

Fronius

Additive

Additive Manufacturing to unleash your welding potential

Layer by layer

A layered build-up creates components seemingly out of thin air.

Individual design freedom and technical precision come together to transform weldable materials into tailor-made components.

In contrast to conventional subtractive processes that remove material—such as milling or cutting—additive manufacturing adds material to produce the desired component.

The future of additive manufacturing: Push the boundaries of what's possible.

Fronius Additive is revolutionizing the manufacturing industry with this fast, cost-effective, and precise method for producing components.

The wire-based and arc-based CMT process permits complex geometries and a high degree of flexibility in component design while delivering high deposition rates, all of which make this process ideal for prototype construction and small batches.

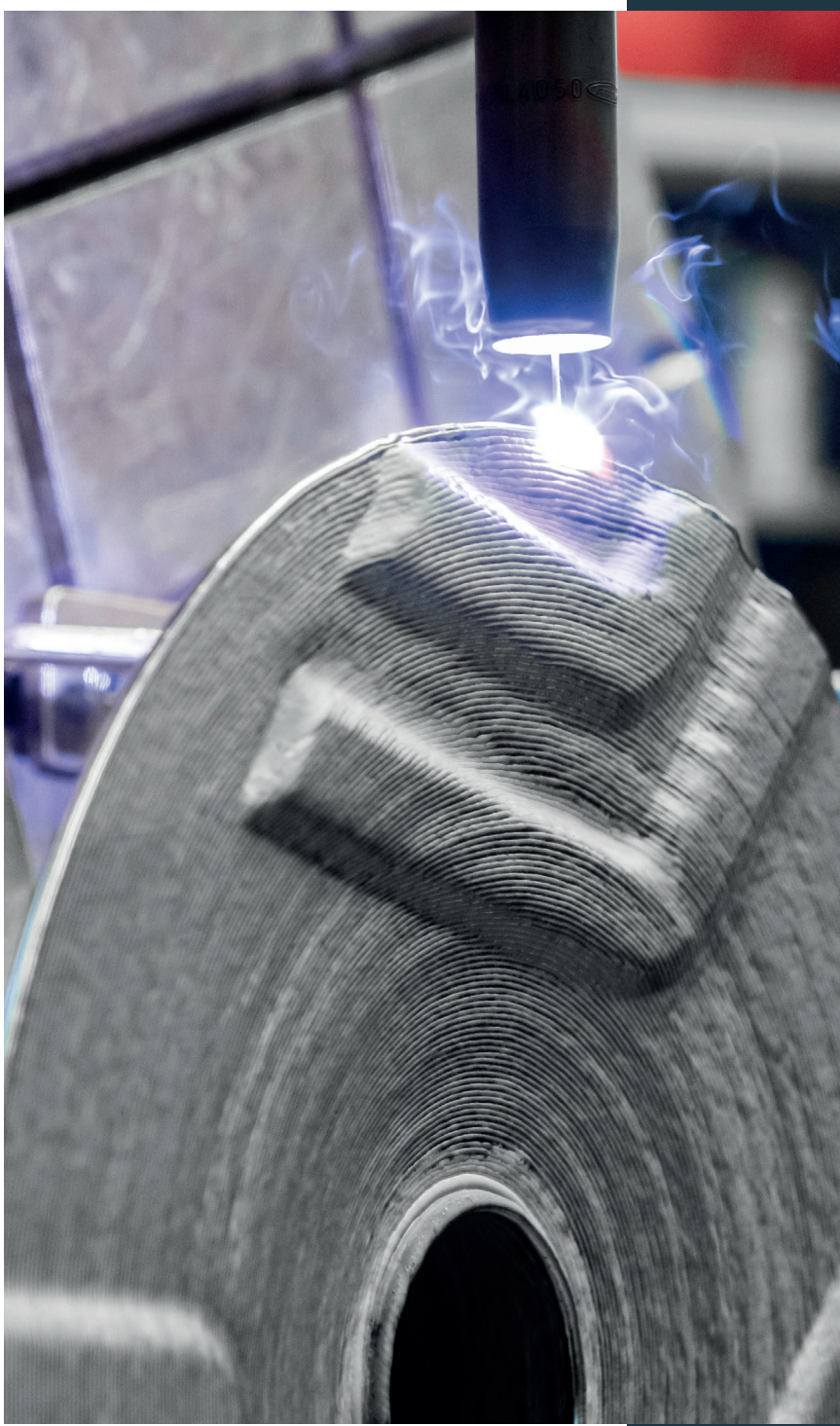




Fronius **Additive**

CMT Additive Pro

For maximum additive control

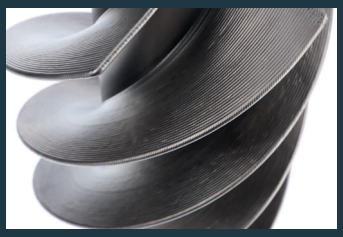


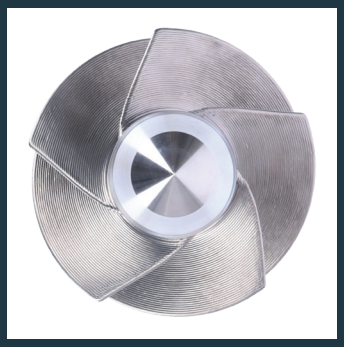
Efficiency and process stability

The synergy between stability and flexibility is crucial to producing components in additive manufacturing—and a reliable welding process and efficient heat management are key.

Thanks to its revolutionary reversing wire movement, the CMT process is extremely stable, making it a perfect solution for additive manufacturing. Layers are built up consistently, evenly, and virtually spatter-free, ensuring that the welded layers and components produced meet the highest standards of quality.







Exclusive features

for additive manufacturing

We developed the CMT Additive Pro welding characteristics specifically for additive manufacturing.
They make it easy to achieve a reproducible uniform layer structure, as well as deal with other challenges.

For the first time, you can also get positioning feedback during welding without any external sensors.

All in a single characteristic

Deposition rate stabilizer

The deposition rate is regulated by the welding process. Layers are built up more consistently while boosting the reproducibility of production.

Pulsed HotStart

It's simple to start welding in pulsed arc, so you can achieve sufficient penetration and adhesion even without adjusting the operating point.

CTWD measurement

The CTWD value [mm] is measured in real time and was specially developed for materials with low electrical conductivity, such as steel.

Power correction

Heat input can be precisely regulated thanks to the power correction, so you can keep the seam geometry almost constant, even at elevated temperatures.



Equipped for the challenges of tomorrow

Your complete solution for today, tomorrow, and beyond

Our perfectly coordinated equipment for additive manufacturing is compatible with conventional robot systems and includes the following Fronius components.



iWave AC/DC 300i–500i

+

OPT/i Multiprocess PRO

+

CMT Welding Package

+

Interface:
RI FB Pro/i AM Basic

- Enable additive characteristics
- Make settings for additive characteristics
- Correct additive characteristics

+

Interface:
CFGi RI FB PRO AM Basic

- Activate the process image for additive manufacturing

Prototyping
and small series

Solutions that impress

360° service

From the feasibility study to the pilot series

Our comprehensive service package gives you everything you need to optimize and carry out your additive manufacturing processes. We offer custom solutions to meet your individual requirements.

Our experts work closely with you, from the initial consultation and feasibility check to the development and production of your component. By taking this approach, we help you manufacture your first prototypes and preproduction series and ensure you get off to a smooth start with the additive manufacturing process.

Our goal is to unleash your projects' full potential by minimizing time to market, mitigating risks, and identifying opportunities. To this end, we also give you sound recommendations on:

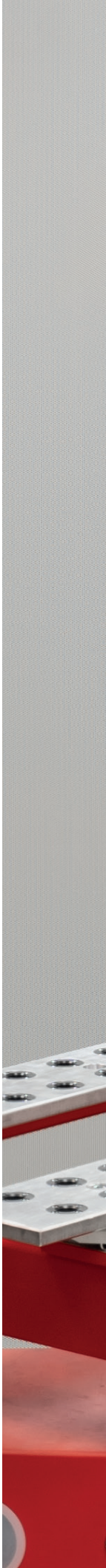
- Feasibility
- Cycle times
- Quality
- Implementation options
- Calculable data
- Costs for a prototype and start of production

Prototyping center

Space for innovation and technology

At our prototyping center in Wels, Upper Austria, we guarantee maximum confidentiality with several robot cells and systems that are partitioned off from one another. In an area covering 900 m², our experts work to make your project a reality:

- Consulting and feasibility studies
- Simulations
- Mechanical processing (such as milling)
- Metallurgical analyses
- 3D component measurement
- Offline programming and welding simulation
- Welding tests with detailed data documentation
- Material testing and quality control
- Logistics
- Project management

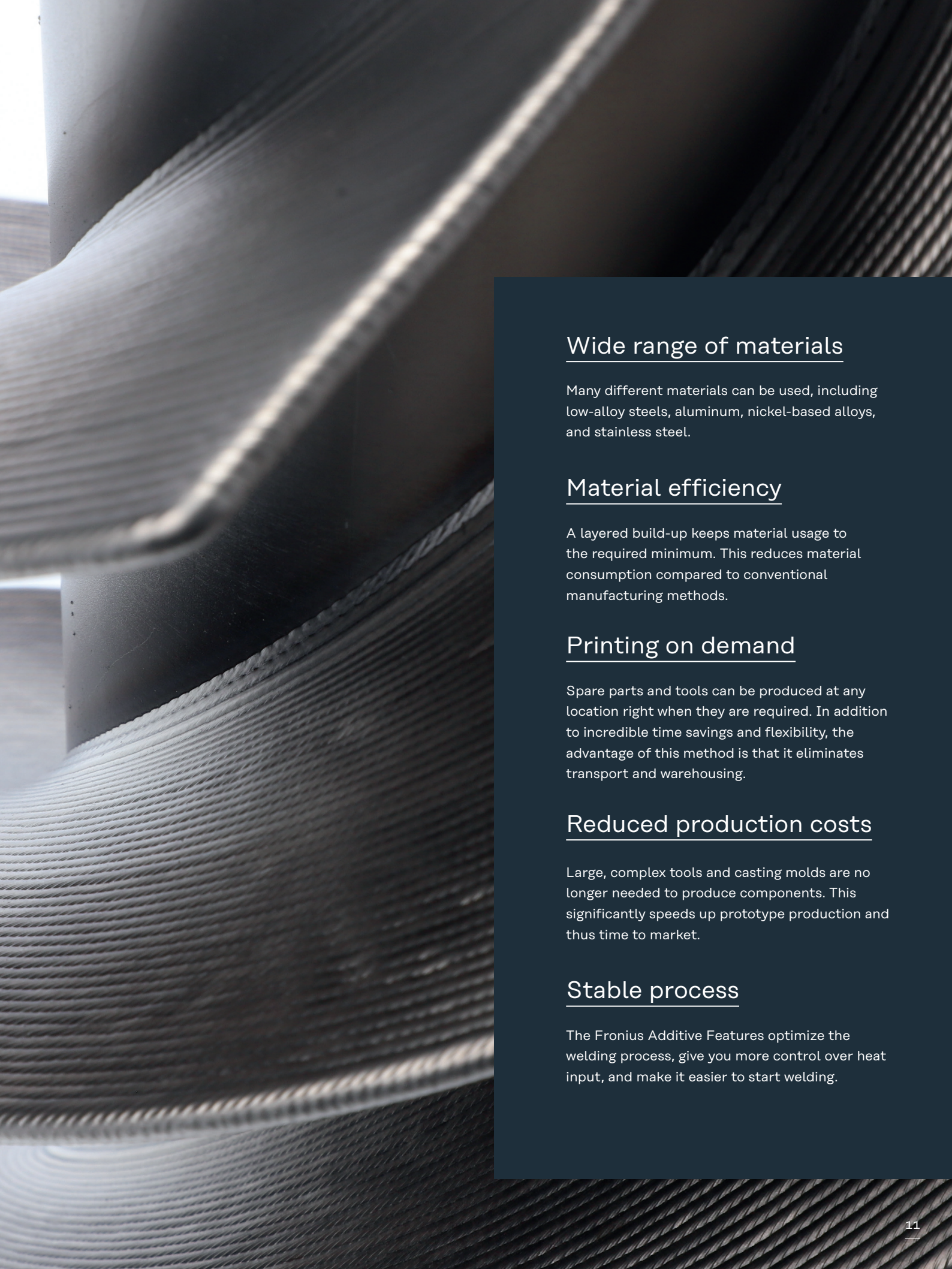



CMT
ULTINORM
multinorm.hr

Combining key factors for your success







Wide range of materials

Many different materials can be used, including low-alloy steels, aluminum, nickel-based alloys, and stainless steel.

Material efficiency

A layered build-up keeps material usage to the required minimum. This reduces material consumption compared to conventional manufacturing methods.

Printing on demand

Spare parts and tools can be produced at any location right when they are required. In addition to incredible time savings and flexibility, the advantage of this method is that it eliminates transport and warehousing.

Reduced production costs

Large, complex tools and casting molds are no longer needed to produce components. This significantly speeds up prototype production and thus time to market.

Stable process

The Fronius Additive Features optimize the welding process, give you more control over heat input, and make it easier to start welding.

We take responsibility



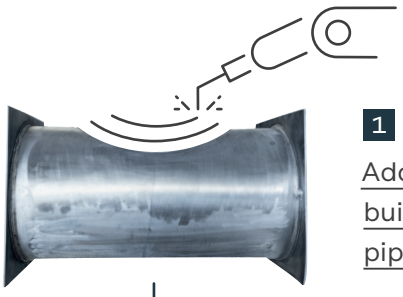
Our high-end welding technologies break new ground and form connections—between metals, industries, and people. We promote innovation with sustainability in mind. For us, developing sustainable products means creating high-quality, durable, and repairable welding solutions that not only use energy, gas, and materials efficiently but also bring greater benefits to our customers.



Additively manufactured pressure vessels

The application story on this component provides an insight into additive welding while highlighting the quality and safety that come with the prEN 13445-14 certification. Scan the QR code to view the documentation presenting the entire manufacturing process with this technology and everything it can do.

Pressure vessel technical data	
Welding process	CMT Additive Pro
Welding machine	iWave AC/DC 500i
Material	1.2 mm AlMg4.5Mn
Additive material weight	4.12 kg
Welding time	3 h 26 min
Deposition rate	1.2 kg/h



1 Additive build-up on pipe section



2 Finished component

For further information visit www.fronius.com

Unleash your welding potential

To ignite the welding potential of our customers: that is our mission. As the innovation leader for arc welding and global market leader for robot-assisted welding, we create both advanced and profitable welding solutions, which are inspired by our sustainable mindset. We enjoy long-standing relationships with our customers. We understand their challenges and perspectives and maintain a close relationship with them through our regional service teams throughout the world. We listen, understand, and therefore shape the mindset of the welding industry. Our strengths lie in combining our customers' knowledge with our expertise, which allows them to unleash their full welding potential.

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