

Upending Control Systems

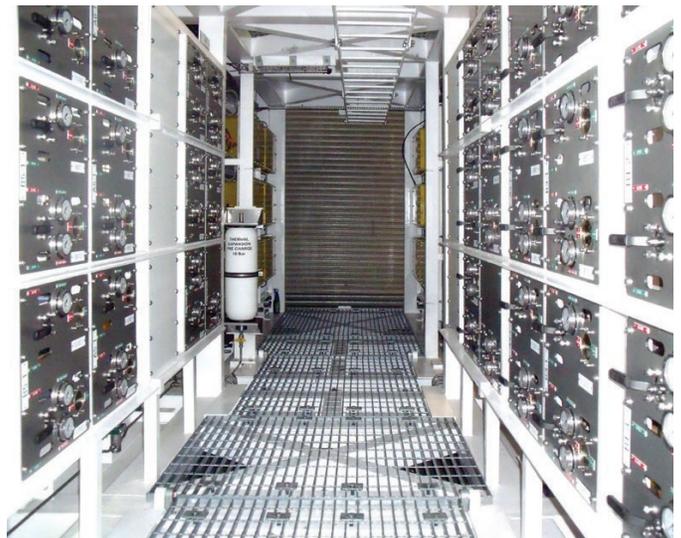


Photo: Typical Barge Launched Jacket being towed for installation in the North Sea.

Your partner for a Lifetime of Lifting

Over the last 25 years we have gained the experience to be your trusted partner in the ballasting, leveling and set down of barge launched jacket structures and steel-constructed gravity-based jacket structures.

We provide safe and reliable products for righting and lowering jackets to the seabed. Our complete Upending Control Systems (UCS) include flood and vent valves, tube bundles, the Upending Control Center (UCC), flotation tank release systems, rigging release systems, HPU's, umbilical and umbilical winches. We also provide template leveling systems for accurate positioning control of subsea drilling templates.



Upending Control Systems

Description

Depending on the size and weight of the jacket due to the installation water depth and topside capacity, a typical jacket structure can have more than 100 hydraulically actuated ball valves mounted in air tight compartments within the jacket legs and buoyancy tanks. Coordinating the opening and closing of the flood and vent ball valves to provide accurate active ballasting into each compartment is key to a safe and successful jacket installation. The operation of the upending control system is manual from the UCC, which is mounted on the jacket above the water line. The UCC is designed to protect the operating equipment from slam forces during launch and is connected by up to 4km of tube bundles to the flood and vent valves.

Prior to launch, it is critical to ensure the jacket leg and buoyancy tank valves are closed and air tight compartments fully sealed. This is done using a remote pressure monitoring system that can be read from simple pressure gauges or from electrical pressure transducers via a laptop or PLC screen.

After launch, skilled operators are transferred to the jacket and enter the UCC. The UCC is designed to allow the operator freedom of movement and safe access to control panels throughout the righting of the jacket; from the launch position (shown below) to true vertical. The UCS is equipped with a bull's eye levelling gauge and an electronic level device to assist with jacket levelling prior to final set down using the installation vessel crane.

As an alternative to operators boarding the jacket, we offer two options to carry out operations from the installation vessel. The first mounts the UCC on the installation vessel and runs an umbilical (or multiple umbilicals) from the UCC to an interface panel on the jacket. The second mounts the UCC on the jacket and operates the control valves electronically from a remote control station. This method uses a telemetry radio frequency communication system to provide control from a PLC or laptop.



Key features

- Proven and reliable design
- Environmentally friendly water-glycol hydraulic control fluid
- Ergonomic UCC design housing hydraulic control valves and electric monitoring system
- Stored energy system within the UCC
- Multiple back-up options available
- Remote control capability eliminates the need for personnel on the jackup during set down

Power:

- The UCS is operated using hydraulic power and monitored using an electrical power supply
- Hydraulic power stored in accumulator banks
- Electrical power supplied by multiple battery packs
- Back-up power provided from an umbilical between the installation vessel and UCC
- Solar power for re-charging at sea

