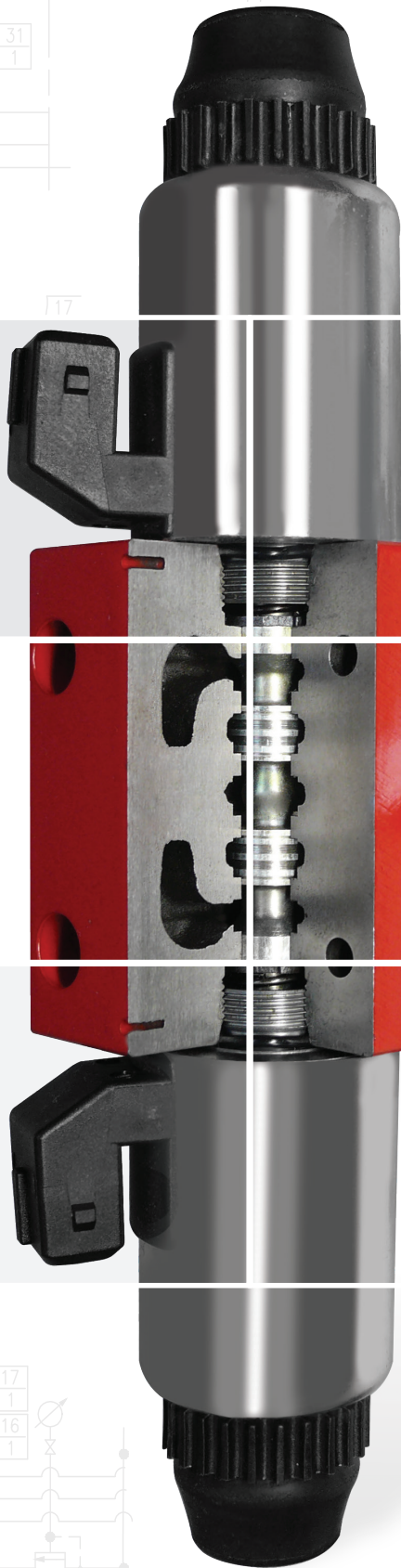


aidro



we create for you

aidro

Experts in Hydraulic Products

CETOP hydraulic components and customized systems

Production and Innovation

Fluid Power parts, valves and manifolds

Additive Manufacturing Solutions

A new generation of hydraulic components

Our Applications



MOBILE
HYDRAULICS



INDUSTRIAL
HYDRAULICS



ENERGY



AEROSPACE

What we do



Traditional hydraulics

A wide range of valves suitable for the creation of complex hydraulic circuits. From Cetop components to cartridge valves for integrated solution, we can provide a complete range of components for your applications.



Additive manufacturing

Aidro has introduced Additive Manufacturing to create a new generation of hydraulic components and to overcome the limits of traditional manufactured parts. The 3D printing technology allows fast lead time and better performances thanks to the optimization of the internal channels.



Engineering service

Aidro supports its customers in providing support in design, digitalization and additive manufacturing, also offering training courses on specific topics, process qualification and sustainability evaluation.



Aidro



In **1982**, Aidro was founded by Mr. Paolo Tirelli, an Italian engineer with a vast experience in the hydraulics sector.

During **2006**, Aidro received the Quality Certification ISO 9001 for the design and production of hydraulic valves and components.

Thanks to the success of its activities, in **2009** Aidro established a new headquarters in Taino (Varese). In **2012** Valeria Tirelli succeeded her father as CEO of Aidro.

Starting from **2017**, Aidro introduced the new technology Additive Manufacturing, enabling the production of Metal 3D Printed products in the hydraulics sector.

In **2018**, Aidro adopted new Quality Management Systems and received AS/EN 9100 Certification, for Hydraulics and Additive Manufacturing.

The company, now led by the siblings Tommaso and Valeria Tirelli, has expanded its activity to other sectors like aerospace, energy and oil&gas.

In **2021** Aidro joined Desktop Metal group to grow in fluid power with Additive Manufacturing.

In **2022** Aidro celebrated its 40th anniversary.

In **2023** Aidro Achieves Industry-First Global Additive Manufacturing Manufacturer Certification from DNV for Metal 3D Printing with Two Technologies, Laser Powder Bed Fusion and Metal Binder Jetting.



MANAGEMENT SYSTEM CERTIFICATE

Certificate no.: 277827-2018-AQ-ITA-ACCREDIA
Initial certification date: 29 October 2018
Issue Date: 28 October 2021
Expiry Date: 28 October 2024

This is to certify that the management system of
A.I.D.R.O. S.r.l.
Via Prati Bassi, 36 - 21020 Taino (VA) - Italy

has been found to conform to the Quality Management System standards:
EN 9100:2018 and ISO 9001:2015
(technically equivalent to AS9100D and JISQ9100:2016)

and has been audited in accordance with the requirements of EN 9104-001:2013 and ACCREDIA Technical Regulation RT-18.

Type of certification structure: Single Site

This certificate is valid for the following scope:
Design, manufacture and trade of control valves and components for the adjustments and the control of hydraulic systems and parts produced by additive manufacturing.
Progettazione, fabbricazione e commercializzazione di valvole e componenti di regolazione e controllo per applicazioni oleodinamiche e particolari realizzati mediante tecnologie additive.

Setor IAF: 17, 18, 19



Statement of Approval No. : LH/1782

This is to Certify that

AIDRO-

**VIA PRATI BASSI 36
21020 TAINO VA
ITALY**

is hereby approved as a Supplier to

Leonardo Helicopters

in accordance with QRS01 'Quality Requirements for Suppliers',
the scope of which is defined within the attached
Scope of Approval

Date of Issue: 29 September 2021



CERTIFICATE OF QUALIFICATION

Document No.:
COQ10303900-1

This is to certify:

That
Aidro Srl
Via Prati Bassi, 36, 21020 Taino VA, Italy

is a qualified manufacturer of:

Additive Manufacturing of metallic parts

in accordance with
DNV-ST-0303 and DNV-SE-0568 Module B

and the following particulars:

AM Facility qualified	Aidro Srl, Via Prati Bassi, 36, 21020 Taino VA, Italy
AM Technologies qualified	1. Laser beam powder bed fusion (PBF-LB) to AMC 3 level 2. Binder jetting technology (BJT) to AMC 1 level
BPQs qualified	1. AM Stainless Steel Alloy (UNS S31603) for PBF-LB 2. AM Nickel Alloy 718 (UNS N07718) for PBF-LB 3. AM Precipitation Hardening Stainless Steel (UNS S17400) for BJT
Parts qualified	1. Valve body, AMC 3 level as per manufacturer's own specification, PBF-LB and UNS S31603 material, see page 2 & 3 PPS for details 2. Manifolds family, AMC 2 level in AM Nickel Alloy UNS N07718, see page 2 & 3 PPS for details

Reference documents:

- Facility description - FD 01
- Audit comments - Audit 01 Issue 1
- BPQ records for PBF-LB, BPQR_S1832_316L-40um_N7, BPQR_S1832_DNV_N718_AP16ACRA-40um_N8 & for BJT, BPQR_1749H_316HP-d50_75um_MBL_01
- PC records - PCR-2000063 Issue 0 & PPS-2000063 for valve body & PCR-CDT00076, 78, 80, 90, 90-R01 for Manifolds

Issued at Havik on 2023-06-10

This Certificate is valid until 2030-06-09.

Technical Authority: Sastry Yagnanna Kandukuri



for DNV
This document has been digitally signed and will
become invalid if the signature is tampered with.

Activities



Engineering and design



Technical competence, vast experience and creativity are the basis to design hydraulic solutions that satisfy our customers' needs.

Quality ISO9001 & EN9100



Constant attention is given to quality control in all phases of engineering, production, assembly, testing, packaging and delivery.

Production



Our lean, efficient and flexible organization provides products that meet our customers' expectations in terms of quality and delivery times.

Metal 3D Printing



Design and production with Additive Manufacturing of fast prototype, spare parts and new products on demand, with innovative shapes, various materials and higher performances.

Fast delivery



We believe in the importance of time and a fast response to the customers' requests.

Leonardo Supplier



Started our collaboration with Leonardo Company, Who bring us into aerospace world



We like to do things well done!

All our activities are undertaken carefully and we offer a wide range of hydraulic valves and blocks: from CETOP components to cartridge valves. Our Company has a complementary portfolio of products and solutions able to converge into integrated hydraulic systems. Our attention to quality is guaranteed by the ISO 9001 Certification. The raw materials and components are produced in Italy or in EU countries.



Our production is 100% tested

and the goods are meticulously packed in order to ensure our customers receive the best products on time.

Hydraulics Products



Solenoid CETOP Valve

- Directional Control Valves
- Flow Valves
- Check Valves
- Pressure Control Valves
- Proportional Valves



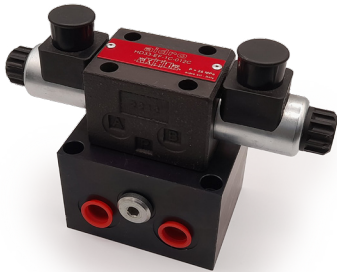
Explosion Proof valve

We offer a wide range of ATEX valves such as on-off, proportional and poppet valves, with certification Gas and Dust and Temperature class from T5 to T6.



Cartridge Valve

- Directional Valves solenoid operated
- Poppet type and Spool type in different sizes
- Pressure reducing and pressure relief
- Flow regulators



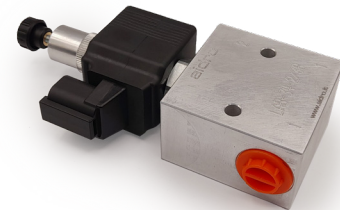
System and special products

Our design and technical know-how allow Aidro to develop new systems and special products with particular surface treatments to fulfill the customers' needs.



Manifolds and accessories

We have developed a new series of mini power packs with a compact design, suitable for DC and AC supply. Panels and Manifold Blocks of different sizes are available: CETOP 02 (NG04), CETOP 03 (NG06) and CETOP 05 (NG10),

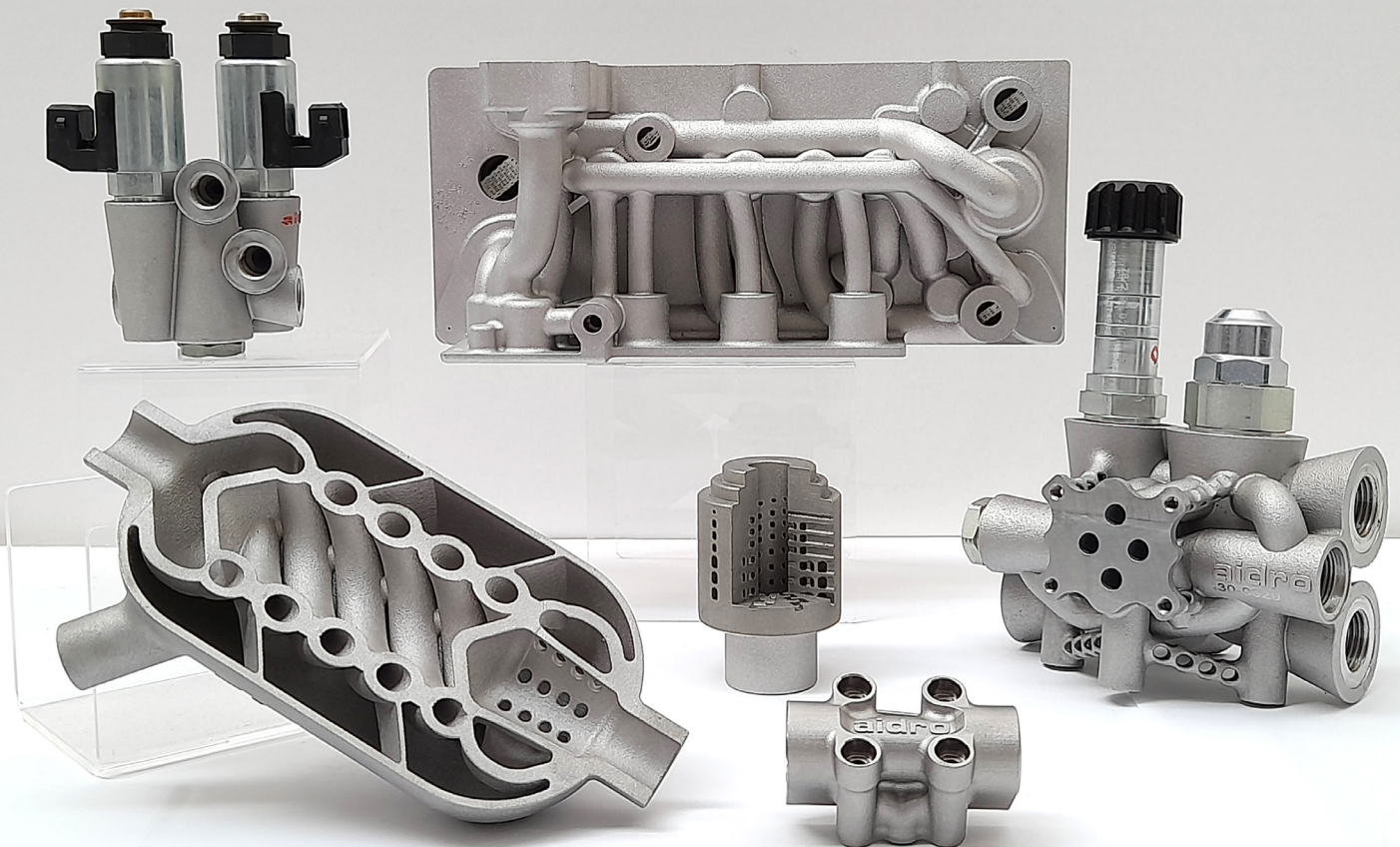


moreover in line assembly body for SAE08 and SAE10 cartridges. Aidro provides many accessories such as connectors, coils and reliable pressure switches.



Additive Manufacturing

Aidro has introduced **Additive Manufacturing, or Metal 3D Printing**, to create a new generation of hydraulic solutions and to overcome the limits of traditional manufactured hydraulic components.



This new technology allows to produce **lightweight and space saving products** and provide a better performances thanks to the optimization of the internal channels.

The fast lead time is an advantage for prototypes that can be tested and marketed in a competitive time. Additive manufacturing is also able to produce functional parts with complex geometries made with

a wide range of high quality metals such as **Stainless Steel, Aluminium, Inconel, Maraging steel**.

Aidro designs and produces **3D printed hydraulic systems** using the laser power bed fusion technology (DMLS), which guarantees a high quality metal materials and very good mechanical properties of the printed parts.

"At Aidro, we love the idea of creating the impossible thing and we see ourselves as pioneers in the introduction of additive manufacturing in the hydraulic sector"

3D Printed Products



Valve Body

- CETOP valves with a wide range of available size (CETOP2, CETOP3,...)
- Lightweight compared to the conventional manufacturing
- High quality materials with corrosion resistance
- Annular chambers for reduced pressure drops



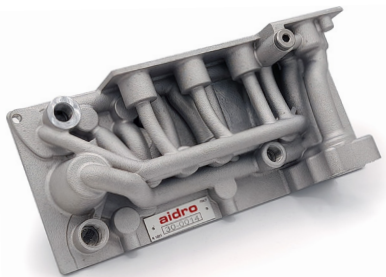
Overcenter Valve

- Optimized flow paths for improved performances
- Extreme stability on full working range
- No more need of auxiliary caps and plugs
- Reduced risk of leakage
- The lowest weight valve in the class



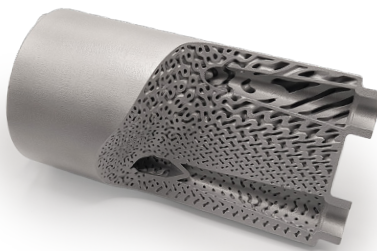
Bankable Valves

- Optimized internal flow paths for improved performances
- Optional modules can be assembled with the system or directly integrated in one body
- Suitable for the harshest environments



Hydraulic Manifold

- Extreme weight reduction
- Low pressure drops
- No more need of service plugs
- Channels optimization
- High pressure resistance (700 bar or 10,000 psi)



Heat Exchanger

- Design freedom
- Possibility to produce complex geometries
- High customization
- Space saving
- High heat transfer and performance

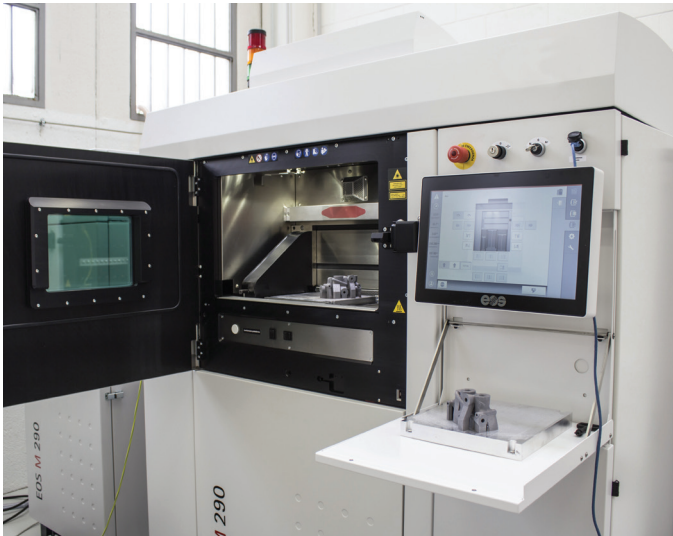


Small Components

- Good material properties
- Fast delivery time
- Custom-made products
- Mass-production volume

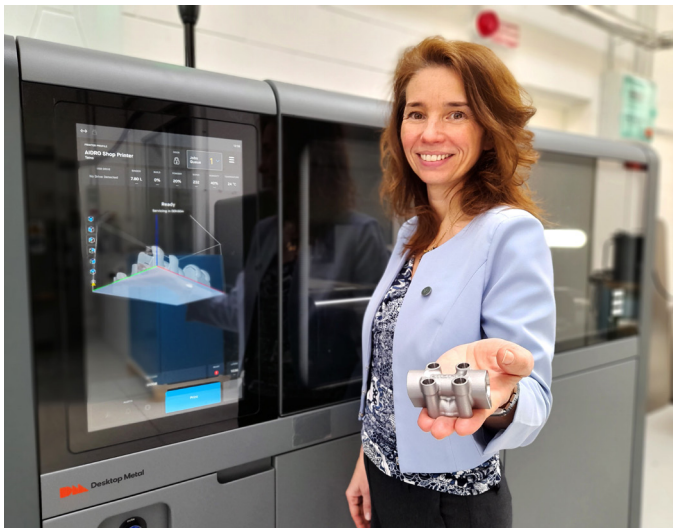


3D Printing Technologies



Laser Powder Bed Fusion

Direct Metal Laser Sintering (DMLS) is among the most versatile and frequently used metal 3D printing technologies. It allows highest mechanical properties, high metal density, good surface finishing and tolerances' respect.



Metal Binder Jetting

is an additive manufacturing process in which an industrial printhead selectively deposits a liquid binding agent onto a thin layer of powder particles to build high-value and one-of-a-kind parts and tooling. The process is repeated layer by layer, using a map from a digital design file, until the object is complete.



Sustainability



Aidro supports customers in their journey into sustainability and carbon footprint reduction. Sustainability is at the core of everything we do.

Society has to move towards net-zero emissions, and we aim to be a committed partner on that journey.

Our goal is to improve our products' quality and efficiency in respect of nature, and to make a positive change towards sustainable production and environment.



Green Powder from the Recycling of Obsolete Parts

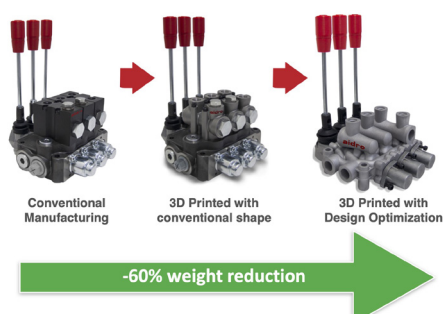
Aidro is a proudly partner of the GREEN powder project made with the recycling of obsolete parts by our partners.

This project marks a milestone towards the circular economy :

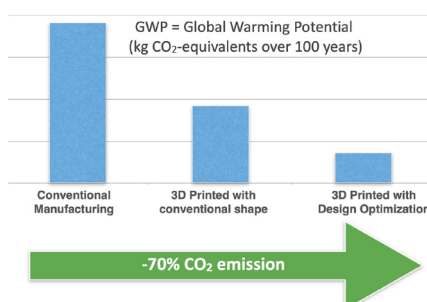
- recycle obsolete parts from “dead stock”
- create metal powder for 3D printing
- design for AM and 3D print new components at lower CO₂ footprint
- giving new life to scrap metals

Aidro supports its clients in their Carbon Footprint Reduction plans with the supply of 3D printed parts made with Green Powder

Additive Manufacturing



Life Cycle Assessment



aidro

Operative Address and Warehouse:

aidro s.r.l.

Via Prati Bassi 36- 21020 Taino (VA) Italy

Phone: +39 0331 960250 - Fax: +39 0331 960075

email: aidro@aidro.it



member of:



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