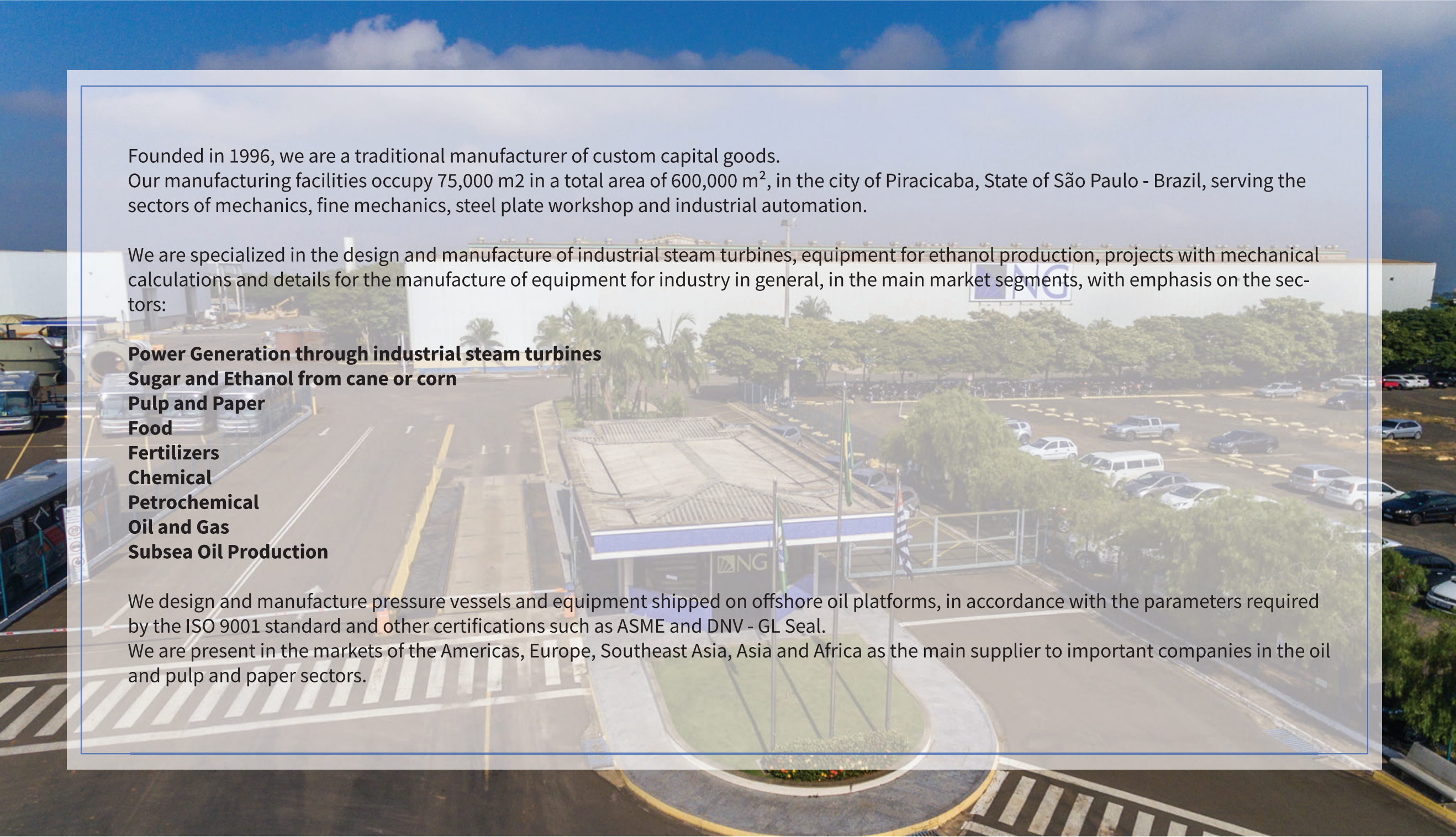




Technologies, qualifications and capabilities
at the service of industry





Founded in 1996, we are a traditional manufacturer of custom capital goods.

Our manufacturing facilities occupy 75,000 m² in a total area of 600,000 m², in the city of Piracicaba, State of São Paulo - Brazil, serving the sectors of mechanics, fine mechanics, steel plate workshop and industrial automation.

We are specialized in the design and manufacture of industrial steam turbines, equipment for ethanol production, projects with mechanical calculations and details for the manufacture of equipment for industry in general, in the main market segments, with emphasis on the sectors:

Power Generation through industrial steam turbines

Sugar and Ethanol from cane or corn

Pulp and Paper

Food

Fertilizers

Chemical

Petrochemical

Oil and Gas

Subsea Oil Production

We design and manufacture pressure vessels and equipment shipped on offshore oil platforms, in accordance with the parameters required by the ISO 9001 standard and other certifications such as ASME and DNV - GL Seal.

We are present in the markets of the Americas, Europe, Southeast Asia, Asia and Africa as the main supplier to important companies in the oil and pulp and paper sectors.

Specializations - Design and Manufacturing

Industrial Steam Turbines

Single stage
Multiple stages - action and reaction
Power up to 65 MW

Packaging

Pumps
Compressors - screw and centrifugal
Nitrogen generators
Industrial process modules

Equipments for Sugar and Ethanol Production

Distillaries
Molecular sieves
Evaporators
Stilage concentration system
Continuos vacuum pan

Industrial Automation

Panels and cubicles
Energy distribution

Equipments for Offshore Plataforms

Columns
Filters
Pressure vessels

Equipments for Subsea Oil Production

Christmas trees
PLET's, PLEM's, ILT's, Manifold's
Flowlines
Assembly and hydrostatic test up to 15.000 psi

Equipments for Industry in General

Pressure vessel
Storage tanks
Process towers and columns
Heat exchangers
Ovens and converters
Reactors
Structures and components for pulp and paper machines
Rotary granulators, dryers and coolers

Industrial Steam Turbines

We are pioneers in Brazil in the manufacture of industrial steam turbines, with more than 3,300 equipment with powers between 5 kW and 65,000 kW produced and installed in Brazil and in several countries around the world.

Through our technology and international agreements, we have developed a diversified line of single and multiple stage turbines, applied in several sectors, especially in industrial electricity generation, providing an excellent cost-benefit ratio with high performance, availability and operation reliability.

The turbines meet API 611, API 612, NEMA SM23 and API 614 in their lubrication systems.

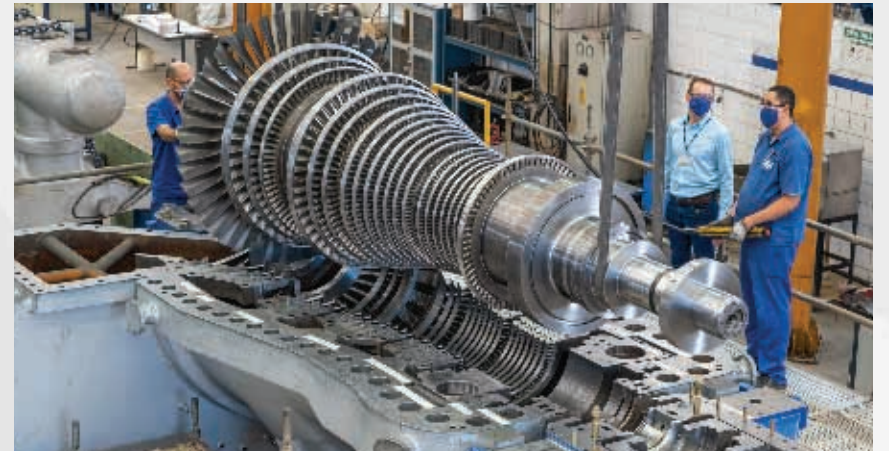
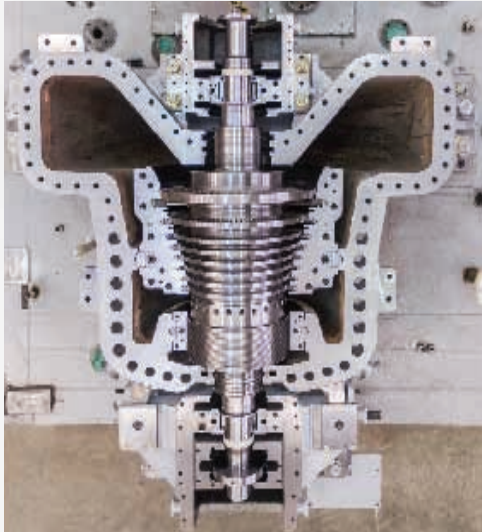
Condensation Systems

Designed by our engineering team, we manufacture our own condensing systems, meeting the requirements of H.E.I and ASME VIII

Supervision, Control and Protection Panels

Our automation unit produces and tests all control panels for turbines and generators and also prepares the operating programs for the turbo machines.

Series	Constructive Type	Pressure/ Temperature	Maximum Power	Lubrification Oil System	Extraction/ Bleed
Ce	Impulse Backpressure	120 Bar a / 520 °C	3.000 kW	Forcer Feed	
DSE	Impulse Backpressure	49 Bar a / 420 °C	1.200 kW	Forced Feed Oil Ring	
DME	Impulse Backpressure	45 Bar a / 450 °C	17.000 kW	Forced Feed	Bleed
M / H	Impulse Backpressure Condensing	80 Bar a / 520 °C	50.000 kW	Forced Feed	Controlled Extracrtation Bleed
B / C	Reaction Backpressure Condensing	140 Bar a / 540 °C	65.000 kW	Forced Feed	Controlled Extracrtation Bleed



Packaging

Mounting Equipment on Skids

Complete and detailed projects are developed by our engineering team, for the construction of integration skids for rotating or process equipment such as:

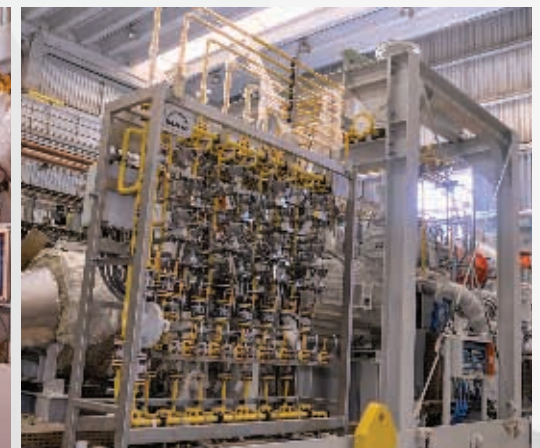
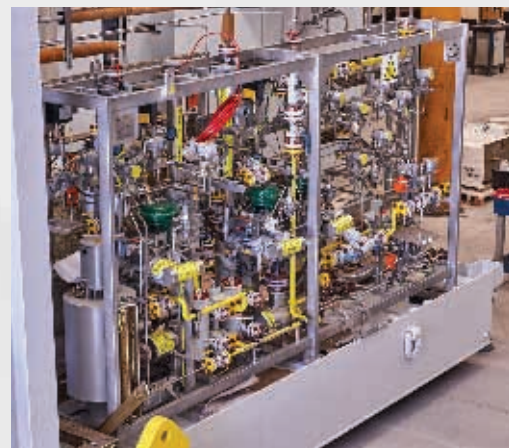
- Compressors
- Pumps
- Fans and Exhaust Fans
- Nitrogen Generators
- Industrial process modules

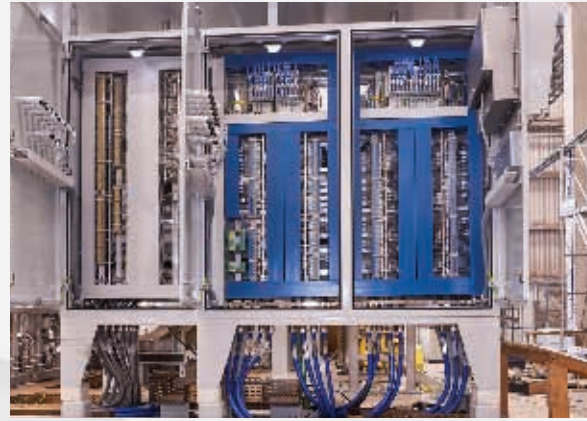
The project includes:

- Metallic base and skid structure
- Lubrication oil systems
- Mechanical piping and its accessories
- Tubing
- Electrical interconnections
- Instrumentation
- Electrical and control panels
- Isolation
- Sealing systems
- Electromechanical assembly and factory tests

Applied codes, standards and specifications:

- AISC
- ANSI – B31.1, B31.3
- API-610, API-613, API-614, API-617, API-618, API-619, API-676, API-677
- ASME – NB, Section VIII Div. 1 U, Section VIII, Div. 2
- ASME Section IX – welded materials





Equipment and Systems for Ethanol Production

Through the entrepreneurship of the Gobbin Family, NG's controller family, we have become pioneers in Brazil in the manufacture of ethanol distilleries using stainless steel for the Brazilian sugar and alcohol sector.

In the 90s, we introduced ethanol dehydration via molecular sieves in Brazilian plants for the first time. Throughout our history, more than 600 plants have been designed and installed for the production of ethanol in Brazil and in several countries around the world.

The development of established technologies and projects with efficiency and a high degree of automation for ethanol production systems, meet the most varied and strict product standards and requirements, including the ANP for fuel ethanol.

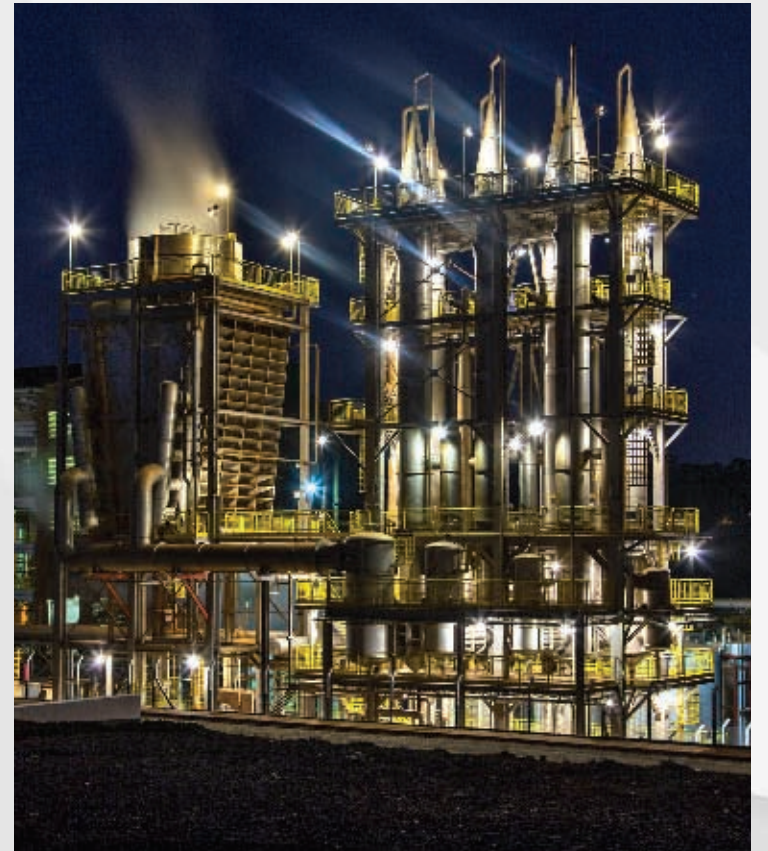
Product line and production systems:

- Hydrous Ethanol Fuel
- Neutral Hydrated Ethanol
- Anhydrous Ethanol

Products:

- Distilleries with a capacity of up to 1,500 m³/d in the atmospheric or vacuum system
- Molecular sieve with a capacity of up to 1,500 m³/d, with or without regeneration columns, in the atmospheric or vacuum system
- Ethanol recovery columns
- Ethanol Purification System
- Systems for conventional vinasse concentration or integrated to ethanol distillery.





Equipment for Subsea Oil Production

In the year of 2004 marked the beginning of our presence in the market for structures for oil production equipment. Through our steel plate workshop excellence, we are accredited as an important supplier serving the market of large global companies that design and install subsea systems for the production of oil and gas at sea, from the reserves found in the post and pre-salt oil fields in ultra deep water slides.

Structures for the main subsea equipment:

- Christmas trees
- Pumping modules
- ILT
- PLEM
- PLET
- Manifolds

Applied materials:

- Carbon Steel: A-36, A-283, A 285, A- 516 – 60/70, A 572 – 50
- Stainless Steel: 304, 304 L, 316, 316 L, 317 L, 904 L
- Duplex: UNS31803 / 32205
- Super duplex UNS32750
- Inconel 625

Welding Process:

Conforms to ASME Section IX and AWS standards

Processes: FCAW - SAW - GTAW - GMAW

Qualified inspectors: SNQC - FBTS - ASNT – ABENDE

Regular third party work:

ABS – DNV – Bureau Veritas – Lloyds Register

Non-destructive inspections and tests:

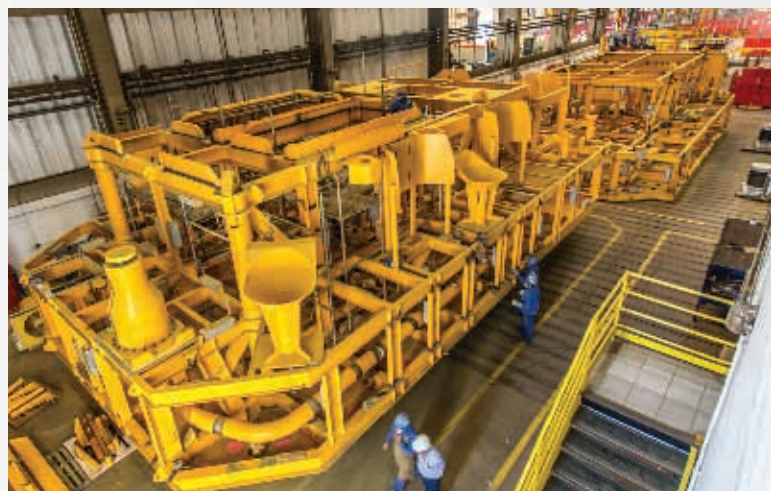
- Dimensional inspection
- Hydrostatic up to 15,000 psi pressure
- Pneumatic
- Penetrating liquid
- Magnetic particle
- Ultrasound: pulse / eco - phase array
- X-ray



We manufacture and assemble subsea equipment flow lines, which are tested in our hydrostatic testing unit, with a capacity for testing with pressures up to 15,000 psi.

We have high pressure hydraulic units and also a bunker to carry out tests with this pressure class, having an inclined floor and gutters for collecting fluids with water and oil reservoirs for proper waste disposal.

This testing unit has a room for inspectors and third parties to monitor the tests.



Equipments for Offshore Plataforms

Mechanical projects and equipment manufacturing for offshore production, storage and flow platforms for oil and / or natural gas (FPSO).

Our steel plate workshop excellence consecrated us in the construction of structures for subsea equipment, and the design and manufacture of pressure vessels with ASME seal, ISO 9001 and DNV certifications for embedded equipment such as:

- Oil processing modules and produced water
- Water injection modules and sulfate removal unit
- Utility modules

Main products:

- Columns
- Filters
- Pressure vessel
- Multicyclones



General Industry Equipment

We manufacture several type of equipment and rotary equipment for the industry in general, under design or developing detailed mechanical projects carried out by our team of engineers.

- Pressure vessel
- Tanks
- Process towers
- Reservoirs
- Columns
- Structures for pulp and paper machines
- Fermenters
- Evaporators
- Heat exchangers
- Gas / gas exchanger
- Scrubbers
- Ovens and Converters
- Rotating equipment
 - Dryers
 - Coolers

Markets served:

- Oil and Gas
- Chemical and Petrochemical
- Fertilizers
- Pulp and Paper
- Mining
- Steel

Field assembly

Team prepared to assemble the equipment in the field, mobilizing all the necessary resources.



Industrial Automation

Instrumentation, controls, electrical solutions and services, ensuring: availability, reliability, flexibility and profitability in industrial processes that your company needs.

Our complete technical solutions include:

- Design and detailing engineering
- Supply of equipment and components
- Electrical installation

For:

- Power generation plants
- Medium voltage distribution systems - up to 17.5 kV
- Low voltage distribution systems
- Installation and implementation of projects according to the details
- Control panels for steam turbines, plants and industrial processes.

Electricity distribution

Medium voltage cubicles with withdrawable circuit breaker Projects, manufacturing, testing and installation for the most varied applications.

- Industrial process substations
- Supply of distribution network substations

Features and benefits:

Flexible solutions adapted to the needs of the project

Dedicated engineering

Experience of the manufacturers of the main electrical components of the cubicles

The switching devices are of the extractable vacuum type

NG projects take into account important requirements for their users:

- Confidence
- Simplicity
- Safety of operating personnel



Manufacturing Facilities





NG Metalúrgica S/A

Energy • Sugar and Ethanol • Industry • Electrical & Automation • Service

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