Introduction
Oil States Industries is a world leader in the design and manufacture of advanced connection systems for offshore applications. Our connectors provide fast make-up and high performance ideal for Risers, SCRs, TLPs, tethers, conductors, casing, new and replacement caissons, HP risers, pipelines and jacket piles. Oil States is a proven provider of riser components for deep water, production, drilling and completion risers. We also offer comprehensive riser system design services for completion, drilling, subsea and surface equipment to complement our field-proven connector technologies.

Merlin™ R connectors consist of male and female couplings at either end of the pipe. These unique connectors permit pre-welded pipe segments, 30 - 90 meters long, to be safely assembled offshore without welding. Merlin™ R connectors include a preload against operating tension, thereby minimising stress concentrations to extend the service. The connectors’ unique grooved thread profile provides clear evidence of proper mating and prevents connector back-off under fatigue loadings.

Complete Handling Package
Oil States has designed and tested handling tools for installation of the Merlin™ R. Tools include assembly clamps, stabbing guides, hydraulically operated spider units to support the full weight of the riser during assembly and pick-up tools to lift the riser string into position prior to assembly. Tools are operated by in-house offshore technicians ensuring a smooth installation service.

Design
The Merlin™ R connection system has been designed and manufactured to meet a range of static, fatigue and pressure loads (up to 15,000 psi). Sizes range from 6 5/8” to 24”. As with all Merlin™ connectors, the high pressure riser Merlin™ incorporates non-helical interlocking teeth which, because of the design geometry, ensure that the connector pin and box can only be mated in one precise configuration. The connection is assembled in a maximum time of 5 minutes using an Oil States supplied hydraulic clamp and air operated power pack.

Field Proven
Since their inception in 1981, Merlin™ R Connectors have consistently proven to be at the forefront of connector technology worldwide with over 60 systems run in the last 20 years.

Features
- Non helical tooth profiler
- Non rotation make-up
- Multiple seals
- Pre-loaded abutment face
- Full bore smooth profile
- High yield material
Merlin™ R Connectors for Workover Risers

Merlin™ R workover riser connectors are designed to meet a range of static and fatigue stresses compatible with ISO 13628-7. All the design features of the TLE connectors are present, together with a number of additional capabilities; the connector can be machined directly onto upset riser pipe, with the facility to perform “re-cuts” of the connector, should damage occur in service. The interface profile between pin and box has been improved to allow the full combined pin/box thickness to be mobilised when resisting riser internal pressure.

Testing

Extensive testing has been carried out on the Merlin™ to include internal gas pressure, external water pressure, tension, axial fatigue, bending fatigue, corrosion simulation, crevice corrosion and a variety of load combinations that simulate operating conditions.

Merlin™ R Connectors for Workover Risers

Merlin™ R workover riser connectors are designed to meet a range of static and fatigue stresses compatible with ISO 13628-7. All the design features of the TLE connectors are present, together with a number of additional capabilities; the connector can be machined directly onto upset riser pipe, with the facility to perform “re-cuts” of the connector, should damage occur in service. The interface profile between pin and box has been improved to allow the full combined pin/box thickness to be mobilised when resisting riser internal pressure.

Testing

Extensive testing has been carried out on the Merlin™ to include internal gas pressure, external water pressure, tension, axial fatigue, bending fatigue, corrosion simulation, crevice corrosion and a variety of load combinations that simulate operating conditions.