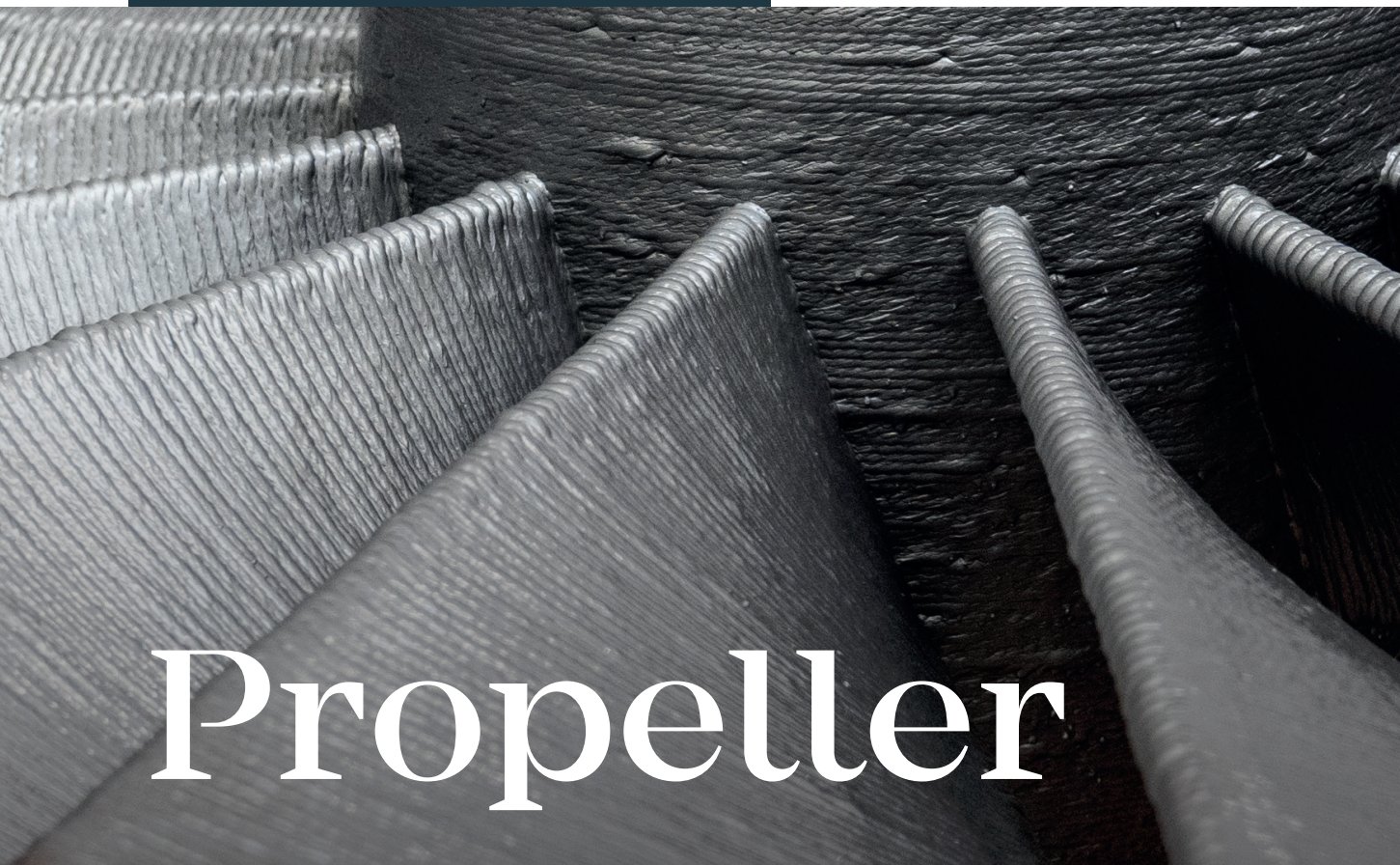




Additive Manufacturing

3D printing together with welding technology involves arc-based manufacturing by building up layers which enables the production of complex structures and geometries, thereby increasing flexibility in component geometry. They are individual layers, each one building upon the last. The process is attractive financially and resource-efficient, especially for prototyping, repairing, and rebuilding damaged components, as well as for small-batch production. Alongside flexibility, one of the advantages of wire-based additive manufacturing is the high deposition rate. For steel materials, it is possible to achieve a rate of up to 4 kilograms per hour in industrial production environments.

Individual Components
– Layer by Layer



Propeller

Manufactured via
Additive Manufacturing
Technology

The stability of the welding process and heat dissipation are crucial factors when manufacturing components using large-volume metal 3D printing. In addition to significant know-how, the welding process itself is essential in determining the quality of components produced. Fronius Cold Metal Transfer technology offers the best conditions as the CMT process produces a stable arc and a controlled short circuit with long short circuit times. This means that the heat input is lower and the material transfer is practically spatter-free, enabling precise work and increased reproducibility.

Propeller Technical Data	
Welding process	CMT AC Additive (available from 2024)
Welding system	iWave AC/DC 500i
Material	1.2 mm G3Si1 steel wire
Total weight	86.5 kg
Weld time	26h 18min 56s
Number of welds	2,607
Deposition rate	3.3 kg/h