



CIS



Conductor Installation Services

Today's technology – traditional values

Conductor Installation Services Ltd (CIS) installs well conductors and pile foundations for the international oil and gas community using a range of hydraulic hammers. We are a dynamic, highly focused company staffed by specialists with extensive experience of the conductor installation business.



We offer

- **installation and operation services**
 - conductor whipstock installation
 - deviated directional driving
 - installation from low-cost vessels
 - underwater pile installation
- **engineering support**
 - conductor driveability studies
 - conductor fatigue studies
- **tools and technology**
 - hammers
 - pipe handling
 - cold cutting
 - drive shoes
 - drive chasers
 - whipstocks
 - sleeve reducers.

Our main purpose is to install conductors with the maximum possible structural integrity – reliably and safely. From our fully equipped service center in Great Yarmouth, UK, we constantly strive to reduce the cost of conductor installation through the development of more efficient work processes and the use of new technology.

Total project management capability

CIS is willing to take full responsibility for the entire conductor installation process. Under the direction of an experienced project manager, we can

- undertake preliminary engineering studies
- develop operational and quality procedures and project programmes
- design and manufacture the necessary materials, tools and equipment
- take care of logistics issues
- perform all site work under the control of trained supervisors, all of whom are experienced in working alongside drilling and platform crews
- prepare project close-out reports.

CIS field crews are hand-picked for their experience and positive attitude. The teams always include qualified hydraulics mechanics to look after the equipment in the field, which is essential for avoiding unplanned downtime during a project, particularly in remote locations. Where a welded conductor is specified, we will also provide qualified welders and inspection personnel.

CIS is one of the world's leading installers of oilfield conductors. We offer a complete service for installing conductors of any size, from make-up and running services through to driving and then cold cutting, which leaves our clients with fully installed conductors.



Installation and operation services

On- and offshore conductor installation

When installing conductors for land-based developments, CIS can undertake every aspect of the job, from initial engineering studies through to the point when the wellhead can be installed on the conductor.

Offshore, CIS installs conductors from jack-up rigs or drilling and production platforms in depths to 230m. The company has experience in driving conductors vertically, deviated directional driving and platform slot recovery using conductor whipstocks. The company's offshore teams work alongside drilling crews and take control of the conductor installation process, including pipe handling, running and make-up.

The conductor is driven until it reaches the desired penetration or meets refusal. At this stage, we cold cut the conductor to the desired length and bevel the pipe internally and externally ready for installation of the wellhead.

Conductor slot recovery whipstocks

CIS offers a range of conductor whipstocks for conductor slot recovery operations. The conductor slot recovery operation can be conducted in association with Acteon company Claxton, which has expertise in conductor and multiple casing recovery, cutting equipment, drilling and pinning systems, and hydraulic jacks. After the existing casing strings have been pulled and cut by Claxton, CIS will supply and install suitable whipstocks to offset the new conductors and will provide and operate the hydraulic hammers to complete the new conductor installation.

Deviated directional driving

Directional driving reduces the chance of conductors colliding subsurface; ensures access to slots that might otherwise have been unusable; and provides a valuable start when drilling extended-reach horizontal wells. Steering a conductor using a deviated directional drive shoe can be difficult. CIS controls the hammer to apply a precise amount of energy to the pile at various points during the drive. Conductors can usually be deviated by up to 5° over a depth of 50m.

Installation from low-cost vessels

In an effort to bring down the costs of offshore conductor installation, particularly in shallower water, CIS has developed techniques for driving conductors from the back of a relatively low-cost construction vessel. The hammer is slung from a suitable crane on the boat, and its force is transferred to the conductor via an extended drive chaser. Alternatively, the hydraulic hammer can be dressed for underwater capability. As well as the cost advantage of using a boat, there is also the opportunity to preinstall conductors off the critical field development path.

CIS also has the ability to install anchor piles and subsea templates in depths to 250m from the back of a low-cost vessel. All our hammers can be deployed underwater with specialist control equipment, and, if necessary, we can team up with Acteon companies such as InterMoor or Aquatic to deliver a complete service. CIS also hires out personnel to other companies for underwater construction projects.

Deepwater conductor installation

One of our prime objectives is to offer a means of installing conductors and piles underwater from a low-cost vessel. To achieve this, we have developed specialist control systems to enable our hammers to be operated in shallow-to-medium water depths to 250m.

Engineering support

Conductor driveability studies

A conductor driveability study is a vital precursor to the installation process and provides a range of crucial information, including

- the stresses that the conductor will have to withstand during the driving operation
- the conductor's load-bearing capacity, so calculations can be made for how much hardware can be hung off the conductor
- the depth of penetration required to achieve refusal under hammer blows of a defined force, which is essential for the maximum possible structural integrity of the conductor.

CIS routinely carries out these studies, and in challenging cases often exploits its close links with fellow Acteon companies that possess specialist knowledge.

Conductor fatigue studies

Conductor fatigue studies complement driveability studies by confirming whether the installed conductor will be fit for purpose in its intended role. They focus on the conductor's ability to

- withstand the forces applied during the driving operation
- provide sufficient structural integrity to support the well throughout its life.

CIS works closely with 2H Offshore on these studies so that wave-induced conductor fatigue analysis and structural analysis of platform conductor support frameworks can be included.

Links within Acteon

CIS maintains intimate links with other Acteon companies and can readily draw on a wide range of valuable engineering knowledge and expertise:

- **2H Offshore** – riser design, installation and monitoring; and mobile drilling rig and floating production unit installation services
- **Aquatic** – flexible pipelay and retrieval
- **CAPE** – pipeline inspection, repair and maintenance services
- **Claxton** – specialist engineering services for well-construction, workover and maintenance
- **Fluke** – design, supply and maintenance of high-quality mooring equipment
- **InterAct** – high-level project management and engineering consultancy
- **InterMoor** – mooring system design and installation, severance services
- **LDD** – large-diameter hole drilling, and drilling related installation
- **MENCK** – pile driving, underwater hammers and geotechnical engineering
- **Mirage Machines** – manufacture of portable on-site machines and tooling packages
- **NCS Survey** – global survey and positioning services
- **Pulse Structural Monitoring** – subsea structural monitoring services
- **Seatronics** – marine electronic equipment rental
- **SRP** – offshore riser products for critical drilling and production applications
- **TEAM** – engineering personnel services



CIS can be trusted to take full responsibility for project management of the entire process of installing conductors – anywhere in the world.



Project profiles

Onshore conductor installation

In Kazakhstan, CIS teamed up with Wagenborg Foxdrill to install 38 conductors using a mobile crane and a purpose-designed land frame. This enabled the conductors to be held perfectly vertical while the hydraulic hammer drove them into position. Moreover, this method of installation unlocked significant cost savings, as a drilling rig was not required, and it enabled the entire operation to be undertaken off the critical field development path.



Offshore conductor installation

A conductor installation project offshore Turkmenistan required CIS to drive a 36-in. diameter, 1-in. wall thickness conductor with a welded connection into the seabed to a penetration of at least 50m. We achieved this without operational problems.

Installation from a low-cost vessel

CIS was asked to drive anchor piles in 30m of water offshore Korea. Following discussions, it was agreed that using an extended drive chaser and hammering the piles from a vessel would avoid having to dress and then deploy a hydraulic hammer underwater. The operation went to plan, and the customer congratulated us on our innovative approach.



Tools and technology

CIS offers a one-stop shop for the conductor installation process. Our experience of the business has enabled us to assemble a set of the most reliable tools for conductor installation. Experience is also vital in helping us to design and manufacture a range of highly effective drive accessories.

Hammers

CIS routinely uses S-90 and S-150 hydraulic hammers (net energy per blow is 90 and 150 kN.m respectively) for installing conductors. All hammer servicing is carried out at our bases in Great Yarmouth, Qatar and Singapore or in the field by our fully qualified service personnel.

Pipe handling

We undertake all aspects of pipe handling, running and joint make-up using our full complement of tools: manual tongs, spiders, slips, clamps, elevators, etc.

Cold cutting

CIS can supply equipment and provide expertise in cold-cutting techniques. As part of the installation process, we ready conductors for the addition of the wellhead, normally using a lightweight, slimline, Zone I cold-cutting tool, such as a Low Clearance Clyde model from Roberts Products.

Allied engineered products

We design and manufacture standard and deviated directional drive shoes, drive chasers and whipstocks, which are for sale or rent. They enable us to carry out a wide range of installation projects involving conductors of any size. If required, we can also provide the conductor pipe itself.

Operators have been installing well conductors for many years, but ensuring the structural integrity of these primary components still presents serious challenges. In this specialist area, experience is a precursor to high value.

Please contact CIS for further information.

Conductor Installation Services Ltd

CIS House
Eurocentre
North River Road
Great Yarmouth
Norfolk
NR30 1TE
United Kingdom

Tel: +44 (0)1493 849680
Fax: +44 (0)1493 849681
Email: info@c-i-services.com

www.c-i-services.com

