



SUBSEA



TIS Manufacturing is a specialist in the design, manufacture, refurbishment and rental of well service and subsea control equipment for the oil and gas industry.

Our equipment is built to the highest quality and safety standards, and is supported by unrivalled after sales service.



TIS Manufacturing offers comprehensive experience in engineering and operation of well service and subsea control equipment, allowing us to provide superior bespoke solutions to suit the unique requirements of our global client base.

SUBSEA

Umbilical Reeler Equipment

- ▶ IWOCs Umbilical Reelers
- ▶ Drilling Umbilical Reelers
- ▶ Lubricator Valve Umbilical Reelers
- ▶ Nitrogen Hose Reelers
- ▶ Cable Reelers
- ▶ Umbilical Arch Sheaves
- ▶ Under Roller Spoolers
- ▶ Storage Drums

Subsea Controls

- ▶ MQC Stab Plates
- ▶ Umbilical Termination Assemblies (UTAs)
- ▶ Subsea Distribution Units (SDUs)
- ▶ Subsea Accumulator Modules (SAMs)
- ▶ Hydraulic/Electrical Flying Leads
- ▶ ROV Panels
- ▶ Test Stands
- ▶ Deployment Baskets
- ▶ Running Tools

Topside Equipment

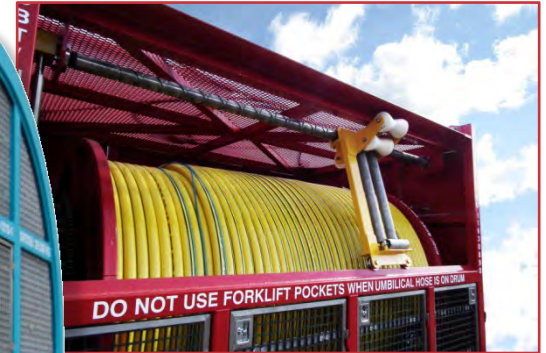
- ▶ Subsea HPUs
- ▶ Subsea Control Units
- ▶ Accumulator Skids
- ▶ Control Cabins
- ▶ ESD Units
- ▶ Topside Umbilical Termination Units (TUTUs)
- ▶ Hydraulic Distribution Panels (HDPs)
- ▶ Flowhead Control Units
- ▶ Chemical Injection Units
- ▶ Triplex Pump Units



Subsea | Umbilical Reeler Equipment | Umbilical Reelers

TIS Umbilical Reelers are designed to accommodate umbilical products with multiple hydraulic, chemical, electrical and fibre optic power and signal cores.

Bespoke umbilical reelers can be configured to deploy and recover any length and diameter of umbilical product, with standard build types including IWOCS Umbilical Reelers, Drilling Umbilical Reelers, Lubricator Valve Umbilical Reelers, Nitrogen Hose Reelers and Cable Reelers.



Subsea | Umbilical Reeler Equipment | Sheaves, Spoolers & Drums



TIS Umbilical Arch Sheaves are designed to facilitate the deployment arrangement of umbilical product during well intervention operations



TIS Umbilical Spoolers are designed for controlled transfer of umbilical, hose or cable onto a reeler drum.



TIS Storage Drums & TIS Transportation Baskets are designed for storage and handling of umbilical, hose or cable, and ancillary items.

Subsea | Topside Equipment | Subsea HPUs

TIS Subsea HPUs are designed to control and monitor subsea trees and associated subsea equipment during well intervention operations, and are typically accompanied by an IWOCs Umbilical Reeler as part of complete Intervention Workover Control Systems (IWOCs).

Bespoke HPUs can be engineered to govern multiple functions including pump control, subsea valve operation, ESD and EQD functions, all from a single containerised unit using a programmable logic controller system.



Subsea | Topside Equipment | Production HPUs

TIS Production HPUs are designed to supply hydraulic power and control functionality from a topside location (typically an FPSO), through a production umbilical to a Subsea Control Modules (SCM).

Bespoke HPUs can be engineered to govern multiple functions via a PLC or manual control system, by use of water-glycol or mineral oil, and typically comply with SIL2 or SIL3 for safety functions.



Subsea | Topside Equipment | Subsea Control Units

TIS Subsea Control Units are designed to provide control for a range of critical subsea valves including subsea trees, BOPs and other equipment during well intervention operations.

Bespoke units can be engineered to meet specific operational requirements, accommodate 20 or more outlet functions, and retain an operator friendly build that allows for easy maintenance in the field.



Subsea | Topside Equipment | Subsea Control Units

TIS Control Cabins are designed to accommodate multiple hydraulic electric control stations, monitoring stations, and workstations in a containerised or open console housing.

Bespoke units can be engineered to meet specific operational requirements, accommodate multiple control functions, and retain an operator friendly build that allows for easy maintenance in the field.



Subsea | Topside Equipment | Well Control



TIS Flowhead Control Units are designed to provide control for the flowhead unit, which supports the test string and provides a means of well control over the flow of wellbore fluids during well intervention operations.



TIS Choke Manifold Control Units are designed to provide control for the choke line valve on the well, which redirects mud and refuse from the well bore to the choke manifold when a kick occurs during well intervention operations.



TIS Lubricator Valve Control Units are designed to provide control to the lubricator system, which isolates pressure or flow above or below its position in the well string during well intervention operations.

Subsea | Topside Equipment | Well Control



TIS Topside Umbilical Termination Units (TUTUs) are designed to provide a conduit between a subsea umbilical and topside control systems such as Subsea HPUs and Chemical Injections Systems.



TIS Hydraulics Distribution Panels (HDPs) are designed to operate critical valves on any offshore or land based installation, and are typically configured to suit a high, medium or low pressure range.



TIS Accumulator Skid Units are designed to provide additional stored volumes of energy to enable changes to BOP Ram functions, speeds, controls, and higher shearing pressures during well intervention operations.

Subsea | Topside Equipment | ESD & Pump Systems



TIS ESD Control Units are designed to either manually or remotely close a valve in response to a pipe leak or break, malfunction or other similar emergency which involves loss of well control during well intervention operations.



TIS Chemical Injection Units are designed to introduce various chemicals into the well for cleaning blocked perforations, reducing corrosion, improving flow-assurance, and several other critical applications.



TIS Triplex Pumps are designed for high pressure pumping applications that are typically between 20 and 400 bar, and are used in a variation of operations including well intervention.



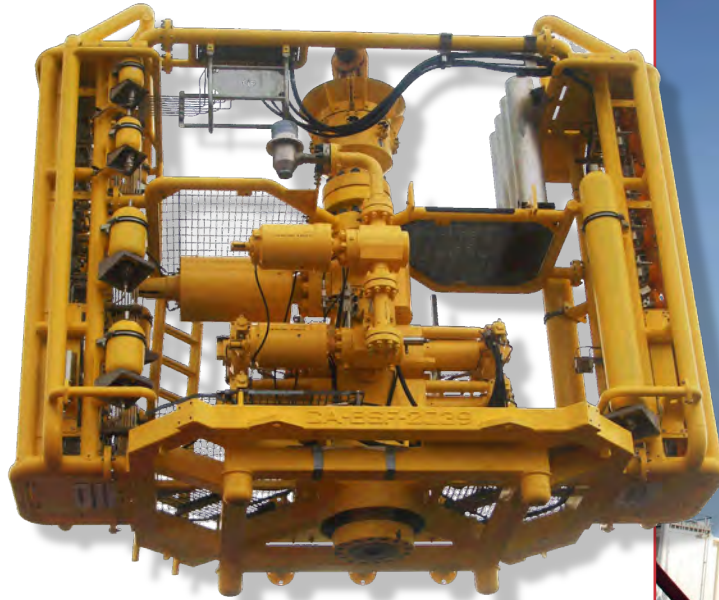
TIS Pressure Test Pumps are designed as a safe and reliable facility for pressure testing pressure control equipment during well intervention operations.

Subsea | Subsea Controls | Subsea Intervention Systems

TIS Manufacturing provides fabrication, assembly and integration of proprietary subsea pressure control equipment as part of the delivery of a complete Intervention Workover Control System.

Subsea intervention packages are designed to connect a subsea tree or wellhead to a vessel for tool deployment during wireline or coil tubing well intervention operations.

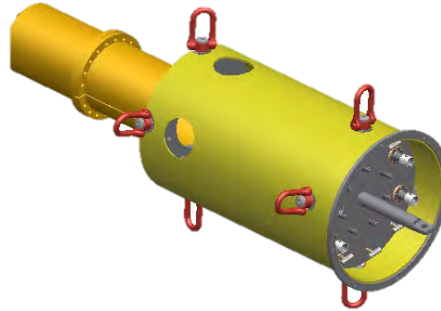
Built to perform multi-disciplinary operations during a single mobilization, subsea well intervention packages are a major asset in increasing time efficiency.



Subsea | Subsea Controls | SDUs, UTAs & SAMs



TIS Subsea Distribution Units (SDUs) are designed to distribute hydraulic & electric control signals, and are typically configured to suit a high, medium or low pressure range.



TIS Umbilical Termination Assemblies (UTAs) are designed to provide a conduit between a topside umbilical and subsea control equipment such as Trees, UTAs & SDUs.



TIS Subsea Accumulator Modules (SAMs) are designed to provide additional stored volumes of energy required to meet speed, pressure & control functions of subsea equipments.

Subsea | Subsea Controls | Subsea Modules



TIS Multiple Quick Connect (MQC) Stab

Plates are designed to enabling hydraulic and electrical connection between subsea control equipment such as Trees, UTAs & SDUs.

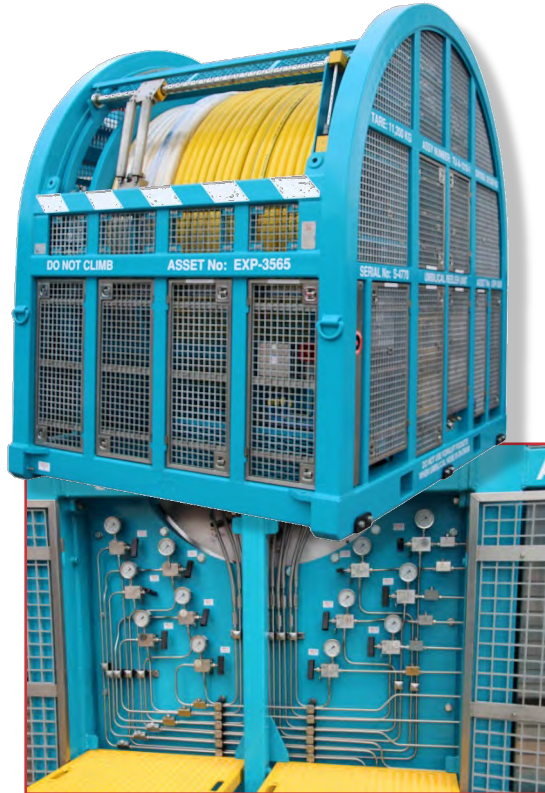


TIS Flying Leads are designed to provide a conduit for hydraulic, chemical and electrical signals between subsea control equipment such as Trees, UTAs & SDUs.



TIS Subsea Baskets are designed for storage and handling of subsea ancillary equipment, such as flying leads or tools, from surface to subsea.

Case Studies | IWOCS Umbilical Reeler Package



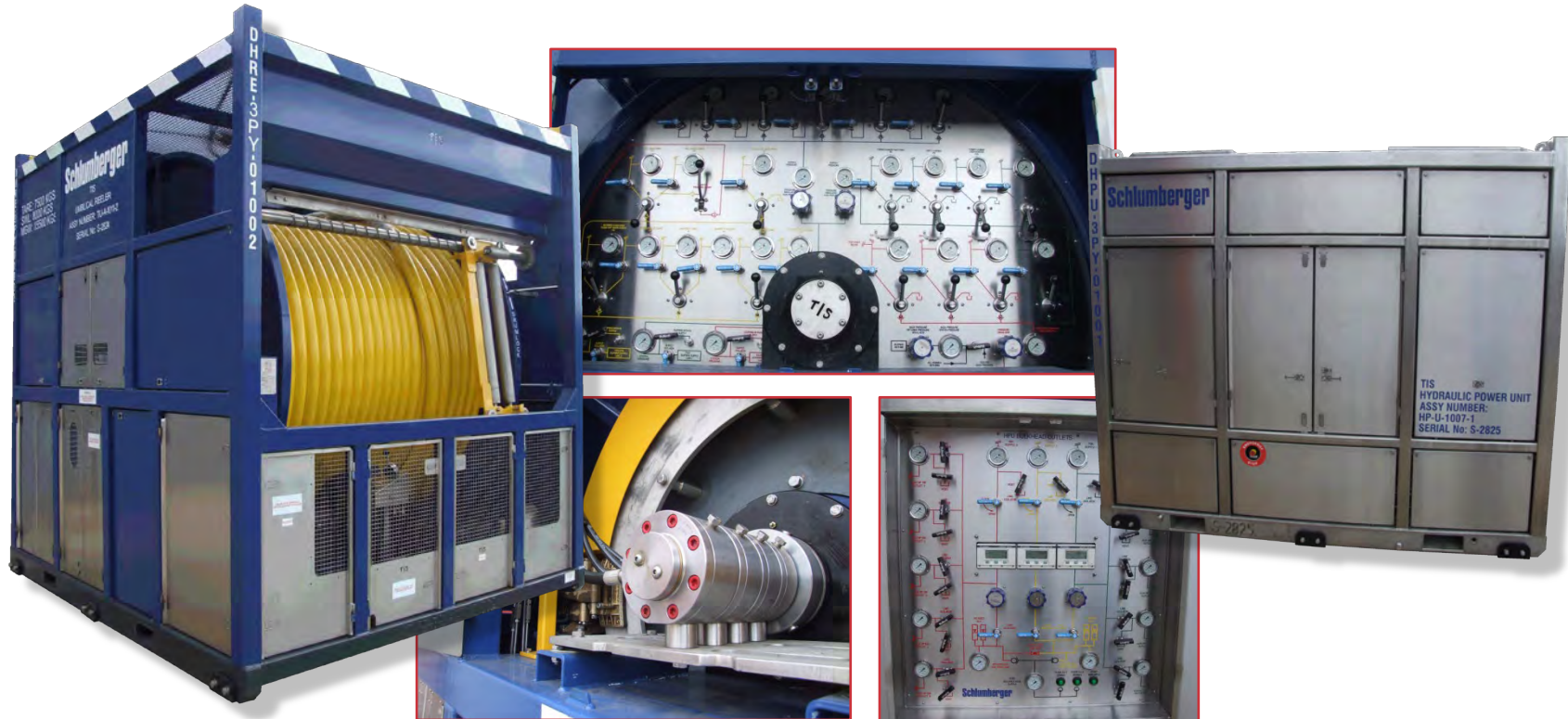
Case Studies | IWOCS Umbilical Reeler Package



Case Studies | IWOCS Umbilical Reeler Package



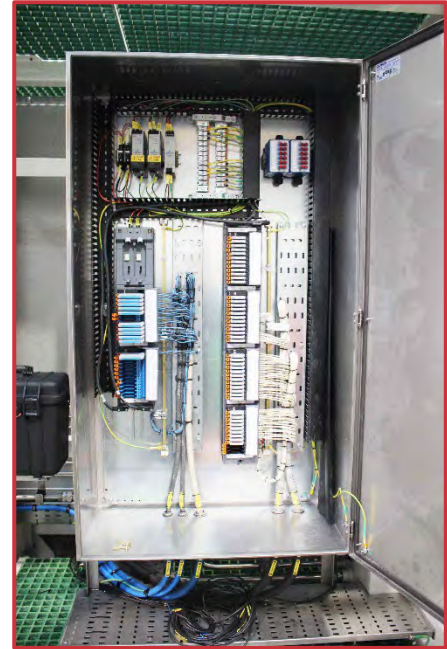
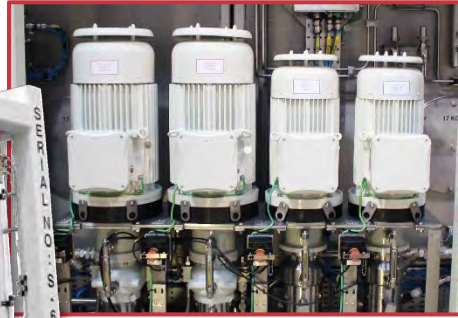
Case Studies | IWOCS Umbilical Reeler Package



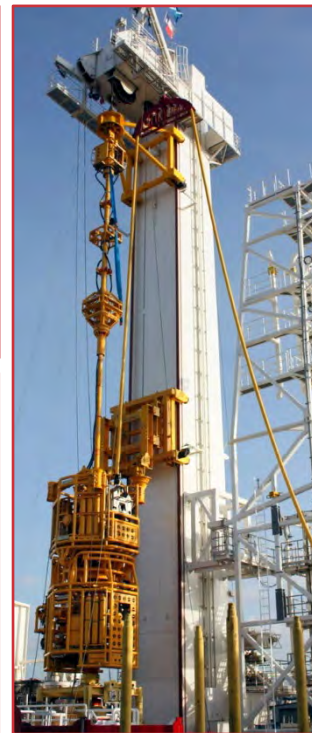
Case Studies | IWOCS HPU Package



Case Studies | Production HPU Package



Case Studies | IWOCS & Subsea Intervention Package



Case Studies | Subsea Distribution Units

Orbital Welding Workscape for 2x SDUs

TIS Manufacturing was contracted to deliver integral welding and fixed pipework in compliance with ASME IX certified procedures, for the completion of 2 off client Subsea Distribution Units.

Workscope Included:

- ▶ 32x Socket welds coded to ASME IX
- ▶ 40x Butt welds coded to ASME IX
- ▶ DPI & Radiography Tests
- ▶ Bespoke Pipe Turning & Fitting
- ▶ Tubes sizes:
 - $\frac{3}{4}$ " x 0.104"
 - $\frac{3}{8}$ " x 0.065"
 - $\frac{1}{2}$ " x 0.065"
- ▶ Test & Flushing
- ▶ Work competed within 7 days



Before



After



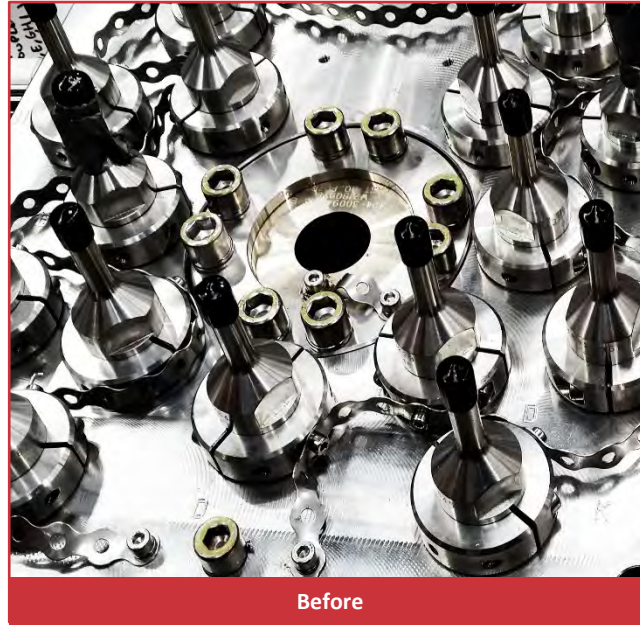
Case Studies | Stab Plates

Orbital Welding Workspace for 10x Stab Plate

TIS Manufacturing was contracted to deliver integral welding of couplers and tubing tails with ASME IX certified procedures, for the completion of 10off client Subsea Stab Plate.

Workspace Included:

- ▶ 90x Butt welds coded to ASME IX, B31.3
- ▶ DPI & Radiography Tests
- ▶ Tubes sizes:
 - 3/8" x 0.065" (50)
 - 1/2" x 0.065" (10)
 - 3/8" x 0.125" (30)
- ▶ Work competed within 14 days



Before



After

Case Studies | Subsea Accumulation Module

Subsea Accumulation Module SAM (Like-for-Like Replacement)

Workscope Included:

- ▶ 4x LP 54L Accumulators
- ▶ 2x diver mate connectors
- ▶ DNV 2.7-3 Frame
- ▶ 5x Subsea Needle valves
- ▶ SAMMB (Mounting Base)
- ▶ 23 weeks delivery



TIS Manufacturing | Global Operations

HEAD OFFICE

Aberdeen

SERVICE SUPPORT CENTRES

Baku

Doha

Muscat

Port Harcourt

EQUIPMENT DEPLOYMENTS

UK North Sea

Scandinavia

Caspian Region

Middle East

North & West Africa

Asia Pacific

Australia & New Zealand

Canada

Gulf of Mexico

South America



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TIS Manufacturing | Our People

The TIS Manufacturing Team boasts a wealth of experience in engineering of well service and subsea control equipment.

Our application consultants work with the client to develop superior bespoke solutions to meet any wireline or subsea intervention operational requirement.

A department of expert design engineers work together with specialist workshop technicians to turn innovative concepts into field-proven technology.



TIS Manufacturing | Our Clients





tis-manufacturing.com