

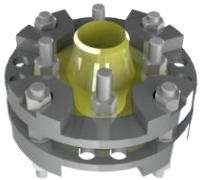


ELEVATING ASSET INTEGRITY



We elevate our clients' integrity management **PERFORMANCE**
By combining cutting-edge containment **TECHNOLOGIES**
With engineering and operational **KNOW-HOW**

BoltEx[®] – Bolt Exchange Clamp

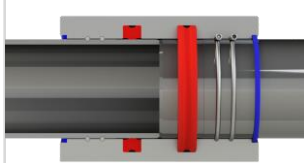


Safe online bolt replacement

Flange reinforcement

No damage to flange gasket

SRJ Weld-free Pipe Coupling



Weld-free pipe connection

Spool tie-in or replacement

Multiple configurations

Multi-Shell Repair Clamp



Emergency pipe repair

Proactive application

Reusable and compact to store

Bespoke Solutions



Enclosure repair units

Composite wrap solutions

Elbows, tees, flanges, nozzles & valves

BoltEx[®] – Bolt Exchange Clamp

- Designed to ASME PCC-2, ASME VIII, and ASME B16.5
- Enables safe bolt replacement during normal operations
- Ensures flange integrity until the next shutdown opportunity
- Validated by FEA to perform at 1.5 times rated line pressure with all flange bolts removed

INDUSTRY CHALLENGES

- Corrosion of piping systems
- Flange and weld failures
- Safety risks
- Costly repair works
- Shutdowns – Penalties
- Loss of containment – Loss of production



BoltEx® – Bolt Exchange Clamp

IMMEDIATE INTERVENTION

Corroded bolts replaced immediately in accordance with ASME PCC-2 (Hot Bolting)

EXTENDED FLANGE LIFETIME

BoltEx® can be left installed as a preventative measure on defected flanges with bolts that are impossible to retrieve/replace



BENEFITS

Quick and safe to install

- + 1-2 installers
- + Available at short notice
- + Optimised weight for ease of use
- + No damage or disturbance to gasket

Compact and reusable

- + Countersunk bolts in one side for limited access applications
- + Open design allows access to the nut splitter for removing corroded flange bolts
- + Designed for fast and efficient installation and handling
- + Easy to remove and reinstall multiple times
- + Space-efficient storage and transportation

Cost effective

- + Eliminates the need for plant shutdown
- + Extends asset lifetime and reduces maintenance costs

Innovative Gasket Protection System (GPS)

- + GPS prevents over-compression or release of sealing pressure of flange gasket
- + BoltEx® bolts are pre-loaded against the GPS with an equal tension to the flange bolts; compression load on the gasket is therefore maintained as the flange bolts are removed
- + In the case of bolt failure BoltEx® will safely take the load preserving joint integrity