



Strap Clamp Repair, Hot Tapping or Encapsulation

STATS patented strap clamp provides a localised seal on a pipe surface. These clamps can be used for either pipeline repair or hot tapping operations. Lightweight in design they are simple to install and offer a robust isolation for localised sealing.

Sealing a localised area of the pipe reduces the sealing area hence the loads which need to be restrained. Due to this these clamps are much lighter and easier to handle than a traditional repair clamp which encapsulates the whole circumference of the pipe.

The localised sealing area is provided by a circular 'D' seal, mounted in a profiled groove which conforms to the pipe OD. The size of the repair which can be accommodated with this design can vary but must be small in relation to the pipe diameter (<25%).

Operation

The clamp is installed by assembling the strap around the pipe and connecting the two elements together. Once connected, the strap can be orientated to provide easy access for assembling the seal housing.

The clamp can then be located to the correct position and the strap bolt tightened. The elastomeric seal on the pipe can accommodate a poor surface finish on the pipe OD, however coatings must be fully removed and any deep gouges must not impinge on the seal contact area.

The strap bolts do not require a high torque as they are only required to provide the initial seal. Once pressure is applied to the seal housing, the pipe seal will become energised by the differential area acting across the cartridge. This is an important feature on thin pipe wall, where the pipe would deflect with preload on the strap bolts.

Key Features

- ◆ Lightweight strap clamp for localised repair or intervention
- ◆ Seal self-energised against pipe
- ◆ Simple and fast to install
- ◆ Low profile design allows installation in restricted space
- ◆ Seal housing can be configured for Repair (Blind); Hot Tap (Flanged); or Encapsulation (Capped) formats
- ◆ Available for low and high pressure applications
- ◆ Modular construction allows cross utilisation of components for different pipe geometries
- ◆ Seal material provided to suit application (NBR, HNBR, Viton, HPU)
- ◆ NACE compliant carbon steel as standard, other materials available upon request
- ◆ Available in single or dual seal arrangement





Strap Clamp

The clamp has three major components:

1. Strap

This is a steel strap which wraps around the pipe and provides the mechanical restraint for the internal pressure acting on the clamp. This comes in two pieces, which are joined diametrically from the seal housing. The strap conforms to the pipe OD around the back of the pipe, then running tangential to the connection to the seal housing. The connection to the seal housing is by bolts which are mounted directly in line with the load path.

The strap design maintains the load path in direct tension minimising weight.



2. Seal Housing

The seal housing connects to the strap completing the load restraint. The housing can be designed in a variety of configurations to provide the following:

- ◆ A sealing plate for a repair
- ◆ A ported housing to allow hot tapping (As shown)
- ◆ An encapsulation housing which can accommodate pipeline fittings

The connection to the strap is structural and the connection with the seal cartridge is on a bore seal.



3. Seal Cartridge

The seal cartridge is a cylindrical seal piston which is mounted inside a seal housing.

This cartridge seals against the seal housing on the cylinder diameter and on the pipe at the compression seal diameter ('D' seal).

The result is that the internal pressure (red), pressure energises the compression seal onto the pipe.

