

DEEPWATER

RETROCLAMP™ ELECTROMECHANICAL CLAMP INSTALLED BY DIVERS OR ROV

RetroClamps can be installed by diver or ROV, making them useful for anode retrofits at any depth.

The RetroClamp was originally designed to facilitate ROV attachment of retrofitted cathodic protection anode sleds to offshore pipelines. The first clamps were built and deployed in 2000, and since that time, the clamp has been adapted and improved significantly for strength and versatility. Thousands of RetroClamps have been successfully installed by divers and ROVs for a wide variety of applications, including attachment to wellheads, vessels, and large-diameter tubular members.

The large majority of RetroClamps are still used for electrically connecting aluminum anodes to tubular platform members and pipelines, but Deepwater has begun using modified versions of the clamp for subsea cable runs and for attaching monitoring equipment to verify cathodic-protection system performance (see applications). This adaptability has made the use of RetroClamps widespread among Deepwater's cathodic protection and monitoring systems.

Versatility, low cost and ease of installation make the RetroClamp a potential solution to a host of other subsea-retrofit uses. For inquiries into additional applications where the RetroClamp might prove useful, please contact Deepwater.

Fast and easy installation

The simple push-and-twist installation means that the clamp is usually installed in minutes; the unique design of the spring-tensioned floating plate ensures that the low-resistance electrical contact is maintained under constant tension. The clamp can be configured with a range of contact tips that allow it to be attached without cleaning or coatings removal in most cases. Even concrete weight coatings can be penetrated, saving a significant amount of time and effort during installation.

Large anode retrofit projects

Connecting sacrificial anode arrays (Retropod, Retrosled, CP Mat) to offshore pipelines, platforms and subsea systems is quick and cost-effective with the RetroClamp. The clamp can be fitted to a partially-buried pipeline by exposing only 120 degrees of the pipe. A concrete drilling bit can be attached to the contact tip, so concrete weight coats are no problem for the ROV or diver to get through. For platforms, the clamp is usually attached to a diagonal member near the bottom. Pictured right is a standard pipeline anode retrofit with divers.

Smaller anode retrofits

The RetroClamp can actually be a stand-alone local anode retrofit system, where one or two clamps support the anode material. This allows rapid and cost-effective deployment of additional cathodic protection to subsea structures. It's most effective as supplemental CP during routine ROV pipeline work.

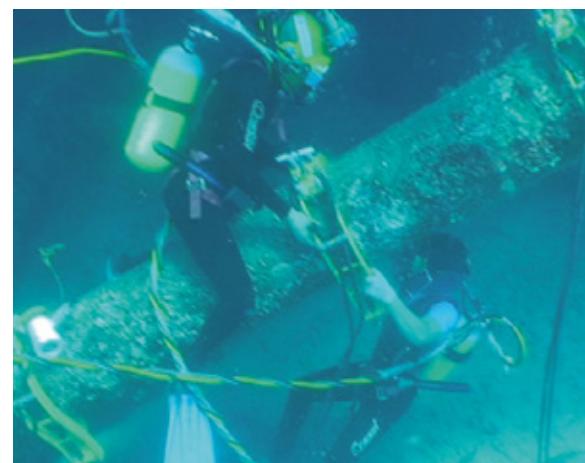
Subsea cable support

The weld-on topside suspension assembly can be attached to horizontal or vertical members, and the isolator can have links for protecting offshore risers. Links can be attached subsea using a modified hang-off. A new clamp-on support is also available, complete with I-Rod® Clips to prevent crevice corrosion.

More info at www.stoprust.com



ROV INSTALLATION
RetroClamp on a deep-water flowline, retrofitted by ROV.



RED SEA
RetroClamp on a platform member, connecting RetroPod anode sleds.



NORTH SEA
RetroClamp (with connection verification system) on a pipeline anode sled.