INNOVATION IN PIPELINE REPAIR

SR

COMPANY INTRODUCTION

PIONEERING ENGINEERING

Today, SRJ is building on a solid body of experience in fittings manufacture and problem solving expertise.

Its British-based R&D team boasts over 50 years of experience in specialist fittings and with this solid engineering base, SRJ has developed and tested, over the past four years, a range of ground-breaking leak-prevention technologies.

The aim is clear: to provide engineered cost-effective solutions that enable asset operators to minimise downtime, as well as improving safety and reliability.

SRJ

THE TRIPLE SHELL REPAIR CLAMP



Time-related factors such as fatigue and corrosion in onshore and subsea pipelines, can severely damage the line, resulting in leakage, as can external damage from dropped objects, heavy plant movement, tampering, or anchors.

Conventional repair methods involve the use of two half shells bolted together over the damaged area, encasing it in a box-like container held in place by bolts. These do not provide a perfect seal and in most cases, only offer a temporary repair solution.



SOLUTION

To eliminate the shortcomings of conventional repair kits, SRJ has developed a highly effective permanent repair solution, the Triple Shell Repair Clamp. The TSRC features a segmented housing containing a circular recess that encompasses the damaged area. Each segment contains an intrinsic gasket which abuts the pipework and the adjacent segment. The segments are linked together by plates which allow the assembly to completely envelop the failure location.

Exterior circumferential tension chains, connected via turn buckles, compress the segments against the joint, thereby ensuring reliable performance in high pressure applications. The TSRC can be provided to suit specific client requirements and to meet requisite industry standards. Units are currently being tested in live conditions in the UAE.

The main benefit of the TSRC configuration is a far more efficient distribution of pressure between the pipe and the resulting sleeve than is the case with traditional repair kits. These typically comprise two half shells, which inevitably result in the point of seal being located at 90 degrees to the fixing point, with no clamping force at the point adjacent to the bolts.





The TSRC design, featuring three segments, bolted fixing mechanisms (which act as secondary tensioners) and an external tension chain, provides much greater inherent strength in the form of an equal force directed towards the centre point of the pipe in the manner of a wedge.

To ensure a perfect seal, the TSRC contains a unique sealing matrix material in the form of a honeycomb mat system that is clamped inside the three-shell structure. The seal may be designed as a single circumferential or longitudinal seal. Dual circumferential seals at either end or dual longitudinal seals can be accommodated if required by a certifying authority. These dual seal designs feature a test port between the seals to demonstrate seal integrity post-installation. The design offers substantial structural support for the damaged pipe, with a large surface area compressed against the wall of the pipe.



For ease of installation in the field, the TSRC is equipped with hinge plates and lifting eyes. Options for hydraulic operation are also available.

In concept, the TSRC is sufficiently flexible to enable bespoke solutions. These may encompass exotic alloy body materials, speciality coatings, extended seal and body lengths, special sealing and bolting materials. It is designed to address in-line damage, kits to repair leaking flanges and leaking valves are also available. The TSRC range covers sizes from 4" to 48" diametre.



Quality control is of paramount importance given the harsh operating environments prevailing in the oil and gas industry. Each TSRC is fully inspected and factory tested to 1.5 times design pressure, or to a customer's test procedure. Each kit is serial numbered and inspection reports are kept on file for material traceability. SRJ welcomes third party inspection and test witnessing.

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SRJ has developed a revolutionary product aimed at the oil and gas, and processing sectors, which allows for the safe, reliable and strong non-welded connection of pipes for the entire diametre spectrum.



SRJ produces the TSRC, the world's only heavy duty triple-shell repair clamp for semi-permanent pipeline repair scenarios. The TSRC offers numerous benefits over conventional, two-shell repair mechanisms, notably greater structural support for damaged pipes, as well as two retention mechanisms. SRJ can meet bespoke requirements for a range of scenarios, whether onshore, for facilities, EPRS, offshore or subsea and can also offer designed solutions.



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