

# SYNERGISING PARTNERSHIPS



PETRA

## OVERVIEW

PETRA Energy Bhd, an intergrated brownfield oil and gas service company, is making strong in-roads in the industry. Having worked with some of the major oil giants over the past two decades, PETRA became the third local Malaysian company to participate in the Small Field Risk Service Contract (SFRSC) in partnership with Coastal Energy Company to develop and produce petroleum from a small field cluster offshore peninsular Malaysia.

PETRA's successful venture in the SFRSC and penetration into the technology-driven brown field development, which includes subsea services, are attributed to its strong market reputation as a committed, integrated brown field service provider since 1988.

Over the past two decades, the Group has provided services in:

- Integrated Brown Field Maintenance and Engineering
- Marine Fleet Support
- Design, Fabrication, Supply and Installation
- Engineering and Project Management

Through 'single point of responsibility and accountability', PETRA has successfully completed major integrated brown field projects such as the retrofiting of ExxonMobil's offshore oil and gas facilities; topside major maintenance, hook-up, construction and commissioning of Shell's offshore facilities (2 cycles); as well as hook-up and commissioning projects for PETRONAS Carigali, which also included underwater inspection, maintenance and repair works.

The Company was also awarded its 'first' deep-water offshore service contract by Shell in 2012.

PETRA's achievements are backed by its ability to optimise resources and competencies of its assets, i.e. marine fleet, fabrication and construction services, and competent and skilled workforce.

Coupled with its partnerships with global exploration and service players, PETRA is strongly geared towards capitalising more opportunities in:

- Small field or marginal field development
- Brown field development
- Subsea services
- Topside major maintenance, hook-up and commissioning

**PETRA aims to deliver greater value for its stakeholders.**

## OUR COMPETENCIES

### Marine Fleet

The Group owns and operates accommodation and work barges, AHTS vessel and workboats. The Group will continue to increase its fleet size to meet the growing demand of offshore marine services.

### Fabrication Yards

The Group's minor fabrication yards, which are located in close proximity to major sea ports, provide fabrication and construction services, whilst serving as hubs for equipment supplies, storage and logistics.

### Competent and Skilled Workforce

The Group's highly skilled technical workforce and crew are led by a core team of professionals under various business units. Their adherence to stringent Health, Safety, Security and Environment (HSSE) standards and commitment to provide quality services have resulted in strong recognition by oil majors in the country.

# MOVING TOWARDS A NEW ERA OF OIL AND GAS DEVELOPMENT AND PRODUCTION.

## HEALTH, SAFETY, SECURITY AND ENVIRONMENT

Health, Safety, Security and Environment (HSSE) is the top and utmost priority of the Group's business operations.

The Group's stringent compliance to HSSE protocols and practices has earned it numerous accolades over the years.



## QUALITY ASSURANCE AND QUALITY CONTROL

PETRA is committed to providing quality services and continuously enhances its management and operating systems. The Group has been recognised by Lloyds Register and Det Norske Veritas in the following disciplines:

### Quality Management System Certification – ISO 9001:2008 accredited by Lloyds Register

- TMM Project Management and Operations
- Engineering, Operations and Maintenance
- Engineering Design and Project Management

### Management System Certification – ISO 9001:2008 accredited by Det Norske Veritas

- Design and Fabrication of Process Equipment

## OUR CORE VALUES

**Integrity Professionalism Commitment Teamwork**



## DEVELOPMENT AND PRODUCTION – SMALL FIELD RISK SERVICE CONTRACT (SFRSC)

PETRA became the third local Malaysian company to participate in the Small Field Risk Service Contract (SFRSC) with Coastal Energy Company to develop and produce petroleum from the Kapal, Banang and Meranti small field cluster offshore Peninsular Malaysia.

The services to be provided under the SFRSC include:

### Primary Scope of Services

- Implementation of the Field Development Plan
- Implementation of Production operations to achieve a set of first oil date, and thereafter to sustain production activities

### Duration of SFRSC

The SFRSC for the KBM Cluster is for a term of eight years commencing June 2012. The first oil was in December 2013.

PETRA's participation in the SFRSC is the cornerstone for the Group's endeavour in moving up the value chain to develop and produce petroleum.

## TOPSIDE MAJOR MAINTENANCE, HOOK-UP, CONSTRUCTION AND COMMISSIONING

PETRA has firmly established itself as an integrated provider for topside major maintenance, hook-up, construction and commissioning (TMM / HuCC) of offshore and onshore oil and gas installations. The scope encompasses all surface engineering capabilities that include design, engineering, procurement, fabrication, installation, hook-up, construction, commissioning and marine fleet support.

To provide maximum benefits to our clients, our services are executed on a 'single-point of responsibility and accountability' or integrated basis that ensures operations efficiency, reduced costs and faster project turnaround.

HSEQ and QA / QC procedures are engaged at all levels of operations to ensure compliance with project requirements in reference to applicable laws, codes, standards, specifications and regulations.

### Our Capabilities

- Pre-drill, post drill and well tie-ins
- Rejuvenation of platforms and living quarters
- Brown field tie-ins and modifications

- Green field installation, hook-up and commissioning
- Helideck removal and installation
- Onshore minor fabrication
- Engineering and work execution, planning and construction
- Provision of construction equipment and personnel
- Provision of offshore marine vessels
- Procurement of long lead project materials
- Mobilisation of specialist vendors such as rope access, hydroblast and welding habitats
- Provision of specialist services such as bolt tensioning, cold cutting and flange facing, hot tapping and GRE fabrication works
- NDT inspections and testings
- Support for well intervention and acidisation
- Marine fleet support

Our TMM / HuCC operations and marine fleet logistics are managed by our project offices, which houses a highly competent team of industry professionals with extensive experience in project management, work planning, design, engineering and implementation, HSEQ, QA / QC and marine operations.

PETRA clocked approximately 30 million man-hours over a six year period whilst operating a fleet of marine vessels and a crew of more than 1,000 offshore.





## TOPSIDE MAJOR MAINTENANCE, HOOK-UP, CONSTRUCTION AND COMMISSIONING

The Group secured its first deepwater offshore services contract from Shell to provide support services for the Gumusut-Kakap semi-submersible Floating Production System (FPS). The Gumusut Kakap FPS operates at depths of approximately 1200m.

### Proven Track Record

#### ExxonMobil Retrofit

Contract: one cycle

#### Shell Malaysia TMM

Contract: two cycles

#### PETRONAS Carigali HUC

Contract: two cycles (on-going)



## MARINE FLEET

As owner and operator of a fleet of marine vessels comprising accommodation work barges, accommodation workboats and anchor handling tug supply vessels, PETRA is able to facilitate brown field operations whilst optimising client costs.

The vessels provide support for the Group's TMM / HuCC operations and are also leased on term charter to clients for offshore work in the oil and gas industry.

The vessels are Malaysian and/or foreign flagged, and are fully equipped to meet stringent international and industry standards.

✓ **MV ANIS**  
ABS  
Classification  
Pedestal Crane  
45MT lifting capacity  
199 men



< **MV ALYA**  
ABS  
Classification  
Pedestal Crane  
45MT lifting capacity  
199 men



✓ **PETRA ORBIT**  
Malaysian Flag  
ABS  
Classification  
Pedestal Crane  
25MT lifting capacity  
189 men

^ **PETRA CHALLENGER**  
Malaysian Flag  
ABS  
Classification  
Pedestal Crane  
300MT lifting capacity  
300 men



^ **PETRA DISCOVERY**  
Malaysian Flag  
ABS  
Classification  
Pedestal Crane  
60.5MT lifting capacity  
300 men



^ **PETRA ENDEAVOUR**  
Malaysian Flag  
ABS  
Classification  
Pedestal Crane  
68MT lifting capacity  
300 men



< **PETRA LYRA**  
FCA OTTO 3  
ABS  
Classification  
Pedestal Crane  
68MT lifting capacity  
300 men

< **KAS MARINE 1**  
Malaysian Flag  
DP 1 / FIFI 1  
ABS  
Classification  
60MT Bollard Pull  
5150BHP

## FABRICATION AND CONSTRUCTION



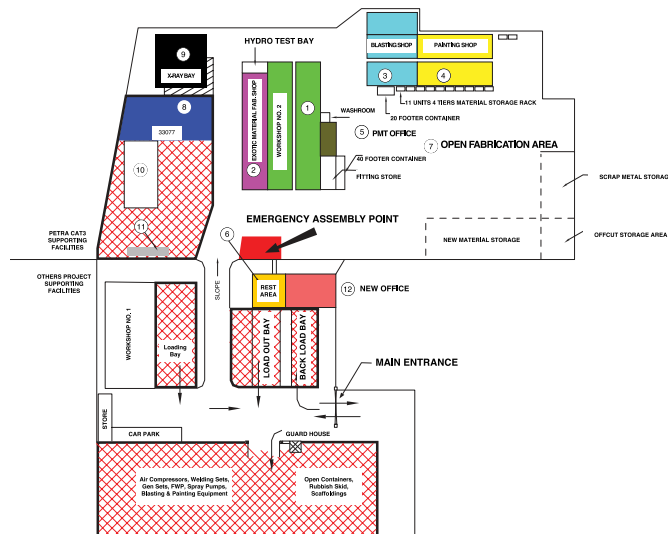
PETRA's minor fabrication yard in Labuan provides fabrication and construction services, and also serves as a hub for equipment supplies, storage and logistics. The activities and services at the Yard, amongst others, include fabrication, assembly, erection, inspection, testing load out, planning and non-destructive testing (NDT).

The Yard's strategic location, i.e. close proximity to the clients' oil and gas facilities, ASEAN Supply Base (ASB) and the Group's marine fleet, has enabled PETRA to ensure timely deliverables to the clients' facilities offshore.

The Yard comprises a team of key personnel as well as technical support teams that have completed work orders for oil majors like PETRONAS Carigali, Shell Malaysia and others.

The Yard covers an area of approximately 2.3 hectares and houses support facilities as follows:

- Two offices
- Two workshops
- Material lab shop
- Hydro testing facilities
- Blasting shop
- Open fabrication yard
- Radiography bunker
- Scaffolding storage shed
- Logistics and materials handling



### Covered Structures

- 1 Workshop no.2 = 788 sq.m
- 2 Exotic material fab shop = 376 sq.m
- 3 Blasting shop = 324 sq.m
- 4 Painting shop = 486 sq.m
- 5 PMT office = 72 sq.m
- 8 Workers' rest area = 288 sq.m

### Open Area

- 7 Open fabrication area = 1184 sq.m
- 8 Laydown area for completed works = 546 sq.m
- 9 X-ray bunker = 288 sq.m
- 10 Scaffolding materials storage shed = 297 sq.m
- 11 Gases storage shed
- 12 New office = 112 sq.m
- Proposed Logistic & Receiving Facilities

## INTEGRATED PRODUCTION & OPERATIONS SOLUTION PROVIDER

PETRA provides multi-disciplinary exploration and reservoir management consulting services for the oil and gas industry through the provision of sub-surface geological and geophysical, reservoir, production engineering and well engineering services.

In oil field optimisation, we provide Full Field Review (FFR) and Field Development Plan (FDP) of ageing assets and reservoirs to enable our clients to make informed decisions on operating onshore and offshore oil and gas facilities.

We have managed projects utilising field optimisation techniques and new technologies on behalf of both operators and lead contractors in numerous locations throughout the world.

From the FDP recommendations, clients have the option to decide on the following:

- Operate "as is" basis
- Redevelop for maximum immediate recovery
- Redevelop for long-term reservoir recovery
- Redevelop to arrest production decline
- Abandon / decommission wells and facilities

Field rejuvenation, stranded reserves exploitation and bypassed oil recoveries are the key areas of our focus for our clients.

Our track record also includes successes in new technology application for the rejuvenation of mature oil and gas fields. We achieved this through our multi-disciplined expertise, and also by working hand-in-hand with our rapidly expanding international clientele base that includes many of the major principals worldwide.

### Our Capabilities

- Integrated brown field rejuvenation and optimisation
- Production enhancement and field rejuvenation
- Well and asset integrity management
- Well and asset abandonment
- Small field and bypassed oil development
- Training and consultancy



**P2 Energy Solutions**  
Formerly known as ISS Group



**Petroleum Experts Limited**  
Petroleum Engineering Software  
Tools IPM Suites



**Caesar Systems**  
Petroleum Ventures & Risk  
(Petro VR) Decision Support Tools



**Platte River Associates, INC**  
Petroleum Systems Modeling  
Software





# PETRA PROVIDES A HOST OF ENGINEERING, OPERATIONS AND MAINTENANCE SERVICES FOR THE OIL AND GAS INDUSTRY.

## ENGINEERING, OPERATIONS AND MAINTENANCE

Our service facilities, which are fully equipped with specialised tools, machinery, calibration testing equipment and managed by a team of competent and experienced personnel, are able to provide a full range of repair, overhaul and maintenance services. We also undertake onsite emergency onshore plant & offshore platform breakdown and preventive maintenance services.



### Our Capabilities

- CATERPILLAR and Waukesha engine operations and maintenance
- Marine maintenance support
- Mechanical and rotating equipment maintenance and services
- Electrical and instrument calibration and maintenance
- Testing and certification
- Fabrication and manufacturing
  - Component re-engineering
  - Spare parts fabrication, modifications and upgrades
- Offshore and onshore shutdown engineering support and services
- Offshore & Onshore lifting equipment rental & services and crane operations and maintenance services
- Hydrostatic testing for valves and cylinders
- Rebuilding of coolers, heat exchangers and radiator
- Operation and maintenance for Aqua-Chem Watermaker

Our operation in both East & West Malaysia (Miri, Labuan & Kemaman) are supported by a highly competent team of professionals and technical personnel, comprising specialist, Field service Engineer, Supervisors, senior technicians, technicians, welders and machinists. Combined, they possess extensive experience in maintenance and operations of a wide range of rotating and static equipment of the oil and gas industry. We also provide project management services in compliance with QA/QC Standards (ISO 9001:2008 Certified) and HSSE procedures and guidelines, with over two million incident free man-hours for completed contracts and service provisions.

The unit's warehouse carries a substantial inventory of raw materials, which include parts and components for fast turnaround of repair and manufacturing services.





PETRA specialises in the design and fabrication of heat transfer and process equipment such as pressure vessels, heat exchangers, storage tanks and other fabricated items.

Our end users include EPCC contractors, offshore structure fabricators, process package specialists (in the oil and gas, petrochemical and other industries) – for both domestic and international markets.

**Our Capabilities**

- Fabrication materials
- Petrochemical and oil and gas engineering design
- Fabrication design and support services
- Mechanical equipment handling design and support services

**Carbon Steel / LTCS / NACE**

- Boilers Plate, Pipe, Tube, Flange, Forging, Fitting, etc. (ASME / ASTM / BS / API / ANSI, etc.)

**Corrosion Resistant Alloy (CRA) and Exotic Materials**

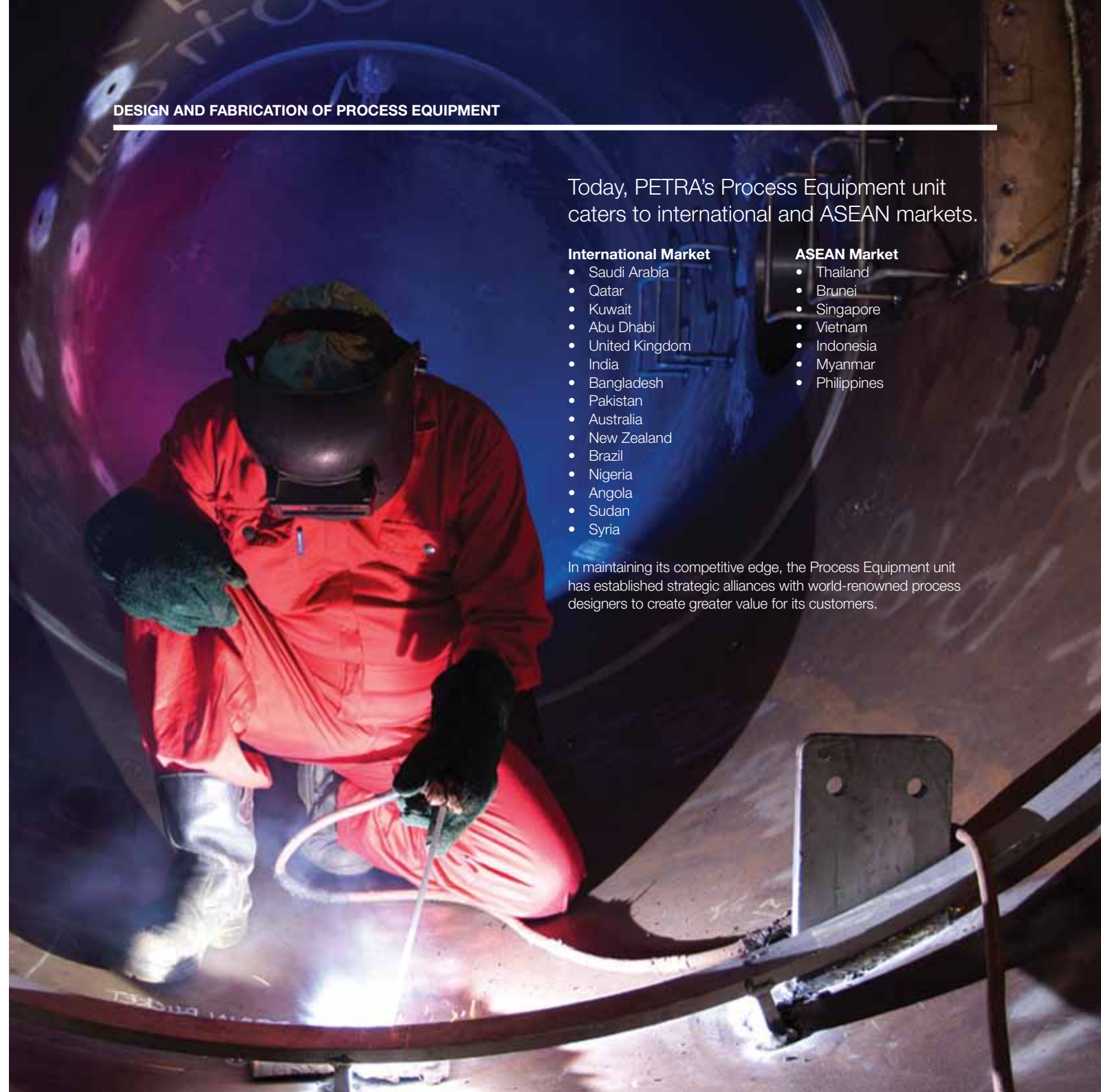
- SS316L, SS304L, SS310, SS321, Duplex Stainless Steel; Super Duplex Stainless Steel; Copper Nickel; Chrome Moly; Titanium; Super Austenitic Stainless Steel (6Mo) and Alloy 20; Inconel 625; Incoloy 825; Hastelloy C276, Quench and Tempered SA533 & SA537 grades

**Cladded Materials**

- CS cladded with SS316L, SS340L, Incoloy 825 and Inconel 625
- Electroslag Strip Welding / Cladding for Shell and Head and Weld Overlay of small bore nozzles
- Hot rolled clad and explosion bonding

**Thick Walled Material**

- Thickest track record (213+4.5)mm nominal / (201+3)mm minimum



Today, PETRA's Process Equipment unit caters to international and ASEAN markets.

**International Market**

- Saudi Arabia
- Qatar
- Kuwait
- Abu Dhabi
- United Kingdom
- India
- Bangladesh
- Pakistan
- Australia
- New Zealand
- Brazil
- Nigeria
- Angola
- Sudan
- Syria

**ASEAN Market**

- Thailand
- Brunei
- Singapore
- Vietnam
- Indonesia
- Myanmar
- Philippines

In maintaining its competitive edge, the Process Equipment unit has established strategic alliances with world-renowned process designers to create greater value for its customers.





**Amarillo Gear**

Right Angle Gear Drives for Pumps Offshore.



**Aqua Chem Inc.**

Aqua-Chem is the leader in providing Global Water Solutions. From the North Sea to the Middle East, from the Far East to the Indian Ocean, we offer the industry's leading solutions for converting seawater, brackish and polluted water into pure, fresh water.



**Dawson Downie Lamont**

Reciprocating Pumps



**IFS**

Integrated Flow Solutions LLC (IFS) is a global solution provider of skid-mounted, modular liquid and gas process systems. These units are fully optimized "Engineered-to-Order" packages which ship ready to "plug into" the process flow at your plant. Packages: Gas Treatment, Water / Methanol / Chemical Injection, Crude Oil Pump, Aviation Fuelling, Nitrogen Generation, Multiphase Pumping System, API610 pumps General Industries Valves, Repair & Maintenance Centre



**LSI Robway**

Sales and Services of Wireless & Cable Based Products for Offshore, Marine, Overhead and Hydraulic Cranes. To provide solutions utilizing the following wireless sensor types: Load Cell, Load Pin, Line Rider (Tensiometer), Boom Angle, List / Heel Angle, Mast Angle, Luffing Jib Angle



**Neway**

General Industries Valves, Repair & Maintenance Centre



**Niigata Chiksan**

Marine Loading Arms

PETRA packages, supplies and commissions equipment used extensively in the oil and gas, petrochemical, refining and other related industries. All our equipment packages meet international standards and regulations.

We specialise in rotating and mechanical equipment packages, and provide services that include design, engineering, testing, installation, hook-up and commissioning for a host of engineered equipment – supported by globally recognised equipment manufacturers.

In addition, our team of specialists provide technical support for site installation, commissioning, training on equipment use, on-going / scheduled maintenance and breakdown repair services.

**Types of Engineered Equipment**

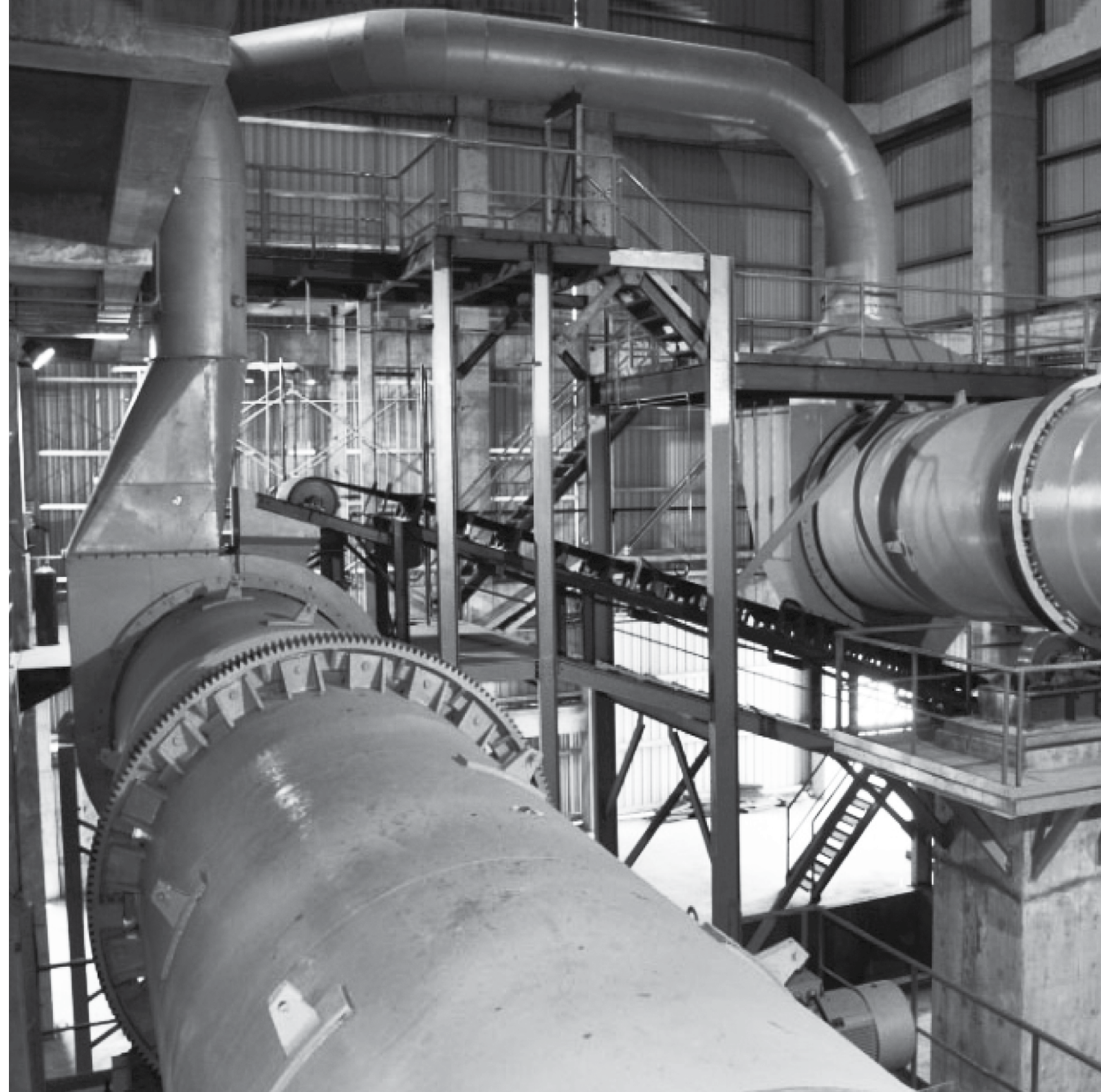
- Centrifugal and Vertical Pump Packages Air Compressor Skids
- Reciprocating Pump Packages
- Rotary Screw Air Compressors
- Horizontal Centrifugal Pump Packages Vertical Firewater Pumps
- Gas and Diesel Power Generators
- Vertical Service Water Pumps

- Water Makers
- Chemical Injection Pumps
- Control Systems (Electrical and Pneumatic), and other services for packaged equipment

For skid packaging, we provide design, assembly and testing of mechanical, structural, instrumentation and electrical items that incorporate proprietary engineered equipment, piping, structural frame, supports, pressure vessels, tanks and I&E installation. The scope also covers painting, logistics, project documentation and management.

Our packaging and manufacturing facility occupies a covered area of approximately 5,700 sq. meters.

Supported by our highly competent in-house design engineering and fabrication capabilities, we have successfully packaged engineered products and equipment in collaboration with world-renowned principals to further enhance our services.





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