibers are left on the surface.



e. Installing the fitting onto the pipe

1. Remove the fitting from its original packaging, only when you are ready to start the welding process. Clean the inner side of the fitting with the special cleaning solution. Clean the pipe surface again.
2. Install the fitting onto the prepared pipe and make sure that the pipe is fully inserted into the fitting up to the end. The fitting should fit easily into the pipe.



f. Preparation of the opposite pipe end for insertion

1. Clean, mark and place the rounding device as described.
2. Pull the pipe into the fitting by means of 2 spanners from each side until the rounder and the coupler meet.
3. Make sure to insert the pipe straight and precisely along the axis of the fitting by guiding both spanners. Make sure that there are no "angles" between the pipe's axis and the fitting's axis.



g. Welding

Please follow carefully installation instructions for the electro fusion control box.

1. Connect the terminals from the control box to the fitting. Make sure to connect "black to black" and "red to red", and make sure that the electric cable is loose, not pulled tight.
2. Operate the control box and start the welding process.



h. Cooling time

At the end of the fusion carefully remove the black and red terminals from the fitting.

1. The correct cooling time is shown on the barcode label on each fitting. Mark on the coupler the exact hour when the coupler can be removed (adding the correct cooling time to the exact hour when the fusion was completed).
2. Dismantle the clamps and rounding equipment only at the end of the cooling time.

Note:

Since pressure testing requires lower temperatures of the joint, we recommend waiting twice the cooling time after fusion before pressurizing the pipe and waiting 3 times the cooling time after fusion before beginning pressure testing.



Welding of Saddles

a. Pipe must be marked

The pipe must be free of dirt and dust.

1. Place the lower part of the saddle on the place intended for fusion, mark the location of the outlet by marking a line all around the pipe. Use the lower part of the saddle for marking in order to avoid dirtying the upper part prior to welding.
2. Mark 3 lines on each side of the line at a distance of 30mm from each other.
3. Remove the lower part and scrape the marked area with a manual scraper until all lines are scraped (except for the center line).

Note: The manual scraper should be very sharp! Sharpen it by rotating the knife from time to time (4 positions) and by sharpening it with a fine iron file. Use a manual scraper and scrape using two hands to achieve best results.



b. Pipe preparation and mounting of the saddle

1. Clean the pipe with a special cleaning solution for PE cleaning (ethanol) as any other fluid may damage the joint. To apply the solution, use clean wipes.
2. Clean the inner side of the upper saddle and install it to the pipe.
3. Close the saddle screws so that the upper and lower parts meet.
4. Fasten the screws.

Note: The hole should be drilled only after the welding is completed.



c. Welding

Please follow carefully installation instructions of the welding device.

1. Connect the terminals from the generator to the saddle "red to red", "black to black".
2. Operate the generator and start welding process.



d. Cooling time and drilling of hole

Cooling time:

1. At the end of the fusion carefully remove the black and red terminals from the fitting.
2. Mark on the coupler the exact hour when the coupler can be removed (adding the correct cooling time to the exact hour when the fusion was completed).
3. Dismantle the clamps and rerounding equipment only at the end of the cooling time. After cooling, drill the outlet hole using a hole saw tool.

