

# Electrofusion Fittings

FLUID AND GAS TRANSMISSION  
SOLUTIONS BY AGRU



## The Plastics Experts.

AGRU is committed to solving modern problems through the development of innovative solutions. For over 70 years, AGRU has been a worldwide leader in fittings for polyethylene pipes. Today, AGRU offers an extensive electrofusion fittings solution that combines AGRU electrofusion fittings with specialized equipment and world-class support. AGRU fittings are part of the AGRULINE system, which includes pipes and a whole range of specialized fittings.

The AGRU success story has been unfolding for seven decades. Founded in 1948 by Alois Gruber, who set the company on the course for plastic manufacturing, AGRU has become one of the world's most important single-source suppliers for piping systems, semi-finished products, concrete protective liners, and lining systems made from engineered plastics. We use only the finest grade thermoplastic polymers as our raw materials. When it comes to application and technical consulting, we are your best partner in the field.



### Quality

The AGRU quality assurance system is compliant with multiple international standards and AGRU's procedures help ensure that products meet or exceed these international standards, on an ongoing basis. The start-to-finish attention to quality ensures that the products meet or exceeds the strictest technical specifications, providing safe operation within gas distribution, industrial, water, and wastewater infrastructures.



# Addressing the Fluid, Water, and Gas Transmission Problem

The typical U.S. water system presents an average leakage rate between 14% and 18%<sup>1</sup>, which is relatively high for a developed country where averages are between 8% and 24%. In developing countries, the leakage rate can reach as high as 68%. The World Health Organization attributes most of the physical losses to poor network design, construction, and quality control; aging pipe network; and leakage at connections joints, valves, and fittings.<sup>2</sup>

A significant step in alleviating issues surrounding the water transmission problem lies in reducing leaks at pipe joints. One readily available solution uses polyethylene pipe and fittings, which incorporates a different kind of welding method. Electrofusion fittings can help reduce installation time and cost by promoting fast, efficient welding. Unlike other welding approaches, electrofusion welding creates an interior pipe wall free of internal obstructions and, requires a minimum open trench reducing reconstructive costs and creating a leak free system eliminating infiltration and ex-filtration.

Ultimately, electrofusion promotes the creation of a leak-free homogenous piping system that minimizes the risk of potential mechanical failure.

## The Electrofusion Fittings Solution

To help overcome the challenges associated with modern piping systems, AGRU has developed an electrofusion fittings solution that incorporates AGRU's manufacturing expertise with state-of-the-art technologies. AGRU's integrated solution combines a range of electrofusion fittings, industry-leading electrofusion equipment, and robust technical support and training for the creation of an engineered joint that can be easily produced in the field.



<sup>1</sup>"2017 Infrastructure Report Card: Drinking Water." ASCE. <https://www.infrastructurereportcard.org/wp-content/uploads/2017/01/Drinking-Water-Final.pdf>.

<sup>2</sup>"Leakage Management and Control - A Best Practice Training Manual." WHO. Accessed online 5 November 2019. [https://www.who.int/docstore/water\\_sanitation\\_health/leakage/ch04.htm](https://www.who.int/docstore/water_sanitation_health/leakage/ch04.htm).



## Solutions Overview

### AGRU Electrofusion Fittings

AGRU's latest electrofusion fittings are manufactured up to SDR 11 pressure rating using PE 100-RC, a pipe-grade resin that offers greater resistance to stress crack propagation than standard PE 100 or PE 4710. Additionally, AGRU's resin is listed by the Plastics Pipe Institute (PPI) as PE 4710, meaning that it is compatible with current industry standards as well as older polyethylene piping systems. AGRU fittings also meet other standards including ASTM D2513, D3261, D3350, F1055, and AWWA C906. AGRU electrofusion couplings are also FM Approved for sizes 2"–12".

The company also leans on its manufacturing expertise to enhance the construction of its fittings. The whole manufacturing process is extremely automated, which allows AGRU to precision engineer the entire product. For instance, the electrofusion fittings have a heating wire that is fully embedded for precise welding and risk reduction. A fully embedded heating wire makes it easier to clean the fittings and helps reduce the chances of damaging the heating element during installation.

Stock fittings are available in sizes up to 48 inches. For sizes above 48 inches, fittings can be made to order upon request.







## Products

### Electrofusion Coupler

- Most sizes injection molded from PE 100/PE 4710 material
- Fusion barcode and traceability barcodes on each fitting
- 4.0 mm fusion connectors
- Available as SDR 17 and 11
- Size range: 1/2" IPS through 48" IPS.

### Electrofusion Branch Saddle

- Most sizes injection molded from PE100/PE 4710 material
- Barcoded to facilitate automated fusion and traceability
- Main Sizes: 3" IPS through 12" IPS
- Outlet Sizes: 1" IPS through 4" IPS.

### Electrofusion Tapping Tees

- Most sizes injection molded from PE100/PE 4710 material
- Barcoded to facilitate automated fusion and traceability
- Main sizes: 2" IPS through 6" IPS
- Outlet sizes: 1/2" CTS through 1" IPS.

## Features

### Premium PE 100-RC that is compatible with most common polyethylene piping resins such as PE 4710

- Outstanding resistance against slow crack growth
- Delivers cost savings by supporting installations without the use of sand beds to prevent rock impingement
- Easy-to-clean welding surface and protection against corrosion
- Resin listed by PPI as PE 4710.

### Fully Embedded Heating Wire

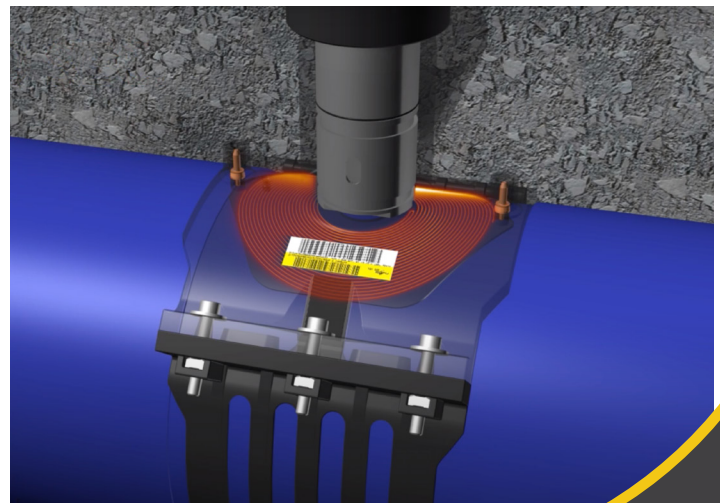
- Uniform heat distribution in the welding area
- Highest safety factor
- Better able to hold their position regardless of field conditions
- Improves the integrity of the fusion weld.

### Bifilar Welding System (in large diameter couplings larger than 14 IPS)

- Reduces current requirement during installation
- Simplifies the infrastructure requirements for welding
- Supports two separate welding zones
- Supports one-sided, pre-welding (e.g., in a workshop)
- Can be welded with universal welding machines
- Incorporates tension belts for the perfect interfacial welding pressure.

### Innovative automation manufacturing process

- Machined automation leading to consistent high quality
- Lightweight and easy to transport
- Significantly reduced welding times
- Allows preheating in large diameter couplings to insure proper fit prior to the main fusion cycle.



## AGRU Electrofusion Equipment and Support

AGRU is the exclusive distributor of industry-leading electrofusion equipment developed by HÜRNER's, including the company's latest offering, the HCU 300 series. The HST 300 in the series has been designed to work seamlessly with AGRU's electrofusion fittings, and most other fitting with an ISO compliant 24 character bar-code, to provide accurate welding at a fraction of the time and effort of traditional systems.

The HST 300 makes manual markings of welds and data on the pipe a thing of the past. Instead, welding operations are recorded via the on-screen display and can be printed on a label using the optional printer that is then affixed to the pipe or associated paperwork. This easy-to-use process is further improved upon by the device's compact size and weight. Professional welding process control and monitoring by the international standard add to the power of the HST 300.

### Features

#### High Interoperability

- Works with diameters up to 48" IPS
- HÜRNER's equipment works seamlessly with AGRU electrofusion fittings and all ISO bar-code compliant fittings.
- Provides accurate welding at a fraction of the time and effort of traditional systems.
- 110V and 230V versions available.

#### High-Resolution Display

- Built-in traceability based on ISO 12176-2/4
- Displays text in all major languages
- Welding operations are recorded via the display.

#### Domestic Service

- Quick turnaround for parts and repair
- Equipment calibration
- Supplemental equipment that are available for purchase
- HST 300 Meets all major quality assurance standards
- Standards include ISO 9001:2015.

#### AGRU Weld Certification Program

- Industry-leading training and certification program for welding technicians
- Construction site safety, welding safety, and best practices
- Electrofusion welding techniques
- Welding quality assurance training.





## Products

### HST 300 SERIES

- HST 300 Print + GPS Auto ID BT 230V
- HST 300 Print + GPS Auto ID BT 110V
- HST 300 Print + Auto ID BT 230V \*
- HST 300 Print + Auto ID BT 110V\*



### HCU 300 SERIES

- AGRU HCU 300 GPS BT 110V
- AGRU HCU 300 BT 110V \*
- AGRU HCU 300 GPS BT Auto ID 230V
- HCU 300 GPS BT 230V



\* Non-GPS units are not in stock. This feature can be turned off on the GPS versions.



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