



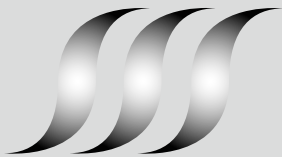
Beyond Integration
Seamless Solutions™



Delivering Global Products and Services to the Onshore and Offshore Drilling Industry



Your Ultimate
Total Solutions Company



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 **ervices**

 **olutions**

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01

ABOUT TSC



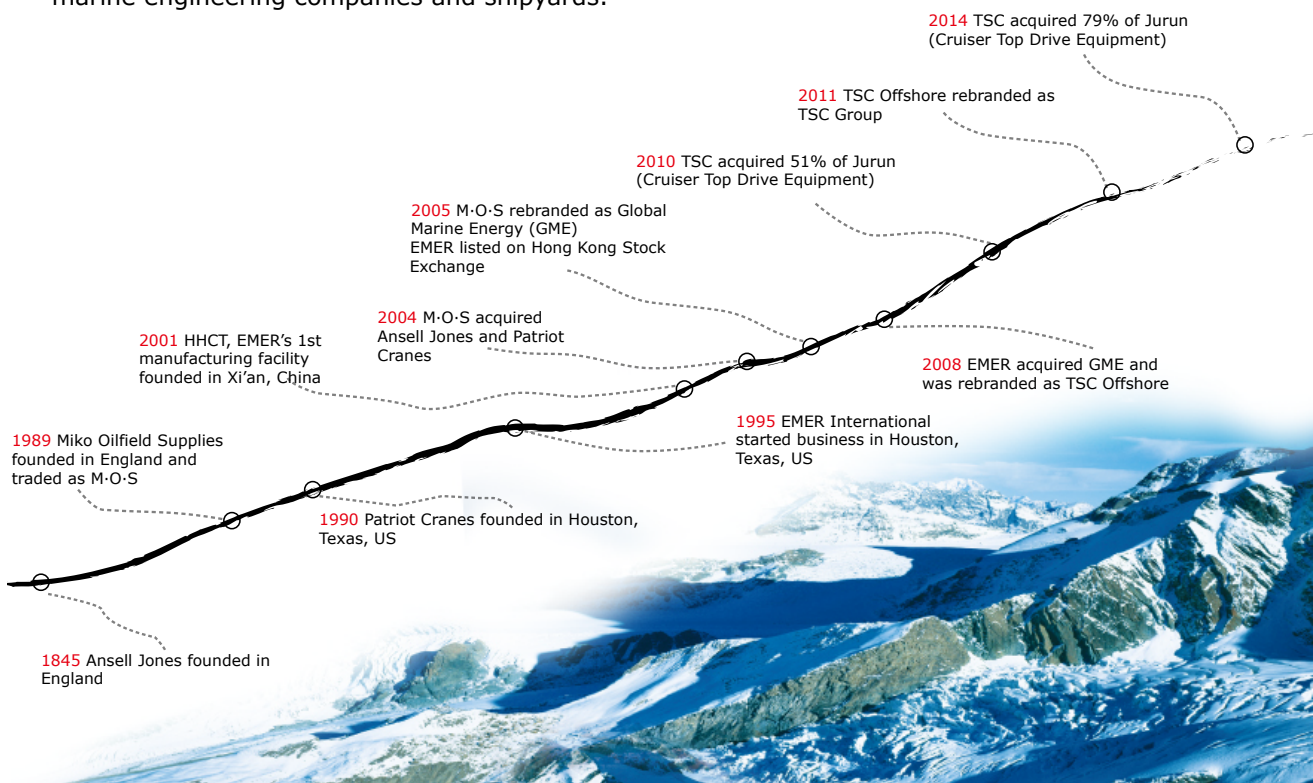
TSC Group Holdings Limited ("TSC"), formerly known as TSC Offshore Group Limited is a product and service provider serving both onshore and offshore drilling industries worldwide. The company was incorporated in the Cayman Islands and its shares are listed on the main board of The Stock Exchange of Hong Kong Limited (Stock code:206). The company and its subsidiaries develop, manufacture, market, install and service a comprehensive line of products for onshore and offshore drilling industries. Through its products and services, the group provides innovative solutions to offshore platforms and onshore rigs, as well as of various rig packages to its global customers.

TSC has research and development centers in the U.S.A., U.K. and China, and has manufacturing and repair facilities and offices in all major oil & gas producing regions globally.

TSC's clients include a diverse global portfolio of major international and national oil companies, drilling contractors, offshore and marine engineering companies and shipyards.

Notable Achievements:

- One of the few global companies providing various offshore rig packages;
- Over 25% of the world's floater rigs (semisubmersibles and drillships) are equipped with TSC equipment;
- TSC delivered the world's first ABS-CDS 2012 edition drilling system for jack-up rigs;
- Over 180 jack-up rigs, semisubmersible rigs and drillships are equipped with TSC BOP Handling equipment.



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02

**VISION, MISSION,
& VALUES**



Our Vision

To be a world-class solution provider to the energy industry.

Our Mission

Drive business growth through creating value to our customers, shareholders, staff and other stakeholders.



Core Values

4-D

Customer-Driven
Service-Driven
Solution-Driven
Result-Driven

TOP-E

Teamwork
Openness
Passion
Entrepreneurship

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03

QHSE



Keeping people safe is our top priority. TSC aims to achieve zero harm and zero lost time, incidents inside the organisation, at clients work sites and on-board any rig which TSC is involved with. TSC is committed to pursue the highest possible level of standards in products and services whilst maintaining a safe work environment.

Quality: TSC maintains the highest standards for its products and services by using the TSC Global Quality Management System

Health: TSC focuses on employee health and on continuously improving the work environment

Safety: TSC believes that all incidents can be prevented, so as to strive continuously for zero harm to personnel, material and non-material assets

Environment: TSC designs products and services to have no undue environmental impact, and conducts operations through efficient use of materials and energy, with minimum waste and damage to the environment.

The attainment of ISO 9001 at TSC's manufacturing facilities globally, is testimonial to its commitment towards stringent quality standards for all of TSC products and services.

TSC has attained multiple product specific licenses in our facilities that include API Monogram licenses amongst others.

These products can be designed and manufactured to comply with relevant standards to enable the product to be CE marked.

TSC maintains the following licenses at applicable facilities:



API Spec Q1 – Quality Management System

API Spec 2C – Offshore Pedestal Cranes

API Spec 4F – Drilling and Well Servicing Structures

API Spec 8C – Drilling and Production Hoisting Equipment

API Spec 7K – Rotary Tables; Slush Pump Components; Drawworks Components

API Spec 8C – Hoisting Sheaves at PSL 1

CE / ATEX compliant products include, but are not limited to:

- Mud Pumps
- Centrifugal Pumps
- Centrifugal Pump Skids
- Cranes
- Conveyors
- Substructures
- Riser Spiders
- CTUs
- Skidding Systems
- Iron Roughnecks



Q1-1108, 0645, 0152
2C-0097, 0101
4F-0374, 0192
7K-0440, 0201, 0084
8C-0128



"U"48788



"R"9643



ISO 9001:2008



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04

R&D CAPABILITY



Highly skilled and competent engineers along with a vastly experienced project management team allow TSC a competitive edge in the worlds' on and offshore oil and gas industries.

TSC has more than 150 skilled R&D engineers around the global and 3 major technology research centers based in China, UK and USA.

TSC is committed and focused on providing flexible package and equipment solutions to its clients, this is achieved through using advanced and state of the art software (Auto-CAD, Solidworks, ANSYS, SACS etc...) expertly driven by technical professionals.



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05

OFFSHORE RIG INTEGRATED SOLUTIONS



TSC delivers integrated solutions for jack-up, semi-submersible, mono column platform, modular platform rig, lift boat, MSV, drillship and floating production vessels. TSC delivers reliable and flexible project solutions, backed with a proven track record and robust internal processes and systems. TSC is uniquely positioned to accommodate to any challenges or requirements that a client needs.

TSC also provides customized solutions for worldwide clients based on their particular requirements and specifications. TSC's customized offshore solutions include drilling packages, mechanical handling packages, electrical control packages, cranes, MRO supplies and services.



In addition, TSC provides upgrade, refurbishment, re-build and repair solutions and services, along with spare parts as well as onshore and offshore services to meet client demands.





Jack-Up Rig Solutions

Through a seamless turnkey approach, TSC builds complete jack-up rigs and provides a complete cantilever and drill floor package which includes the cantilever and drill floor structure, drilling equipment, cranes, solids control system, power package, rig control and drive package, BOP stack and handling and pipe handling system.

TSC's dedication to utilizing leading-edge technology in its equipment, creates a high product performance and unparalleled advantages. TSC distinguishes itself from other companies with its reliable and flexible product line. The world's 1st and 2nd JU-2000 jack-up rigs were equipped with TSC equipment. Moreover, TSC's jack-up drilling package received the world's 1st ABS-CDS dual certification (2012 edition). TSC's commitment to product excellence, project management and after-sales services has allowed the company to maintain strong relationships with big and small oil companies, as well as shipyards world-wide.

TSC provides highly efficient, flexible services, and cost-competitive solutions to clients through combining experienced engineers, innovative technology, and best practices.

TSC delivered the world's 1st ABS-CDS 2012 edition drilling system for jack-up rigs.



Jack-Up Package Scope of Supply

Hoisting Equipment

Drawworks | Derrick Structure | Crown Block | Monkey Board | Travelling Block

Drill Floor Equipment

Rotary Table | Iron Roughneck | Drill Line Spooler | Cathead | Drill Floor Hydraulic Power Unit Package | Personnel Access Basket | Air Winch | Man Rider Winch | Mud Bucket | Top Drive | Air Hoist | Personnel Safety Devices | Deadline Anchor | Wire Line Unit | Bug Blower | Skimmer Tank Pump | Drill Floor Air Receiver

Tubular & Riser Handling Equipment

Gantry Crane | Knuckle Boom Crane | Catwalk Machine | Bridge Racker | Column Racker | Fingerboard | Derrick Man's Cabin | Mouse Hole | HTV Machine | Drill Floor Manipulation Arm | Power Slips Assembly | Belly Board

Deck Crane

Kingpost Deck Crane | Pedestal Deck Crane

Tensioning & Skidding Equipment

Conductor Tension Unit | Cantilever Beam Skidding Unit | Drill Floor Skidding Unit | Crown-Mounted Compensator | Drilling Tensioning System | Production Tensioning System

BOP & Subsea Handling Equipment

BOP Crane | Xmas Tree Crane | BOP and Xmas Tree Skid Unit | BOP Transporter / Carrier | Xmas Tree Carrier / Trolley | BOP Chain Hoist | BOP and Xmas Tree & LMPR Guidance System | BOP Lifting and Storage Elevator

Pumps

Mud Pump | Centrifugal Pump

Mud System

Shale Shaker | Mud Cleaner | Desander | Vacuum Degasser | Centrifuge | Mud Agitator | Mud Gun | Mud Gas Separator | Mud Jet Hopper | Liquid Chemical Additive Pump Skid | Sack Cutting and Bulk Power Dosing Unit | Bulk Surge Tank | Gumbo Conveyor | Cutting Auger | Verti-G Cutting Dryer (Optional) | P Tanks | Air Surge Tank | Dust Collection Tank | Stand Pipe Manifold | Cement Manifold | Kill and Choke Manifold | Choke Hose | Rotary Hose | Cement Hose

Well Control System Equipment

Flare Boom | Diverter | Diverter Control Unit | BOP

Control & Drive System

Rig Power Distribution and Drive System: SCR / VFD | Drilling Control System | Rig Reactive Power Compensation and Harmonic Suppression System | Intelligent Drillers Cabin with Integrated Drillers Console and Instrumentation System | Jack-Up Rig Jacking Control System | Power Control System

Jacking System

Jacking Drive System | Leg Rack | Fixation System

Lifting & Mooring Equipment

Block, Sheave and Swivel | Winch and Reeling Equipment: Hydraulic Winch / Electric Winch / Air Winch / Reeler | Material Handling Equipment | Deck Fitting and Hardware

Rig MRO Supplies & Global Rig Services

Mud Pump Expendables and Spares: Liners / Pistons / Rods / Valves and Seats | Solids Control Spares | Rig Up Commissioning Service | Rig Down Service | Rig Design Service | Repair and Refurbishment | Top Drive Service



Semi-Submersible Rig Solutions

TSC has a proven track record in the engineering, supply and delivery of semi-submersible rig equipment and packages. TSC has provided more than 180 sets of mechanical packages to a global fleet of jack-ups and floaters, over the past decade. Through providing quality systems and technical engineering expertise, TSC has built up a substantial portfolio supplying subsea and pipe handling packages to several major drilling contractors including, Transocean, Diamond, ENSCO and Schahin.



Drillship Solutions

TSC has a proven track record in the engineering, supply and delivery of drillship packages. TSC has provided more than 180 sets of mechanical handling packages to a global fleet of floaters, over the past decade. Through providing quality systems and technical engineering expertise, TSC has built up a substantial portfolio supplying subsea and pipe handling packages to several major drilling contractors including, Transocean, Diamond, ENSCO and Schahin.

Semi-Submersible Rig and Drillship Packages

Scope of Supply

Hoisting Equipment

Derrick Structure | Crown Block | Monkey Board
| Travelling Block

Drill Floor Equipment

Rotary Table | Iron Roughneck | Drill Line
Spooler | Cathead | Drill Floor Hydraulic Power
Unit Package | Personnel Access Basket | Air
Winch | Man Rider Winch | Mud Bucket | Top
Drive | Air Hoist | Personnel Safety Devices |
Deadline Anchor | Wire Line Unit | Bug Blower
| Skimmer Tank Pump | Drill Floor Air Receiver

Tubular & Riser Handling Equipment

Gantry Crane | Knuckle Boom Crane | Catwalk
Machine | Bridge Racker | Column Racker |
Fingerboard | Derrick Man's Cabin | Mouse Hole
| Power Slips Assembly

Deck Crane

Kingpost Deck Crane | Pedestal Deck Crane

BOP & Subsea Handling Equipment

BOP Crane | Xmas Tree Crane | BOP and Xmas
Tree Skid Unit | BOP Transporter / Carrier |
Xmas Tree Carrier / Trolley | BOP Chain Hoist |
BOP and Xmas Tree & LMPR Guidance System

Pumps

Mud Pump | Centrifugal Pump

Mud System

Shale Shaker | Mud Cleaner | Desander |
Vacuum Degasser | Centrifuge | Mud Agitator
| Mud Gun | Mud Gas Separator | Mud Jet
Hopper | Liquid Chemical Additive Pump Skid |
Sack Cutting and Bulk Power Dosing Unit | Bulk

Surge Tank | Gumbo Conveyor | Cutting Auger
| Verti-G Cutting Dryer (Optional) | P Tanks |
Air Surge Tank | Dust Collection Tank | Stand
Pipe Manifold | Cement Manifold | Kill and
Choke Manifold | Choke Hose | Rotary Hose |
Cement Hose

Well Control System Equipment

Flare Boom | Diverter | Diverter Control Unit |
BOP | Underwater Robot

Control & Drive System

Middle Voltage Engine Control and Distribution
System | Rig Power Distribution and Drive
System: SCR / VFD | Drilling Control System
| Rig Reactive Power Compensation and
Harmonic Suppression System | Intelligent
Drillers Cabin with Integrated Drillers Console
and Instrumentation System | Power Control
System | Dynamic Positioning System

Lifting & Mooring Equipment

Block, Sheave and Swivel | Winch and Reeling
Equipment: Hydraulic Winch / Electric Winch
/ Air Winch / Reeler | Material Handling
Equipment | Deck Fitting and Hardware

Rig MRO Supplies & Global Rig Services

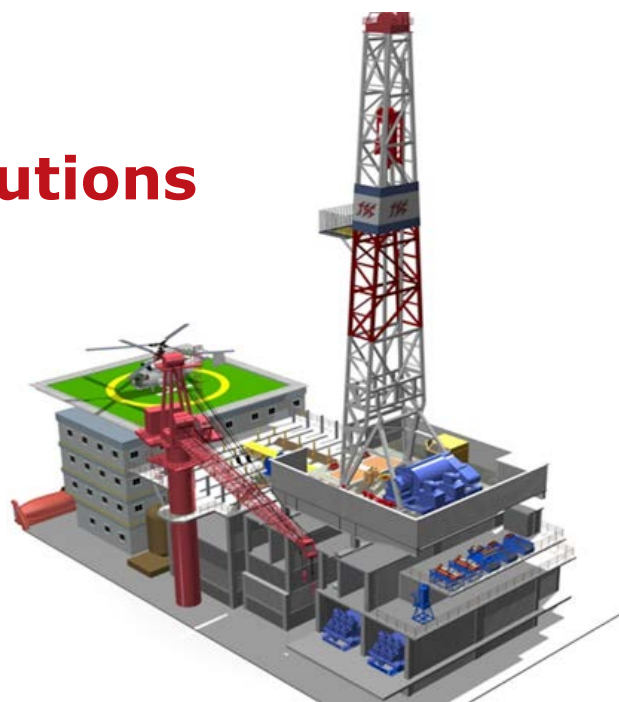
Mud Pump Expendables and Spares: Liners
/ Pistons / Rods / Valves and Seats | Solids
Control Spares | Rig Up Commissioning Service
| Rig Down Service | Rig Design Service |
Repair and Refurbishment | Top Drive Service





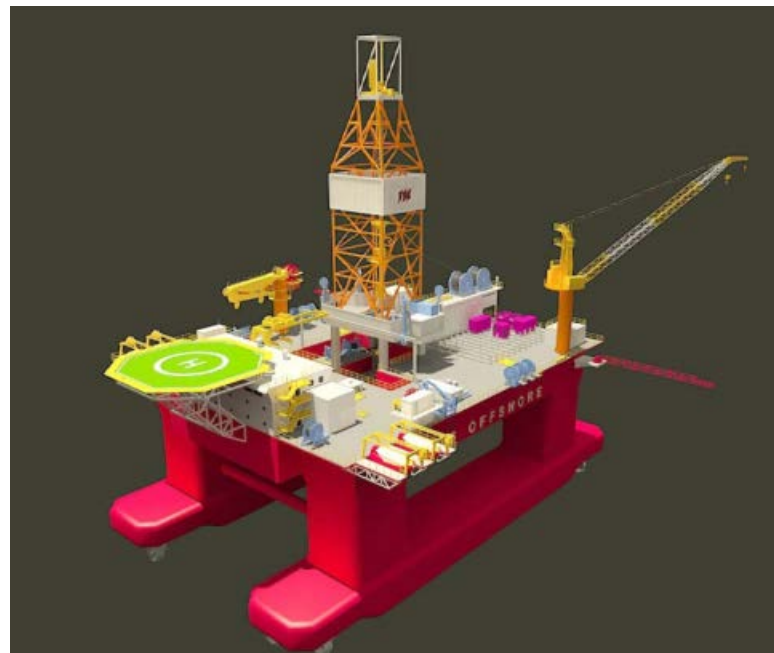
Modular Platform Rig Solutions

TSC's modular rig designs are customized to each customer's specific requirements, including packages for regular jacket platforms, tender assist rigs and mono column platforms. The modularized packages, such as a drilling package, solids control package, power package and living quarters can be tailored to accommodate to development well drilling and work-over operation. Complete packages can be easily lifted and re-located to another platform.



Multi-Service Vessel Solutions

The TSC MSV was designed for operation in Brazilian waters and other similar mild weather environments. The vessel's design can be easily adapted for operation in harsh environments, with minimal modifications to deck elevations and increased air gap. The multi-purpose design allows for workover, well intervention and restricted drilling operations.

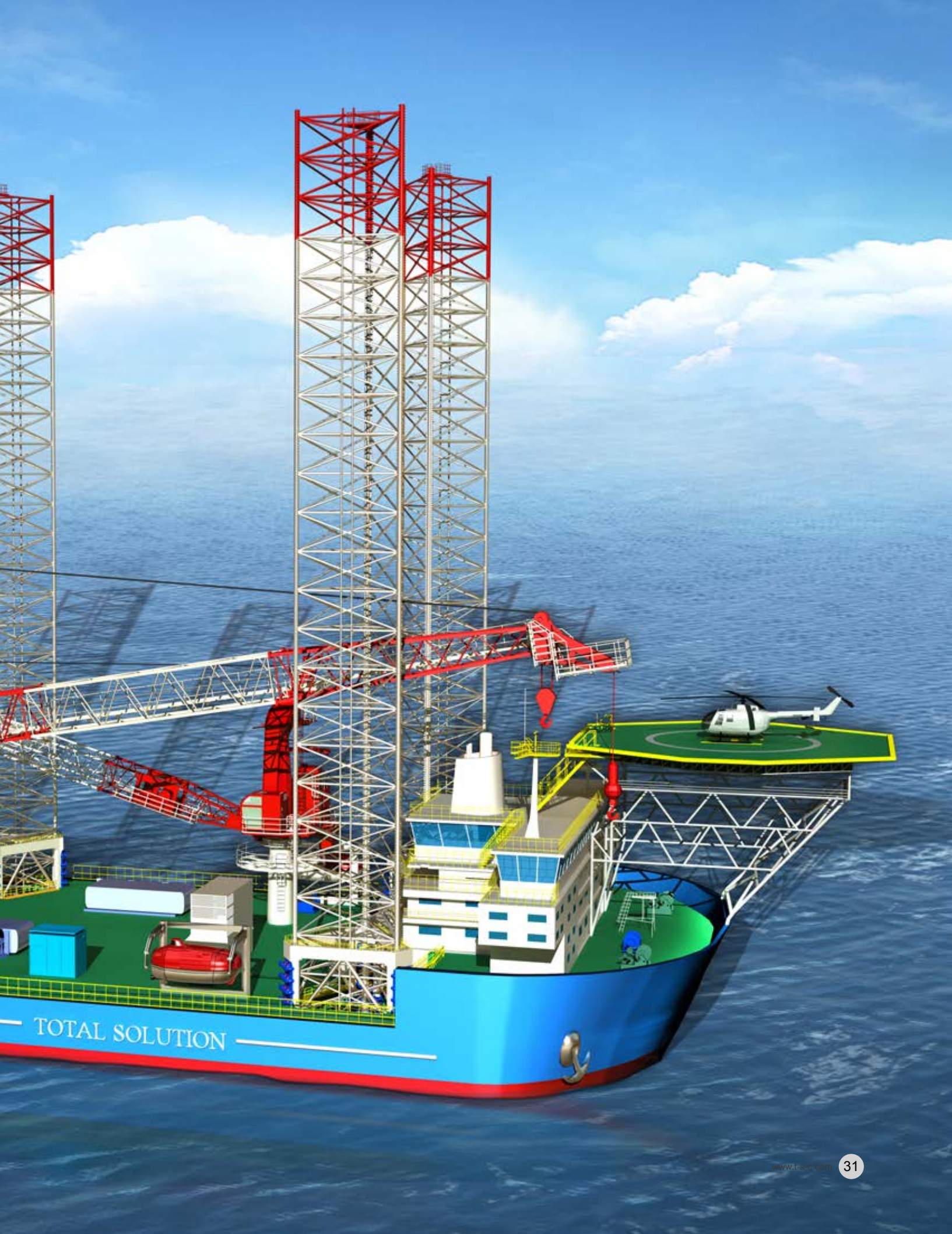




Liftboat Solutions

TSC is able to provide a liftboat total solution for a variety of offshore needs. TSC's liftboat solution includes the design, build, equip and commission of the complete liftboat. Clients have the ability to choose their preferred designs and specifications.





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06

**EQUIPMENT FOR
OFFSHORE &
ONSHORE RIGS**



HOISTING EQUIPMENT

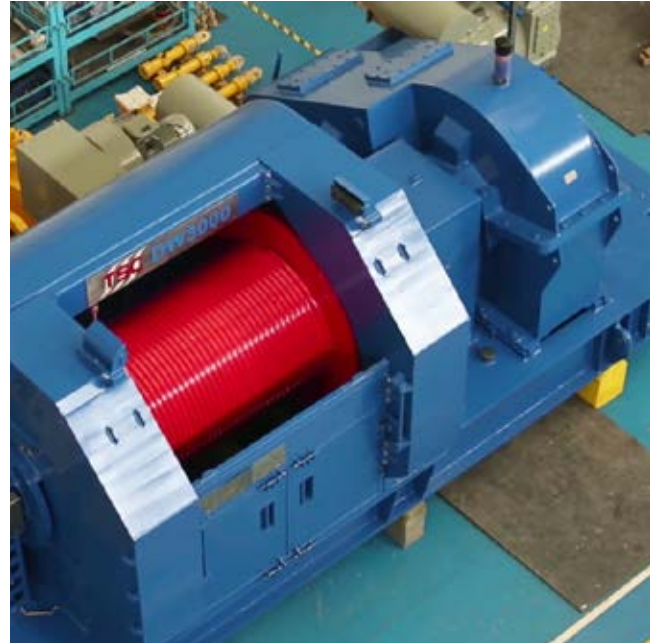


HOISTING EQUIPMENT

Drawworks

Features:

- Designed to meet the requirements of ABS or DNV;
- The drum uses a LEBUS-groove which is favorable for rope arrangement and maintenance;
- The mechanic-electronic-hydraulic integration technique allows for a more compact layout;
- Skid and frame welds are rigid, accurate and have a small footprint;
- Forced lubrication system increases the drawworks operation convenience and safety.



Description:

TSC's DW series drawworks are manufactured in accordance with API standards and have received numerous certifications including ABS and DNV. The drawwork's stable performance is ensured through using ultra-strength, high-quality materials as well as a well-known motor. The DW series is characterized by its simple construction, convenient maintenance, light weight and small footprint.

Specifications:

Model	DW 2300	DW 3000	DW 4600	DW 6000
Power Rating (kW)	1715	2237	3430	4474
Weight (kg)	48000	58000	66000	76000
Length (mm)	4800	6800	8400	9100
Width (mm)	3500	3200	3300	3500
Height (mm)	2400	3100	3300	3500
Hook Load (MT)	585	680	680	900

HOISTING EQUIPMENT

Derrick Structure

Features:

- Designed as per API 4F, API8C and other internationally recognized rules and regulations;
- Hot dip galvanized construction consisting of beam sections, fabricated from killed, normalized and sharp V-notch tested steel with a wide operation temperature range;
- Maximum hook load ranging from 1500KIPS to 2000KIPS supplied;
- Capacity of setback load ranging from 750KIPS to 1500KIPS supplied.



Description:

TSC manufactures derricks for jack-up rigs, semi-submersible rigs and drillships. TSC derricks are able to accommodate top drives, travelling blocks, crown blocks, personnel access basket, racking board, casing board, belly boards and other derrick accessories. For semi-submersibles and drillships, TSC offers derrick and crown mounted compensator packages.





DRILL FLOOR EQUIPMENT

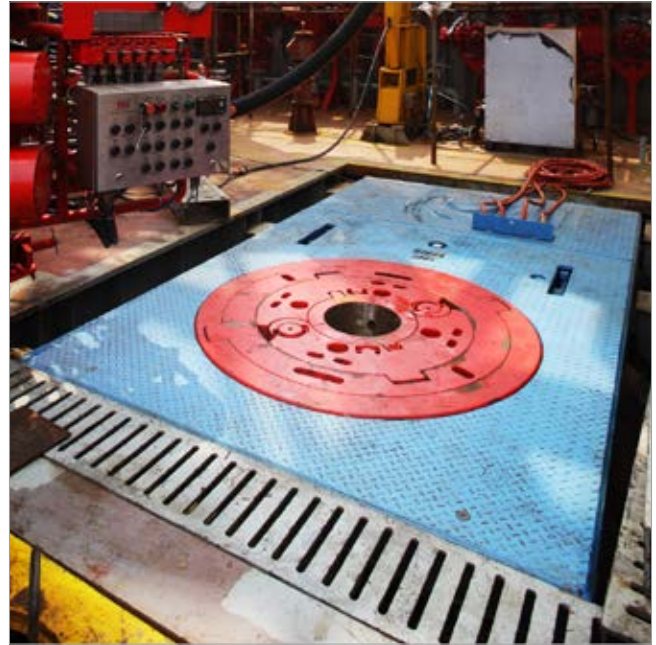


DRILL FLOOR EQUIPMENT

Rotary Table

Features:

- Designed to meet the requirements of ABS and DNV;
- Two selective, uni-directional and independent locking devices;
- Turntable and pedestal are joined by weld structure with good rigidity and durability;
- Design of input shaft assembly is a cylindrical structure, which is easy to install and disassemble;
- Hardened gears and spiral bevel gears are characterized by strong bearing and long life;



Description:

The TSC RT series rotary table is provided with high reliability and serviceability. The rotary table structure has been designed to provide maximum strength to ensure larger load, increased safety and well-fit between bearings and gears.

The table assembly was greatly simplified so it can be installed into the rotary housing and is easy to maintain. The RT series can be designed to meet the requirements of various drilling operations and work environments.

Specifications:

Model	RT 275	RT 375	RT 495
Weight (kg)	6163	8026	10405
Length (mm)	2392	2468	2953
Width (mm)	1670	1810	2185
Height (mm)	685	718	814
Max. Table Torque (N•m)	28000	33000	45000
Static Load Capacity (kN)	4500	5850	9070
Gear Ratio	3.67	3.56	3.93

DRILL FLOOR EQUIPMENT

Iron Roughneck

Features:

- 2 Jaw or 3 Jaw options;
- Manual, semi or full automatic control modes;
- Automatic clamp pressure setting relative to tubular diameter;
- Well centre and mousehole operations;
- Operation from roughneck, drill floor panel, drillers cabin or radio control;
- Mousehole tilt accommodated on IRN1000 and IRN2000 models.



Description:

TSC engineers and manufactures a range of hydraulically powered iron roughnecks for making-up and breaking-out drilling tubulars. These durable and rugged roughnecks can be supplied with various controls and arrangement options that include track and pedestal mounted versions. All models are available with hydraulic, electro-hydraulic or radio remote controls.

Specifications:

Model	IRN1000: Rail Mounted	IRN 2000: Rail Mounted	IR120: Pedestal Mounted	IR150: Pedestal Mounted
Weight (kg)	8000	9000	6500	7000
Make up Torque (ft lb)	100000	100000	100000	100000
Break Out Torque (ft lb)	122000	122000	120000	120000
Spinner Speed (rpm)	0-140	0-140	0-100	0-100
Stickup Height Min/Max (mm)	740/1540	740/1240	860/1610	860/1610

DRILL FLOOR EQUIPMENT

Drill Line Spooler

Features:

- Rope storage capacity and speed of operation are specific to client requirements;
- Heavy duty steel frame complete with certified lift eyes and forklift pockets;
- Two direction rotation of drum;
- Hydraulic, pneumatic or electric motor actuation.



Description:

TSC drill line spoolers form an integral part of the drilling system package. The spoolers store the drill line and provide the facility to deploy during the cut and slip operation. One of the main considerations during the design development phase was to ensure that the reel change-out process was quick, efficient and safe for personnel. TSC's drill line spooler adaptation is possible to suit special client requirements.

DRILL FLOOR EQUIPMENT

Cathead

Features:

- Mounted to suit the drill floor arrangement;
- Control options available: driller's cabin, drill floor mounted console or radio control;
- Torque adjustment to meet make up or break out requirements;
- Suitable for Zone 1 operation.



Description:

TSC catheads provide the force necessary to make up and breakout drill pipes and collars. The cathead is a drill floor mounted tool which, when working with manual rig tongs, provides the required torque.

Specifications:

Title	Cathead
Pull Force (kN)	0 - 160
Operation Arc (°)	± 40
Rope Travel (mm)	2000

DRILL FLOOR EQUIPMENT

Hydraulic Power Unit

Features:

- Fixed or variable displacement pumpsets to suit application;
- Pressure, return or offline filters;
- Flow/pressure monitoring to ensure efficient usage and reduced power consumption;
- Control options available: Driller's cabin or local station;
- Standard safety features including high temp probe and ultimate low level switches.



Description:

The hydraulic power unit (HPU) is a critical part of the handling system's operations. TSC hydraulic power units are provided to suit all applications, from individual equipment to complete handling systems with available flow rates in excess of 1000 ltr/min and pressures in excess of 5000psi.

DRILL FLOOR EQUIPMENT

Personnel Access Basket

Features:

- Fulfils all relevant design approval and fabrication inspection safety requirements;
- Can be operated from the basket or from a remote control stand;
- Hydraulic cylinders perform tilting and telescoping functions;
- Motor performs slewing action;



Description:

The TSC personnel access basket is a telescopic arm with a personnel basket designed for offshore duty on vessels operating under dynamic conditions. The TSC personnel access basket can be used for casing stabbing, as well as access and maintenance operations within the derrick, moonpool or lower deck locations.

DRILL FLOOR EQUIPMENT

Mud Bucket

Features:

- Designed according to ABS rules;
- Adaptable to suit a variety of client requirements.



Description:

The TSC mud bucket is used during wet trip or back reaming. During operation, the mud bucket is installed in the deck housing on the drill floor.

Specifications:

Title	Mud Bucket
Weight (kg)	1600
Length (mm)	1705
Width (mm)	1125
Height (mm)	2336
Min. Working Pressure (bar)	200
Pipe Range (inch)	3 ½" , 4" , 5" & 5 ½"



TUBULAR & RISER HANDLING EQUIPMENT



TUBULAR & RISER HANDLING EQUIPMENT

Gantry Crane

Features:

- Two main types: fixed main hoists for dedicated riser handling and traveling auxiliary hoists for general use;
- Traveling main hoists for handling all tubulars use interchangeable heads.



Description:

TSC gantry cranes deliver solutions for moving riser and drilling tubulars from the storage area to the catwalk. Gantry cranes can be designed and manufactured with toe hook tools for risers, pipe grabs or magnets.

Specifications:

Title	Gantry Crane
Weight (Te)	80-160
Capacity (kg)	2 x 12.5 to 2 x 30 Te
Lift Speed (m/min)	12
Travel Speed (m/min)	16
Span (ft)	60-100

TUBULAR & RISER HANDLING EQUIPMENT

Knuckle Boom Crane

Features:

- Knuckle boom or fixed boom options available: slewing or rigid frame;
- Positional mapping of head position available to ensure accurate control and provide anti-collision;
- Integrated hydraulic power unit, if required;
- Interlocked with catwalk and other deck equipment to promote safe and efficient operation;
- Standard safety features include overload protection, emergency load lowering, fail to safe braking on all devices and speed ramps for end of travel.



Description:

TSC offers a variety of pipe handlers to satisfy specific requirements and configurations for any type of rig. The pipe handlers provide accurate, quick and efficient transportation of tubulars between the pipe deck storage areas and the catwalk or conveyor.

Specifications:

Title	Knuckle Boom Crane
Lifting Capacity (MT)	5
Tubular Range (inch)	2-7/8" to 20"

TUBULAR & RISER HANDLING EQUIPMENT

Catwalk/Conveyor

Features:

- Capable of transporting single tubulars or multiple tubulars of specific size;
- Optional tubular feed systems mounted adjacent to equipment;
- Optional tailing arm mounted in front of the tubular lift and Separator arms, tubular raise, as well as auxilliary hoists for general handling and/or triple braking system on hoisting unit;
- Hydraulically or electrically (VFD) controlled.



Description:

A range of catwalks, conveyors and riser skates are available to accurately transport tubulars, from the drill pipe to risers and telescopic joists, between the handling equipment in the pipe storage area, to the drill floor.

TUBULAR & RISER HANDLING EQUIPMENT

Bridge Racker

Features:

- Griphead and racking columns are slew bearing mounted to a trolley, between the bridge beams;
- Control options available: driller's cabin, derrickman's cabin or control station;
- Independent operation or synchronized operation with other racking arms provided;
- Interlocked and integrated into drilling system zone management;



Description:

The TSC bridge racker is mounted within the derrick, above the fingerboard level. The bridge racker handles and guides tubulars between the fingerboard/setback area and the well centre position.

TUBULAR & RISER HANDLING EQUIPMENT

Column Racker

(Guardian Racker)

Features:

- Interlocked and integrated with the drilling system zone management;
- Upper rail mounted in the derrick to guide the top of the column;
- Winch mounted on the top of the column, incorporates a cylinder for make-up and break out compensation;
- Slew bearing mounted column travel provided by rack and pinion drive;
- Hydraulically actuated with manual and automatic control modes;



Description:

The TSC column racker (guardian racker) transfers tubulars between the horizontal position, from the catwalk or conveyor, to the vertical position, when presented into the derrick for make-up at well centre or mousehole. It is used in conjunction with other equipment to make-up doubles, triples or quads offline. The stands can be presented directly to well centre or stored in the setback area.

Specifications:

Model	3m Reach	4m Reach
Capacity (kg)	10000	7000

TUBULAR & RISER HANDLING EQUIPMENT

2-Arm Racking System

Features:

- Trolley mounted slewing telescopic arm to suit the fingerboard arrangement and well centre reach;
- Control options available: drillers cabin or operators cabin;
- TRA and CRA can have independent operation or synchronized operation;
- Interlocked and integrated into the drilling system zone management.



Description:

The TSC 2-arm racking system includes a top racking arm (TRA) and a centre racking arm (CRA). The system handles and guides tubulars between the setback area and well centre positions.

TUBULAR & RISER HANDLING EQUIPMENT

Fingerboards

Features:

- Individual pneumatic actuated latches provided to secure each tubular;
- Adjustable fingers available to suit tubulars;
- Control options available: Drillers cabin or derrickman's cabin;
- Independent operation or synchronized operation with the racking system;
- Interlocked and integrated into the drilling system zone management;
- Standard safety features include spring return to close on the cylinders, ensuring positive tubular retention.



Description:

TSC fingerboards are mounted within the derrick, above the drill floor. The fingerboards are capable of storing any combination of tubulars, provided space is available.

TUBULAR & RISER HANDLING EQUIPMENT

Derrickmans and Assistant Driller Cabin

Features:

- Insulated double skin construction from steel or stainless steel with internal lighting;
- Hinged access door with spring close;
- Anti-vibration mounting;
- Toughened, single or double glazed windows available on all sides, floor and roof to suit requirements;
- Fully adjustable ergonomic swivel chair;
- HVAC for climate control;
- Control options available: full range from basic direct hydraulic actuation to touchscreen HMI.



Description:

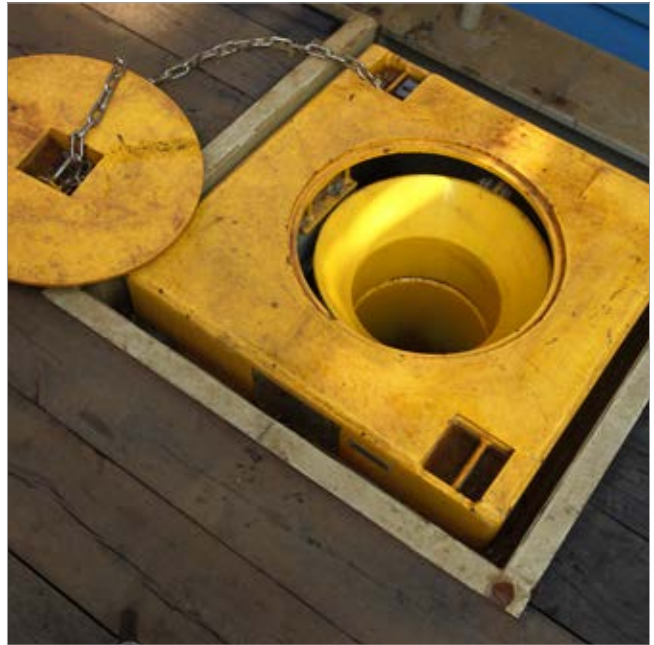
TSC cabins are mounted in the derrick to provide a safe, climate controlled area for operation of equipment. Adaptation is possible to meet client requirements.

TUBULAR & RISER HANDLING EQUIPMENT

Mousehole

Features:

- Powered Rabbit, dropped load impact absorber and drain line;
- Tubular centralizing mechanism;
- Powered or non-powered;
- Tilted or vertical mounted;
- Single or dual mousehole models available;
- Fixed length or telescopic;
- Control options available: Driller's cabin or drill floor mounted control station.



Description:

The TSC mousehole is mounted on the drill floor. It is used in conjunction with other tubular handling equipment for offline make-up and break out operations, to increase operation efficiency.

TUBULAR & RISER HANDLING EQUIPMENT

HTV Machine

Features:

- Telescopic HTV Arm with reach and slew function to suit drill floor layout;
- Griphead spreader beam;
- Hydraulically actuated;
- Control options available: operators cabin, drillers cabin, drill floor console or radio control;
- Backup manual control on the HTV Arm;
- Manual and automated control modes;
- Interlocked and integrated with the drilling system zone management;



Description:

The TSC HTV arm (horizontal to vertical arm) transfers tubulars between the horizontal position from the catwalk or conveyor to the vertical position, when presented into the derrick for make-up at well centre or mousehole. The HTV Machine is used in conjunction with other equipment to make-up doubles, triples or quads offline. The stands can be presented directly to the well centre or stored in the setback area.

Specifications:

Title	HTV Machine
Capacity (kg)	10000
Tubular Range (inch)	2-7/8" to 20"

TUBULAR & RISER HANDLING EQUIPMENT

Drill Floor Manipulation Arm

Features:

- Slew, tilt and extend functions on the telescopic arm;
- Options for mounting: drill floor mounted on a pedestal or underslung from the top drive guide rails;
- Range of heads available to suit tubular diameters;
- Rollers fitted on riser head to protect riser buoyancy;
- Tilt and rotate functions on the heads to accommodate for handling leaning;
- Optional pad eye on the racker head for general handling around the drill floor;
- Control options available: operators cabin, drill floor console or radio control;



Description:

The TSC drill floor manipulation arm tails and guides tubulars between the V-Door ramp/catwalk/conveyor, setback area and well centre position. Its tubular range is adaptable to a variety of client needs.



DECK CRANES



DECK CRANES

Pedestal Crane

Features:

- Lighter operating weight;
- Reduced tailswing;
- Designed & built to API 2C latest edition;
- Easily customized to fit customer's needs.



Description:

TSC pedestal cranes are designed to meet lifting demands on-board all types of offshore installations, and can extend up to heavy lift requirements. TSC pedestal cranes are available in lifting capacities of ranging from 50 metric tons up to 300 metric tons and boom lengths up to 200'. TSC provides comprehensive handling and transporting capabilities.

Specifications:

Model	P10	P18	P20	P24	P35
Lifting Capacity (MT)	50 - 75	100	150	200	300
Boom Length (ft)	90 - 140	90 - 140	90 - 165	90 - 180	90 - 200
Typical Application	Platforms & Jackups	Platforms, Jackups, & Floaters	Platforms, Jackups, & Floaters	Platforms, Jackups, & Floaters	Platforms, Jackups, & Floaters

DECK CRANES

Kingpost Crane

Features:

- Easy inspection & maintenance of upper lower bearings;
- Designed & built to API Spec 2C latest edition;
- Easily customized to fit customer's needs.



Description:

TSC kingpost cranes are suitable for a variety of platforms including fixed platforms, jack-ups and deep water floaters. Prime mover arrangements, combined with a state-of-the-art hydraulic system, offers safe, reliable simultaneous multi-function operation without sacrificing performance. TSC also offers a wide array of optional features and equipment to allow the customer to configure cranes exactly to their specifications. TSC cranes have a solution to fit your needs.

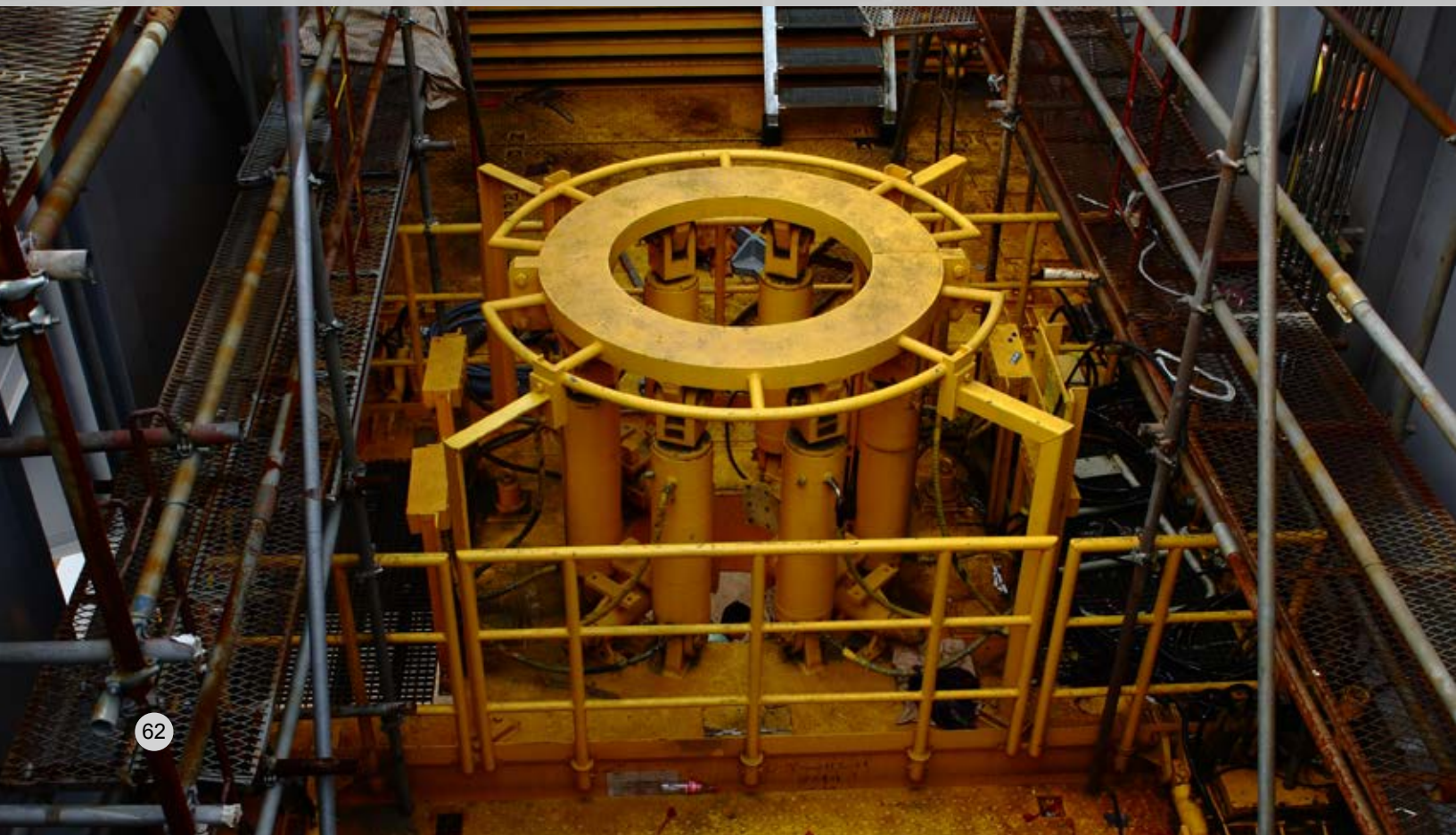
Specifications:

Model	Model 162VE	Model 198-200VE	Model 240-200VE	Model 240-250VE
Main Hook Capacity (MT)	50	75	100	150
Boom Length (ft)	80-120	80-140	90-170	90-170
Kingpost Dimension with Wall Thickness (inch)	54×1.5, 54×2	66×2	80×2	80×2.5
Typical Application	Platforms & Jackups	Platforms, Jackups, & Floaters	Platforms, Jackups, & Floaters	Platforms, Jackups, & Floaters





TENSIONING & SKIDDING EQUIPMENT



TENSIONING & SKIDDING EQUIPMENT

Conductor Tensioning Unit

Features:

- Can be supplied with a sliding panel system to fully enclose the conductor tensioning platform, or fitted with a dedicated lifting tool to raise them into stored position;
- Can be supplied with secondary tensioning to support a surface BOP stack;
- “Mini” CTUs can be specified with a hydraulic power unit for hazardous area use and are fitted with interchangeable inserts to suit different diameter tubulars;
- Hazardous area electric controls are standard on “Standard” CTUs and include digital displays and links for remote monitoring of the tensioning load.



Description:

TSC conductor tensioning units (CTU) are field proven through installations globally. TSC’s CTUs can be custom-designed for a variety of specific rig layouts. TSC offers two types of CTUs: a low capacity, Texas deck mounted- “Mini” and a high capacity, conductor tensioning unit platform mounted - “Standard.”

Specifications:

Model	Standard CTU
Cylinder Mounts	8
Primary Tensioning Capacity (MT)	135-275
Conductor Diameters Accommodated (inch)	20-36
Conductor Aperture Diameter (mm)	1066
Horizontal Travel Distance (mm)	9144 , 4572 to either side of well

TENSIONING & SKIDDING EQUIPMENT

Secondary Tensioning Unit

Features:

- Suspended from the drill floor (other suspension options also available);
- Integrates with BOP lift ring;
- Utilizes either wire rope or adjustable chain slings;
- Standalone accumulator system or integrated with CTU accumulator;
- Full integration with BOP handling system available.



Description:

TSC Secondary Tensioning Units (STU) are designed for individual rig types to ensure that the BOP weight is not transferred to the conductor string. The TSC STU can be used with or without a CTU, depending on the drilling program. TSC's designs and flexible approach ensure the client gets what they want, when they want.

TENSIONING & SKIDDING EQUIPMENT

Skidding Systems

Features:

- Capacity and skidding speed designed to suit client requirements;
- Hydraulic supply from dedicated HPU or rig supply package;
- Deck mounted control console control option available.



Description:

TSC skidding systems are used to move large structures around the rig or platform in a safe and efficient manner. The system is an efficient method for handling a multiple well program as it allows the rig or platform to operate within a designated space to develop a well pattern. TSC skidding systems include three main types: cantilever skidding, drill floor skidding (lift and roll) and module skidding. Systems can be adapted to meet specific client requirements.



BOP & SUBSEA HANDLING EQUIPMENT



BOP & SUBSEA HANDLING EQUIPMENT

BOP Crane

Features:

- Goliath, semi-goliath, and gantry designs available;
- Span, height of lift and lift capacity are specific to client requirements;
- Features wire rope hoists with multi-reeved arrangement terminating with lift blocks;
- Optional auxiliary hoists for handling during maintenance;
- Optional triple braking system on hoisting units;
- Option collision protection if required;
- PLC controlled. Hydraulically or electrically (VFD) powered.



Description:

TSC BOP cranes provide solutions for handling the BOP stack within and between the moon-pool area and BOP storage area. TSC BOP cranes work in conjunction with the BOP transporter, BOP skid and guidance system, creating a complete handling system.

BOP & SUBSEA HANDLING EQUIPMENT

Xmas Tree Crane

Features:

- Goliath, semi-goliath, and gantry designs available;
- Span, height of lift and lift capacity are specific to client requirements;
- Features wire rope hoists with multi-reeved arrangement terminating with lift blocks;
- Optional auxiliary hoists for handling during maintenance;
- Optional triple braking system on hoisting units;
- Option collision protection if required; PLC controlled. Hydraulically or electrically (VFD) powered.



Description:

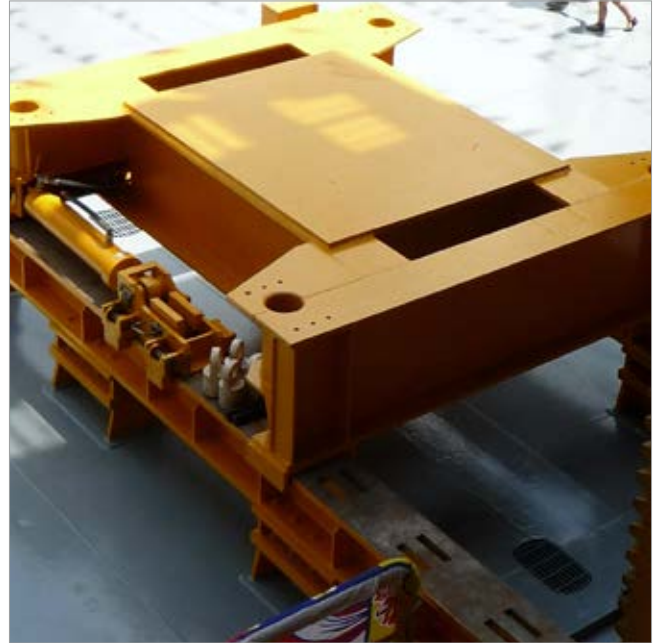
TSC xmas tree cranes provide solutions for handling the xmas tree within and between the moonpool area and the xmas tree storage area. TSC xmas tree cranes work in conjunction with the xmas tree carrier, xmas tree skid and guidance units, creating a complete handling system.

BOP & SUBSEA HANDLING EQUIPMENT

BOP and Christmas Tree Skid Units

Features:

- Low height to maximize available headroom;
- 2-way or 4-way skidding option;
- Alternate designs for skin head (locking pawl, hydraulic gripper pot or locking pin);
- Optional test stump mounting available;
- Optional guide posts available: Optional keyhold Slot available;
- Deck mounted control console.



Description:

TSC provides a wide variety of BOP and christmas tree skid units for moving subsea packages around the vessel deck, between the storage/assembly location and moonpool. TSC's BOP and christmas tree skid units feature a robust design with the capacity to meet specific client needs. Moreover, TSC skids are also available for other subsea equipment including: guide bases, templates, mud mats, etc.

BOP & SUBSEA HANDLING EQUIPMENT

BOP Transporter/ Carrier

Features:

- 'C' frame, fixed fork and elevating fork designs available;
- Optional hang-off facility available to support riser spider and gimbal;
- Optional integrated test stump (either fixed or retractable) available;
- Radio control, pendant control or control station control options available;
- Integrated with hydraulic power unit, if required.



Description:

TSC's BOP transporters/carriers are used to transport the BOP stack within the moonpool area between the well centre and parked positions. The units work in conjunction with the BOP crane, BOP skid and guidance units, creating a complete handling system. TSC transporters/carriers are adaptable to meet a variety of client needs.

BOP & SUBSEA HANDLING EQUIPMENT

Xmas Tree Carrier/ Trolley

Features:

- 'C' Frame, flat top, sunken and elevating frame designs available;
- Option for hang-off facility to support pipe or casing hang-off;
- Hang-off spiders and adaptors available;
- Hydraulically powered;
- Option for integrated test stump, either fixed or retractable;
- Radio control, pendant control or control station control option available.



Description:

TSC's xmas tree carrier/trolley is used to transfer the xmas tree within the moonpool area between the well centre and parked positions. The carrier/trolley works in conjunction with the xmas tree crane, xmas tree skid and guidance units, creating a complete handling unit. TSC's xmas tree carrier/trolley is adaptable to suit a variety of client needs.

BOP & SUBSEA HANDLING EQUIPMENT

BOP Chain Hoist

Features:

- Low headroom design to maximize space envelope;
- Positive rack and pinion drive (no wheel spin);
- Hydraulic or pneumatic actuation;
- Deck mounted control console, pendant or radio control options available;
- Secondary hangoff points for added safety.



Description:

TSC offers a wide range of BOP chain hoists, which provide the BOP stack's lift and transverse movements. Typical application is on jack-up rigs, however BOP chain hoists can also be used on dynamic vessels for the same purpose. TSC BOP chain hoists are adaptable to meet a variety of client needs.

BOP & SUBSEA HANDLING EQUIPMENT

BOP, Xmas Tree & LMRP Guidance System

Features:

- Splash zone guidance extends and retracts to capture and release equipment;
- Bulkhead guidance arms latch onto equipment;
- Hydraulic supply from rig;
- Can feature independent operation or can be synchronized with other equipment.



Description:

TSC provides horizontal and vertical guidance systems to prevent potential swing during lifting and stabilizing equipment. TSC guidance systems are offered as either as an accompanying piece of equipment or as a specialized unit, such as splash zone guidance (SZG) and bulkhead guidance. Examples of guidance systems mounted to other equipment includes: SZG mounted underneath BOP transporters, SZG mounted underneath spider beams and capture arms mounted on BOP cranes. Guidance system size and capacity is based on the size of the equipment being handled.



PUMPS



PUMPS

Mud Pump

Features:

- Manufactured to API standards;
- Third party inspection certificates, such as ABS and DNV, can be provided, in accordance to customer requirements;
- Maximum discharge can reach up to 7,500psi, with a 10,000psi option available;
- Output power ranging from 340HP to 2,200HP;
- Bearing and gearing designed for a minimum L10 life of 30,000 hours at rated load;
- Can be installed with standard or non-standard fluid ends.



Description:

TSC Workforce™ (WF) series mud pumps are developed to offer superior performance for a variety of drilling operations and work environments. TSC offers a full line of triplex high pressure mud pumps to handle any drilling requirements. The WF series mud pumps are characterized by its compact-sized, light weight, small footprint, durability, effectiveness and energy-efficiency. WF mud pumps can be assembled using a variety of expendable fluid ends, which can be easily purchased based on customer requirements.

Specifications:

Model	WF 400	WFU 340	WFU 450	WWS 500	WF 700	WF 1300 B	WF 1300 C	WF 1600 A	WF 1600 B	WF 1600 BH	WF 1600 L	WF 1600 LH	WF 2000	WF 2200
Nominal Input Horse Power (HP)	400	340	450	500	700	1300	1300	1600	1600	1600	1600	1600	2000	2000
Weight (kg)	4600	2300	4600	4300	8600	15500	15700	24500	22230	27480	19200	21000	34000	36500
Max. Strokes per Minute (SPM)	155	450	155	155	150	130	130	120	120	120	120	120	115	110
Length(mm)	3048	1710	3048	2426	3565	4295	4295	4560	5190	5190	4401	4401	5350	6008
Width (mm)	1693	1410	1693	1987	2310	2719	2719	2860	2989	2872	2896	2896	3111	3270
Height (mm)	2673	634	2673	2028	2214	2588	2527	2623	2449	2735	2676	2676	2855	2601
Gear Ratio	5.7:1		5.7:1	5.7:1	5.05:1	4.67:1	4.67:1	4.324:1	4.324:1	4.324:1	4.613:1	4.613:1	4.57:1	4.273:1

PUMPS

Fracturing Pump

Features:

- High-strength, light-weight alloy steel construction;
- Free of porosity, slags and other defects.

**Description:**

The TSC Megaforce frac pump was designed and built based on robust engineering innovations. The pump is built strong for longer life, utilizing a power end frame design.

PUMPS

Centrifugal Pump

Features:

- Composite metal seal;
- Impeller with open van structure, reducing the shaft load to minimum;
- High output and efficiency;
- Longer service life achieved through utilizing wear-resistant materials;
- Axial adjustment structure ensures structure is able to adjust clearance between the impeller and mechanical seal.



Description:

TSC Highlight™ and PowerForce™ centrifugal pumps feature a rugged design with heavy duty construction. TSC centrifugal pumps reduce downtime and total cost of ownership for operators and contractors. TSC provides three main types of centrifugal pumps: HCP, HCPS, and PF series. These pumps are highly compatible with the MAGNUM, SANDMASTER and XP series pumps.

PUMPS

HCPS Series

Features:

- 6 Models available;
- Hydraulic motor;
- Composite seal results in increased stabilization;
- Open style impeller design, suitable for viscous medium liquids;
- Long product life realized through the unique wear-resistant material.



Description:

TSC HCPS series mud pumps are driven by a powerful hydraulic motor. Typical application for these pumps is on cement trucks and blending trucks.

PUMPS

PF Series

Features:

- Able to handle flow rates up to 7,500 GPM;
- Able to handle head pressure up to 500 feet;
- Specific output interface is more suitable for a hydraulic motor drive;
- The external adjustment panel allows for convenient adjustment of the impeller clearance.



Description:

TSC Powerforce™ (PF) series pump are designed to handle applications requiring up to 500HP. PF series pumps are available in three different sizes.

Specifications:

Title	PF Series
Flowrates (gpm)	7500
Head Pressure (ft)	500



MUD SYSTEMS



MUD SYSTEMS

Shale Shaker

Features:

- Utilize deck angle adjustment without requiring machine to be shut down or negatively affect operations;
- Wedge type screen retaining system holds pre-tensioned screens in place during equipment operation;
- Simple installation and removal.



Description:

TSC shale shakers utilize a traditional equipment design with modern operational equipment to meet a variety of shale shaker needs. TSC shale shakers are a single deck type, ranging from two to four screens per unit, at varying screen areas.

Specifications:

Model	HS 270- 3P	HS 270-3P(2)	HS 270-3P(3)	HS 270-4P-PTS	HS 270-4P(2)-PTS	HS 270-4P(3)-PTS
Motor Power (kW)	2×2.2	2×2.3	2×2.4	2×2.5	2×2.6	2×2.7
Weight (kg)	2000	4000	6000	2000	4000	6000
Length (mm)	2970	2970	2970	2970	2970	2970
Width (mm)	2010	4466	6715	2010	4466	6715
Height (mm)	1700	1700	1700	1700	1700	1700
Frequency 50Hz	24.3	24.3	24.3	24.3	24.3	24.3
Frequency 60Hz	29.2	29.2	29.2	29.2	29.2	29.2
Amplitude (double) 50Hz	5-6	5-6	5-6	5-6	5-6	5-6
Amplitude (double) 60Hz	4-4.8	4-4.8	4-4.8	4-4.8	4-4.8	4-4.8
Screen Area (m ²)	3×0.775×1.15	3×0.775×1.15	3×0.775×1.15	4×0.585×1.165	4×0.585×1.165	4×0.585×1.165
Shaking Intensity (G)	7.2	7.2	7.2	7.2	7.2	7.2
Adjustable Range (°)	-2° ~ +8°	-2° ~ +8°	-2° ~ +8°	-2° ~ +8°	-2° ~ +8°	-2° ~ +8°

MUD SYSTEMS

Mud Cleaner

Features:

- Primarily used to eliminate 20-74 microns of sand and mud, in the underflow;
- Design consists of a liner shale shaker, desander with two 10" cones and a desilter with twelve 4" cones.



Description:

TSC mud cleaners are designed to improve mud pumping efficiency. TSC mud cleaners are an efficient solids-fluids processing design.

Specifications:

Model	HMC250X2/100X12			HMC250X3/100X16		
	Desander		Desilter	Desander		Desilter
Parameter						
Length (mm)	2620		3150	2620		3150
Width (mm)	2450		2550	2630		2630
Height (mm)	2500		2500	2500		2500
Hydraulic Cone (Qty)	10" (2)		4" (12)	10" (3)		4" (16)
Pressure (MPa)	0.2-0.4		0.2-0.5	0.2-0.6		0.2-0.7
Separation Point (um)	43-74		20-44	43-74		20-44
Inlet (inch)	6		6	6		6
Outlet (inch)	8		8	8		8
Max. Capacity (m ³ /h)	200		200	260		260
Shale Shaker	HS220-3P	HS240-3P	HS280-3P	HS220-3P	HS240-3P	HS280-3P
Motor Power (kW)	2 X 2.2	2 X 2.2	2 X 2.2	2 X 2.2	2 X 2.2	2 X 2.2
Weight (kg)	2700	2740	2840	2900	3000	3160
Adjustable Range (°)	-2° ~ +8°	-2° ~ +8°	-2° ~ +8°	-2° ~ +8°	-2° ~ +8°	-2° ~ +8°

MUD SYSTEMS

Centrifuge

Features:

- Can be used in multiple applications such as solids control, dewatering, barite recovery, or as a polisher.



Description:

TSC HCF centrifuges are used in a wide range of separation, slurry laden fluid and drilling fluid applications.

Specifications:

Model	HCF 450X1000-N	HCF 450X1000-N	HCF 450X1000-N	HCF 450X1000-N
Weight (kg)	3300	3300	3300	3300
Length (mm)	3050	3050	3050	3050
Width (mm)	1580	1580	1580	1580
Height (mm)	1700	1700	1700	1700
Inner Diameter of Bowl (mm)	450	450	450	450
Active Length of Bowl (mm)	1000	1000	1000	1000
Model of Feed pump:	HCP 3X2X13			
Design Pressure (MPa)	1			
Sleeve Diameter (mm)	800			
Feeding Pipe (in)	5/6			
Mud Discharge Pipe (in)	8/10			
Gas Discharge Pipe (in)	8			
Model of Parameters:	HCF450X1000.NL	HCF450X1000.NM	HCF450X1000-N	HCF450X1000B.NH
Active Speed of Bowl (rpm)	1800	2000	2200	≤ 2200
Separation Factor	815	1007	1219	≤ 1219
Differential Speed of Conveyor (rpm)	17-36	17-36	17-36	≤ 40
Max. Capacity (m ³ /h)	40	45-50	50-60	50-60
Model of Motor:	yb2-200L-4W	YB2-255S-4W	YB2-160M-6W	
Motor Power (kW)	30	37	7.5	
Rated Speed (rpm)	1470	1480	970	

MUD SYSTEMS

Mud Gas Separator

Features:

- Simple structure;
- High efficiency and easy to maintain;
- Large capacity;
- Easy transportation and installation.



Description:

The TSC HLGS mud gas separator is designed primarily for the removal of entrained gas from the drilling fluid. The TSC HLGS mud gas separator is designed in multiple capacities, to meet your mud gas needs.

Specifications:

Model	HLGS 800-1	HLGS 1000-1	HLGS 1200-1	HLGS 1000-4	HLGS 1200-4
Weight (kg)	1610	2590	2970	3940	5010
Length (mm)	1600	2000	2300	2000	2300
Width (mm)	1600	2000	2300	2000	2300
Height (mm)	5760	6450	6500	6670	6730
Max. Capacity (m ³ /h)	260	300	350	300	350
Design Pressure (MPa)	1	1	4	4	4
Sleeve Diameter (mm)	800	1000	1200	1000	1200
Feeding Pipe (in)	5/6	5/6	5/6	5/6	5/6
Mud Discharge Pipe (in)	8/10	8/10	8/10	8/10	8/10
Gas Discharge Pipe (in)	8	8	8	8	8

MUD SYSTEMS

HV & HVV Vacuum Degasser

Features:

- Ensures efficient separation and proper filtering;
- Gas-fluids separation structure is well designed;
- Water ring vacuum style degasser used for degassing both combustible and explosive gases.



Description:

The TSC HV series vacuum degasser is an indispensable equipment used in gas wells, prospect wells and deep wells to quickly remove all kinds of entrained gas from the fluids. The vacuum degasser is also used with a variety of clean circulating systems for drilling.

Specifications:

Model	HV 240	HVV 300	HVH 300	HV 1200
Main Motor Power (kW)	15	18.5		
Weight (kg)	1340	1530	2050	1455
Length (mm)	1960	1380	4400	2410
Width (mm)	1065	1315	1020	1450
Height (mm)	2314	2000	2575	2000
Max. Capacity (m ³ /h)	200-240	260-300	270-310	272-318
Vacuum Degree (nn)(Hg)	≥ 228	≥ 228	≥ 228	≥ 228
Efficiency (%)	≥ 95	≥ 95	≥ 95	≥ 95
Vacuum Pump	SZB-8	SK-1.5	SK-1.5	SK-1.5
Motor Power (kW)	4	4	4	4

MUD SYSTEMS

Mud Agitator

Features:

- Mounted on the circular tank;
- Agitator vanes dip into the mud to uniformly agitate the fluid.

**Description:**

TSC mud agitators are an important part of the mud solids control system. TSC offers a variety of motor and impeller sizes to fit specific tank configurations.

MUD SYSTEMS

Jet Hopper

Features:

- Good mixing capacity, fast feeding and not easily jammed;
- Shear effect is greater when the jet mixer is used along with a shear pump.



Description:

The TSC cyclone mud mixer is used to efficiently mix treating fluid with the mud.

Specifications:

Model	HVM-250	HJM-200
Capacity (m ³ /h)	260~300	200
Inlet Pressure (Mpa)	0.3 ~ 0.6	0.3 ~ 0.6
Outlet Pressure (Mpa)	≤ 0.04	0.1 ~ 0.2
Nozzle diameter (ft)	---	2"
Inlet (ft)	6"	6"
Outlet (ft)	6"	6"
Weight (kg)	480	120
Dimension (mm)	1500×700×1090	1370×750×970



WELL CONTROL SYSTEM EQUIPMENT



WELL CONTROL SYSTEM EQUIPMENT

Flare Boom (Burner Boom)

Features:

- Hydraulic motor driven;
- Swivels and hoses are provided among the ship and flare boom for rotating demand;
- Pivot pin installation on both upper and lower bases;
- Boom rotates horizontally from 0~135 degrees;
- Each limitation position has a hydraulic switch for safety control;
- 4,000bbl/day per head of oil burning capacity.



Description:

TSC provides a robust flare boom (burner boom) to safeguard rig assets and protect the lives of personnel on the drilling rig. The flare boom is a truss structure, which carries pipeline to connect the ship well test pipeline and burner, on the tip end. Designed as per AISC, IMO, ANSI, NACE and DNV standards.

Description:

Title	Flare Boom (Burner Boom)
Adjustable Range (°)	0 ~ 135
Sour Gas Service (bbl)	4000
Operating Temperature (°C)	-20~+45



CONTROL & DRIVE SYSTEMS



CONTROL & DRIVE SYSTEMS

Drilling Control System

Features:

- Auto bit feed system features an inverter, encoder, pressure sensor, touch panel and software, and brake unit resistors;
- Traveling block anti-collision system features a drum shift encoder, position detection module, touch panel and software as well as a connecting cable;
- The systems both feature high control accuracy and are easy to use.



Description:

TSC's drilling control system is comprised of an auto bit feed system and an intelligent traveling block anti-collision system. TSC's auto bit feed system allows for the improvement of oil well quality, increased drilling efficiency, reduced labor intensity and prolonged drill bit life. TSC's intelligent traveling block anti-collision system is an advanced piece of equipment used to prevent up and down collision related accidents.

CONTROL & DRIVE SYSTEMS

Power Compensation & Harmonic Suppression System

Features:

- Comprised of a power supply house, reactive power compensation and harmonic suppression house (HPFC house);
- Provided to 4,000-12,000m land rigs;
- Uses clean energy;
- Easy to install, reliable and economically feasible.



Description:

TSC's rig reactive power compensation & harmonic suppression system provides constant industrial electric power to make rig maintenance far easier and more reliable than if from a diesel power source. TSC has already delivered over 40 sets of high-voltage power grids to international customers.

CONTROL & DRIVE SYSTEMS

Intelligent Drillers Cabin

Features:

- Driller's cabin is anti-explosive, corrosion preventative, moisture proof, sound proof and fire proof (A60);
- PMS has manual and automatic generator turn on/off modes;
- Integrated instrument system provides high accuracy measurements and features info on a touch screen in the control console.



Description:

TSC's intelligent and integrated driller's cabin structure fully meets integrated control requirements and is designed for use either on jack-up rigs or semi-submersible platforms. The system also includes a power management system (PMS) and an integrated instrument system. The PMS monitors information in real time while also recording historical data. The integrated instrument system receives and processes signals from the sensors, encoders and transmitters and projects the data onto the driller's cabin touch panel.

CONTROL & DRIVE SYSTEMS

Jack-up Rig Jacking Control System

Features:

- All jacking control systems have received ABS approval;
- Provide consistent lifting speed;
- Easy to operate and offer reliable performance.



Description:

TSC has strong technological capabilities for providing jack-up rig jacking control systems. TSC maintains strong relationships with world class design companies, enabling TSC to provide high quality, robust systems to customers.



A large, complex industrial component, likely a turbine or generator part, is shown in a factory setting. The component is made of metal and features several large, curved blades or vanes. It is mounted on a wooden support structure. The background shows a dark, grid-patterned ceiling. A semi-transparent white banner is overlaid across the middle of the image, containing the text "JACKING SYSTEM" in red, bold, uppercase letters.

JACKING SYSTEM

JACKING SYSTEM

Jacking Drive System

Features:

- Leg position detection and load monitoring systems to achieve level lifting automation;
- Highly adaptable design, based on the latest ship specification requirements;
- Torque sensor, power loss protection and load monitoring system achieve real-time monitoring of load lifting;
- Jacking units are suitable for 300ft, 350ft and 400ft jack-up rigs;
- Advanced control technology capable of providing a variety of control speeds.



Description:

TSC designs, builds and supplies a complete set of jacking units for a variety of jack-up rigs. TSC was the first company in China to satisfy ABS certification requirements for jacking systems. TSC's jacking system includes a jacking unit and a jacking electric control system.

Specifications:

Model	SJ 220	SJ 400	SJ 450	SJ 750	SJ 1000
Lifting Capacity (Kip)	220	400	450	750	1000
Lift Speed (ft/min)	3	1	1.5	1.5	1.5

JACKING SYSTEM

Leg Rack & Chord

Features:

- Provide leg racks with less than 210mm thickness, and chords with less than 120mm thickness;
- ABS, DNV and CCS certification available, based on client requirements;
- Provide leg rack and chord welding, sectional welding and technical services, based on client needs;
- 4.5" to 8" leg racks and chord offered.



Description:

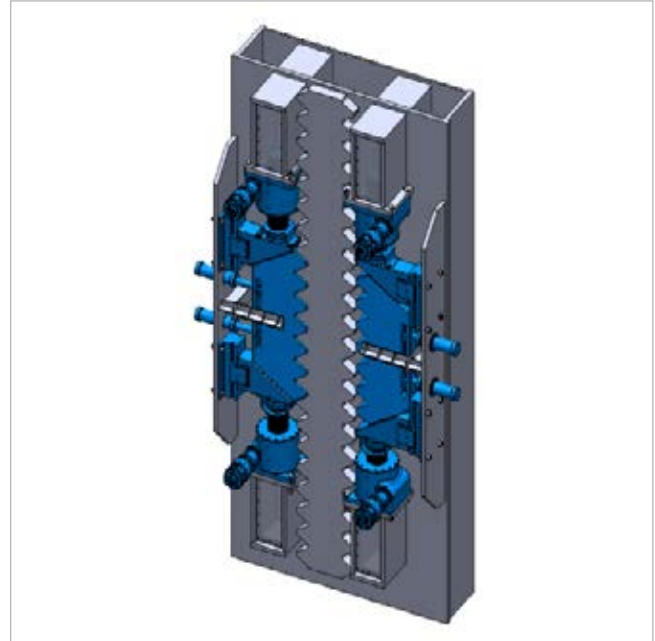
TSC provides complete leg rack solutions, from material supply through final delivery. TSC leg racks utilize the latest technological advancements for rack and chord material.

JACKING SYSTEM

Fixation System

Features:

- Highly adaptable design, based on the latest ship specification requirements;
- Hydraulic or electric drive control modes available;
- Customization available based on client requirements;
- Provides ABS, DNV, CCS and other certificates, as required;
- Highly efficient and optimized structure which provides an effective solution to "jamming" situations.



Description:

TSC's FS 5000 and FS 10000 fixation systems were design based on the most recent 300ft and 400ft water depth jack-up requirements, respectively.

Specifications:

Model	FS 5000	FS 10000
Vertical Chord Load Capacity (MT)	5000	10000
Horizontal Chord Load Capacity (MT)	2886	5774
Operating Temperature (°C)	-20~+50	-20~+50
Suitable Jack-up WD (ft)	300	400

JACKING SYSTEM

Raw Water Tower Jacking System

Features:

- Highly adaptable design, based on the latest ship specification requirements;
- Provides ABS, DNV, CCS and other certificates, as required;
- Customized to meet specific client needs.

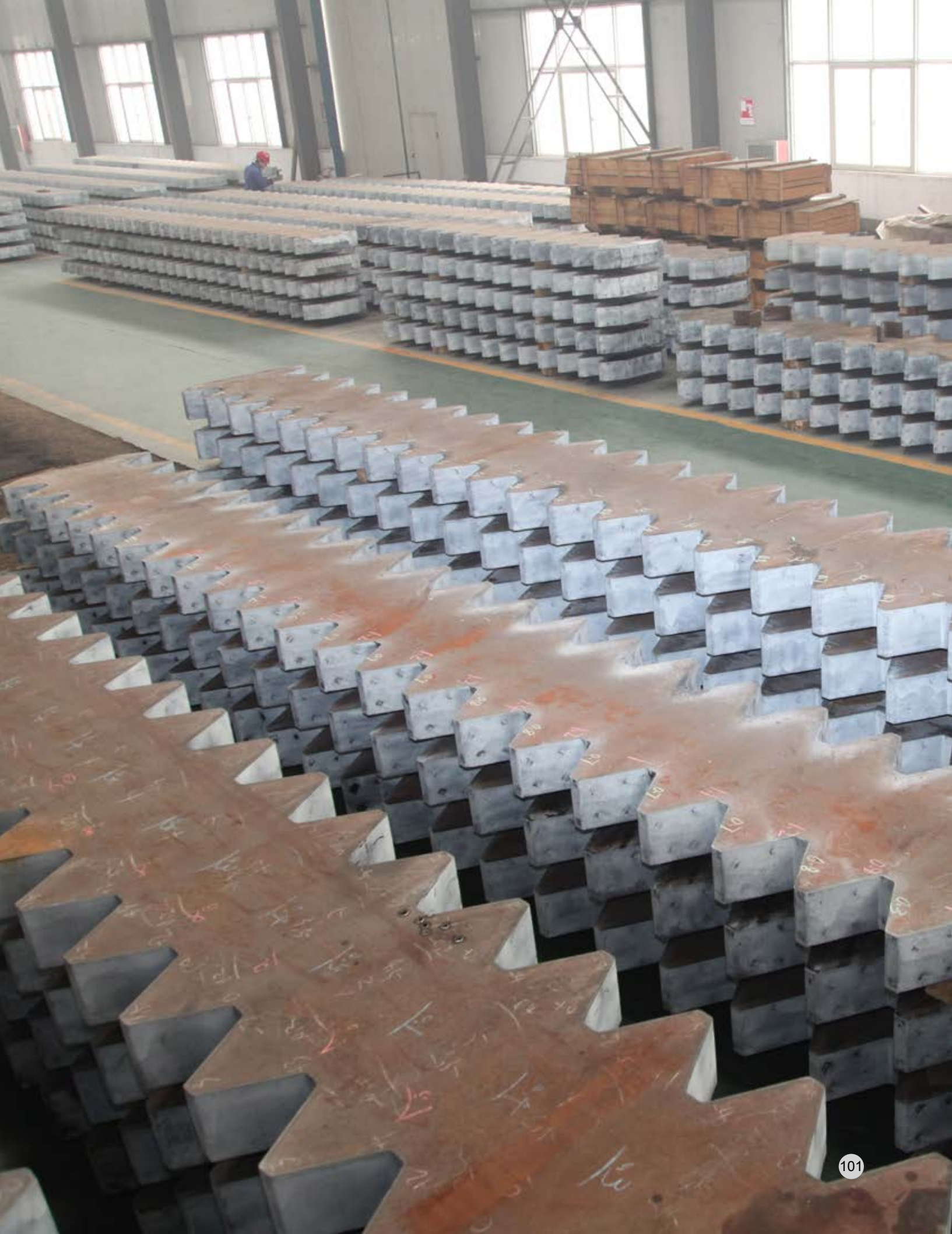


Description:

TSC provides a customized raw water tower jacking system, for a variety of jack-up platform types.

Specifications:

Model	HST11	HST19	HST34	HST40
Lifting Capacity (MT)	11	19	34	40
Lift Speed (m/min)	1.2	0.9	0.84	0.8





LIFTING, MOORING & WINCH EQUIPMENT



LIFTING, MOORING & WINCH EQUIPMENT

Blocks & Swivels

Features:

- All blocks are manufactured in the UK and are 100% tested and certified;
- Available with a choice of head fittings, hook types and sheave sizes to suit a variety of wire rope diameters and applications;
- Manufactured from different materials depending on operating environment, material certification and load capacity required.



Description:

Ansell Jones has been designing and manufacturing rigging blocks and swivels for over 50 years, to a variety of sectors from the construction and recovery industry to oil and gas processing facilities. Ansell Jones' engineering team has the ability to adapt products to meet specific client needs.

LIFTING, MOORING & WINCH EQUIPMENT

Sheaves

Features:

- Range from 75mm to over 2m in diameter;
- Can be manufactured with lightening holes to reduce overall weight without compromising strength;
- Can be custom made for working offshore suitable for low temperature and harsh operating conditions;
- Supplied fully certified to 3.1 or 3.2 levels of traceability.



Description:

Ansell Jones manufactures a range of cast, machined and fabricated sheaves for a variety of applications. Sheaves can be supplied individually or complete with fabricated housing suitable for welding or bolting to structures. All sheaves are designed and manufactured to meet specific customer requirements.

LIFTING, MOORING & WINCH EQUIPMENT

Hydraulic Winches

Features:

- Standard range from 5Te upwards;
- Can be supplied with dedicated HPU or to run from ring main;
- Custom options and controls for different applications such as mooring systems or pipe lay vessels;
- Third party design approvals available upon request.



Description:

Ansell Jones manufactures a wide range of hydraulic winches and power units. Ansell Jones power winches have been used on vessels and rigs in a wide range of applications from simple pull in or lifting functions through to more complex PLC controlled operations for mooring spreads and pipe lay systems.

LIFTING, MOORING & WINCH EQUIPMENT

FPSO Installation/ Riser Winch Packages

Features:

- PLC controlled to give condition monitoring of winch and HPU status;
- Designed to suit space available and deck layout for pull in operations;
- Hazardous area and IP rated to suit the project requirements;
- Typical Line speed 3m/min at max load, 6m/min at reduced load and 10m/min no load;
- 1.5 x SWL failsafe brake holding capacity ;



Description:

Ansell Jones has extensive experience in providing high capacity mooring and riser installation winches for permanently moored offshore production and storage vessels. These winches have extremely high line pulls up to 600TE. Ansell Jones winches are designed and manufactured under the supervision of a third party such as DNV or ABS, as required by the client.

Specifications:

Title	FPSO Installation/ Riser Winch Packages
Brake Holding Capacity (Te)	900
Max. Capacity (Te)	600

LIFTING, MOORING & WINCH EQUIPMENT

Electric Winches

Features:

- Utilizes the latest drive and motor technology for maximum control and efficiency;
- Options such as remote access and control monitoring can be included within a PLC controlled winch;
- Single speed, dual speed and inverter driven options available;
- Extensive experience with constant tension winches for pipe lay vessels;
- Third party design approval available as required.



Description:

Ansell Jones designs and manufactures a range of electrical winches ranging from single speed motor drives through to inverter drives with PLC. Many of these inverter driven winches have been supplied with constant tension modes where the drive will adjust torque output from the motor to maintain a line tension set by the operator.

LIFTING, MOORING & WINCH EQUIPMENT

Reelers

Features:

- Supplied with slip rings or rotary unions for complete connection and control of sub-sea equipment;
- Typically designed and certified in accordance with DNV 2.7-1, 2.7-2 & 2.7-3 rules where required;
- Drum sized to store your required length of umbilical cable;
- Fully guarded with safety shut down mechanisms;
- Certified lifting points for moving and handling the equipment;
- Remote options and spooling systems available.



Description:

Ansell Jones designs and manufactures air and hydraulic reelers for rigs and vessels. The reelers are individually designed to suit the minimum bend radius of the umbilical. Ansell Jones reelers are designed and certified to DNV 2.7-1 rules.

LIFTING, MOORING & WINCH EQUIPMENT

Air Winch

Features:

- Typical line pulls up to 20Te, however specially manufactured models are also available;
- Designed and certified to latest ABS rules;
- Fully guarded for increased safety;
- Air operated emergency stop;
- Tamper proof pressure regulator factory set then locked.



Description:

Ansell Jones manufactures a range of air winches designed for use on drilling rigs. The range is compact, cost effective and reliable. Ansell Jones air winches are suitable for operating in areas with potentially explosive atmospheres such as, the drill floor, pipe deck and BOP platform on a rig. There are a full range of options for varying wire lengths, preferred method of control and different spooling systems, available to suit individual rig requirements.

Ansell Jones air winches are fully function tested prior to leaving our factory, with installation and commissioning options, if required.

Specifications:

Title	Air Winch
Weight (kg)	1354
Air Pressure Req (bar)	6
Line Speed (m/min)	16
Safe Workload (kg)	5100 (Top Layer)

LIFTING, MOORING & WINCH EQUIPMENT

Material Handling Equipment

Features:

- Designed for zone 1 and zone 2 hazardous areas;
- Manufactured and certified for special projects involving temperatures as low as -40 degrees C;
- 25 year design life;
- Can install and commission full range of products on site at dock or offshore.



Description:

Ansell Jones designs and manufactures a wide range of chain block hoists, trolleys, cranes and associated material handling equipment. Ansell Jones' UK manufactured material handling range has been the solution of choice for many production platforms, rigs and vessels operating, world-wide.

LIFTING, MOORING & WINCH EQUIPMENT

Deck Fitting & Hardware

Features:

- Standard range of deck mooring equipment available;
- Complete packages supplied for mooring and rigging systems;
- Non-standard equipment designed and certified to suit your requirements ;
- Third party certification available on some products from bodies such as Lloyds, DNV and ABS.



Description:

Ansell Jones has over 35 years experience manufacturing marine equipment including bollards, fairleads, bulwark and emergency towing equipment.

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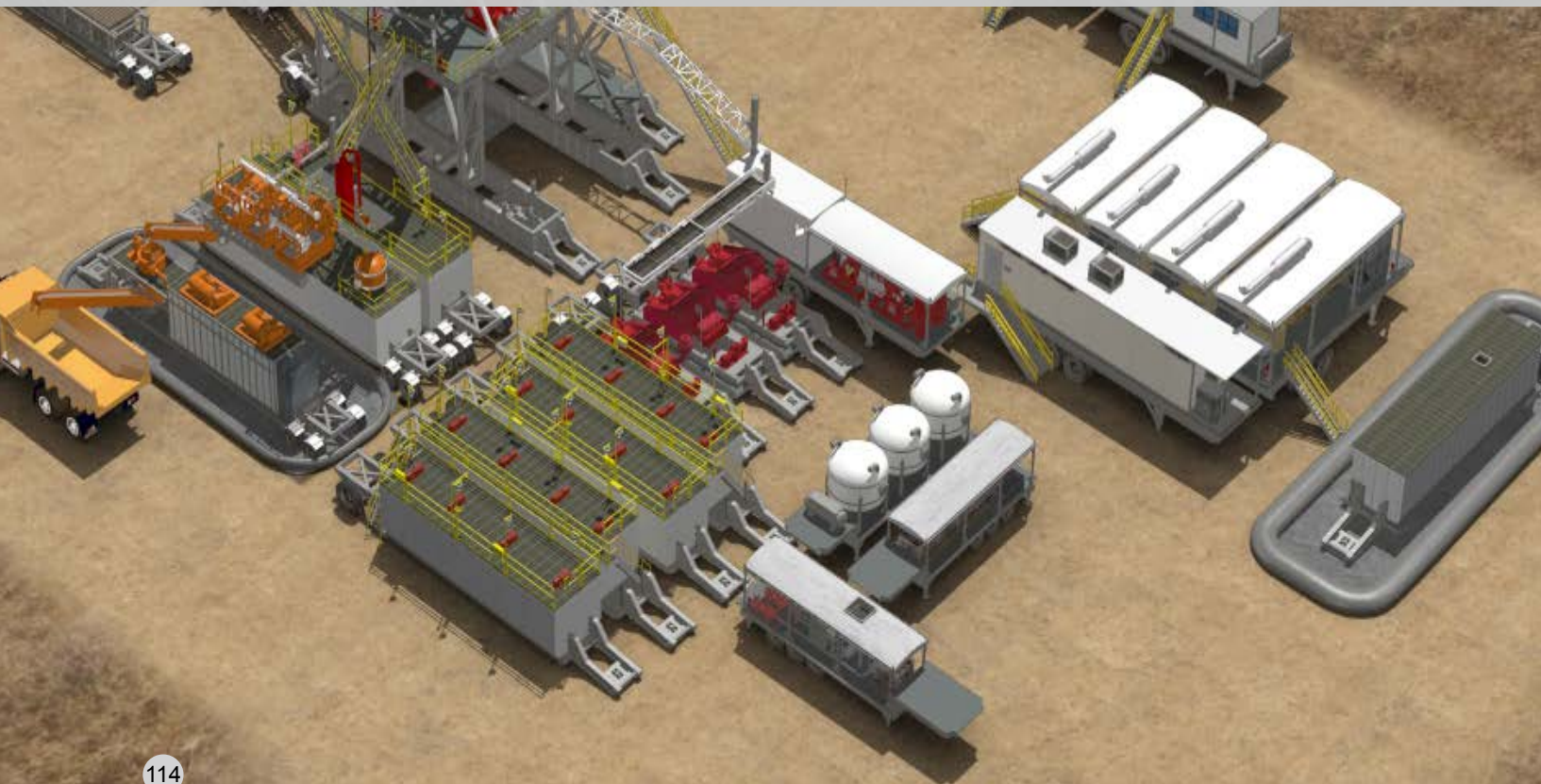


07

**LAND RIG
SOLUTIONS**



LAND RIG SOLUTIONS



LAND RIG SOLUTIONS

Environmental Fluid Management System

Features:

- Single mud tank configuration;
- Operation drilling in zero-discharge environments;
- No reserve pit need to reduce site area;
- Maximize separation of solids and liquids;



Description:

The Environmental Fluid Management Systems (EFMS) is an integrated system of solids control, fluid recovery and drilling waste management equipment masterfully packaged into a single mud tank configuration.

An ideal solution for operations drilling in zero-discharge environments, the EFMS eliminates the need for a reserve pit and drastically reduces site reclamation requirements. The system connects directly to the flow line, making integration into existing drilling rigs as a simple exercise.

The EFMS works to maximize separation of solids and liquids, while comprehensively managing both phases after separation. Discarded cuttings are prepared for off-site disposal through an automated system of screw conveyors; drilling fluids are recycled and primed for re-use in the active mud-system. The TSC EFMS features an extensive product line which includes cutting drying packages and polymer injection systems.

The TSC EFMS features an extensive product line which includes cutting drying packages and polymer injection systems. TSC has many different configurations of EFMS systems, from manual to fully automated systems. These systems can be quickly configured to client requirements.

LAND RIG SOLUTIONS

PDQ Land Rig Package

Features:

- Compact rig layout minimizes location size and move times;
- Reduces rig mobilization costs through faster rig moves, efficient tail boarded or fully trailered loads;
- Performance driven design which can save 18-24 hours off rig move time from release to spud;
- Designed to operate in zero-discharge applications.



Description:

TSC Performance Driven land rigs are high performance land rigs for drilling the most advanced wells. TSC created the PDQ-Desert™ and PDQ-Winter™ series to meet all harsh environment applications.

Specifications:

Model	PDQ-D500	PDQ-F500	PDQ-T750	PDQ-F750	PDQ-F1000
Minimum Drawworks Horsepower (HP)	1000	1000	1500	1500	2300
Hook Load (lbs)	500000	500000	750000	750000	1000000
Mast Clear Height (ft)	109	147	142	147	147
Substructure Height (ft)	22	25	26	28	30
Substructure Type	Slingshot	Slingshot	Slingshot	Slingshot	Slingshot
Mast and Substructure Raising Type	Double-Stage HC	Single-Stage HC	HC	Single-Stage HC	Single-Stage HC
Power Type	AC-VFD-AC	AC-VFD-AC	AC-VFD-AC	AC-VFD-AC	AC-VFD-AC
Active Mud System (bbl)	1000	1000	1000	1000	1450
Mud Pumps (HP)	Two (2) 1300	Two (2) 1300	Two (2) 1600	Two (2) 1600	Two (2) 1600

Note: 'HC' stands for Hydraulic Cylinders

LAND RIG SOLUTIONS

Complete Mud System Packages

Features:

- Ensures solids control equipment will function at the most efficient level;
- Mud and additive savings by correctly mixing drilling fluids with state of the art equipment and plumbing design;
- Preventing the settlement of ultra fine in tanks which makes rig moves go much quicker, no need to shovel out solids;
- Correctly size and design plumbing to solids control equipment and centrifugal pumps, which ensures the system operates at full capacity, efficiently;
- Different tank types available: Flat bottom, V-Bottom, Round Bottom, Slant Bottom, Cone Bottom.



Description:

A Performance Driven Mud System “PDMS” is key to a drilling operation. TSC Rig Solutions can design a custom mud system to your specifications or utilize one of our many existing designs. TSC can help choose the most efficient equipment for your requirement. A good mud system design can save thousands on each hole drilled.

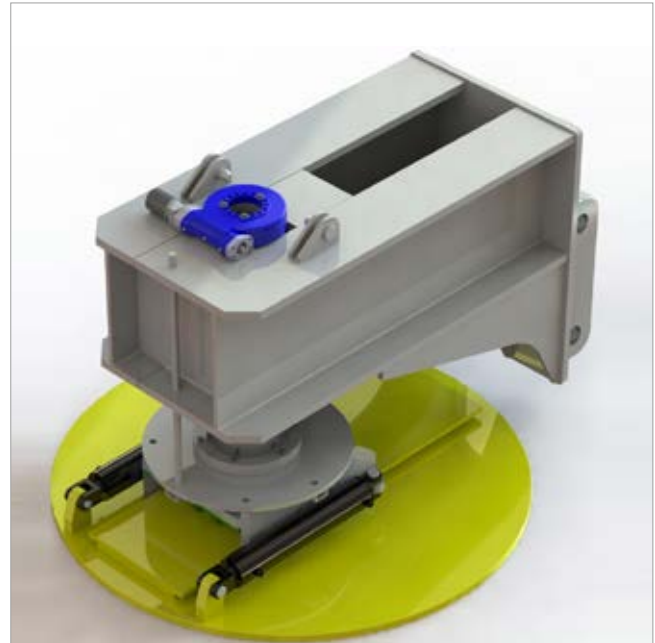
Each one of the tanks can be mounted on skids, trailer mounted, ISO frame for shipping internationally or modular for utilization in offshore drilling packages. TSC has mud system designs available to operate in the world’s harshest environments.

LAND RIG SOLUTIONS

Walking System

Features:

- Capable of drilling multiple wells from a single location;
- Pad optimized, multi-directional walking system (i.e. 1500hp rig design 23,000ft of 5" drill pipe);
- TSC's shoe design is less expensive than the industry average;
- Ability to adjust to misaligned well bores and uneven drilling locations;
- Capability to auto-rotate or manual-rotate in any direction;
- Can be manually operated or radio remote control operated (EX rated control optional);
- AC driven PLC programmable technology;
- Multi-directional walking shoe is capable of 45-degree angles and 360-degree rotation.



Description:

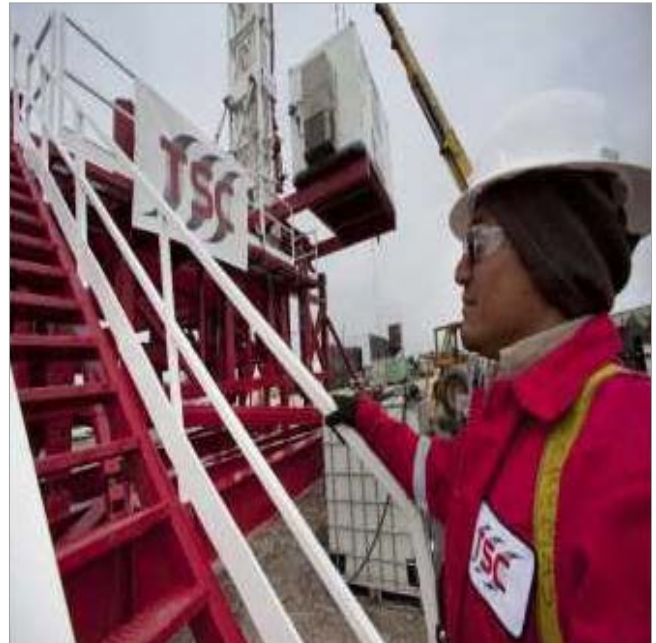
The TSC walking system is skillfully engineered to move faster and rig-up quicker, utilizing the latest technology and industry-proven equipment to maximize performance, safety and reliability of your operations. TSC is a total solutions provider for any walking system, whether conventional, unconventional, box-on-box, or custom to suit any rig design.

LAND RIG SOLUTIONS

Upgrades and Inspection Services

Features:

- Inspection and services to API, ASME, NBIB and ISO 9001 standards;
- Provide repair and refurbishment services through its manufacturing facilities strategically located in North America, South America, Europe, Middle East and Asia;
- Typical scope ranges from general maintenance and inspection to full equipment overhaul and upgrades, all carried out in accordance to clients' project requirements;
- Re-certification of structure in accordance with API 4G Cat III and IV inspections.



Description:

TSC land rig refurbishment, upgrades, and re-certification form a significant part of its core business worldwide. TSC can provide you with a range of services from complete overhaul, upgrade for new equipment/capacity, refurbishment of individual components, or inspection and recertification.

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08

**RIG MRO SUPPLIES
& GLOBAL RIG
SERVICES**



MUD & FRACTURING PUMPS/EXPENDABLES & SPARES



MUD & FRACTURING PUMPS / EXPENDABLES & SPARES

High Chrome Sleeve Liner

Features:

- Rated for all drilling operations up to 7,500psi;
- Bore hardness is 62-69 Rockwell;
- "HP" lip design to prevent inner sleeve slippage;
- Extremely long service life.

**Description:**

TSC mud pump liners meet the highest quality standards. The outer hull of the liner is manufactured using high-strength forging, with molybdenum, added to increase hardness.

MUD & FRACTURING PUMPS / EXPENDABLES & SPARES

Chrome Plated Liner

Features:

- Premium forged alloy steel;
- Chrome plate 0.010 - 0.015" depth;
- 62-65 Rockwell C hardness;
- Long lasting service life.



Description:

TSC chrome plate liners feature a chrome-plated outer liner, in lieu of a sleeve, for maximum thickness. The liner is machined and polished to a mirror like finish.

MUD & FRACTURING PUMPS / EXPENDABLES & SPARES

Zirconia Liner

Features:

- Zirconia exhibits better impact strength;
- Zirconia is harder than alumina. Hardness is HV 0.3 kg/mm - 1100/1200 (92-94Rc);
- Zirconia can be honed to finer surfaces than alumina;
- Three to four times finer than alumina.



Description:

TSC zirconia liners offer lifetime cost savings, significantly longer service, better performance and safer operation than these made of more commonly used alumina ceramic.

MUD & FRACTURING PUMPS / EXPENDABLES & SPARES

Bonded Urethane Piston

Features:

- Rated for all drilling operations;
- Maximum operating temperature is 180°F;
- High pressure and mud pump service;
- Extended service life.



Description:

TSC bonded urethane pistons are constructed of urethane, bonded to a steel hub. The double durometer urethane is designed to provide optimum performance in oil or water base mud and high drilling pressures.

MUD & FRACTURING PUMPS / EXPENDABLES & SPARES

Bonded Rubber Piston

Features:

- High tensile strength;
- Rated for all drilling operations;
- Maximum operating temperature is 250°F;
- Extended service life.



Description:

TSC bonded rubber pistons are constructed of nitrile rubber bonded to a steel metal. The oil resistant rubber is designed to provide optimum performance in oil base or water base mud and high drilling pressures.

MUD & FRACTURING PUMPS / EXPENDABLES & SPARES

Premium Bonded Piston

Features:

- Manufactured from advanced polymer compounds;
- Increased mechanical values provide resistance to head abrasion and extrusion;
- Capable of operating in fluid temperature up to 300°F.



Description:

TSC mud pump pistons improve drilling contractor economics through utilizing advanced technology, improved process control and increased drilling penetration rates. The single durometer design and open mold casting contribute to overall performance and improve economics.

MUD & FRACTURING PUMPS / EXPENDABLES & SPARES

Piston Rods

Features:

- Fabricated with high quality alloy steel;
- Numerically controlled machining;
- Long-lasting service life;
- Clamped and threaded.



Description:

TSC piston rods are made with premium grade, heat treated alloy steel. The rods offer excellent resistance to fatigue, corrosion and heavy loads. A full line of piston rods are available for various pumps.

MUD & FRACTURING PUMPS / EXPENDABLES & SPARES

Extension Rods

Features:

- Fabricated with high quality steel;
- Numerically controlled machining;
- Long-lasting service life.



Description:

TSC extension rods are made from high strength alloy steel, and are either heat treated or chrome plated. The rod offers excellent resistance to fatigue, corrosion and heavy loads. TSC extension rods are machined and polished to ensure a perfect seal to protect the mud pump gear end.

MUD & FRACTURING PUMPS / EXPENDABLES & SPARES

Valves & Seats

Features:

- Forged alloy construction;
- Deep carburized wear surface;
- Precision machined to API standards;
- Urethane inserts.



Description:

TSC manufactures a full range of valves and seats.

MUD & FRACTURING PUMPS / EXPENDABLES & SPARES

Web Design/4 Web Design Valve & Seat

Features:

- Carburized premium alloy steel;
- Tested to withstand the harshest service conditions;
- Easy insert replacement with minimum downtime;
- Long lasting service life.



Description:

TSC manufactures web design/4 web design valves and seats.

MUD & FRACTURING PUMPS / EXPENDABLES & SPARES

Fluid End Modules

Features:

- Completely interchangeable with OEM;
- Premium forged alloy steel;
- Made on CNC boring mills;
- Strict computer controlled heat treatment procedures;
- Rated for all drilling operations up to 7500psi.



Description:

TSC's high-strength, triple reduction, forged steel triplex fluid end modules are made from 4135 alloy steel and heat treated for long working life. These modules are machined to perfection and packaged for delivery.

MUD & FRACTURING PUMPS / EXPENDABLES & SPARES

Fluid End Accessories

Features:

- Fabricated with high quality alloy steel;
- Made on CNC boring mills;
- Long lasting service life.



Description:

TSC fluid end accessories are available for most triplex mud pumps. Valve and cylinder head plug, thread ring and lock; Valve guide; Stud and nut; Specialty items. CNC machining makes these accessories uniformly dimensional and interchangeable with OEM.

MUD & FRACTURING PUMPS / EXPENDABLES & SPARES

Pulsation Dampeners

Features:

- Single piece forged body (with no circumferential welds), results in a stronger body and smoother inside surface;
- Inside surface machined to facilitate diaphragm movement;
- Field-replaceable top and bottom plates;
- Bottom plate connection to suit customer application requirements;
- Diaphragms available in various materials to suit application requirements.



Description:

TSC offers a broad range of drilling and production spherical pulsation dampeners. Volumetric size ranges from 10 gallon to 20 gallon capacities and pressure ranges from 3000 psi to 7500 psi. The body of the TSC spherical pulsation dampeners is manufactured from a one piece steel forging, thereby eliminating the possibility of weld fatigue failure.

Specifications

Model	TS-3.0-K10	TS-5.0-K10	TS-3.0-K20	TS-5.0-K20	TS-7.5-K20
Volume (Gal)	10	10	20	20	20
Pressure (psi)	3000	5000	3000	5000	7500
Weight (lbs)	950	950	2500	2500	2500

MUD & FRACTURING PUMPS / EXPENDABLES & SPARES

Rubber & Elastomer Products

Features:

- Extension rod seals;
- Valve guide bushings;
- Manifold O-ring;
- Baffle splash guards;
- Valve cover & cylinder head seals;
- Liner gaskets, wear plate gaskets.

**Description:**

TSC offers an extensive range of rubber & elastomer products. Common offerings are urethane or rubber/fabric.





GLOBAL RIG SERVICES



GLOBAL RIG SERVICES

Repair & Refurbishment

Description:

TSC provides repair and refurbishment services through its manufacturing facilities which are strategically located in North America, South America, Europe, Middle East and Asia. TSC prides itself on its ability to support a wide range of onshore and offshore products, through its complete service life. TSC's experienced technicians and engineers can be mobilized to world-wide from one of many service locations.

Typical scope ranges from general maintenance and inspection to full equipment overhaul and upgrades, all carried out in accordance to clients' project requirements.

In the US, rig refurbishment services will be done at TSC's new facility located in Houston, Texas. The new facility has almost 53,000 sq. ft of manufacturing space and 80 tons of overhead crane capacity, along with 5 acres of stabilized yard.



Rig Up Commissioning Service

Description:

TSC provides integrated commissioning services for all types of drilling related systems and equipment. Through its extensive experience, TSC has established a strong track record of providing commissioning services for onshore and offshore rigs, world-wide.



GLOBAL RIG SERVICES

Rig Down Service

Description:

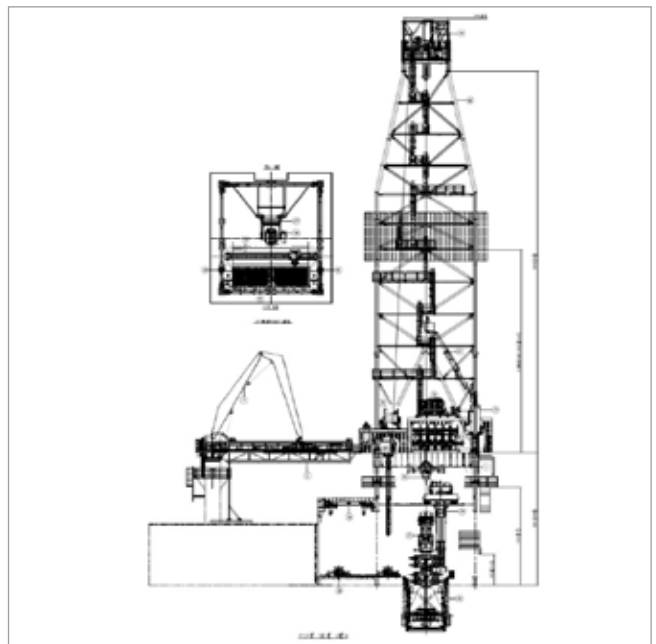
TSC provides rig down service for many types of drilling systems and related equipment. TSC's rig down service is available for a variety of platforms including, offshore construction vessels as well as fixed and floating production units.



Rig Design Service

Description:

TSC can provide basic rig designs for a variety of drilling packages. TSC rig designs are typically comprised of equipment configuration, steel structure, outfitting, piping, and electrical wiring.



GLOBAL RIG SERVICES

Top Drive Service

Description:

NN International, a subsidiary of TSC, focuses on top drive equipment repair, rental & onsite service, parts supply, technical training, top drives sales and purchase related services. NN International has established top drive service, repair and spare parts locations globally, to best serve its international client base. Moreover, its spare parts network management system and top drive spare parts inventory system provides customers with a timely supply of spare parts, anywhere in the world.



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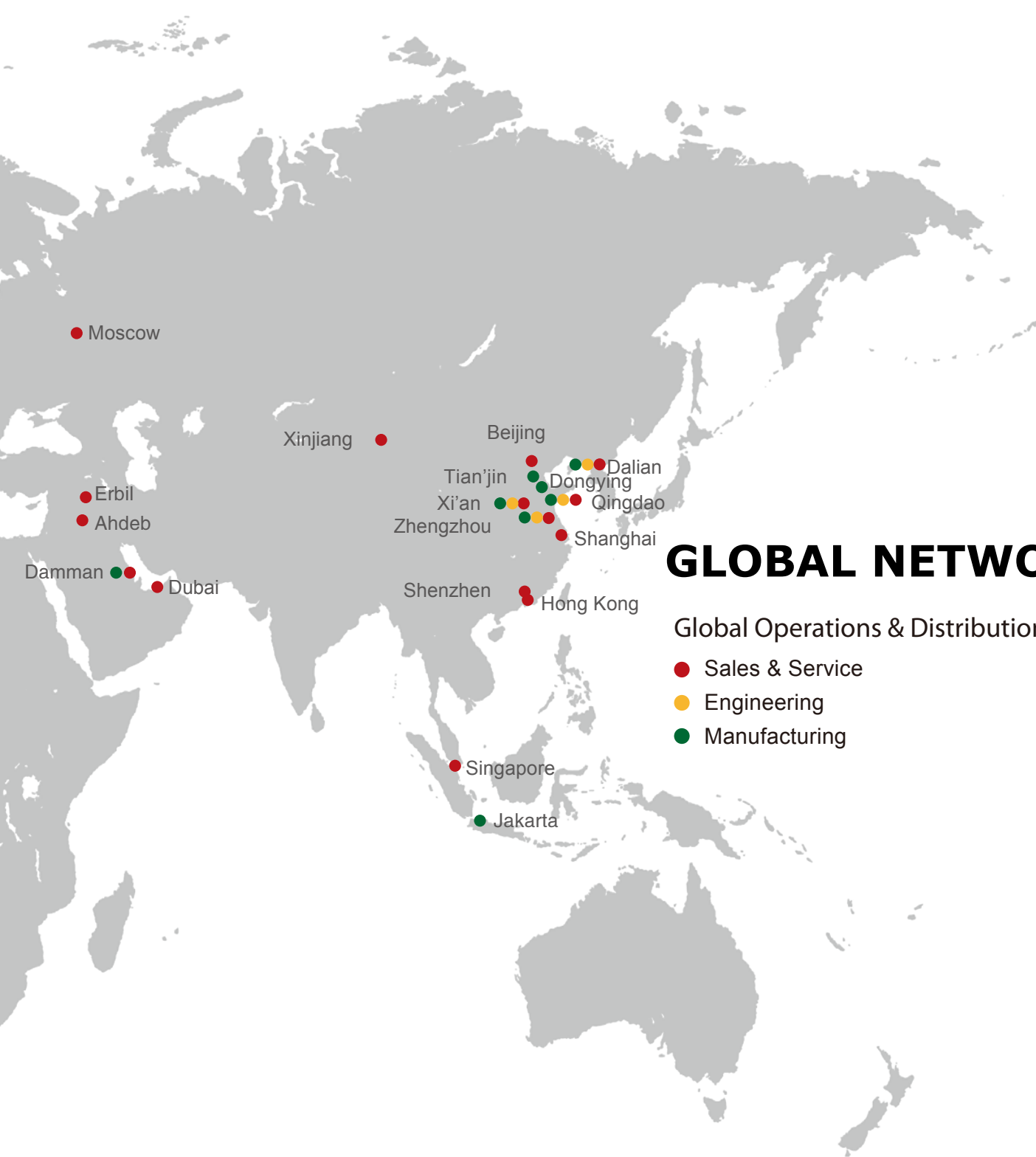


09

GLOBAL NETWORK

Beyond Integration **Seamless Solutions™**



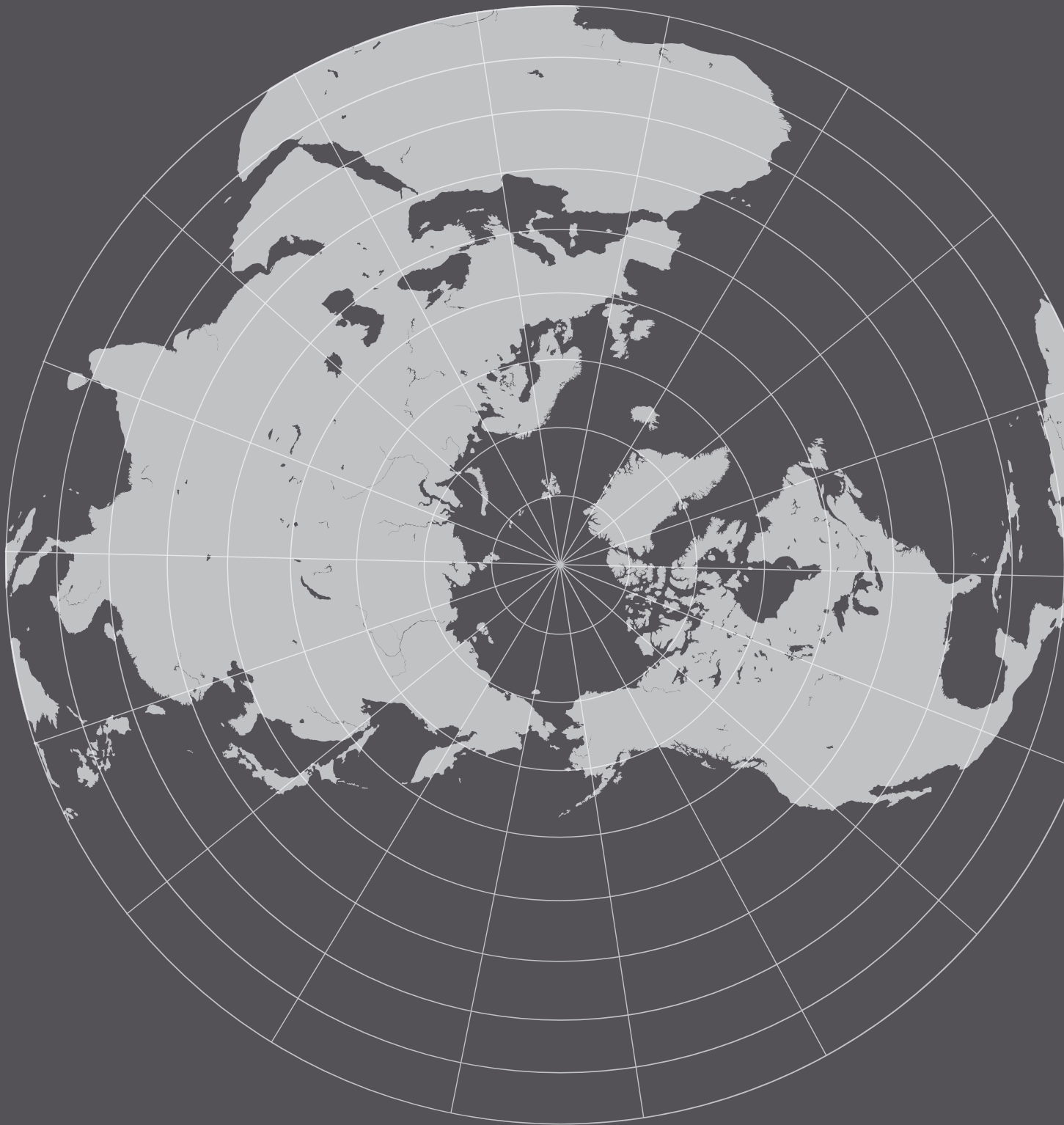


GLOBAL NETWORK

Global Operations & Distribution Solutions

- Sales & Service
- Engineering
- Manufacturing

Beyond Integration
Seamless Solutions™





10

**REGIONAL
HEADQUARTERS**

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