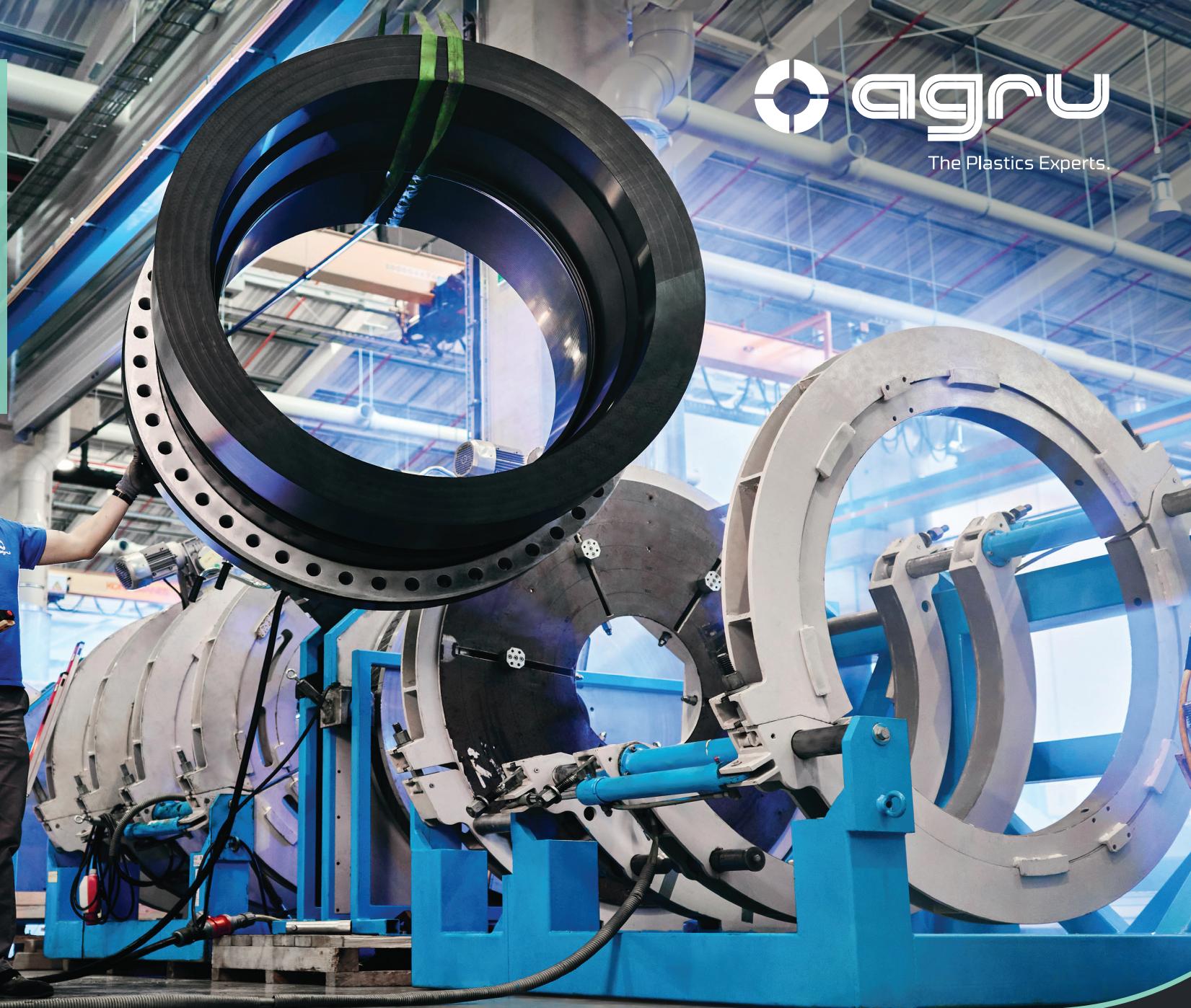


CUSTOMIZED PARTS

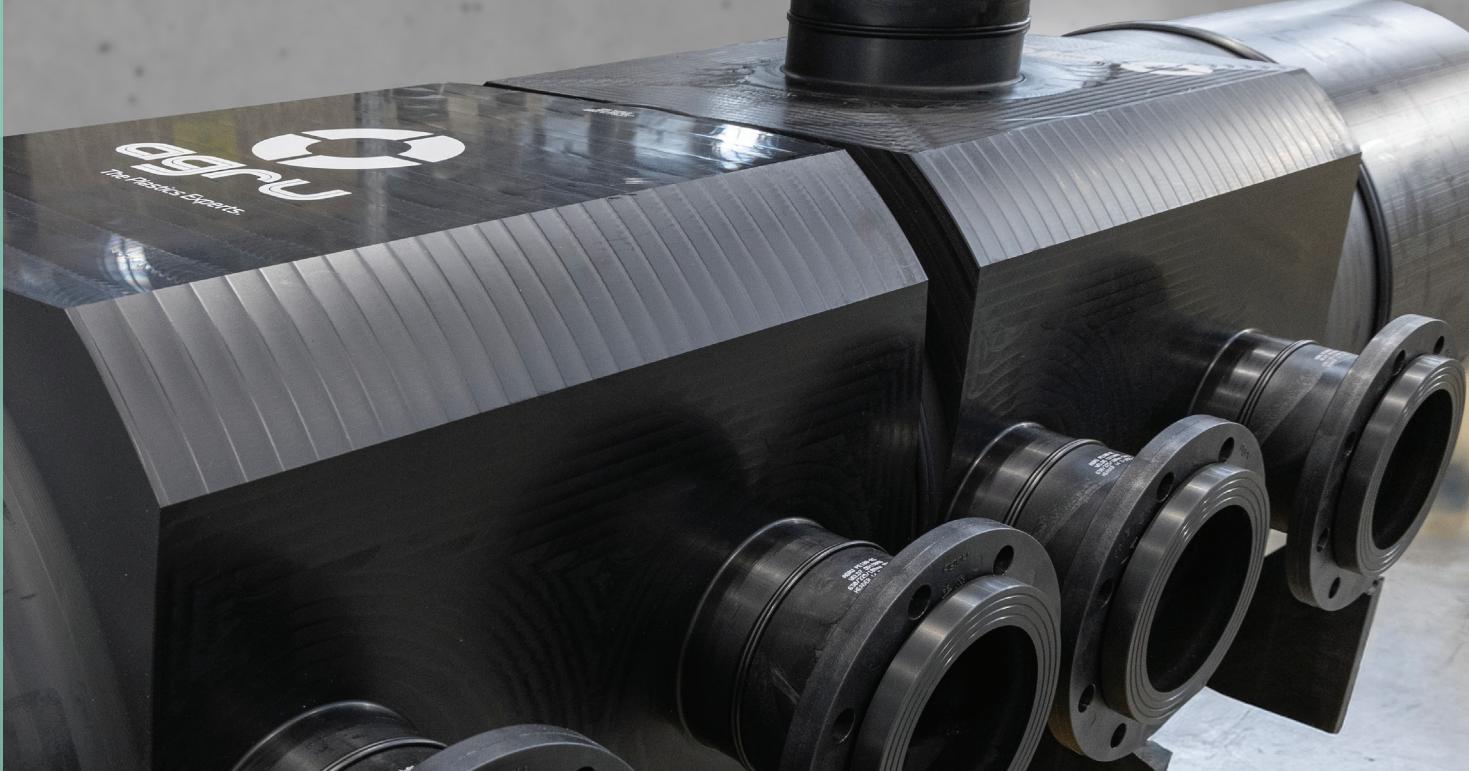
Tailor-made fittings for pipeline construction



CUSTOMIZED PARTS

AGRU is a leading manufacturer of customized plastic piping systems.

- + Wide range of thermoplastics
- + Comprehensive product knowledge
- + Highest manufacturing quality
- + Global logistics network
- + From OD 20 to 3500 mm



The Plastics Experts

Founded by Alois Gruber Sr. in 1948, AGRU has grown to one of the world's key full service provider of thermoplastic products such as piping systems, semi-finished products, concrete protective liners, and geomembranes.

Processing only high-quality plastics all from one single source is what sets AGRU apart. When it comes to material selection and installation expertise, we are your best partner.

Quality

Customer satisfaction is AGRU's highest priority. Technical consultations, training sessions, welding workshops, and professional on-site supervision ensure high quality results for our clients

By maintaining full control over the manufacturing process with state-of-the-art machinery safe, reliable, quality semi-finished products can be achieved to find solutions to complex problems.

AGRU operates a quality management system according to ISO 9001:2015, an environmental management system under ISO 14001:2015, and an occupational health and safety management system under ISO 45001:2018. As a result, the products meet international standards and are regularly monitored and evaluated by independent testing agencies.



ISO 9001
Quality management systems



ISO 14001
Environmental management systems



ISO 45001
Occupational health and safety



Fittings without limits

Plastic experts develop customized parts

- for any geometry, dimension, and pressure load
- tailored precisely to the project's requirements
- ensuring technical compliance with applicable standards



Materials without compromises

The best material for every need

- PE 100-RC, PE 100-el, PP-R, PP-Pure, PPs-el, PVDF, PVDF-UHP, and ECTFE for pipe fittings and double containment pipe fittings
- from standard material PE to high-performance material ECTFE
- semi-finished products manufactured in-house



High efficiency

Engineering services from the best in the industry

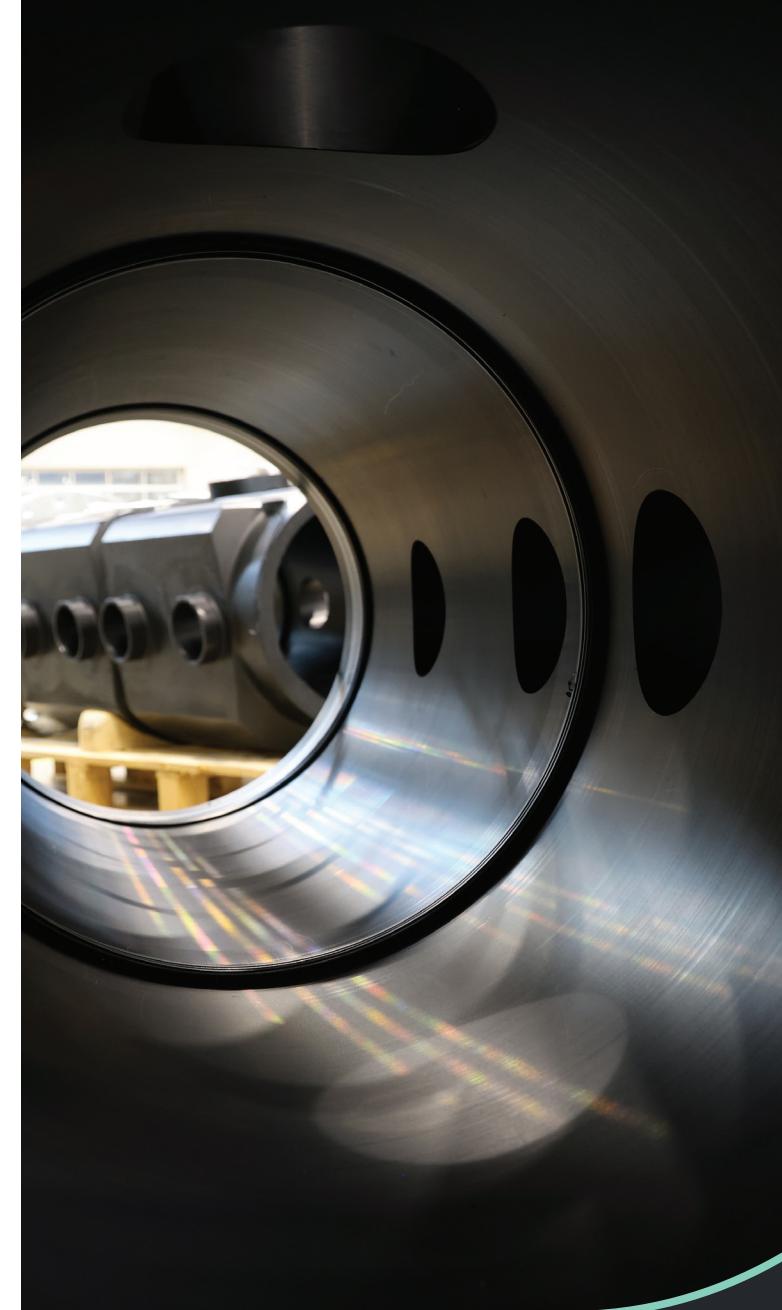
- maximum flexibility through a state-of-the-art machine park
- robust solutions that withstand years of continuous operation



Highest precision

Ready-to-use prefabrication of pipe isometries

- welding of various components under cleanroom conditions
- prefabricated pipe and double containment pipe isometries are delivered ready for connection





Custom manufacturing tailored to specifications

FROM VISION TO REALITY

Our plastics experts collaborate with you to develop everything from individual fittings to series production.

- + Comprehensive customer consultation
- + Design and engineering
- + Precise manufacturing of each part

Planning and design



Consultation

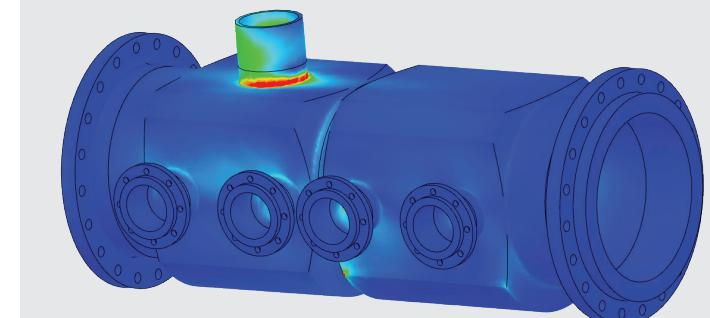
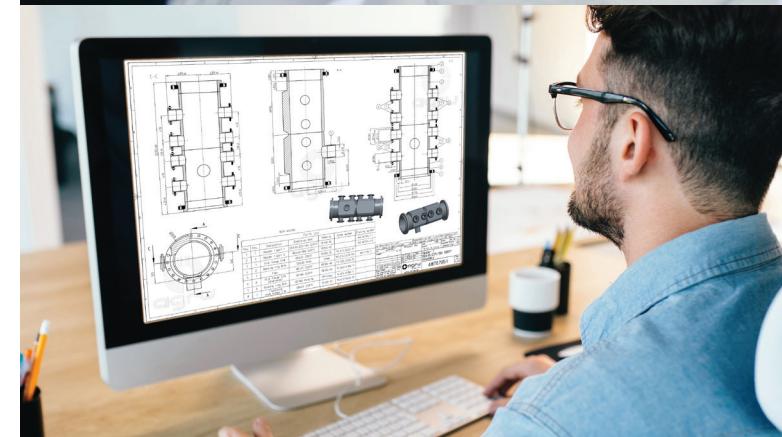
Using various materials, technologies, and products our team develops technical, high quality solutions to complex challenges.

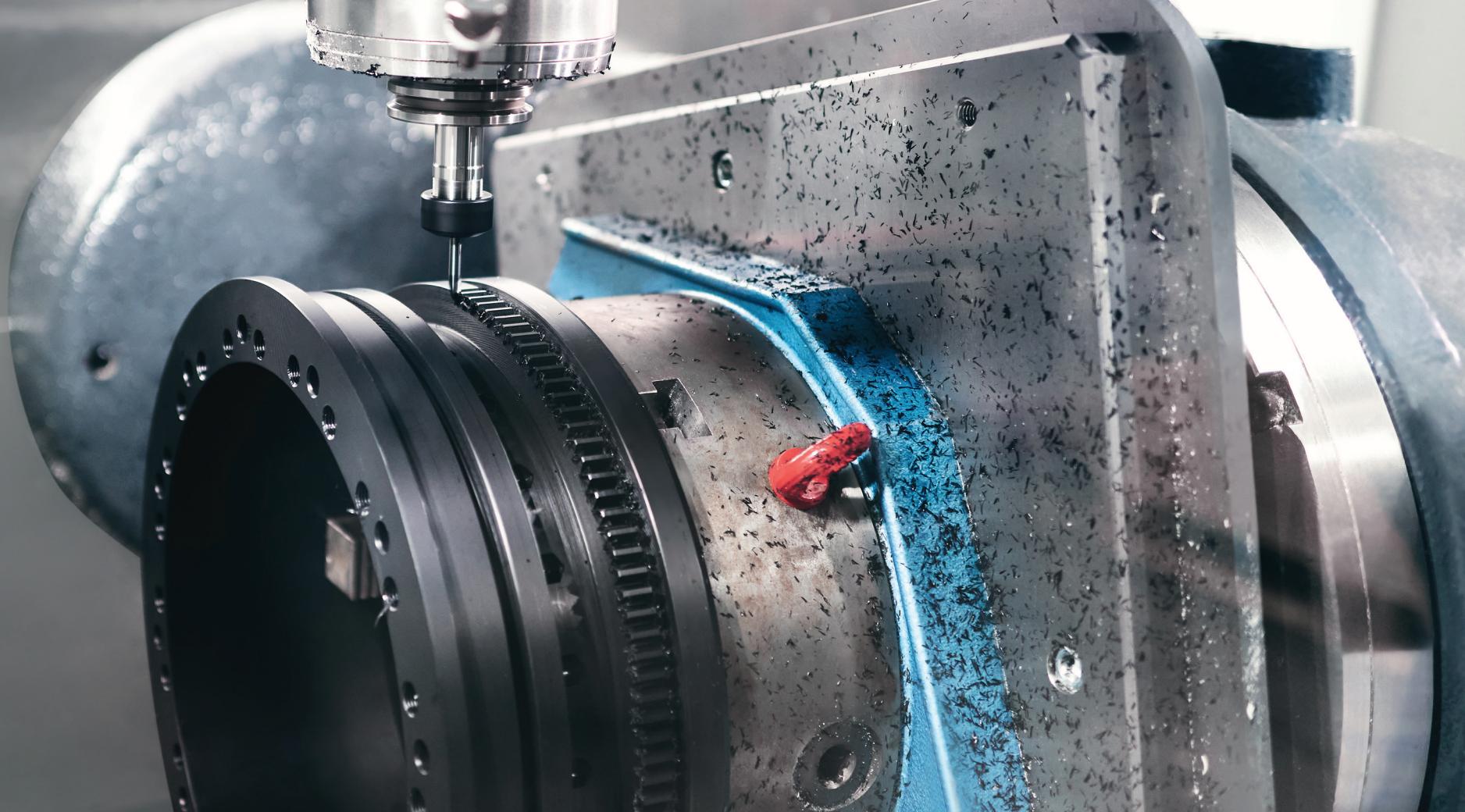
Engineering & design

AGRU's experienced application engineers design and calculate fittings to ensure optimal technical and economic performance. By conducting hydrostatic and hydrodynamic component calculations and adhering to industry standards, our clients receive the best results.

Calculation & analysis

AGRU's application technology team analyses specific project requirements to develop 3D solutions. Our software then simulates stress distributions on the 3D components using the finite element method.





Manufacturing process

PRECISE PRODUCTION FOR OPTIMAL INTEGRATION

Exact fit achieved through CNC-based mechanical processing.

- + Traceable quality assurance
- + Decades of experience
- + Superior quality and durability

Prefabrication and delivery



Mechanical processing

AGRU manufactures all elements in the predefined material with the highest quality and tightest tolerances. All drilling, turning, milling, and welding tasks are performed using state-of-the-art machinery.

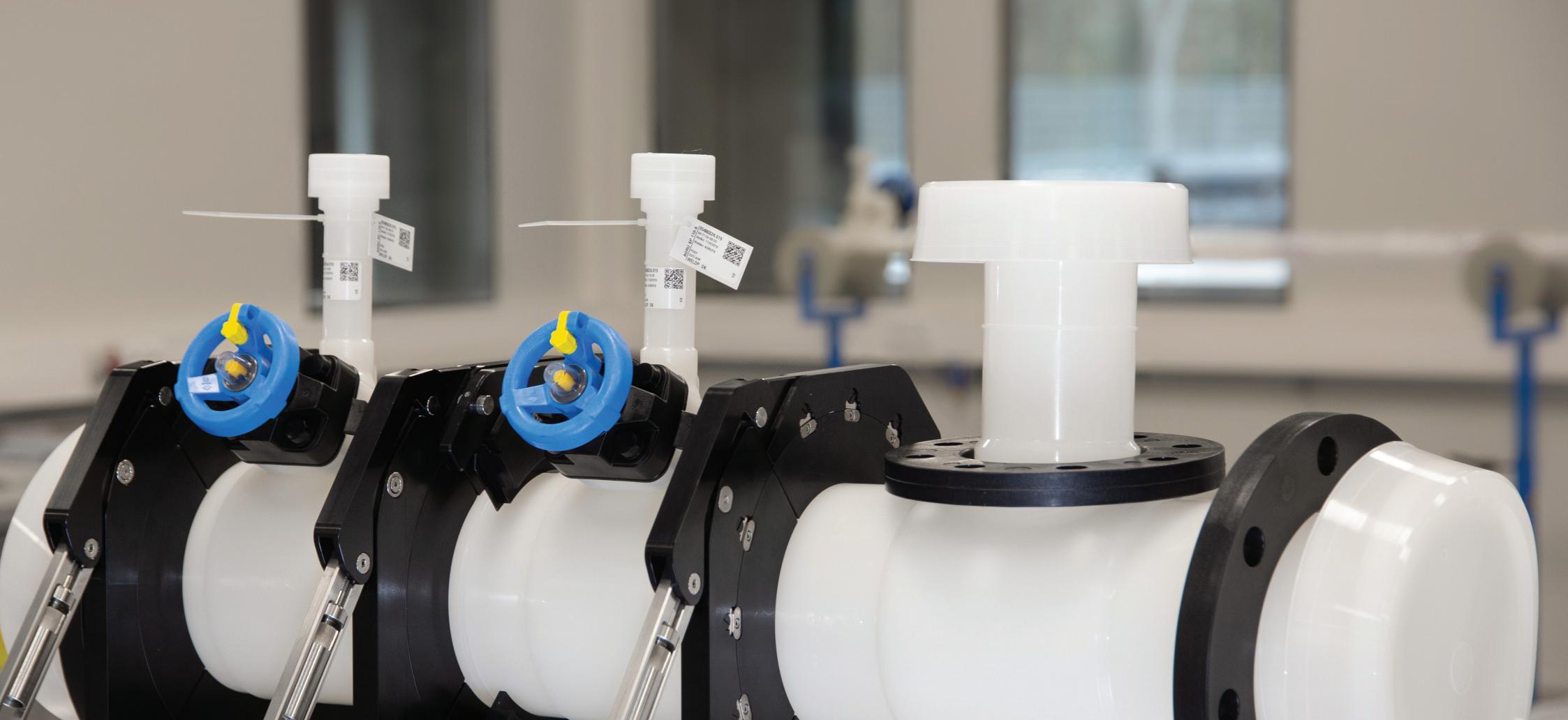
Welding

Whether extrusion welding, electrofusion welding, infrared welding, socket welding, butt welding, hot gas welding, or beadless welding: AGRU applies the various techniques perfectly to any project. Joining thermoplastics has been a core competency of our technicians for over 60 years.

Efficient logistics

AGRU's efficient worldwide logistics services and user training ensure maximum customer satisfaction.





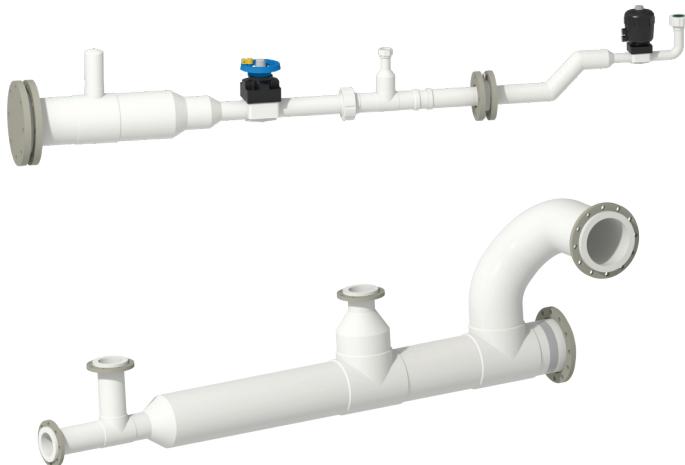
Precision and purity

PURAD CUSTOMIZED PARTS IN CLEANROOM ENVIRONMENTS

Absolute purity is paramount in the semiconductor industry.

- + Compliance with the strictest standards
- + Ready-to-use pipe isometries
- + Rapid, modular installation

Cleanroom off-site manufacturing



PURAD customized parts

AGRU manufactures complex geometries with the latest technology, highest precision, and maximum purity from PVDF-UHP, PP-Pure, and ECTFE.

- Individual design of each part
- Data transmission to production
- Maximum flexibility and precision

Ready-to-use pipe isometries

AGRU offers a comprehensive one-stop shop, from planning to on-schedule off-site manufacturing. Under strictly controlled cleanroom conditions in ISO Class 7, specially trained professionals produce ready-to-install pipe isometries. This facilitates installation and ensures the quality of PURAD high-purity media piping systems.

Precision meets efficiency

AGRU offers precise, easy to assemble, and high quality prefabricated pipe isometries which significantly reduces the installation effort for system builders.





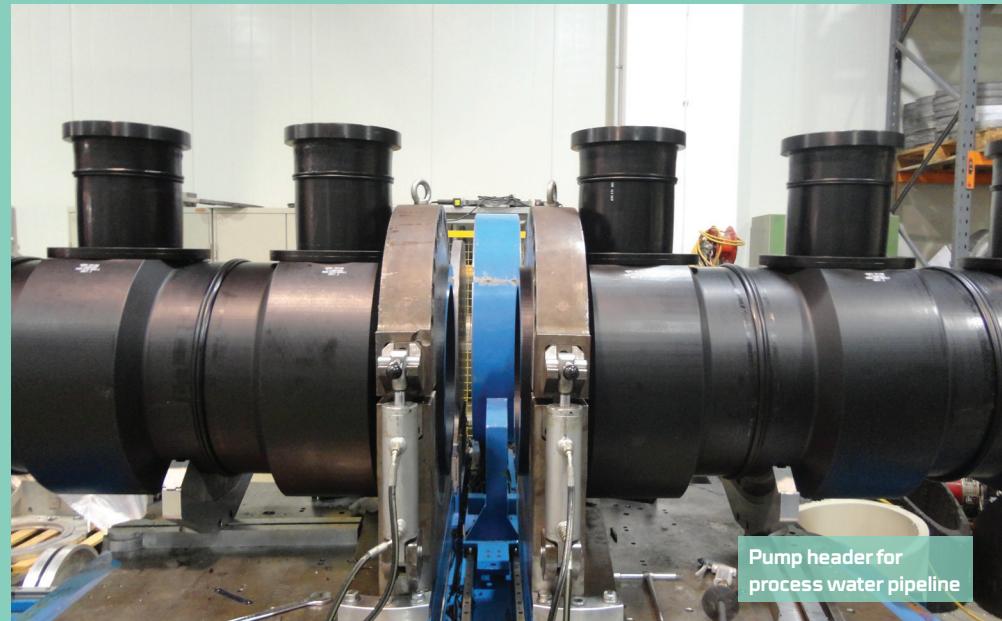
Material PE 100-RC

Polyethylene PE 100-RC is the most economical solution for safe transport of gas, water, or wastewater.

- + High flexibility and low density
- + Chemical and UV resistance
- + Stress crack resistant

Pressure class-compliant customized parts

| SUPPLY PROGRAMME | PE 100-RC | Dimensions | SDR 33 | SDR 26 | SDR 21 | SDR 17 | SDR 11 |
|---|---|-----------------|--------|--------|--------|--------|--------|
|  | E-fittings | OD 20 - 2250 mm | ● | ● | ● | ● | ● |
|  | Tees | OD 20 - 2250 mm | ● | ● | ● | ● | ● |
|  | Flange connections Stub flanges | OD 20 - 3500 mm | ● | ● | ● | ● | ● |
|  | Reducers | OD 20 - 2500 mm | ● | ● | ● | ● | ● |
|  | End caps | OD 20 - 1200 mm | ● | ● | ● | ● | ● |
|  | Segmented fittings | OD 20 - 3500 mm | ● | ● | ● | ● | ● |
|  | Transitions Restrained fittings Screw connections | OD 20 - 800 mm | ● | ● | ● | ● | ● |
|  | Pull heads | OD 20 - 1200 mm | ● | ● | ● | ● | ● |
| Further special fittings and isometries are available on request in additional SDR ratings. | | | | | | | |





Material PP | PP-Pure

Polypropylene (PP-R, PP-Pure) is ideal for industrial applications at temperatures up to 95 °C.

- + More solvent-resistant than PE 100-RC
- + Similar electrical properties
- + PP-Pure for ultra-pure water transport

Pressure class-compliant customized parts

| SUPPLY PROGRAMME | PP | Dimensions | SDR 33 | SDR 26 | SDR 17 | SDR 11 |
|------------------|---|--|--------|--------|--------|--------|
| | E-fittings | OD 20 - 500 mm PP-Pure OD 20 - 315 mm | ● | ● | ● | ● |
| | Tees | OD 20 - 560 mm PP-Pure OD 20 - 315 mm | ● | ● | ● | ● |
| | Flange connections Stub flanges | OD 20 - 560 mm PP-Pure OD 20 - 315 mm | ● | ● | ● | ● |
| | Reducers | OD 20 - 560 mm PP-Pure OD 20 - 315 mm | ● | ● | ● | ● |
| | End caps | OD 20 - 630 mm PP-Pure OD 20 - 315 mm | ● | ● | ● | ● |
| | Segmented fittings | OD 20 - 1400 mm PP-Pure OD 20 - 400 mm | ● | ● | ● | ● |
| | Transitions Restrained fittings Screw connections | OD 20 - 560 mm PP-Pure OD 20 - 315 mm | ● | ● | ● | ● |

Further special fittings and isometries are available on request in additional SDR ratings.



High performance thermoplastic ECTFE

ECTFE possesses a unique combination of properties resulting from its chemical structure - a copolymer with alternating ethylene and chlorotrifluoroethylene.

- + Chemically resistant from pH 0-14
- + Temperature resistant up to 120 °C
- + High impact strength

Pressure class-compliant customized parts

| SUPPLY PROGRAMME | ECTFE | Dimensions | SDR 33 | SDR 21 |
|------------------|---|---|----------------|--------|
| |  | Tees | OD 20 - 90 mm | ● ● |
| |  | Flange connections Stub flanges | OD 20 - 75 mm | ● ● |
| |  | Reducers | OD 20 - 90 mm | ● ● |
| |  | End caps | OD 20 - 90 mm | ● ● |
| |  | Segmented fittings | OD 20 - 160 mm | ● ● |
| |  | Transitions Restrained fittings Screw connections | OD 20 - 75 mm | ● ● |
| | | Further special fittings and isometries are available on request in additional SDR ratings. | | |



Pressure class-compliant customized parts

| SUPPLY PROGRAMME | PVDF | Dimensions | SDR 33 | SDR 21 |
|---|---|----------------|--------|--------|
|  | Tees | OD 20 - 315 mm | ● | ● |
|  | Flange connections Stub flanges | OD 20 - 315 mm | ● | ● |
|  | Reducers | OD 20 - 315 mm | ● | ● |
|  | End caps | OD 20 - 315 mm | ● | ● |
|  | Segmented fittings | OD 20 - 400 mm | ● | ● |
|  | Transitions Restrained fittings Screw connections | OD 20 - 315 mm | ● | ● |
| Further special fittings and isometries are available on request in additional SDR ratings. | | | | |



AGRU PVDF plastic combines excellent mechanical, thermal, and electrical properties with outstanding chemical resistance up to 120 °C.

- + High purity and surface quality
- + For high-end applications
- + HP quality available





The Plastics Experts.



CUSTOMIZED PARTS. Fittings without limits.