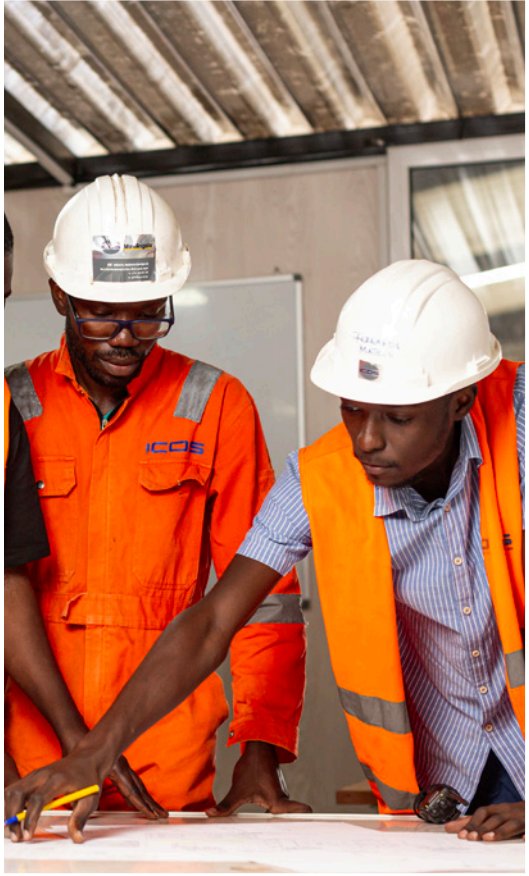
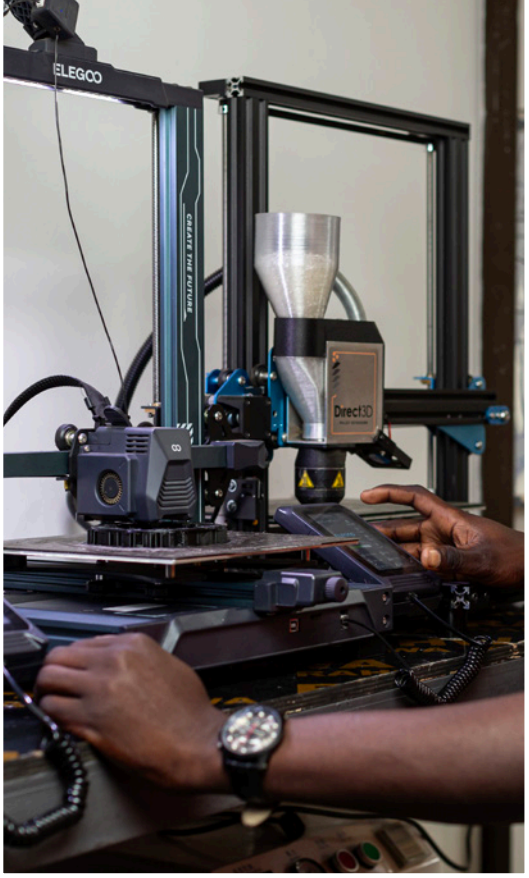
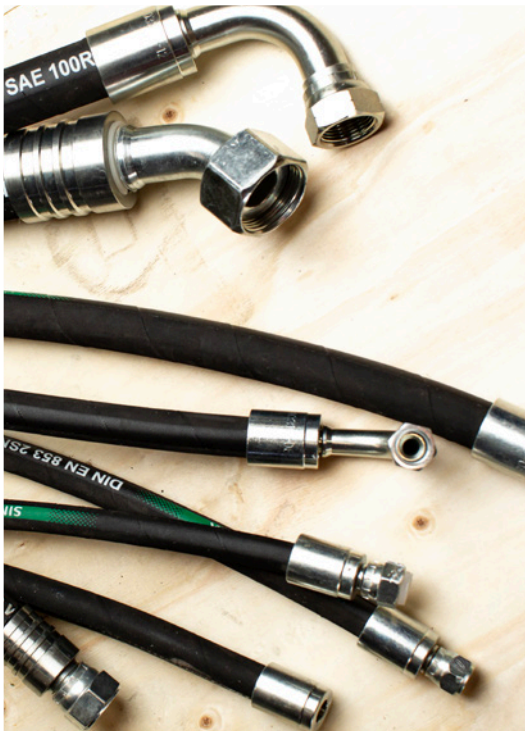




SERVICE CATALOG

ENGINEERING & INNOVATION AT THE SERVICE OF INDUSTRY



SINT
WWW.SINT.CO.AO

ICOS
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TABLE OF CONTENT

ABOUT ICOS

WHO WE ARE

Founded on June 7, 2010, ICOS is an Angolan industrial company headquartered in the Viana Industrial Hub, Km 28, in Luanda. With over a decade of experience and a team of 100 employees, ICOS stands out for developing and implementing comprehensive service and product solutions for the industrial and oil sectors. Our mission is to solve problems with speed, safety, and efficiency, ensuring superior operational and financial results for our clients.

OUR VALUE PROPOSITION

Commitment to Customer Satisfaction
Fast and Safe Solutions: We develop efficient strategies to minimize downtime and maximize productivity.
Guaranteed Results: We provide solutions with measurable operational and financial outcomes.
Mutually Beneficial Value Exchange:
Our professional team ensures excellence in both workshop and on-site operations.

MISSION

To solve the comprehensive challenges of national and international companies by efficiently and effectively delivering services and products that meet their specific needs. We ensure operational and financial results for our clients in the fields of metalworking, hydraulics, and pneumatics.

VISION

To be the clear choice for those seeking high-quality and customized products&services. To be recognized as a leading industry in our segment, in the short term in Angola and, in the long term, across Africa.

CORE VALUES

Customer Focus – We prioritize our clients' interests to earn their trust and secure future projects.
Passion, Quality, and Precision – We work with attention to detail and dedication to achieve the highest quality in every situation.
Ethics and Responsibility – We act with honesty and accountability, continuouslyimproving our skills, teamwork, and discipline.

ICOS

15 YEARS OF EXPERIENCE
In the Industrial solutions market.

+10.000 WORKS
Made in the industrial sector.

115 EMPLOYEES
In the Industrial solutions market.

+100 PARTNERS
Solid relationships with large companies in the industrial and oil sectors, which guarantee the company's trust and continuous expansion.

CUTTING-EDGE TECHNOLOGY
Continuous investment in modern equipment and innovation processes, including 3D printing and CNC machining solutions

APPLIED ENGINEERING CAPABILITY
In creating solutions adapted to each client

"Fast, Reliable & Customized Solutions

ABOUT

WHO WE ARE

Founded in Luanda in 2024, SINT is a dynamic Angolan company specialized in high-precision mechanical components and engineered solutions. With over 400 completed projects across critical sectors — including oil & gas, mining, construction, industry, and engineering — SINT has become a trusted partner for companies operating in demanding and high-performance environments.

Backed by a team of skilled engineers and designers, we ensure that every process and material is fully traceable and that all our products meet certified quality standards.

Today, with more than 30 strategic partners, SINT continues to expand its market presence through technology, innovation, and reliability.

OUR VALUE PROPOSITION

At SINT, we combine technological know-how, agility, and innovation to provide customized, high-performance solutions that simplify complex industrial challenges.

Our ability to execute special machining, ensure full traceability, and accelerate production cycles makes us the ideal partner for companies seeking efficiency and reliability in a fast-changing market.

MISSION

To develop high-impact technological solutions that reduce supply times, overcome the shortage of spare parts in the market, and enhance the productivity and autonomy of our clients. We aim to deliver precision, efficiency, and quality — every time, everywhere.

VISION

To be recognized as a benchmark in technological innovation and industrial excellence in Angola and beyond, shaping the future of engineering solutions through continuous improvement and digital transformation.

CORE VALUES

Innovation: We constantly invest in research and development to anticipate the needs of tomorrow's industries.
Quality: Every product is made under strict control and certified processes to guarantee excellence.
Reliability: We stand by our ommitments, delivering consistent results even under pressure.
Teamwork: Our engineers, designers, and partners work in synergy to create lasting value.
Responsibility: We act with integrity and dedication to the sustainable growth of Angola's industrial sector.

SINT

SINT

TECH INNOVATION

Leaders in 3D printing, CNC, and coating, we o er advanced solutions for industrial operations.

PROJECT MANAGEMENT

delivery, cost control, and maximum quality

30 PARTNERS

Strategic partners that expand our presence and impact in the market.

15 EMPLOYEES

Highly skilled to meet technical and operational challenges.

CUSTOMIZED SOLUTIONS

We create tailored solutions to meet all technical requirements.

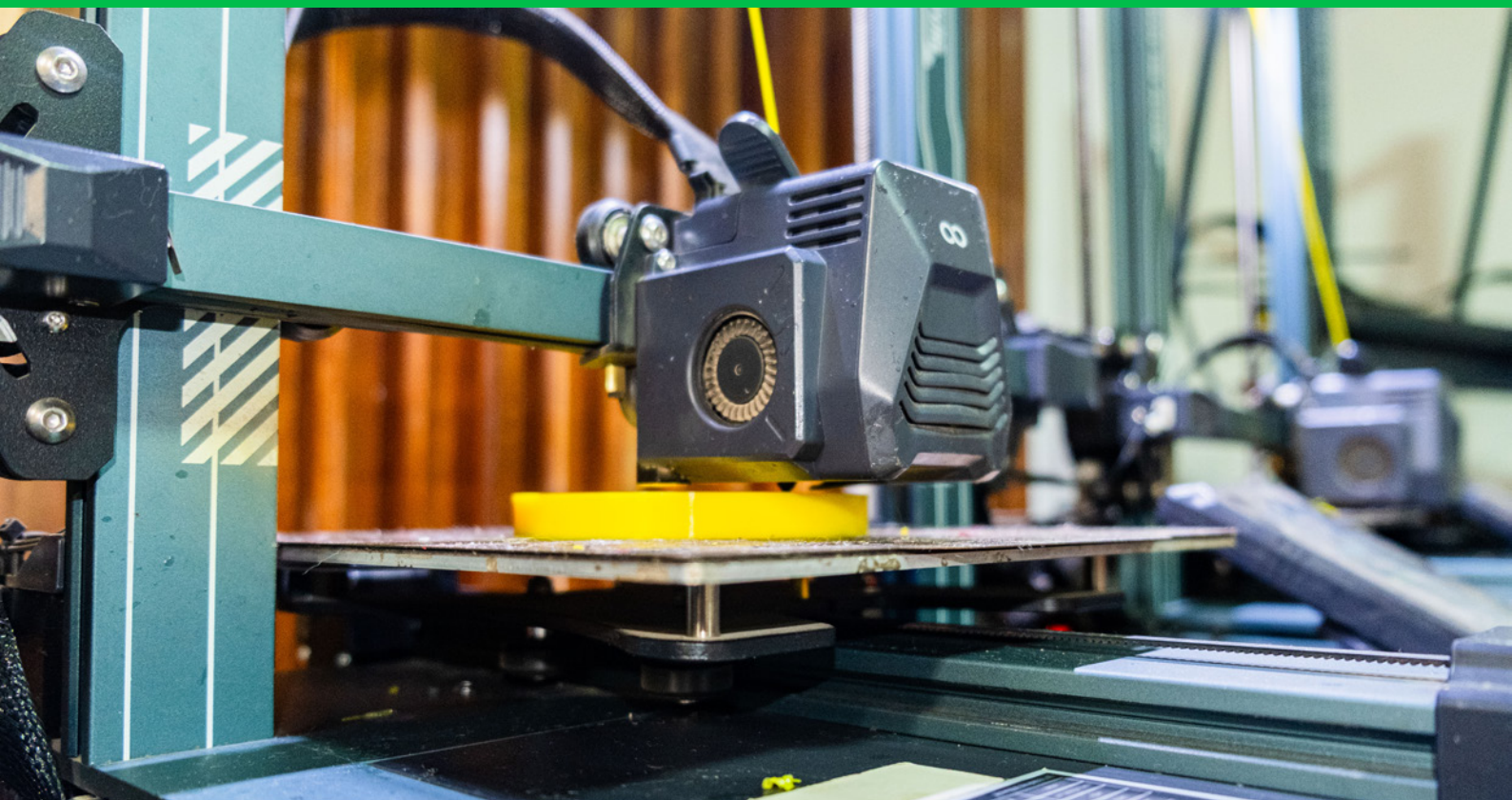
QUALITY&

High standards of quality and certification, ensuring durability and pe ormance.

PRODUCTION CAPACITY

Large-scale production with quality and efficiency.

"THE DREAM IS YOURS, THE ACHIEVEMENT IS OURS



TIMELINE

1

2009

Start of activities focusing on the construction and supply of Hydraulic Hoses.

2

2010

Installation of the first retail store specializing in hydraulic equipment, strengthening its presence in the sector.

3

2011

Opening of stores and strategic partnerships in Luanda, Porto Amboim, Soyo and Benguela, strengthening the distribution network and customer support.

4

2012

Development of a specialized structure to offer technical assistance and maintenance of hydraulic systems.

5

2014

Relocation and expansion of the workshop to meet growing demand.

Start of metalworking services, adding new technical capabilities to ICOS.

6

2015

First Major Projects in the Oil & Gas Sector

HEREMA: Rehabilitation of joints and replacement of all hydraulic equipment.

Execution of an 8 km project in hydraulic hoses for industrial applications.

7

2016

Partnership with Petromar

Replacement of complete hydraulic systems and renovation of Petromar equipment.

Closing of the first direct contract with a company in the oil sector, consolidating ICOS in the market.

8

2017

Construction of the Ambriz shipyard begins, expanding ICOS' operational and logistical capacity.

9

2019

Implementation of the FMC project, marking a breakthrough in industrial production.

Increase in staff to 80 employees, reinforcing production capacity.

10

2021

Strategic partnerships with Petromar and FMC Technologies.

Development of the Engineering and Technical Drawing Department, improving production and response capacity.

11

2022

Inauguration of the Ambriz Shipyard

New unit with areas dedicated to engineering and production, consolidating ICOS' infrastructure.

12

2023

Start of the ISO 9001 certification process, reinforcing the commitment to quality and good industrial practices.

13

2024

Modernization of operations, focusing on general Production capacity, Metalworking, Pneumatics, Advanced Hydraulic 3D Printing, CNC Machining, increasing ICOS' competitiveness in the market.

14

2025

We started the Metallization service.

OUR SERVICES

01.
CUSTOMIZED SOLUTIONS

YOUR SOLUTION STARTS HERE.

Reach out and we'll tailor the perfect service for you

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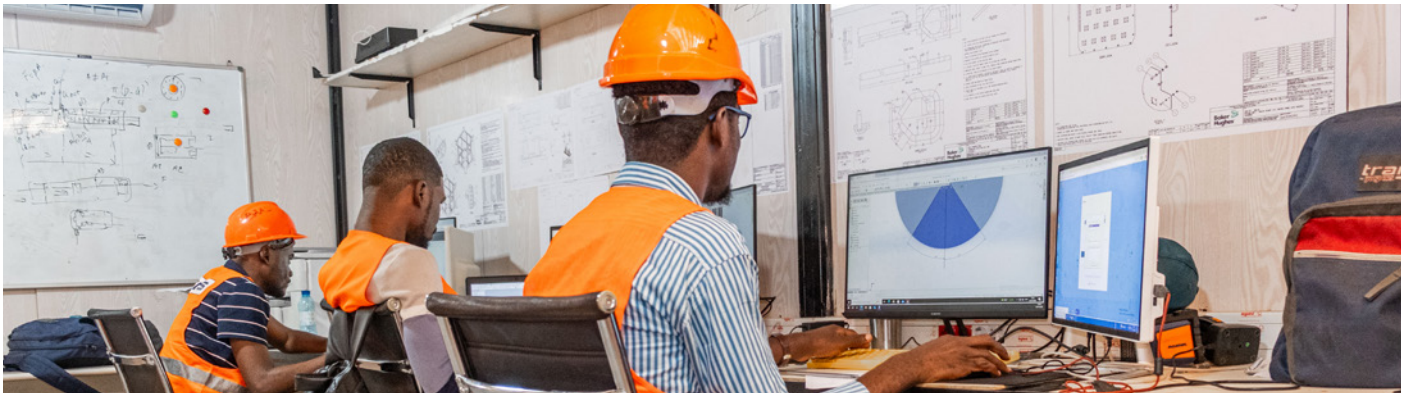
SERVICE NAME **CUSTOMIZED SOLUTIONS**



SERVICE DESCRIPTION

We offer end-to-end engineering project solutions, combining innovation, technical accuracy, and practical execution. With a multidisciplinary team of 15 specialized engineers, we collaborate closely with clients to design, prototype, fabricate, and deliver fully engineered solutions, from initial concept to final testing. Our engineering process follows global industrial standards (ISO, ASME, AWS) and the EPC methodology (Engineering, Procurement & Construction), ensuring complete project accountability, faster delivery timelines, and guaranteed results. What sets ICOS & SINT apart is its tailor-made, results-oriented approach. Every solution is developed according to the client's operational environment, performance requirements, and safety conditions. We believe the core of every successful industrial project lies in its engineering foundation. Therefore we invest first and foremost in skilled human capital, internal and externally trained, to ensure every project is executed with precision, safety, and industrial rigor.

TARGET AUDIENCE & INDUSTRIES:

- ► Oil & Gas operators (offshore rigs, FPSOs, refineries)
- ► Marine & shipyard operations (deck machinery, cranes, winches)
- ► Mining and heavy construction equipment companies
- ► Industrial manufacturing plants and hydraulic machinery OEMs
- ► Logistics companies using lifting platforms, cranes, and hydraulic loading systems

WHAT THE SOLUTION INCLUDES:

Hydraulic System Design & Engineering
- Design of hydraulic circuits, HPUs, manifolds, and control panels
- 3D modeling, pressure calculations, load balancing & flow simulations

Installation & Commissioning
- Assembly and installation of complete hydraulic plants
- System calibration, load testing, leak inspection & perational validation

Maintenance, Repair & Overhaul (MRO)
- Pump, motor, and cylinder disassembly, repair, and reconditioning
- Seal replacement, rod polishing, chrome plating & pressure restoration
- Hoses, valves, fittings supply and certified replacements

Fluid Management & Contamination Control
- Hydraulic oil flushing, filtration & dehydration procedures
- Compliance with ISO 4406 /NAS 1638 cleanliness standards
- Oil sampling, particle analysis & varnish removal

Testing & Certification
- Hydrostatic pressure testing of hoses, pipes, valves & cylinders
- Vacuum testing, leak detection, performance diagnostics
- Certification & technical reporting for client documentation

Reliability & Preventive Maintenance Programs
- Scheduled maintenance planning & lifespan prediction
- On-site technical teams for failure prevention & system upgrades

02.

CNC MACHINING

Subtractive manufacturing is one of the oldest and most reliable methods of producing mechanical components. Unlike additive manufacturing, where a part is built by adding material layer by layer, subtractive methods shape a part by removing material from a solid block using precision tools. The most advanced form of subtractive manufacturing today is CNC machining (Computer Numerical Control).

The origins of CNC go back to the late 1940s, when the aerospace industry in the United States began automating traditional milling machines using punched tape for accuracy and repeatability. With the evolution of computers in the 1970s and 1980s, CNC transformed into digitally programmed machining, drastically improving speed, precision, and consistency. Today, CNC machining is a global manufacturing standard,essential in industries where components must withstand high pressure, heat, mechanical stress and require tight tolerances.

At ICOS & SINT, CNC technology is not only a service,it is a strategic industrial advantage. We operate CNC Turning and 3-axis, 4-axis and 5-axis CNC Milling machines, allowing us to manufacture both complex high-performance components and everyday replacement parts. These machines enable multi-face machining, deep cavity milling, curved surfaces and fully customized geometries with micrometric precision.

CNC machining is used to produce critical parts such as hydraulic cylinder heads, precision shafts, valve blocks, gears, flanges and mechanical seals — parts that require strength, durability and exact functionality. But equally important, we also use CNC for non-critical but essential daily-use components, including bushings, adapters, brackets, spacers and machine fittings. This reduces dependence on imported spare parts, shortens delivery times from weeks to hours, lowers maintenance costs and keeps industrial operations running.

This technology plays a vital role in Angola's and the region's mining, oil and gas, agriculture, manufacturing and marine sectors , where equipment downtime is costly and replacement parts are often unavailable locally. By manufacturing components on demand, ICOS ensures operational continuity, cost efficiency and industrial autonomy.

YOUR SOLUTION STARTS HERE.

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SERVICE NAME **CNC MACHINING**

SERVICE DESCRIPTION

CNC (Computer Numerical Control) machining is essential for producing high-precision components with complex geometries for industrial, automotive, offshore, and energy applications. At ICOS & SINT, we operate advanced CNC Turning, as well as 3-axis, 4-axis, and 5-axis CNC Milling machines, enabling us to manufacture both simple and highly complex parts, including large components and multi-face machining in a single setup.

Our 3-axis CNC milling handles standard precision parts, while 4-axis and 5-axis machining allow simultaneous movement along multiple planes, making it ideal for curved surfaces, impellers, turbine parts, molds, hydraulic blocks, and components requiring advanced contouring or undercuts. CNC Turning is used for cylindrical components like shafts, bushings, threaded pieces, hydraulic fittings, valve spools, and rotating assemblies.

We machine a wide range of materials — carbon steel, stainless steel, aluminum, bronze, brass, titanium alloys, and engineering plastics like Delrin, Nylon, POM, UHMW, PTFE — following ISO 2768 and ISO 9001 quality standards. CAD/CAM software is used to convert engineering drawings and 3D models into finished components with consistent precision and repeatability.

TARGET AUDIENCE & INDUSTRIES:

- ▶ Oil & Gas suppliers (subsea parts, valve bodies, flanges, connectors)
- ▶ Automotive & machinery manufacturers
- ▶ Mining and drilling equipment companies
- ▶ Industrial maintenance and engineering workshops
- ▶ Research, prototyping, and manufacturing firms
- ▶ Industrial plants & repair workshops
- ▶ Engineering and R&D centers

WHAT THE SOLUTION INCLUDES:

- **CNC Turning** – Shafts, axles, bushings, threaded rods, piston rods, couplings
- **3-axis CNC Milling** – Precision flat surfaces, slots, holes, mechanical parts
- **4-axis CNC Milling** – Angular features, rotation machining, cylindrical contouring
- **5-axis CNC Milling** – Complex geometries, aerospace-style parts, multi-face machining without repositioning
- **Manufacturing of parts** from 2D drawings and 3D CAD files (STEP, IGES, SLDPRT, STL)
- **Machining of metals:** Carbon steel, stainless steel, aluminum, brass, bronze, titanium
- **Machining of industrial plastics:** POM (Delrin), Nylon, UHMW, PTFE, PEHD
- **Custom threads** (metric, UNC, NPT, BSP), keyways, pockets, contours
- **Prototyping**, low-volume, and serial production
- **Dimensional inspection,** quality reports & tolerancecertification (ISO 2768)

03.

ADVANCE 3D PRINTING

While CNC machining removes material to shape a component, 3D printing takes the opposite approach, it creates a part by adding material layer by layer. This process is known as additive manufacturing and has become a major innovation in modern engineering, design, product development and industrial maintenance.

3D printing began emerging in the 1980s as a tool for rapid prototyping but has since evolved into a practical manufacturing method. Unlike subtractive machining, which requires tooling, fixtures and solid metal blocks, 3D printing starts with a digital 3D model and builds the part gradually using plastic filament, resin, metal powder or composite material. This allows for complex geometries, lightweight structures, hollow shapes, internal channels and designs that traditional machines cannot produce.

At ICOS & SINT, 3D printing is used as a complementary technology to CNC machining, not a replacement. It is especially valuable in the early stages of product development, for reverse engineering, and when non-critical parts are needed quickly or are no longer available from suppliers. Using 3D scanning and CAD modeling, broken or obsolete components can be digitally recreated and printed in hours instead of waiting weeks for imported replacements. Industries such as mining, oil and gas, education, agriculture, manufacturing and automotive benefit from this capability. ICOS uses 3D printing to produce:

- Prototypes and visual models for client validation
- Functional test parts for design approval before machining
- Custom housings, fixtures, jigs, machine covers, cable guides and protective casings
- Replacement parts for equipment where strength demands are moderate but speed is essential

While 3D printing is not always suitable for high-pressure or high-temperature applications, it plays a crucial role in reducing downtime, accelerating design cycles, supporting innovation and lowering production costs. It enables local industries to test ideas faster, repair equipment without waiting for overseas suppliers and gain independence in manufacturing small-scale parts.

SERVICE NAME **ADVANCE 3D PRINTING**

SERVICE DESCRIPTION

Advanced 3D printing enables the rapid production of functional prototypes, spare parts, molds, and complex geometries that are difficult or impossible to make using traditional manufacturing.

At ICOS & SINT, we use industrial-grade 3D printers and 3D scanners to support product development, reverse engineering, maintenance parts replication, and low-volume manufacturing.

We work with materials such as PLA, ABS, PETG, Nylon, Resin, and Metal Powders (using SLS/DMLS technology where required). Our service extends beyond simple printing — we assist with CAD modeling, 3D scanning of damaged or obsolete parts, digital reconstruction, file optimization, and prototype functionality testing. This reduces project lead times, eliminates shipping delays for spare parts, and enables local manufacturing solutions.

TARGET AUDIENCE & INDUSTRIES:

- Product developers & engineering firms
- Industrial maintenance teams needing replacement parts
- Mining, Oil & Gas, and Marine sectors (obsolete components)
- Universities, R&D labs, innovators, startups, designers, creatives & hobbiests
- Manufacturing companies & automation engineers

WHAT THE SOLUTION INCLUDES:

- 3D CAD modeling & optimization
- 3D scanning of existing components (reverse engineering)
- Prototyping for functional testing and validation
- Production of jigs, fixtures, housings & mechanical components
- Resin, plastic & metal-based 3D printing
- Finishing, sanding, post-processing & assembly
- STL & STEP file repair & engineering documentation

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04.

3D SCANNING,
REVERSE ENGINEERING AND DIMENSIONAL CONTROL

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SERVICE NAME **3D SCANNING & REVERSE ENG.**

SERVICE DESCRIPTION

This service uses high-precision 3D scanning technology to digitally capture the geometry of mechanical components for three core purposes: reverse engineering, dimensional inspection, and part reproduction. It allows ICOS to recreate parts that are obsolete, damaged, or no longer available on the market, and verify whether existing components meet original specifications and tolerances. Through 3D scanning and CAD modeling, parts can be digitally rebuilt and manufactured using CNC machining or 3D printing, reducing procurement and repair times by up to 50%. This technology also ensures quality control and compliance, detecting wear, deformation, and deviations before failure occurs — minimizing downtime and extending equipment life.

TARGET AUDIENCE & INDUSTRIES:

- ▶ Mining & quarrying
- ▶ Oil & Gas (onshore/offshore)
- ▶ Marine & shipbuilding
- ▶ Automotive repair and maintenance
- ▶ Manufacturing, Agriculture machinery
- ▶ Industrial maintenance and engineering workshops.

WHAT THE SOLUTION INCLUDES:

- ▶ High-resolution 3D scanning of mechanical parts, molds, tools, worn or broken components
- ▶ Reverse engineering of unavailable or discontinued components using CAD modeling
- ▶ Reproduction or improvement of parts via CNC machining or 3D printing
- ▶ Dimensional control: comparison of scan data to original CAD models or technical drawings
- ▶ Tolerance and wear analysis, deformation and alignment verification
- ▶ Export of 3D models and reports in formats such as STEP, IGES, STL, PDF
- Technical documentation for traceability, maintenance, and future manufacturing

05.

METALLIZATION & SURFACE PROTECTION

Arc Thermal Spray Coating, also known as Arc Metallization, is an industrial surface protection process where two metallic wires are electrically melted and atomized using a high-energy electric arc. The molten metal is then sprayed onto a prepared surface using compressed air, creating a bonded metallic coating that protects the component from corrosion, abrasion, chemical exposure, and extreme environmental conditions.

Unlike traditional painting or chemical coatings, thermal spray metallization does not rely on adhesion from liquid solvents. Instead, it forms a solid metal layer that mechanically bonds to the surface, making it far more durable, impact-resistant, and long-lasting. This makes it especially effective in marine environments, offshore platforms, oil & gas installations, mining sites, shipbuilding, and structural steel protection, where surfaces are exposed to saltwater, humidity, abrasion, and aggressive chemicals.

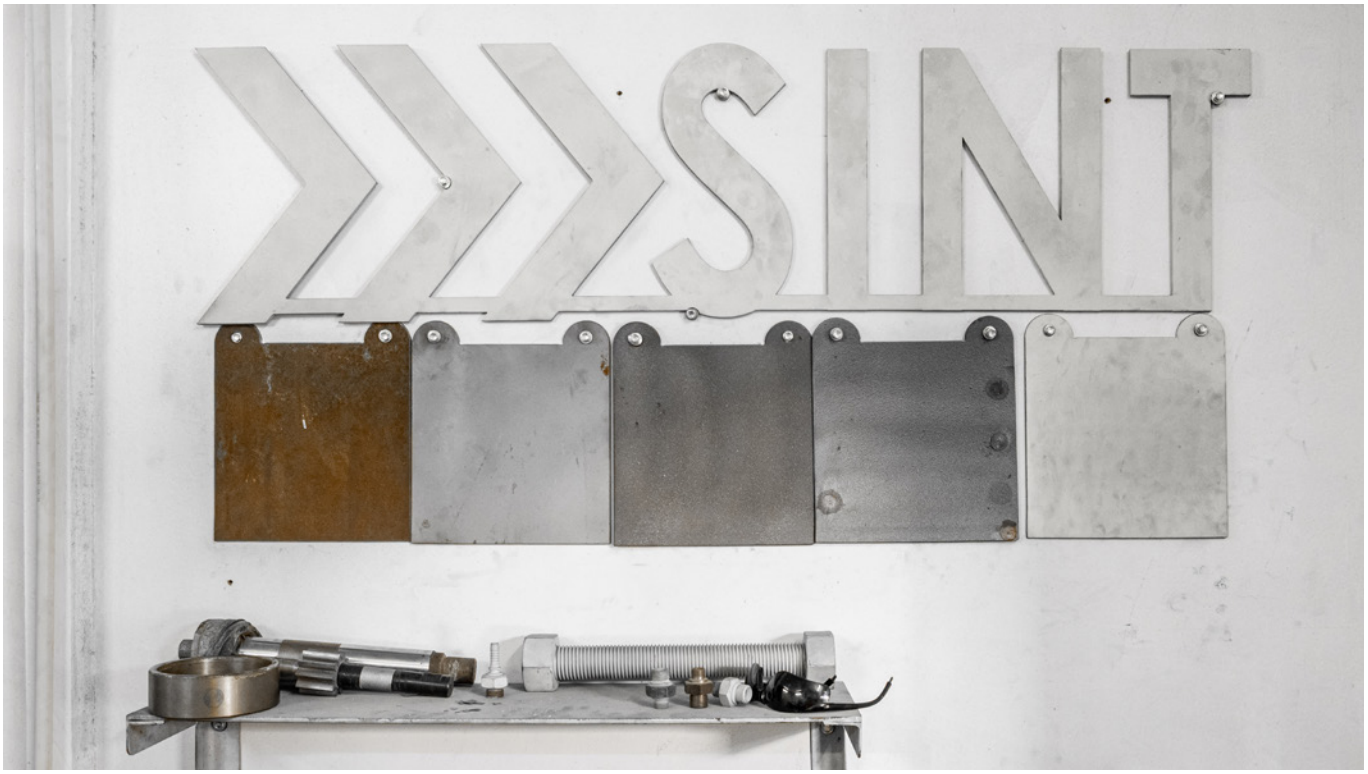
The process is typically used with zinc, aluminum, stainless steel, or zinc-aluminum alloys, depending on the level of corrosion or wear resistance required. Prior to coating, surfaces are roughened using abrasive blasting to ensure proper adhesion and surface profile. The result is a protective metallic layer that will not peel like paint and can outlast traditional coatings by 5–10 years or more, even in harsh coastal or industrial conditions.

At ICOS & SINT, Arc Thermal Spray Coating is applied to extend the lifespan of:

- Marine structures, ship components, offshore platforms and cranes
- Pipelines, storage tanks, pressure vessels and structural steel
- Hydraulic cylinders, shafts, flanges and industrial machinery components
- Mining equipment and exposed mechanical parts subject to abrasion

By applying this coating locally,we help industries avoid premature failure and reduce the costs of part replacements or imports. It allows companies to repair and protect parts instead of replacing them, supporting sustainability, operational efficiency and asset longevity.

SERVICE NAME **METALLIZATION & SURFACE PROTECTION**



SERVICE DESCRIPTION

Metallization is a surface engineering process that applies protective metal layers onto industrial components to prevent corrosion, wear, and mechanical degradation. ICOS offers zinc metallization, thermal spray coating, anti-wear overlays, and repair of heavily eroded parts. These treatments extend asset lifespan and reduce replacement costs in offshore, marine, mining, and heavy industries. Surface coatings follow ISO 2063 metallization standards and are applied using arc spray or flame spray systems. Typical applications include restoring shafts, hydraulic rods, gears, turbine parts, and metal structures exposed to harsh environments.

TARGET AUDIENCE & INDUSTRIES:

- ▶ Oil & Gas platforms (saltwater corrosion protection)
- ▶ Marine vessels, shipyards & offshore cranes
- ▶ Mining machinery & drilling equipment
- ▶ Steel plants, fabrication yards & power generation companies

WHAT THE SOLUTION INCLUDES:

- Zinc metallization for anti-corrosion protection
- Thermal spray coating for anti-wear surfaces
- Restoration of worn shafts, rollers, hydraulic rods
- Application of anti-friction & heat-resistant coatings
- Surface preparation (blasting, degreasing, polishing)
- Inspection and coating thickness certification

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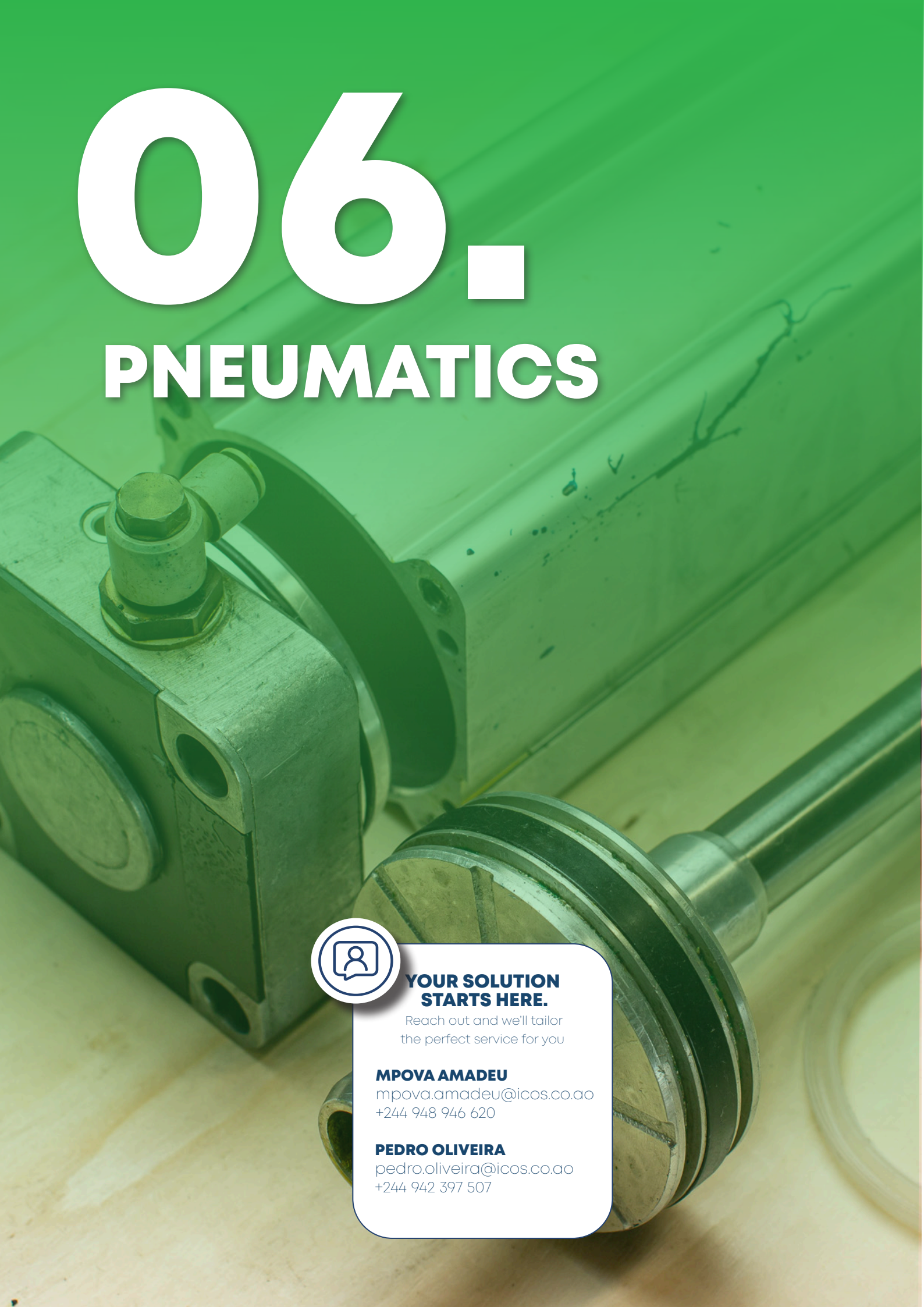
06.
PNEUMATICS



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SERVICE NAME **PNEUMATICS**

SERVICE DESCRIPTION

Pneumatic systems use compressed air to power industrial machinery, automation devices, assembly lines, and control systems. ICOS & SINT designs, installs, repairs, and maintains pneumatic networks used in industrial manufacturing, food processing, automotive assembly, textile machinery, and offshore operations. The focus is on energy-efficient air handling, leak-free systems, and precision control. Our expertise covers air compressors, filters, actuators, valves, FRL units (Filter, Regulator, Lubricator), air dryers, and Transair aluminum compressed air network installations. We provide full pneumatic system diagnostics, air pressure optimization, and component refurbishment. All equipment is tested following ISO 8573 compressed air quality standards.

TARGET AUDIENCE & INDUSTRIES:

- ▶ Factories & manufacturing plants
- ▶ Automotive and assembly industries
- ▶ Food, textile, packaging industries
- ▶ Oil & gas (instrument air systems)
- ▶ Construction & industrial automation companies

WHAT THE SOLUTION INCLUDES:

- Pneumatic System Design & Installation
- Compressor room setup & air treatment systems
- Assembly and disassembly of pneumatic circuits
- Air leakage testing & efficiency optimization
- Repair of pneumatic valves, cylinders, actuators
- Installation of Transair® compressed air piping systems
- Custom pneumatic seals, gaskets & accessories
- Certification, pressure testing & maintenance documentation

07.

HYDRAULIC CYLINDER SERVICE

Hydraulic cylinders are critical components in heavy machinery, lifting systems, mining equipment, industrial presses, offshore platforms, and construction machinery. Their role is to convert hydraulic fluid pressure into linear force and motion—making them essential for operations that require strength, precision, and control.

At ICOS & SINT, we provide complete hydraulic cylinder services, including disassembly, inspection, repair, machining, seal replacement, reassembly, and testing. Each cylinder is restored to its original OEM performance or better, ensuring zero leakage, full pressure capacity, smooth operation, and extended service life.

YOUR SOLUTION STARTS HERE.

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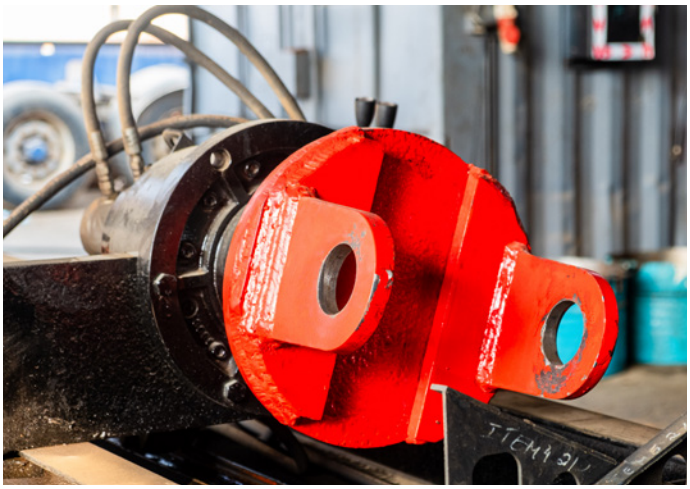
SERVICE NAME **HYDRAULIC CYLINDER SERVICES**



SERVICE DESCRIPTION

Hydraulic cylinders are essential components in industrial, mining, construction, marine, and agricultural machinery.We provide a full hydraulic cylinder restoration service that returns each unit to as-new or better performance. This includes complete disassembly, wear analysis, precision repair or re-manufacturing of internal parts, seal replacement, reassembly, and functional testing on a certified hydraulic test bench.

During the process, cylinders are checked for rod scoring, barrel wear, seal failure, misalignment, corrosion, and pressure loss. Damaged rods are polished or re-chromed, barrels are honed or replaced, and pistons, glands, and heads are repaired or CNC-machined when necessary. Once rebuilt, every cylinder is pressure-tested to validate performance, leak-free operation, correct pressure holding, and smooth movement under load.

This service ensures quick turnaround times, eliminates the need to import expensive replacement cylinders, and helps clients extend equipment lifespan, reduce downtime, and maintain safe, reliable operations.

TARGET AUDIENCE & INDUSTRIES:

- ▶ Mining & quarrying equipment operators
- ▶ Oil & gas rigs, drilling equipment, hydraulic power units
- ▶ Construction & earthmoving machinery (excavators, bulldozers, cranes)
- ▶ Marine & offshore systems (deck cranes, winches, lifting equipment)
- ▶ Industrial presses, injection molding machines, manufacturing systems
- ▶ Agriculture machinery (tractors, harvesters, hydraulic trailers)

WHAT THE SOLUTION INCLUDES:

Hydraulic System Design & Engineering
- Design of hydraulic circuits, HPUs, manifolds, and control panels
- 3D modeling, pressure calculations, load balancing and flow simulations

Installation & Commissioning
- Assembly and installation of complete hydraulic plants
- System calibration, load testing, leak inspection and operational validation

Maintenance, Repair & Overhaul (MRO)
- Pump, motor, and cylinder disassembly, repair, and reconditioning
- Seal replacement, rod polishing, chrome plating and pressure restoration
- Hoses, valves, fittings supply and certified replacements

Fluid Management & Contamination Control
- Hydraulic oil flushing, filtration & dehydration procedures
- Compliance with ISO 4406/NAS 1638 cleanliness standards
- Oil sampling, particle analysis & varnish removal

Testing & Certification
- Hydrostatic pressure testing of hoses, pipes, valves & cylinders
- Vacuum testing, leak detection, performance diagnostics
- Certification & technical reporting for client documentation

Reliability & Preventive Maintenance Programs
- Scheduled maintenance planning & lifespan prediction
- On-site technical teams for failure prevention and system upgrades

Metal cutting is a fundamental stage in manufacturing and fabrication, enabling raw materials to be shaped into functional industrial components. At ICOS &n SINT, we utilize four different cutting technologies, each chosen based on the material type, thickness, accuracy requirements, and end-use application. This allows us to deliver solutions that range from simple mechanical cuts to high-precision, complex geometries used in advanced engineering.

1. Traditional Cutting (Manual & Mechanical)

This method uses bandsaws, oxy-fuel torches, grinders, and mechanical shears to cut metal. It is ideal for standard fabrication, maintenance work, and heavy structural steel. Though not as precise as CNC or laser cutting, it is efficient and cost-effective for everyday industrial operations.

2. CNC Cutting – High Precision & Repeatability

CNC cutting uses computer-controlled machines to perform accurate, repeatable cuts according to digital design files (CAD/CAM). This process ensures tight tolerances, smooth surfaces, and exact geometries.
Our companies are one of the first African companies to operate 4-axis and 5-axis CNC cutting and machining systems, allowing us to cut and shape large and complex parts with extreme precision.

3. Laser Cutting – Fine and Detailed Work

Laser cutting uses a high-powered laser beam to melt or vaporize material along a programmed path. It is ideal for fine details, thin metals, stainless steel sheets, decorative work, prototype parts, and precision industrial components. Laser technology delivers clean edges, minimal thermal distortion, and high accuracy, especially for thin or delicate materials.

4. Wire Cutting (EDM – Electrical Discharge Machining)

Wire cutting is a non-contact, electro-thermal process where a thin wire uses electrical sparks to cut metal. It is used for extremely precise and complex profiles, such as dies, molds, gears, turbine components, and intricate internal geometries. This technique is especially useful for hard metals, tight tolerances, and shapes that cannot be achieved by traditional tools.

Why These Cutting Technologies Matter

Each cutting method is selected based on:
- Material type – steel, aluminum, stainless steel, titanium, copper, etc.
- Thickness and complexity
- Mechanical or aesthetic requirements
- End-use application – structural, hydraulic, mechanical or decorative

By offering all four cutting technologies, We ensure flexibility to serve industries such as oil & gas, mining, manufacturing, automotive, marine, agriculture, and construction, while reducing reliance on imported parts and shortening fabrication timelines.

08.
METAL WORKS

YOUR SOLUTION STARTS HERE.
Reach out and we'll tailor the perfect service for you

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SERVICE NAME **METAL WORKS**

SERVICE DESCRIPTION

Metalworking is a core industrial service at ICOS, specializing in the fabrication of steel structures, offshore mechanical components, and industrial metallic assemblies for oil, gas, mining, marine, construction, and energy projects. We operate fully equipped workshops capable of CNC bending, laser cutting, plate rolling, structural welding, pipe fabrication, and component assembly. Materials commonly used include carbon steel, stainless steel, duplex alloys, aluminum, bronze, and brass—each selected based on project strength, corrosion resistance, and temperature requirements.

Our welding capabilities follow internationally recognized standards including ISO 9606, ASME Section IX, and AWS D1.1. Welding processes include SMAW (electrode), MIGMAG, TIG for stainless, aluminum, precision parts, and submerged arc welding for large structures. We manufacture and repair platforms, support structures, pressure-bearing components, pipes, skids, tanks, and underwater frames. All critical welds are inspected via visual examination, dye penetrant, magnetic particle, ultrasound, or radiographic testing.

TARGET AUDIENCE & INDUSTRIES:

- ▶ Oil & gas contractors (Petromar, FMC projects, subsea structures)
- ▶ Mining & construction companies (steel structures, heavy equipment)
- ▶ Marine & offshore platforms (ship components, lifeboat systems)
- ▶ Industrial plants & manufacturing companies
- ▶ EPC contractors requiring steel fabrication & assembly

WHAT THE SOLUTION INCLUDES:

Structural Fabrication
- Production of steel frames, platforms, skids, pipe racks, supports
- Offshore structures for shallow and deepwater operations

Welding & Joint Engineering
- MIG/MAG, TIG, SMAW (electrode) certified welding
- Aluminum, stainless steel (304/316), duplex & alloy steel welding
- Orbital welding and welding procedure qualification records (WPQR)

Cutting, Bending & Forming
- CNC plasma cutting, laser cutting, mechanical sheet bending
- Roll forming, pipe bending, chamfering & plate shaping

Industrial Component Repair
- Repair of damaged industrial steel components and frames
- Replacement of corroded, cracked, or worn mechanical parts

Testing & Quality Control
- NDT (Non-Destructive Testing): Visual, Dye Penetrant, UT, RT
- Dimensional inspection and welding certification reports

ICOS provides specialized industrial maintenance services and certified equipment rental solutions for industries that rely on hydraulic, pneumatic, and mechanical power systems. With a dedicated workshop and trained technicians, ICOS performs preventive and corrective maintenance on heavy machinery, hydraulic systems, industrial equipment, and production lines, ensuring operational continuity and safety.

In addition, ICOS is an Authorized Enerpac Service Center and works with leading brands such as Enerpac and Tritorc, offering professional rental, maintenance, calibration, and certification of high-pressure hydraulic tools and bolting equipment. This includes torque wrenches, hydraulic pumps, tensioners, flange spreaders, nut splitters, and lifting cylinders. All rental tools are inspected, tested, and delivered ready for use with optional on-site technical support.

Why This Service Is Important

- Prevents under-tightening (risk of leaks, mechanical failure)
- Prevents over-tightening (bolt stretching, flange damage)
- Ensures repeatable accuracy, safety, and quality assurance
- Reduces breakdowns, shutdown time, and expensive repair costs
- Supports offshore, refinery, subsea, pipeline, and structural assembly work

09.

MAINTENANCE AND RENTALS

OF TORQUE WRENCHES AND MAINTENANCE MACHINES (TRITORC AND ENERPAC)

SERVICE NAME **INDUSTRIAL MAINTENANCE**

SERVICE DESCRIPTION

Industrial maintenance ensures the reliability and longevity of machines, production lines, and critical infrastructure by minimizing breakdowns and optimizing performance. ICOS provides preventive (scheduled) and corrective (repair-based) maintenance for mechanical, hydraulic, pneumatic, and processing equipment. We diagnose inefficiencies, conduct equipment overhauls, replace worn parts, and optimize energy consumption.

By using condition monitoring techniques (vibration analysis, oil analysis, thermal inspection), ICOS helps clients avoid major failures and reduce operational downtime.

TARGET AUDIENCE & INDUSTRIES:

- ▶ Oil & Gas operators (offshore rigs, FPSOs, refineries)
- ▶ Marine & shipyard operations (deck machinery, cranes, winches)
- ▶ Mining and heavy construction equipment companies
- ▶ Industrial manufacturing plants and hydraulic machinery OEMs Power Plants & Industrial Facilities,
- ▶ Mechanical Construction, Steelworks & Fabrication
- ▶ Logistics companies using lifting platforms, cranes, and hydraulic loading systems

WHAT THE SOLUTION INCLUDES:

▶ Industrial Maintenance Services
Preventive, corrective and predictive maintenance
Repair of hydraulic, pneumatic and mechanical equipment
Replacement of components: cylinders, pumps, valves, seals, hoses. On-site and workshop-based technical interventions
Documentation and maintenance reports

▶ Authorized Enerpac & Tritorc Tool Services
ICOS is an Authorized Enerpac Service Center
Service and maintenance of Enerpac and Tritorc equipment
Calibration and testing of torque wrenches and hydraulic tools
Supply, repair, and certification of high-pressure pumps and power units

▶ Rental of Industrial Tools & Equipment
Rental of hydraulic torque wrenches (Enerpac, Tritorc)
Rental of tensioners, hydraulic pumps, nut splitters, flange spreaders Rental of hydraulic lifting cylinders and jacking tools
Short-term and long-term rental options with full inspection and testing

▶ Support & Training
On-site tool setup and operational support
Operator training for safe use of torque and hydraulic equipment
Assistance with bolting operations, controlled tightening and flange management

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