ENERCON

AIR FILTRATION SYSTEMS
HYDRAULIC SYSTEMS




YOUR GREEN INDUSTRIAL SOLUTION




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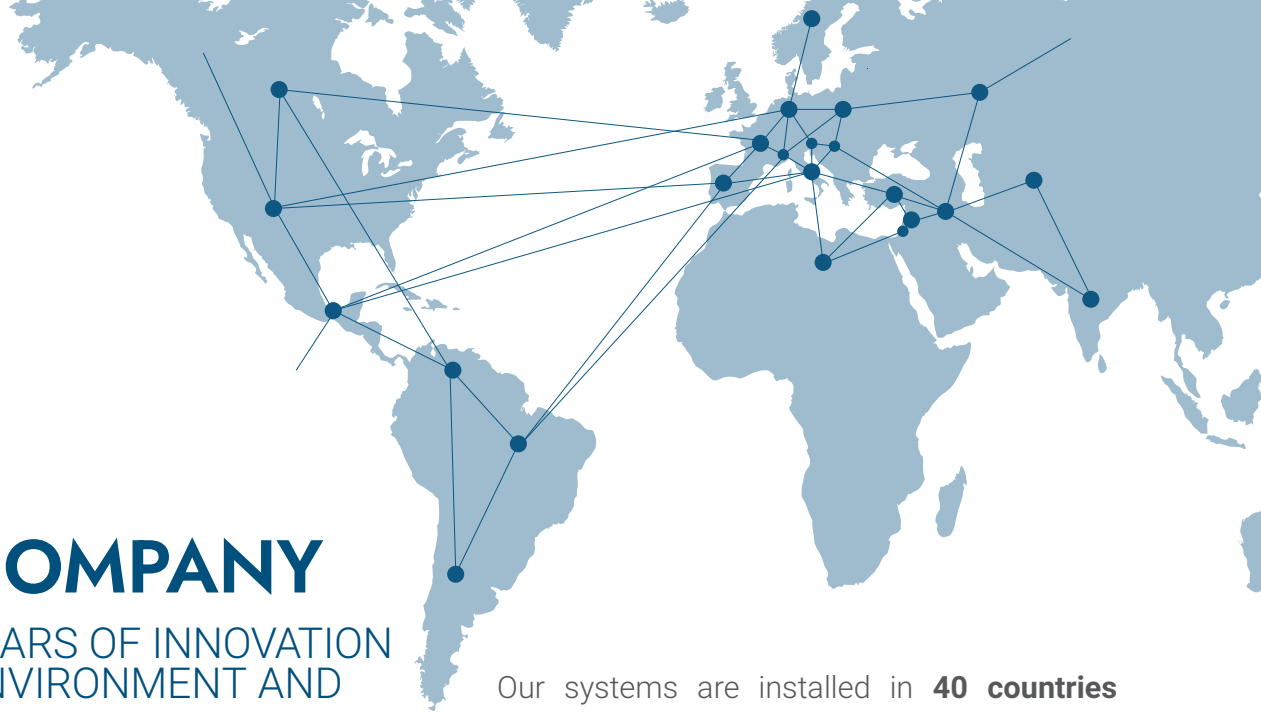

OUR COMPANY

OVER 40 YEARS OF INNOVATION FOR THE ENVIRONMENT AND INDUSTRY

Enercon was founded in 1980 to meet the plant engineering needs of a group operating in the field of waste purification and disposal. Since the very beginning, our dynamic and flexible structure has earned a prominent role in both the national and international plant engineering markets.
Initially focused on engineering and the design of custom-built systems, in 1986 **Enercon** consolidated its own production unit, becoming a comprehensive and reliable partner able to oversee every stage: from design to direct construction.
Today, **Enercon** is a benchmark in the field of industrial **air and fume treatment and in industrial hydraulics**, developing innovative solutions aimed at:

- **Sustainability and environmental protection** with systems that drastically reduce harmful emissions;
- **Energy and cost savings** through heat recovery and consumption optimization;
- **Workers' well-being** creating safer, healthier and more comfortable workplaces;
- **Global benefits** making a tangible contribution to reducing companies' carbon footprint.

Our systems are installed in **40 countries around the world.**

In more than forty years of activity, **Enercon** has enriched its technical and technological know-how, building customized systems, dedicated equipment and innovative prototypes. Our philosophy is to provide **turnkey solutions** – a choice that has earned us the trust of qualified customers worldwide.
Every day, **Enercon** continues its mission: **reconciling production needs with environmental protection, creating sustainable value for businesses and for society.**

OUR PRODUCTS

- OIL MIST ASPIRATION AND FILTRATION SYSTEMS
- FUME AND DUST ASPIRATION AND FILTRATION SYSTEMS
- ENERGY RECOVERY AND SAVINGS
- INDUSTRIAL HYDRAULIC PLANTS
- SPECIAL APPLICATIONS
- SUPPORT AND MAINTENANCE SERVICES

OIL MIST ASPIRATION AND FILTRATION SYSTEMS

Complete hoods with self-cleaning ENERPRESS electrostatic filters for recirculation of purified air into the workplace on die-casting machines from 800 to 2700 Ton – Hungary

Oil mists arise in various industries and applications, often with the possibility of heat recovery:

- **Metallurgical, molding and mechanical engineering:** aluminum die casting, hot brass processing, turning, milling, grinding, CNC machining centers, release agents, synthetic or neat cutting oils, tool cooling water.
- **Food industry:** industrial frying, high-fat cooking.
- **Plastics and rubber:** injection molding, extrusion with additives (with potential heat recovery).
- **Textile industry:** loom lubrication, stenters and heat-setting processes (with potential heat recovery).
- **Recycling and waste treatment:** handling of industrial waste containing oily residues.

Oil mists and industrial aerosols are not simple by-products of production processes!

1. **Production:** they cause machine downtime, reduce the service life of systems, and increase extraordinary maintenance costs.
2. **Environment and sustainability:** they generate atmospheric emissions that must comply with increasingly strict environmental limits.
3. **Health:** they compromise air quality in production areas, exposing workers to health risks.
4. **Safety:** they increase the risk of fire and explosion in environments saturated with oily aerosol.

Extraction means ensuring **production continuity, reducing environmental impact, protecting workers, and maintaining the highest safety standards.**

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OIL MIST ASPIRATION AND FILTRATION SYSTEMS

Enercon designs and builds customized oil mist extraction and filtration systems, using different technologies and providing t**urnkey solutions** according to customer and process requirements, with systems **prepared for Industry 4.0:**

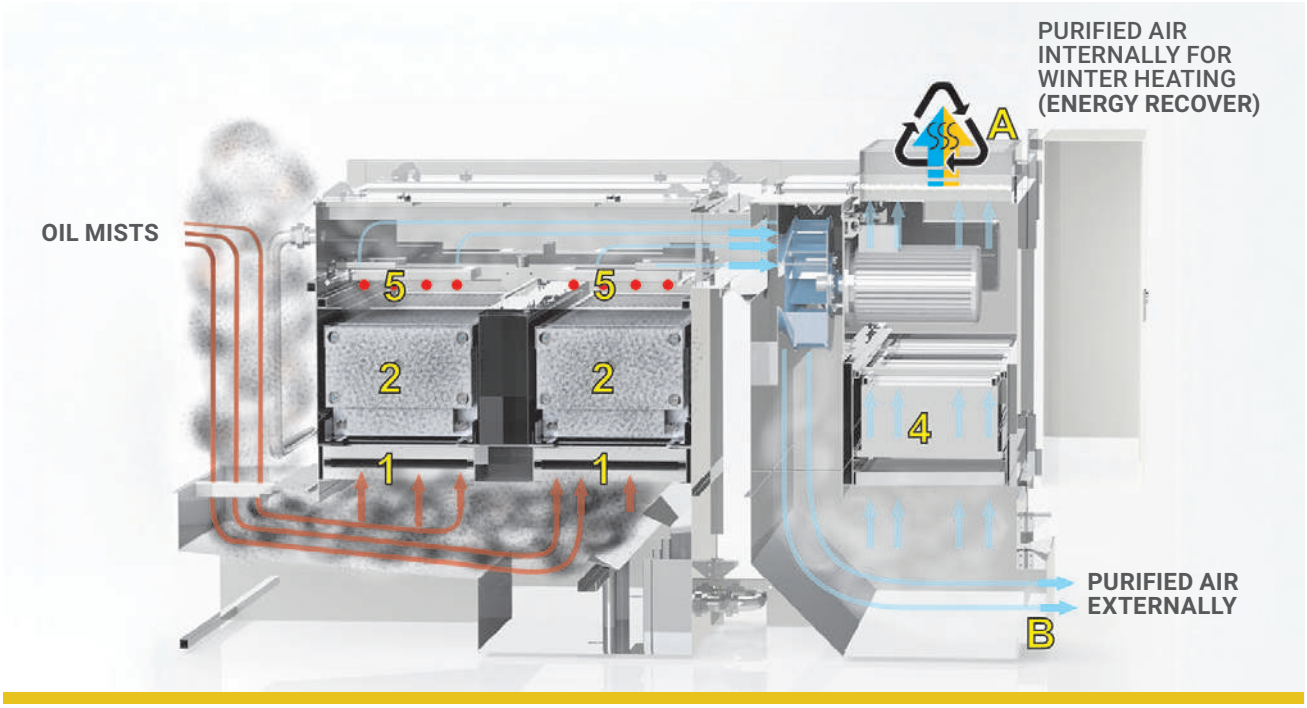
- **Dedicated capture hoods:** designed to effectively collect oil mist directly at the source.
- **Mechanical mesh filters:** for the initial separation of coarse particles and larger oil droplets.
- **Electrostatic:** filters with optional programmable automatic washing to capture even the finest microdroplets with minimal maintenance.

Hood on a 1300 Ton die-casting machine complete with self-cleaning ENERPRESS electrostatic filter for exhaust to atmosphere, connected to a centralized aspiration plant with automated containment curtain – Italy

Die-casting machines with hoods in two parts complete with ENERPRESS filters, fans and individual chimneys for the expulsion of air purified in the atmosphere – Spain

- **High-efficiency:** filters for indoor air recirculation reintroducing purified air into the workplace and reducing energy consumption.
- **Flat or candle-type coalescing filters:** ideal for high concentrations of oil mist, with very high separation efficiency.
- **Centralized and modular systems (with the above technologies:** adaptable to a wide range of industrial applications with maximum flexibility.

Electrostatic filter for the recirculation of purified air in the workplace with heat recovery



1 *Pre filter panels coalescing;* 2 *Electrostatic filters;* 3 *Fan;* 4 *High efficiency filter for internal recirculating air;* 5 *Filters washing system;* A *Filtered air recirculation within the production department with heat recovery (Winter);* B *Expulsion filtered air outside the production department (Summer).*

ENERPRESS EN/NO/8/K/FME2C/LI/AE

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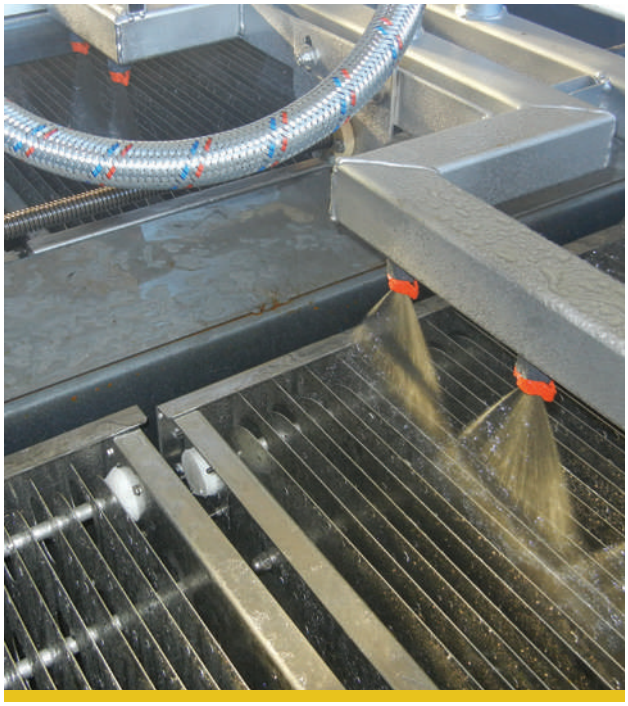
Hood on a 4500 Ton die-casting machine complete with self-cleaning ENERPRESS electrostatic filter for recirculation of purified air into the workplace, installed on an independent platform – USA

ENERPRESS filter on an independent structure with mobile washing tank beside it, dedicated to a single die-casting machine and connected to a centralized suction unit – Ucrania



Automatic cleaning system of the filter.

Hoods and filters on diecasting machines

Hoods on die-casting machines complete with self-cleaning ENERPRESS electrostatic filters for recirculation of purified air into the workplace – Turkey

Hood into two parts complete with individual ENERPRESS suction and filtration system for recirculation of purified air in a die-casting machine – Russia

Hoods on presses connected to a centralized suction and filtration system – Uzbekistan

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Hoods into two parts complete with individual ENERPRESS suction and filtration systems for recirculation of the purified air in the environment on IDRA OL4200S and OL2700S die casting machines – USA

Hoods into two parts on COLOSIO PFO die-casting machines of different tonnages connected to a centralized suction and filtration system ENERPROG. Russia

Hood on a 750 Ton die-casting machine complete with self-cleaning ENERPRESS electrostatic filter for recirculation of purified air into the workplace – Czech Republic

Hoods and filters on diecasting machines

One-piece hoods with automatic opening door for lubricator passage, on die-casting machines from 600 to 1400 Ton, complete with self-cleaning ENERPRESS electrostatic filters for recirculation of purified air into the workplace – Canada

Hood into two parts on IDRA OL900S die-casting machine complete with individual ENERPRESS suction and filtration system, mobile hood on the injection side. Spain

Aspiration and electrostatic filtration system for recirculation of purified air from 4 machining centres. Czech Republic

Two-piece hood complete with individual ENERPRESS aspiration and filtration unit for recirculation of purified air into the workplace on IDRA OL3700CS die-casting machines – Sweden

Two-piece hoods on 2700 Ton die-casting machines of various sizes connected to a centralised aspiration and filtration plant with ENERPROG – Canada

Hood into two parts complete with individual ENERPRESS suction and filtration system for recirculation of purified air in an environment on IDRA OL420S die-casting machine – Poland

Centralized implants

• *Centralized aspiration and filtration plant 80,000 m³/h – detail of the coalescing filter – Italy*

ENERPROG centralized suction and filtration system in 12 modules for a total suction flow of 200,000 m³/h dedicated to 22 presses – Italy

Hoods on 800 Ton die-casting machines – detail of the first 3 machines out of a total of 12 presses served by a centralized aspiration and filtration plant – Mexico

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Complete aspiration systems for die-casting: on the left aspiration and filtration plant for melting and holding furnaces, on the right centralised aspiration and filtration plant 80,000 m³/h serving 9 presses with special coalescing filter in technopolymer – Italy

ENERPROG centralized suction and filtration system in 4 modules dedicated to 7 presses – Italy

ENERPROG centralized suction and filtration system in 10 modules for a total suctioned flow of 150,000 m³/h for 19 presses – Slovakia

FUME AND DUST ASPIRATION AND FILTRATION SYSTEMS

Technological systems for aspiration and filtration of fumes from melting furnaces and powders from mechanical processing at the service of aluminum refinery – Italy

Industrial fumes originate from numerous production processes:

Foundries and metallurgy
- Aluminium, cast iron, steel and brass melting;
- Furnace casting and tapping;
- Refining and degassing treatments;

Heat treatment of metals
- Furnace hardening, case hardening, annealing, tempering;
- Hot atmospheres and metallic vapours;

Metal welding and cutting
- MIG, TIG, arc and plasma welding;
- Laser cutting, oxy-fuel cutting and plasma cutting;

Waste recycling and treatment
- Emissions containing acid gases, heavy metals, dioxins and furans;
- Combustion of industrial scrap and hazardous waste;
- Incinerators and waste-to-energy plants;

Biomass
- Combustion in biomass boilers;
- Gasification and pyrolysis processes;
- Biogas desulphurisation;

Food industry
- Cooking and roasting ovens;
- Smoking processes;
- Odorous organic emissions;

Painting and surface treatments
- Drying and polymerisation ovens;
- Fumes and vapours from solvents, paints and resins.

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Aspiration and filtration plant for aluminium melting furnace with double chamber, complete with chemical inertisation system through storage, dosing and dry injection of reagent.

Dust is generated in numerous production processes, including:

Waste recycling and metal/waste treatment
- Shredding of metals and solid waste;
- Recovery of metals and plastics;
- Mixed dry and light dusts;

Biomass
- Handling and storage of pellets, wood chips and vegetable residues;
- Pneumatic or mechanical transport of fine wood dust;
- Loading/unloading of silos and hoppers;

Sandblasting and shot blasting
- Abrasive dust from steel shot, corundum, sand, grit, oxides;
- High concentrations of coarse and fine particulate matter;

Grinding, sanding and polishing of metals
- Removal of material by abrasion;
- Fine metallic dust, with possible ATEX risk;

Cement, ceramics and minerals
- Crushing, conveying and storage of bulk materials;
- Fine mineral dusts (quartz, clinker, lime, silica);

Plastics and rubber industry
- Grinding, shredding and recycling of plastic and rubber scraps;
- Fine dusts and light fibres, sometimes with electrostatic charges;

Agri-food industry
- Milling of flour and cereals;
- Sugar, cocoa, milk powder;
- Explosive atmospheres from combustible dust (ATEX).

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85,000 m³/h suction and filtration system for fumes treatment from aluminum melting furnaces – Slovakia

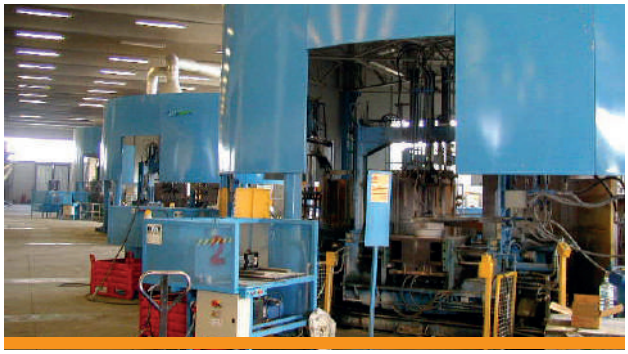
Aspiration and filtration plant for aluminium tower melting furnace – Italy

Aspiration and filtration plant for fumes from 3 aluminium melting furnaces, 1 dryer and 2 degassing stations, capacity 100,000 m³/h, complete with inertisation system for acidic pollutants – Mexico

Aspiration and filtration plant for bronze melting furnaces – Italy

Hoods on combustion openings and slagging doors for aluminum melting furnaces – Slovakia

Extraction hoods on gravity casting cells connected to a centralized suction and filtration system – Italy



Aspiration hoods on shell moulding machines connected to a centralised aspiration and filtration plant – Italy

Managing fumes and dust is not only a legal requirement, but also a real opportunity to improve safety and process efficiency, while ensuring a healthier working environment.

Dust aspiration and filtration plant with lowered discharge and Redler dust transport system – Italy

Enercon plants for fume and dust abatement are **designed for Industry 4.0** and the technologies we employ include:

- Bag filters (sleeve filters)
- Settling chambers and gravitational separators
- Cyclone separators /centrifugal dust collectors
- Acid gas neutralisation with lime or sodium bicarbonate
- RTO – Regenerative Thermal Oxidisers for VOCs
- Cartridge filters
- Pocket filters
- Active carbon filters
- Wet filters (scrubbers)
- Quenching system (torri di raffreddamento fumi)
- Fire detection and extinguishing systems (inert gas, CO , etc.)

Aspiration and filtration plant – Italy

Aspiration and filtration plant for scrap selection system – Italy

Aspiration and filtration plant for scrap selection system – Italy

Aspiration and filtration plants with activated carbon and cartridge filters for odour and dust removal from waste and wastewater treatment – Italy

Aspiration and filtration plant for aluminium dust from manual grinding – Italy

Suction and filtration system from aluminum cutting powders – 6.000 m³/h

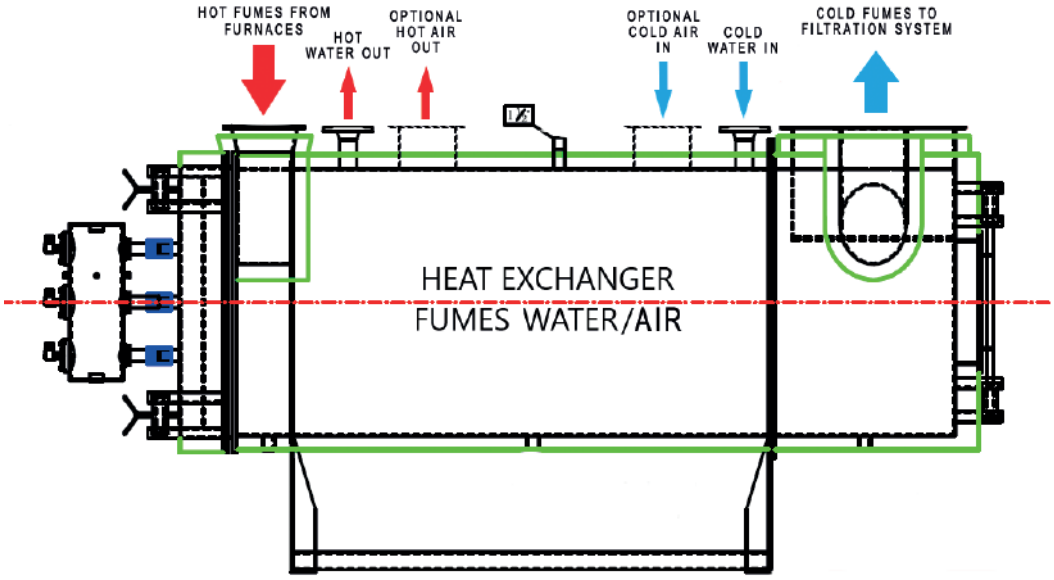
Technological systems for suction, dust filtration and odor abatement from bronze shell casting machines and bronze melting furnaces – Italy

Vertical cyclones for abatement of coarse dust and sparks – Italy

Axial cyclone for coarse dust abatement and spark arresting in aspiration and filtration plant – Italy

ENERGY SAVING AND RECOVER

Energy recovery and savings from process fumes



Enercon does not limit itself to purifying fumes: we transform problems into opportunities.
Through our energy recovery systems, the thermal energy contained in exhaust gases is recovered and enhanced by means of **high-efficiency heat exchangers.**
In several plants we have integrated **heat recovery units connected to absorption chillers,** capable of producing both hot and chilled water for production departments and offices.

The result? An immediate reduction in energy costs and a very short payback period.
We design and manufacture **air-to-air, air-to-water and air-to-steam heat exchangers,** built from special stainless steels, carefully selected according to gas temperatures and composition. Robust, efficient and tailor-made solutions, designed to ensure sustainability and long-term savings.

Hot air applications

- **Heating of production environments;**
- **Drying:** wood, foundry sands, refractories, paints, paper/cardboard, food industry;
- **Preheating of combustion air:** for melting furnaces, holding furnaces, heat treatment furnaces;
- **Preheating of materials:** metal charges, molds, cores.

Hot water applications

- **Production of domestic hot water (DHW):** changing rooms, canteens, offices;
- **Industrial processes:**
  - Galvanic baths (temperature stabilization);
  - Industrial washing (tanks, degreasing);
  - Temperature maintenance in storage tanks;
- **Preheating of process fluids:** osmosis water, mains water for boilers, thermal oil;
- **District heating:** when nearby distribution networks are available (combined civil/industrial use).

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Tube bundle heat exchanger (fumes/air) for preheating combustion air before placing in the furnace – Italy

Examples of fume/air heat exchangers installed on aspirations from melting furnaces complete with insertion of the heated air inside the production departments with high energy recovery.

Fume/water heat exchanger for the use of heated water inside the plant – Italy

INDUSTRIAL HYDRAULIC PLANTS

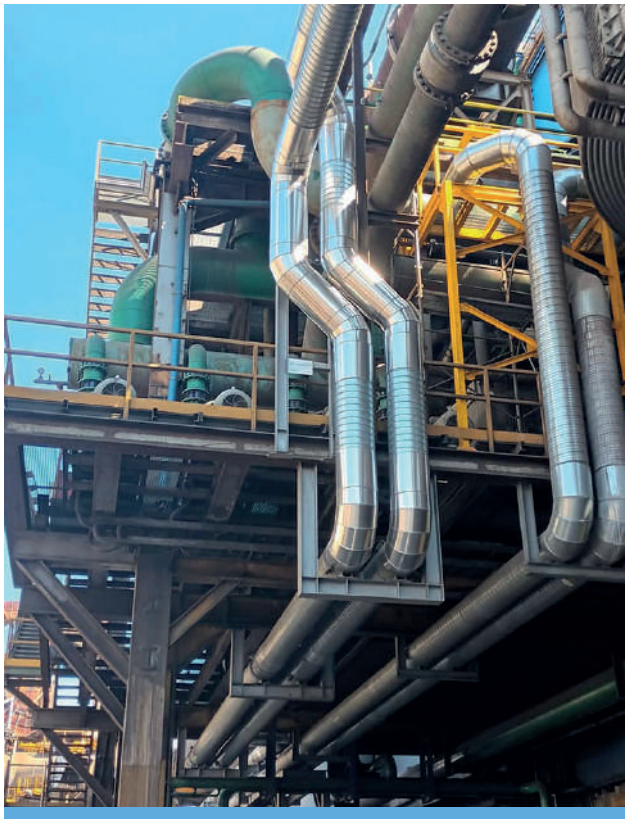
Reverse osmosis plant for purification of industrial water. Compact skid-mounted structure with high-efficiency membranes. Italy

With over 45 years of experience in the sector, **Enercon** designs, builds and maintains hydraulic, hydraulic power and industrial utility systems, offering **turnkey solutions** for the **steel, metallurgy, water treatment, furnace, press and machine-mounted plant sectors.**

Our projects include:

- **Cooling systems:** evaporative towers, heat exchangers, cooling plates;
- **Technical gas distribution plants:** oxygen, etc.;
- **Pumping stations:** with manifolds and pipelines to utilities;
- **Water treatment systems:** settlers, sand filters, reverse osmosis units, softening, demineralisation;
- **Hydraulic power units of all sizes:** valve benches and panels, accumulator groups, oil filtration units;
- **Ordinary and extraordinary maintenance:** with dedicated teams.

Lifting station with in-line pumps in water treatment plant – Italy



Insulated hydraulic lines for heat recovery from melting furnace in steel plant. Integrated into district heating system with overhead routing and dedicated structural supports – Italy

Revamping of hydraulic system in thermal power plant and storage tanks – Italy

Applications include machine-mounted systems for:

- **EAF, LF, induction and gas furnaces;**
- **Continuous casting, forging presses, rolling mills.**

For utilities, we provide:

- **Compressed air systems** with compressors, storage tanks, dryers, filters, condensate drain systems;
- **Ducting for exhaust and heat recovery.**

Each plant is developed in full compliance with current technical standards, by qualified personnel and certified welders in accordance with EN ISO 9606-1, ensuring **reliability, efficiency and seamless integration with existing systems.**

A consolidated network of customers in Italy and abroad testifies to the quality and solidity of our solutions.

Water distribution system for cooling melting furnace in steel plant.

Stainless steel pump group serving the cooling circuit for continuous casting of bronze alloy bars.

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SPECIAL APPLICATIONS

Soil washing plant, including steel structures, piping and installation – Italy

Thanks to its extensive experience across multiple fields and industries, **Enercon** is able to design and build customized systems tailored to specific customer requirements.

Special applications consist of equipment and systems that require the integration of different plant technologies and do not fall within a standardized sector.

Enercon is a solid and reliable partner for industrial operators facing complex production needs or developing prototype systems, providing technical support and constructive collaboration at every stage of the project.

Tilting ladle for the transport and pouring of 800 kg of aluminium – Italy

Silencer for noise attenuation at stack outlet of mist aspiration and filtration plant serving 10 dcms – Italy

Automatic ladle wagon for the pouring of aluminum into holding furnaces at the service of die-casting machines. Spain

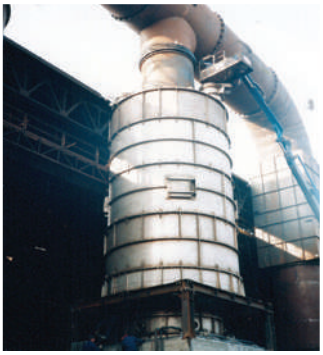
System of fixed and movable gates for silt separation, made of perforated sheet metal on a concrete tank, designed to retain solids from muddy road effluents and allow controlled liquid flow to storage – Italy

Dedicated solutions for special applications:

- Design, construction and installation according to third-party specifications of soil washing plants, land and water remediation systems, waste treatment lines and drying furnaces, including steel structures and piping;
- Tailor-made steel structures manufactured for third parties;
- Ladle cars for feeding melting furnaces;
- Special foundry equipment, such as cooling systems for die-cast parts.

SUPPORT AND MAINTENANCE SERVICES




In order to provide customers with a comprehensive service in the field of industrial plant engineering, **Enercon** offers specialised manpower for:

- Assembly of new systems;
- Qualified technical assistance;
- Routine and extraordinary maintenance of both our own and third-party systems;
- Refurbishment and optimisation of existing plants.

Thanks to its **dynamism, flexibility and diversified experience, Enercon** is a reliable partner capable of handling complex plant engineering requirements, guaranteeing effective solutions and optimal results – also within the framework of **annual scheduled maintenance contracts.**

Our technical department is available for direct cooperation, further clarifications and design support.

Main applications:

- Technical assistance for hydraulic, extraction, pneumatic and oleodynamic systems (including those from other suppliers);
- Scheduled maintenance contracts;
- Extraordinary maintenance and emergency interventions;
- Industrial steelwork and carpentry;
- Plant repairs and adjustments;
- Management of fire detection and extinguishing systems.

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OUR CERTIFICATIONS

ISO 9001:2015

Organisation, control, efficiency, reliability.
International certification for quality management, ensuring structured processes and consistent results.

EN ISO 3834

Welding, procedures, quality, traceability.
Specific certification for welding processes, guaranteeing controlled methods and full traceability of operations. Enercon employs certified **welders in compliance with EN ISO 9606-1.**

EN 1090

Structures, safety, compliance, CE marking.
Certification that guarantees compliance in the manufacture and supply of steel and aluminium components and structures with strict quality and safety requirements, requiring the application of CE marking.

ENERCON S.R.L.

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