



The Plastics Experts.

AGRULINE

MACHINED E-COUPPLERS
MADE OF PE 100-RC





The Plastics Experts.

For decades, electro-socket welding has proven its efficiency and reliability in joining pipes and fittings made of PE, in gas and water supplies, sewage disposal and in the industry. AGRU electro-socket fittings made of PE 100-RC (resistant to crack) are designed, produced, tested and certified according to the highest standards. Safety during welding and reliability in operation has always been a top priority for AGRU.

The AGRU success story has been unfolding now for around seven decades. Founded back in 1948 by Alois Gruber senior, nowadays the company is one of the world's most important single-source suppliers for piping systems, semi-finished products, concrete protective liners and geomembranes made from thermoplastics. Our ability to supply everything from a single source sets us apart. We use only top-grade thermoplastic polymers as our raw materials. When it comes to solution expertise in the choice of materials and installation, we are your go-to partner.



Quality

At AGRU, customer satisfaction comes first. Technical consultations, training courses, welding instruction and expert supervision on-site basic conditions for this. At AGRU, we have an ISO 9001:2015 compliant quality assurance system, an ISO 14001:2015 compliant environmental management system and an occupational safety management system in line with ISO 45001:2018. Our products comply with international standards, and they are regularly monitored and evaluated by independent testing bodies. The start-to-finish attention to quality ensures that the products meet and beat the strictest technical specifications, ensuring safe operation within gas, water and wastewater infrastructures.

Perfect joints for large diameter pipes: machined E-couplers

AGRU's range of machined E-couplers has been deployed successfully for years in a wide variety of applications. Continuous further development and improvement now enable an extensive product range for the SDR 11, 17 and 26 pipe series in dimensions from 560 to 1600 mm. Our machined E-couplers are bifilar and come with some special features and therefore represent a new product line.

Outstanding end product properties

tailor-made for the requirements of the piping system

PE 100-RC enables installation without sand embedding

- Resistance to point loads that could lead to stress cracks
- Resistance to slow crack propagation
- Up to 10-times longer test bed service life compared to conventional PE 100

Maintenance-free

thanks to state-of-the-art material and welding technology

PE 100-RC piping systems require little maintenance due to

- Smooth internal surface without deposits (incrustations)
- Homogeneous, longitudinally forcelocked weldings
- High resistance to pressure surges (water hammer)

Perfectly matched system

Installation and welding of piping systems – also in challenging conditions

Particularly time- and cost-saving because

- Welding is possible even in tight spaces
- AGRU offers a complete set of tried-and-trusted accessories
- The bifilar E-coupler can be welded to the pipe on one side in advance (e.g., in the workshop)
- Installation without sand embedding is possible

AGRU complete

Precision-fit pipes and fittings available for all dimensions

What AGRU offers for your project

- Precision-fit and matched products
- Reliable and punctual delivery
- Personal consulting by experienced employees at the highest technical level





AGRU machined E-coupler design



Machining

- Large scale couplers from OD 560 mm are manufactured on special processing machines
- Only semi-finished products from high-quality and stress crack resistant PE 100-RC material are used for production
- The heating wire is completely embedded at a short depth below the surface in a unique special process
- A smooth, easy to clean inner surface is ensured despite embedding



Bifilar version

- All dimensions from OD 560 mm are bifilar (with 2 separate welding zones)
- The bifilar E-coupler can be welded to the pipe on one side in advance (e.g., in the workshop, or outside of the trench) to facilitate installation in the trench
- Standard welding equipment can be used due to division into two heating wires



Tensioning belts

- Uniform welding pressure is essential for a homogeneous welded joint
- Tension belts ensure the optimum welding pressure during the welding and cooling phase
- Even after an extended storage period of the E-coupler the required welding pressure is secured

Pre-heating

In contrast to injection-moulded E-couplers, machined E-couplers in SDR 11 and 17 have two barcodes. The codes can either be scanned or entered manually on the welding machine.

The white bar code contains the parameters for pre-heating.



The yellow and white bar code is used for welding (white) and traceability/documentation (yellow).



Pre-heating is only necessary for SDR 11 and SDR 17 E-couplers. SDR 26 E-couplers do not require pre-heating (see table). The reason for this is the thin wall thickness which results in better heat distribution and better compensation of ovality.

When to pre-heat

The biggest challenge when welding a machined E-couplers is the tolerances ovality and diameter tolerances of the pipes, which grow as the diameter increases. This can create a large gap between the coupler and the pipe, which can be reliably reduced with the help of the preheating program, thus enabling a superior welded joint.

The right approach to pre-heating

After the preheating program has completed, a break of 15-60 minutes is required to give the material time for thermal expansion (low thermal conductivity of PE). This ensures a uniform temperature distribution over the entire circumference of the coupler. Due to the separate welding zones, this time can be used to preheat the second side. Preheating is considered successful if the height of the gap between the coupler and the pipe is less than 2 mm (this is measured with the gap gauge supplied). If this is not the case, pre-heating must be repeated.

PRODUCT RANGE BIFILAR E-COUPERS										
OD	560 mm	630 mm	710 mm	800 mm	900 mm	1000 mm	1200 mm	1400 mm	1600 mm	
SDR 11	WITH PRE-HEATING									
SDR 17	WITH PRE-HEATING									
SDR 26	WITHOUT PRE-HEATING									

AGRU machined E-couplers - welding process

Welding process

The wide welding zone ensures a homogeneous joint between the pipe and the coupler that can withstand heavy loads. Due to the fully embedded heating wire there is no contact with the medium and therefore no danger of corrosion.

The new machined AGRU E-coupler in SDR 26 completes the system and opens up new application possibilities. Lightweight and therefore easy to handle, the SDR 26 E-coupler impresses with short welding times without pre-heating. Ovalities of the components to be welded and large annular gaps are compensated for to the extent possible. Whether for waste water, in the industrial sector or for fish farming, the AGRU SDR 26 E-coupler ensures a perfectly safe joint.





AGRU machined E-couplers - references

Pressurised waste water pipe in the semiconductor industry

- Location: South Korea
- Dimension: OD 630 – 1000 mm SDR 26
- Installation in an underground pipe tunnel
- Rigid system without linear expansion due to change in temperature



Cooling water for a power station

- Location: Germany
- Dimension: OD 1200+1400 mm SDR 17
- World record – the largest diameter ever installed using a horizontal directional drilling method



Pipe repairs

- Location: Germany
- Dimension: OD 1000 mm SDR 11
- Pipeline damaged by digger. Repair using a parison and two machined E-couplers



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Your distributor

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