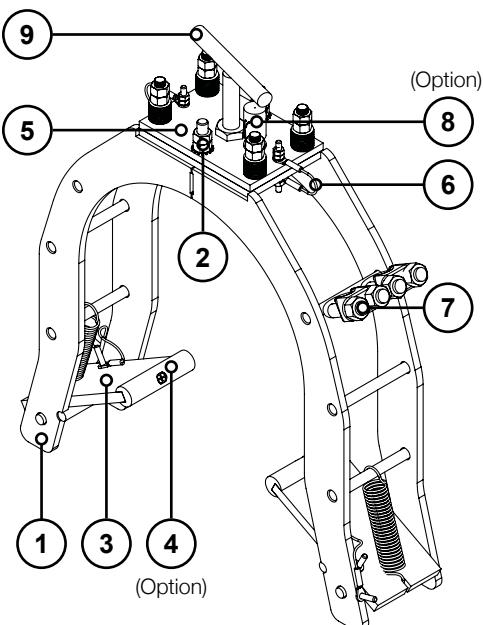


RetroClamp

General

RetroClamp is designed to provide a constant-tension electromechanical connection to metallic subsea tubulars. It may be used to connect galvanic anodes, support monitoring instruments or establish electrical continuity between two subsea metallic entities. RetroClamp is designed to be installed by diver or ROV. RetroClamp is available for installation on all pipe diameters from 4" to 65" with custom sizes available upon request.



Frame (Item 1)

Steel grade

RetroClamp

RetroClamp HD

ASTM A36 [EN 10025 S355]

ASTM A36 [EN 10025 S355]

Steel thickness

3/8" [9.5 mm] Plate

3/8" [9.5 mm] Plate

Fulcrums & spacers

Ø 1/2" Rod [Ø 12.7 mm]

Ø 3/4" Rod [Ø 19 mm]

Fasteners

SS316 and

SS316 and

Zinc Plated Carbon Steel

Zinc Plated Carbon Steel

Cable connection (Item 2)

2 x Ø 1/2" [M12] Stud

2 x Ø 1/2" [M12] Stud

Features

Flappers (Item 3)

Tensioned by springs to allow easy installation onto tubular assets. In the event of snagging, flappers are designed to fail to prevent damage to asset.

Can be fitted with pipeline protectors if required (Item 4).

Floating plate (Item 5)

Spring-tensioned by Belleville spring washers to ensure the low-resistance electrical contact is maintained under constant pressure.

Continuity (Item 6)

Electrical continuity throughout RetroClamp provided by SS316 bonding cable with swaged connector lug (4 required)

Cable grip (Item 7)

Provides strain relief and routing for the anode connection cables

Floating plate separation indicator (Item 8)

Indicates floating plate separation when visibility is obstructed (option)

Contact screw (Item 9)

The contact screw runs through the floating plate and establishes electrical continuity with the target member or pipeline; it is tensioned against the Belleville spring washers. The user interface for the contact screw is customised to suit the installation requirements, i.e. diver or ROV installation.

User interface options (Constructed from Stainless Steel 316)

Rigid tee handle
(Diver or ROV installation)

Ø 3/4" [Ø 19 mm]

Length to suit installation - 6" [152 mm] long handle as standard

Fish handle
(ROV installation)

3/4" [19 mm] Plate

Hexagonal head
(Diver installation)*

Ø 3/4" [Ø 19 mm] Length to suit installation

*To drive the hexagonal head, removable handles with socket attachments are provided

Contact tip options

The contact tip is selected based on the target structure and coating.

Target structure and coating

Structural connections
(Bare steel or painted)

Pipelines with thin film coatings (<6 mm) or
Pipelines with Concrete Weight Coating (CWC)
(Concrete pre-removed)

Pipelines with Concrete Weight Coating (CWC)
(Diver only)

Contact tip

Ø 3/4"-10 Stainless Steel 316
45° point tip

Ø 3/4"-10 Stainless Steel 316
Volcano tip with transverse slot

Ø 5/8"-18 Stainless Steel 316 driver
Tungsten-Carbide concrete piercing
masonry bit

Plate separator

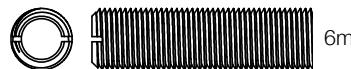
Recommended

Maximum



6mm

10mm



6mm

10mm



8mm

10mm

Technical datasheet

Coating

Frame and flappers coated with submersion service epoxy - safety yellow

Anode connection cables

4/0 AWG [~107 mm²], EPDM insulated, heavy duty flexible cable
 2 per RetroClamp
 Supplied in standard cable lengths of 25' [7.5 m] or 40' [12 m]. Custom sizes available upon request.
 Strain-relieved by 5/8" [16 mm] galvanised malleable wire rope clips.

Anode connection cables weight (dual cables)

Length	Weight (air)	Weight (water)
2 x 25' [2 x 7.5 m]	50 lb [22.8 kg]	38 lb [17.2 kg]
2 x 40' [2 x 12 m]	80 lb [36.4 kg]	60 lb [27.6 kg]

Packaging

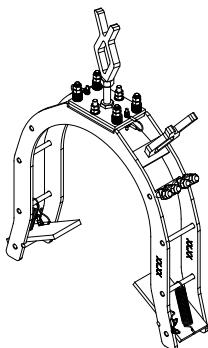
Each RetroClamp is hermetically sealed in a plastic inner envelope and packaged in a wooden crate (fumigated for international shipments).
 May be packed in multiple quantities if required (bulk crating)
 If RetroClamp is to be supplied on a returnable consignment, individual packing is required.

Clamp weights and dimensions*

Pipe OD**	Weight (air)	Weight (water)
4"	28 lb [12.5 kg]	24 lb [10.9 kg]
6"	32 lb [14.3 kg]	28 lb [12.5 kg]
8"	35 lb [15.9 kg]	31 lb [13.9 kg]
10"	36 lb [16.6 kg]	32 lb [14.5 kg]
12"	38 lb [17.3 kg]	33 lb [15.0 kg]
14"	40 lb [18.0 kg]	34 lb [15.6 kg]
16"	41 lb [18.6 kg]	40 lb [16.2 kg]
18"	47 lb [21.1 kg]	41 lb [18.4 kg]
20"	48 lb [21.8 kg]	42 lb [19.0 kg]
22"	50 lb [22.7 kg]	44 lb [19.8 kg]
24"	52 lb [23.6 kg]	45 lb [20.6 kg]
26"	54 lb [24.5 kg]	47 lb [21.4 kg]
28"	57 lb [25.7 kg]	49 lb [22.4 kg]
30"	60 lb [27.2 kg]	52 lb [23.8 kg]
36"	75 lb [34.0 kg]	65 lb [29.7 kg]
46"	116 lb [52.7 kg]	101 lb [45.9 kg]

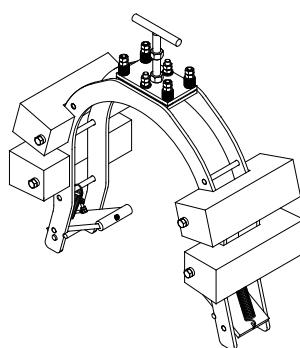
RetroClamp variations and accessories

RetroClamp is available with a variety of accessories to suit many applications. Please contact Deepwater for further details on RetroClamp solutions.



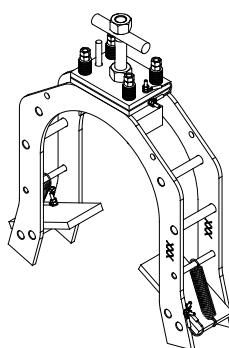
RetroClamp with ROV Grab Handle

To aid ROV installations



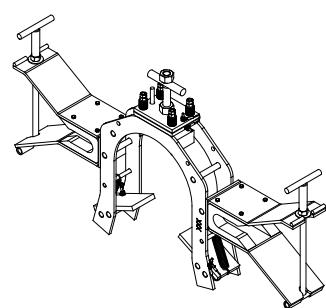
RetroClamp CP

For fast, localised CP retrofits
 (See RetroClamp CP Technical Datasheet)



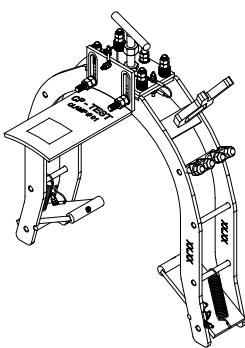
RetroClamp HD

Suitable for heavy-duty applications



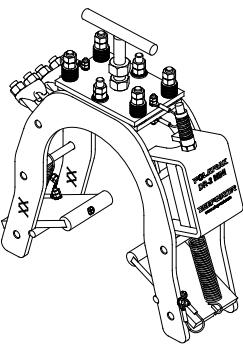
RetroClamp HD with dual cable grips

For subsea cable routing



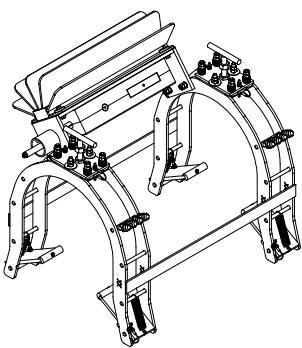
RetroClamp with CP Stab Plate

For pipeline potential stab measurements and location markers



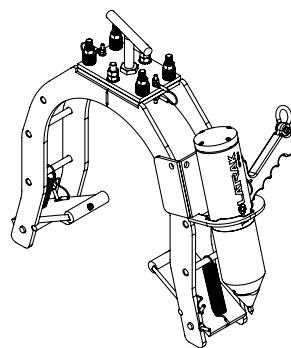
RetroClamp with DR-2 Mini

For retrofit monitoring attachment
 (See DR-2 Mini Technical Datasheet)



RetroClamp with DR-2 CD

For retrofit monitoring attachment
 (See DR-2 Technical Datasheet)



RetroClamp with CP Gun

CP Gun interface used with CWC to verify pipe contact

Diver installation only

(See CWC installation procedure)