

Petrochemical&powergen

Critical piping packages Large diameter pipes Heat treatment equipment Multidisciplinar Engineering Process Skids assembly Offshore & Powergen units

turn-keyvaluechain

THE GROUP

APPLICATION FIELDS

GAS & CHEMICALS PLANT UNITS & PACKAGES POWERGEN UNITS & PACKAGES O&G & OFFSHORE SKID CONSTRUCTION

DIVISIONS

PIPING PACKAGE

PIPING PACKAGE / Chero Piping Spa
LARGE DIAMETER PIPES / Inoxtech Spa
CRITICAL FASTENING / Bea Group Srl
FLUID SEPARATION / Dktc Srl
ENGINEERING SERVICES
INDUSTRIAL ENGINEERING / Tecnoteam Srl
ELECTRICAL ENEGINEERING / Team Engineering
CONSTRUCTION & HEAT TREATMENT
SCRUBBERS & HEAT EQUIPMENTS / Nicro Spa

SKIDS ASSEMBLY / OF.RA Srl





Our experience comes from the most demanding offshore and floating projects within the Oil & Gas applications.

Our Alliance

has been directly promoted by leading Italian manufacturers in top-deck skids solutions EGCS marine scrubber assembly and piping engineering for offshore and critical applications.

Over 40 years

of industrial tradition allied to provide high-quality supply packages, accomplishing all main worldwide requirements for critical applications in offshore and shipbuild environments.

ISO Certified

and officially approved by most major offshore and energy companies in the global market, O&G Alliance currently serves leading worldwide offshore and FPSO projects lead by Petrobras, Lukoil, Exxon-Mobil, Saudi Aramco, Shell, Total, Sonatrach, PDO, BP, Chevron and many others. With its highly qualified staff,

Project management

from the very first steps of the offer up to delivery of the goods, with a problem-solving attitude that gives to the Consortium its most important feature as an unmatched one-stop-shop procurement solution.

Our production guidelines

take full and complete control of every material stream, from sourcing of raw material to the final product.

Our in-house laboratories

perform full testing to each product's individual requirements including full chemical and mechanical testing workshops and NDT (Non Destructive Testing).

Documented activities

for monitoring, measurement, analysis and improvement processes are available on request to demonstrate the conformity of the products and to ensure the adequacy of the Quality Management System.









GAS & CHEMICAL

POWER GENERATION

O&G OFFSHORE REFINERY

SKID CONSTRUCTION

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GAS & CHEM UNITS & PACKAGES

Process plants

Materials & Equipment // The use of raw materials with high corrosion resistance Allianc Companies suitable for a wide variety of applications in process plants within chemical, petrochemical, water, oil and gas industries. Our group provides a full range of piping & packages units for process plants, where corrosion resistant alloy steel are necessary to withstand extreme temperatures and high-pressure environments.

Gas Dehydration and Condensation Plant and related interconnections Booster Station BS-131 Kuwait - KOC Kuwait Oil Company.

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Engineering // the Alliance companies background allows even nowadays to be able to continuously make available a whole series of engineering activities qualitatively compliant with the standards of the sector, having great experience in the application of the plant engineering methodology of the chemical plants in general, due to the presence of the historical and most important international companies of the chemical pole, located in the operational areas of our companies.

Glycol treatment plant consisting of Glycol Contactor, Glycol Scrubber & TEG regeneration installed on the FPSO SMART-1 - on behalf of AKER FLOATING PRODUCTION.

Alliance capability

"Revamping Ammonia and Vapor B.P. lines" at the chemical center of Ravenna for YARA Italia S.p.A.

GDU Gas Dehydration Unit treatment plant installed in the Persian Gulf - Manifa AH Crude Program on behalf of Saudi Arabian Oil Company.



POWERGEN UNITS & PACKAGES

Tri-cogeneration projects

Many skills have been developed in the field of cogeneration and trigeneration, through the continuous engineering e supply service to exclusive companies specialized in the development of this type of plant. The continuation specialization coming from the "Oil & gas"

sector has determined a series of internal company dynamics and policies, aimed at specializing on specific fileds of powergen, embracing cogeneration, trigeneration and chemical prodcuts.

83 MW cogeneration plant consisting of 2 10 MWe Jenbacher engines, 3 21 MWe gas boilers and 6 213 m3e storage tanks. Tor di Valle plant in Rome for ACEA Produzione S.p.A.

"Heat Recovery System - EAF" heat recovery plant at Acciaieria ARVEDI in Cremona.

39 MW cogeneration plant consisting of 2 17 MWe Wartsila engines, 3 MWe DePretto steam generator, fume recovery boilers with methane afterburner for steam production and an auxiliary methane boiler for 40bar steam production, installed in the sugar cane refinery at Brindisi - Italy on behalf of S.F.I.R. S.p.A.

O&G OFFSHORE & REFINERY

FPSO / FLNG projects

A Floating Production Storage and Offloading (FPSO) installation is a floating facility with processing equipments on the topside of the vessel for separation and treatment of crude oil, water and gases, arriving on board from subsea oil wells through a number of pipelines or risers that have been already installed on the seafloor.. There are massive challenges that come with combining a subsea management facility, oil and gas processing and storage operation on a single vessel.

The FPSO vessel is equipped to store the processed hydrocarbons in order to then be offloaded either by shuttle tankers or via pipelines to the shore. O&G Alliance companies provide stainless steel, duplex, super duplex

Living deck, Heli platform, Mud Mats, Piles

and nickel alloy complete package including skids, pipes, valves, fittings filters, strainers tubes for FPSO and FLNG vessel construction and maintenance.

We supply offshore construction projects / assembly completed with all grades items and shipbuilding grades and corrosion resistant grades (CRAs) to shipbuilding centers across the globe.

Floating engineering

ENGINEERING A FLNG SKID / Eni's Coral development in Mozambique. It will be the first FLNG in Africa.

The FLNG will have a length of 439 meters (1,440 feet), width of 65 meters (213 feet), depth of 38.5 meters (126 feet) and will weigh 210,000 tons. It is designed to produce three million tons of LNG and 480,000 tons of gas condensates (ultra-light oil) annually.

Our allied Tecnoteam is planning the electrochlorination skids for the production of sodium hypochlorite with the passage of electric current through a saline solution. It is used to prevent the formation of encrustations in plants using sea water. Electrochlorination of seawater eliminates the handling, storage and purchase of hazardous chemicals. O&G Alliance deals with the design and calculation of structures and piping.

Tecnoteam will also provide assistance during the assembly phases to assure the contractor a rapid response in the case of modifications requested during installation.

Alliance capability

Coral FLNG SA Area 4 of the Rovuma Basin Activity: Off-Shore / Oil&Gas

Off-shore mobile 3000HP skid located in Caspian Sea "Bulla Deniz" field





Off-shore Floating drilling HH300

SKIDS CONSTRUCTION

- On-offshore modules & packaged units construction and assembly
- Assembly and prefabrication of packaged units including E&I system
- Platform & shelving steel struvtures
- Safety infrastructures and storage platforms
- On-site maintenance services

Assembly projects

- Welding processes, Steel structures, Boilers and pressure vessels
- Assembly and welding of carbon steel, stainless steel, iconel and alloy piping, superduplex steel, aluminium
- Prefabrication and assembly of units and E&I system
- Structural frames for offshore and well drilling equipment
- Assembling system and general and specific machines

- Design and manufacture of pressure vessels to PED Directive or ASME Code
- Manufacture mono or multidisciplinary skid mounted plant and equipment
- Manufacture piping in carbon, alloy steel, stainless, duplex, superduplex steel, aluminium
- Oleodynamics

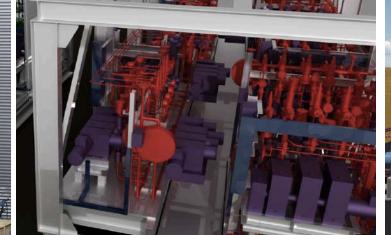
Skid engineering

The general orientation in the design of modern systems is aimed at establishing assemblies of well-defined process parts pre-installed on transportable structures

called skids or packages, depending on the different choices and technical needs of the process. The practicality of prefabrication and on-site installation gives countless advantages, including a more economical, functional and faster manufacturing system. Together with the numerous and important curricular references, place our Group among the most important companies in the sector

Column and interconnecting presso la Tatweer Petroleum / Central Gas Dehydration – Kingdom of Bahrain

skid "MEG Regenaration" per PX Limited presso il sito Breagh Field – Teesside – UK Chemicals Injections" presso Subsea Demulsifier / Naphthenates Dispersant – Moho Nord Project – Congo.





odcution sions

CONSTRUCTION & HEAT TREATMENT

SKID ASSEMBLY & HEAT TREATMENT EQUIPMENT

- □ On-offshore modules & packaged units design
- □ Assembly and prefabrication of packaged units including E&I systems
- □ Scrubber systems
- □ Muffles & retorts
- Bells, bases & diffusers for furncaes
- **Convection fans**
- **G** Radiant tubes
- **D** Petrochemical equipments

ENGINEERING SERVICES

□ Industrial, Piping, Structural Mechanical

- □ Thermomechanical
- Electrical
- □ Site management
- □ Automation
- Electromedical

INDUSTRIAL & AUTOMATION

CORROSION RESISTANT PIPING PACKAGES

FORGED FITTINGS SPECIAL FASTENING PIPES **FLUID SEPARATION**

- □ Forged fittings
- □ Insulating Joints
- □ Branch reinforced fittings
- □ Specialty products
- Piping Bulks
- Bolts, Nuts, Studbolts
- Corrosion resistant large diameter pipes

PIPING PACKAGES





CORROSION RESISTANT PIPING PACKAGES FORGED FITTINGS SPECIAL FASTENING PIPES FLUID SEPARATION CHERO PIPING





Forged fittings

- Insulating Joints
- □ Branch reinforced fittings
- Specialty products
- Piping Bulks
- Bolts, Nuts, Studbolts
- □ Corrosion resistant large diameter pipes



www.cheropiping.com

Chero Piping Spa Corrosion resistant piping manufacturing & packages

CHERD PIPING S.P.A

- □ Forged fittings
- Branch outlets
- Heavy wall fittings (Tees, Wyes, Lateral Tees)
- Customs designed flanges
- □ (anchors, orifice, swivel, misaligned)
- Nozzles (flanged and not flanged) Forged pipe
- □ Mechanical forged components Insulating joints (monolithic and flanged) Cladding





ASME B16.11 BS 3799. finished products in carbon, low temp, low alloys and stainlesssteel materials. Grades such as duplex, super duplex, nickel



Desoigned for critical applications like Subsea, Thermo-Power Plants and Urea Plants. Among those: Heavy wall fittings (Tees, Wyes, Lateral Tees); Custom designed flanges (Anchors, Orifice, Swivel, Misaligned);Nozzles (flanged and not flanged);













Lateral Tees Orifice flanges

Spherical Wye pieces

Anchor flanges

Custom designed 90° and lateral

Urea plant Fittings

Custom made design

self-reinforcing set-on Branch Outlets Codes (i.e. ASME in adherence to MSS-SP97 industry B31.3, B31.1, B31.4, B31.8, EN13480, standard, in both 90° and inclined Div. VIII etc.). Our Branch Outlets are configurations. Fittings are available in manufactured in a complete range of butt weld, socket or threaded ends. Chero Piping can design project and Super Duplex Stainless Steel, specific Branch Outlets as well as set Chrome Alloys, Nickel Alloys and other in Insert Branch Outlets in adherence metallic materials. Flanges

Chero Piping manufactures and stocks with the most stringent industry

Carbon Steel, Stainless Steel, Duplex



Reinforced outlets

Insulating ioints

Branch

product for cathodic and safety generation. protection systems for gas, oil and water pipelines.

Monolithic Insulating Joint (MIJ) are This will grant great savings on long pipeline components used to provide period capital investments. MIJ are high electrical resistance without long lasting solutions against stray maintenance costs. The combination currents and their major effects such of these features makes MIJ a perfect as cathodic corrosion and electric arc







www.beagroup.com

Bea Group Srl Quality of manufacturing

Bea relies on a well-established manufacturing process, from raw materials, to finished product, all aspects of every processing operation are followed at in-house level. This is possible thanks to Bea's agile and compact corporate structure: a really important business within the market also in virtue of the rapidity of response to customers' requirements. Indeed, today Bea is in all respects one of the few companies within the industry of manufacturing fastening components, which is capable of assuring the flexibility that is required by the market. This means a lot.

Steel grades

Bolts & **Studbolts** Highly creep and corrosion resistant.

cracking, corrosion fatigue, pitting, Monel 400 with the added advantages of crevice and erosion corrosion and greater strength and hardness. The



Custom made

DIMENSIONS: 3/8" - 12" ANSI/ASME M8 -M300ISO

ification for Nonferrou

Bolts, Hex Cap Screws, Socket Head Cap Screws, and Studs for General Use.

Eight CNC machines, two semiautomatic milling machines and a machining centre allow Bea to manufacture items to

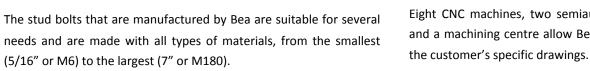
Bolts & nuts

Metric Range M6 - M125

temperature range cryogenic to 1000°C. Duplex stainless steel with enhanced corrosion resistance which is categorised

the excellent corrosion resistance of Monel 400 with the added advantages of

ngth compare with normal high content of chromium and n





Nuts

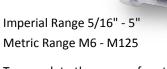
Custom made

Studbolts

M8 – M125ISO

DIMENSIONS: 3/8" - 5" aANSI/ASME

The function of the Indicator Studbolt is to evidence at all times the dynamic stresses that it undergoes and if these stresses are within the limits of the design of the system.is a direct relation of temperature and pressure. To satisfy these requirements the Indicator Studbolt must be constructed as follows:



To complete the range of customers' requirements, Bea supplied bolts (Hex head bolts, round head socket capscrews) made primarily in with special materials.



(5/16" or M6) to the largest (7" or M180).



www.dktcfluidcontrol.com

DKTC Srl Fluid separation & Filters



D-ktc fluid control is one of the very few companies worldwide who actually offers a complete range of mechanical filters and steam equipment.

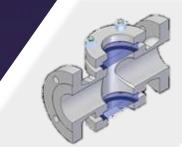
MISSION

D-ktc fluid control faces every challenge with innovative, efficient and safe solutions to satisfy customers needs.

EPC MARKET ACTIVE IN EUROPE AND MIDDLE EAST

Know-how and experience of French and Italian engineers Steam products manufactured by Armstrong International Strainers, sight glasses, separators and other equipments Capability and the flexibility of ARMSTRONG GROUP





Sight Flow Indicators

Our sight flow indicators are characterized by efficient sealing and simple maintenance, and are available also in hipressure/ temperature combinations. Our strainers present a wide choice of sizes and materials to meet most filtering requirements. All of our strainers are made to the highest standards

Sample Coolers

Our sample coolers selection is the widest possible to meet all your steam, water, hydrocarbon and other sampling needs.

Flame arresters are passive devices that prevent the propagation of flame from the exposed side of a pipe to the protected side by the use of a wound crimped metal ribbon type flame cell element.

Flame Arresters

Strainers

Steam Products

Exhaust Heads

Our exhaust heads are especially designed to safely discharge steam into the atmosphere to meet all customer requirements including noise reduction.

Our steam products range is linked to Armstrong International, since D-KTC is its official agent for EPC market. Therefore our selection for hot water, steam and air solutions is the widest worldwide.



Engineering services



INDUSTRIAL MECHANICAL ELECTRICAL SITE MANAGEMENT





- Industrial, Piping, StructuralMechanical
- Thermomechanical
- Electrical
- Site management
- Automation
- Electromedical



www.tecnoteamra.it

Tecnoteam Srl Multidisciplinary Engineering

PROCESS ENGINEERING

- □ CIVIL AND STRUCTURAL ENGINEERING
- □ PIPING ENGINEERING
- □ FIRE AND SAFETY ENGINEERING
- □ MACHINERY AND EQUIPMENT ENGINEERING
- □ LASER SCAN SURVEYS
- □ ELECTRICAL-INSTRUMENTAL-AUTOMATION-PROTOTYPING ENGINEERING
- □ STANDARDS AND SPECIFICATIONS



Drilling Offshore platform SOCAR AQS Caspian Sea

Drilling Rigs

Feasibility studies, structural calculations and design of entire systems including all mobile auxiliary equipment & 3D animation

Offshore platform SOCAR AQS Caspian Sea

O&G Offshore

Design of new plants and maintenance of existing ones assisted by the inspection activity of our technicians

SOLARIUS	AUTOCAD FULL	PDMS
PRIMUS	MECHANICAL DESKTOP	E3D
INTEGRA	INVENTOR	PIPEPLUS
SPAC START IMPIANTI	ADVANCE STEEL	CAESAR II
TNE VIP	RECAP 360	PV ELITE
MC4 SUITE	ESAPRO	PIPINGOFFICE
CPIWIN	POINTSENSE	PIPEMILL
EC700	PROE - CREO	PROSAP
SPAC AUTOMAZIONE 2018	SOLIDWORKS	SAP2000
AUTOCAD LT	SOLID EDGE	STAAD

Software

Tatweer Petroleum / Central Gas Dehydration –Bahrain

Chemicals & Onshore

Design of processing, sludge and gas treatment plants, and related transport (slug catchers, manifolds, pipelines, refining and petrochemical storage)

Scrubber piping Costa Magica

Shipbuilding

Ballast & EGCS systems feasibility studies, general plant engineering activities, from the earliest stages, on-board inspections by laser scan

Cogeneration plant 39 MW / 2 Wartsila 17 Mwe engines, turboDePretto 3 MW S.F.I.R. Spa

Energy

Hydroelectric, Cogeneration and trigeneration plants

MEG Regenaration" per PX Limited Breagh Field – Teesside – UK

Skids & Packages

Design & engineering of well-defined process parts pre-installed on transportable structures on different choices and technical needs



www.team-engineering.it

Team Engineering Electrical & Automation

The services offered by TEAM Engineering S.r.l. can satisfy all technical and operational needs in the plant engineering and shipbuilding sector in general:

design, construction management and testing of civil and industrial works, technological systems, consultancy for fire prevention, safety, assistance and training courses related to the aforementioned materials; site management and project management activities; refurbishments in the energy saving and energy management sector; acquisition of maintenance and / or construction contracts for civil and industrial plants, to be managed through the use of third-party companies and / or suppliers.



Tatweer Petroleum / Central Gas Dehydration –Bahrain

Classification / Evaluation ATEX

Classification of areas with danger of explosion (ATEX) Lightning risk assessment (ATEX)

> MEG Regenaration" per PX Limited Breagh Field – Teesside – UK

Instrumental engineering

Drilling Offshore platform SOCAR AQS Caspian Sea

Electrical engineering

Development of electrical engineering HV, MV, LV basic and detailed

Offshore platform SOCAR AQS Caspian Sea

Thermotecnical engineering

Basic and detailed development of thermomechanical and HVAC engineering Technical Report Law 10/1991 (verification of heat losses)

Scrubber piping Costa Magica

Automation

Design, programming and service of automation systems, PLC, DCS, etc.

Cogeneration plant 39 MW / 2 Wartsila 17 Mwe engines, turboDePretto 3 MW S.F.I.R. Spa

Site management

Assistance and management of construction sites such as Project management and site Engineering

Basic and detailed instrumental engineering development

Construction & Heat treatment





On-offshore modules & packaged units design
 Assembly and prefabrication of packaged units including E&I systems

Scrubber systems

PROCESS SKIDS &

HEAT TREAMENT

EQUIPMENT

Muffles & retorts

Bells, bases & diffusers for furncaes

Convection fans

Radiant tubes

Petrochemical equipments



www.nicro.it

Nicro Spa Heat treatment & scrubbers

Established in 1976 to fabricate special equipment and fixtures for heat treatment furnaces, over the years, NICRO has expanded its market by opening up to new sectors, such as metallurgical, chemical and petrochemical, pharmaceutical and marine.

AISI 309	W.1,4828	UNS S309
AISI 310	W.1.4845	UNS S310
AISI 310s	W.1.4845	UNS S310
AISI 321	W.1.4541	UNS S321
Alloy 330	W.1,4864	UNS N08330
Alloy 600	W.2.4851	UNS N06600
Alloy 601	W.2.4851	UNS NO6601
Alloy 602	W.2.4833	UNS N06025
Alloy 800H	W1.4876	UNS NO8810
Avesta 253MA	W.1.4835	UNS 530815



Nicro is a premium partner thanks to decades of experience. Failing the construction drawing, we can use reverse engineering to measure the dimensions and collect all the necessary data to produce a new muffle.

Bells

Bases & diffusers for furnaces

For coil annealing in bell furnaces, Nicro is able to provide the complete unit, consisting of the base, plenum, bell, diffusers and fans.

These systems are specifically designed to remove SOx (sulphur oxides), in order to control the emissions of the various pollutants in the air and in water and to help lower the levels of sulphur dioxide, hydrocarbons, heavy metals, carbon dioxide, soot and ash.

Marine scrubbers

> Flares O&G equipments

Made of special steel, the flare is used to burn waste gases of the production process

Radiant Tubes

Advanced pressing / bending machines, laser-cutting and equipment for assembly and automated welding

Heat treatment & furnaces

Over 40 years in the development of steel alloys components with high nickel content, suitable for high temperatures and corrosive environments



www.ofrasrl.it

Ofra Srl Skid assembly & workshop

- Integrated systems for the treatment and separation of gases and oils / Package systems for the production and separation of technical gases
- Cryogenic systems for LNG treatment
- Cabin control structures and advanced instrumentation for measurement systems
- Equipment, such as reactors, columns, liquid and process separators, direct flame heaters, energy recovery units, heat exchangers
- Energy production plants, like cogenerators, recovery units, biomass boilers, burners and afterburners



The Energy Division was created for the design, construction and marketing of thermal equipment and systems in the industrial sector. The applications cover the generation of heat, heat recovery, cogeneration and gaseous waste treatment through thermal oxidation. Some of our main products for gas and liquid heating are industrial ovens and boilers, both classic and recovery and biomass, burners, heat exchangers and indirect generators. As for energy recovery and production, we are able to deliver turnkey biomass cogeneration plants, waste incineration plants and heat recovery plants.

Construction

The Engineering and Construction Division is dedicated to the design, supply and construction of package plants for the chemical and petrochemical industry, such as natural gas treatment plants, hydrogen filtration and purification plants, gas and cryogenic compression plants, chemical injection plants, plants for the capture and conversion of CO2. All systems are completely built and tested in its own workshop, and are then shipped to the site ready for installation. OF.RA. also designs and manufactures Local Control Cabins certified for fire resistance according to the main international standards, equipped with air conditioning, gas detection and fire prevention systems, suitable for installation into classified areas.

Mechanicals

The Mechanical and Maintenance Divisionis specializes in ordinary and extraordinary maintenance and assistance on construction sites, both on Italian and foreign soil, for lifting machines of all types, starting from workshop overhead cranes and hoists, up to port, naval and platform cranes, passing through earthmoving machinery.



For companies product catalogues and more informations please contact our Commercial Team at:

HEAD OFFICE

ITALY - Viale Virgilio 58/C 41123 Modena

info@oilgasalliance.it

MILANO SALES OFFICE +39 02 70601557

DIRECT LINE +39 340 9863441

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http://www.oilgasalliance.it/