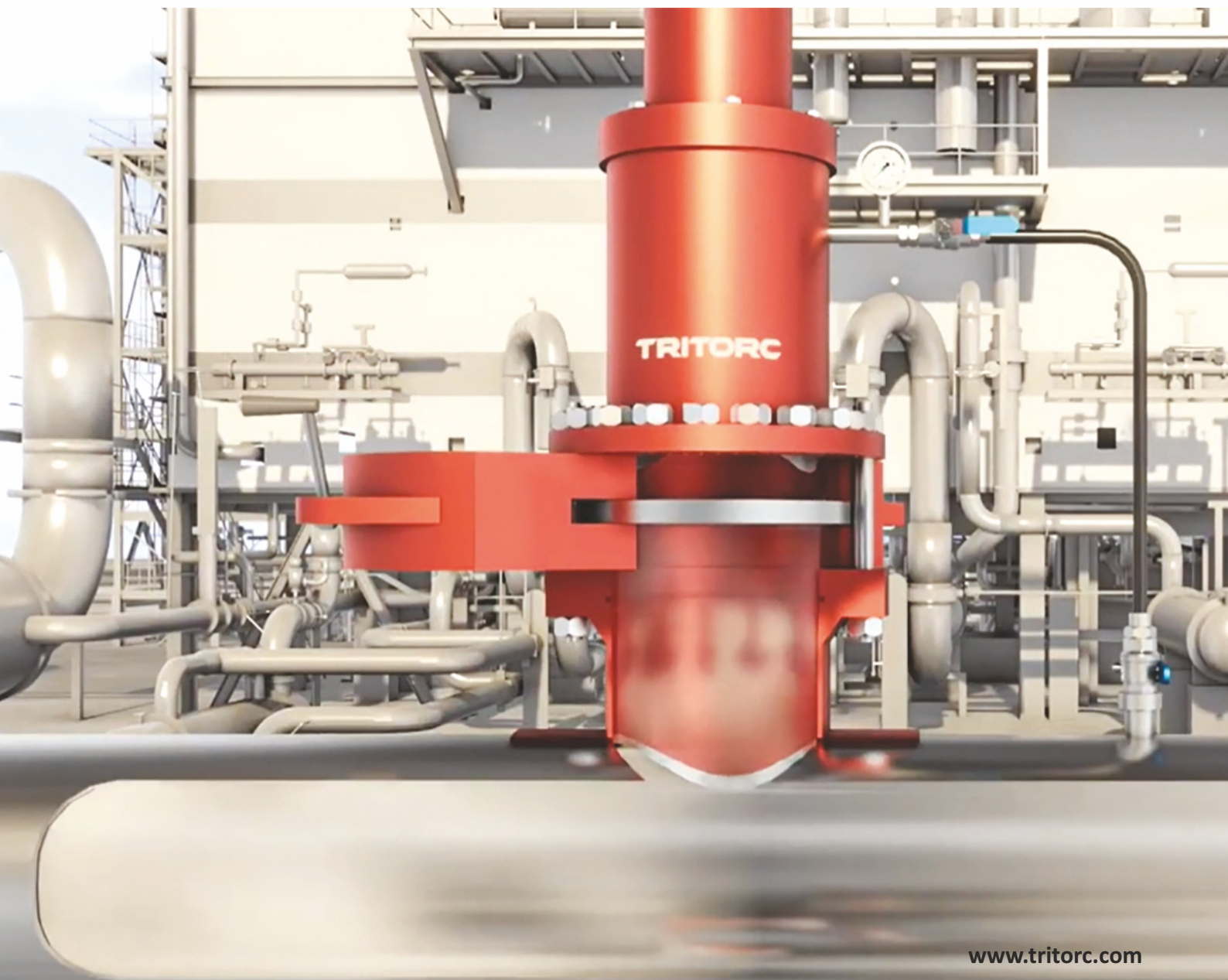


TRITORC

HOT TAPPING & LINE STOPPING

Design Standards to ASME & API codes

Completion Plugs & Pigging Bars Compatible



COMPANY PROFILE

Tritorc Pipeline Solutions - One of the Leading Service Providers of unparalleled and unsurpassed onsite engineering service provider to various industries.

Tritorc operates internationally with headquarters based in Texas USA having its well established regional offices and workshops in India, UAE, Qatar, Oman, Kuwait, KSA and Africa.

Tritorc provides specialized engineering services and products to a diverse range of industries including Oil and gas onshore/offshore construction & maintenance, Petrochemical, Power generation, Construction, Infrastructure, Utilities and MEP & HVAC etc.

The range of products and services offered by Tritorc are designed to maintain maximized plant uptime by undertaking maintenance and repair services online thus to minimize loss of production due to downtime or outage.

At Tritorc, dedicated team of trained and highly skilled service personnel available on call for emergency services and other planned maintenance activities along with portable equipment to undertake the services in a safe and cost effective manner.



MAJOR PRODUCTS AND SERVICES

■ PIPELINE INTERVENTION & PRESSURE SERVICES:

- Hot Tapping and Pipeline Isolation
- Pipe Freezing
- Leak Sealing
- Online Valve maintenance and Testing
- Supply of EPRS Pipeline Repair Clamps
- Flange Weld Testers and Pressure Plugs

■ TUBE TOOLS:

- Tube Expanders for Boilers, Heat Exchangers, Radiators & Condensers
- Hydraulic, Electrical, Pneumatic Tube Expansion Systems / Hydraulic Auto Tube Pulling Systems/ Tube Spinner
- Tube Facing / Beveling Machines / Tube Cutters
- Tube Installation, Tube Removal Tools & Tube Cleaning Tools
- Special Customized Tube Tools

■ CONTROLLED BOLTING TOOLS:

- Hydraulic Torquing and Tensioning Kit
- Pneumatic Torque Wrenches & Accessories
- Electric Torque Wrenches & Accessories
- Backup Wrenches
- Manual Torque Wrenches & Torque Multipliers
- Nut Splitters
- Flange Spreaders
- Spring Balancers
- Impact Sockets and Slugging Wrenches

■ PIPELINE SOLUTIONS:

- Flange Facing Services
- Pipe Cutting and Beveling
- Sale / Rental of Machines
- Pipe Stands, Clamps & Other Accessories

As a Specialist Engineering Service Company, we understand that we have a commitment towards protecting our environment and society for the generations ahead. We endeavor this using most recent and proven industrial and environment friendly technologies and equipment to repair and maintain customer assets.

HOT TAPPING & PIPELINE ISOLATION

Tritorc Hot Tapping Service enables a connection to be made to a piping system or a vessel without shutdown or interruption to production. Isolation of a piping system is achieved by introducing a plugging head into the pipe bore through the Hot Tapping. All the equipment and tools are designed and manufactured in accordance with the applicable design codes as API 2201 & API 1104 APP B.

Our equipment is designed and tested to withstand the required operating pressures, temperatures and harsh working environment, rated up to 1,450 psi and 280°C.

A Comprehensive Hot Tapping Package is available including a survey of the Customer's Site to determine the most efficient solution required.

- Hot tapping up to 84"
- Line stopping up to 66"
- Upstream or Downstream
- Inflatable gas bag isolation upto 60"

Highly skilled and experienced service engineers can apply a variety of different procedures to provide the most cost efficient solution to suit the customer's individual requirement.

Our equipment is capable of performing hot taps into a wide variety of products such as Hydrocarbons, Pipeline Isolation, Water, Steam and Sour Service among others.

HOT TAPPING & FLOW STOPPING MATERIALS

Tritorc's Engineering division provides custom designed and manufactured Hot Tap and Line Stop Tees suitable for various pipe materials such as carbon steel, stainless steel, alloys, plastic based pipes. Consisting of a full-encirclement fitting and a weld-neck flange, our Hot Tap Tees are designed and manufactured to ensure the integrity of the piping system.

Typically the Mating Flange is ASME Class 150, 300, or 600; although, other pressure classes and flange styles are available.

Our Hot Tap Tees are designed to meet the requirements of ASME B31.3 / 31.4 / 31.8. The standard tee material is ASTM A516 GR70 / MSS SP WPHY / ASTM A537 CLI/2 / equivalent to any BS Material. Other materials are available to match customer requirements and existing pipeline materials and design parameters.

The Tees are manufactured in accordance with widely accepted industry standards and in house quality program and are compatible with major models of hot tapping equipment. In compliance with most pipeline design codes, all pressure containing welds are 100% radiographed and hydro statically pressure tested, where applicable.

- Hot Tap and Line Stop Fittings are available in Carbon and Stainless to High-yield Stress Materials
- Fabricated or Extruded
- Welded or Mechanical
- Design Standards to ASME and API Codes
- Completion Plugs and Pigging Bars Compatible



EMERGENCY PIPELINE REPAIR CLAMP

Tritorc Split Sleeve Repair Clamp (SSRC) offers emergency pipeline repair solutions which are economical, bolt-together fitting consisting of two halves which is designed to allow both temporary and permanent repairs to damaged pipelines. The SSRC clamp halves are joined by means of nearly tangential bolting, in such a manner as to produce a high integrity pressure vessel around the affected area of the damaged pipeline.

SEALING MECHANISM:

Primary Sealing is provided by the highest quality molded elastomer seals appropriately selected for compatibility with the pipelines product, its environment, and the operating temperature range. The elastomeric sealing is accomplished via compression of two circumferential and two intersecting longitudinal packing seals, which, upon full compression, form a continuous pressure barrier. Seal material is retained in the seal grooves by utilization of a pre-compressed seal tension groove design. This allows simplified replacement of the seals in the field thereby eliminating expensive factory seal replacements.

MANUFACTURING STANDARDS:

All Our Pipeline Repair Clamps are designed, manufactured and factory tested in accordance with Specification for End closures, Connectors and Swivels and ASME Section VIII Division 1&2.

The clamps are fully hydrostatically pressure tested to 1.5 x times the rated working pressure to check and prove integrity of connections and seals.

The clamps are fitted with 1/2" or 1" venting ports as per client requirements.

INSTALLATION AND MAINTENANCE:

All our clamps are designed and manufactured to be installed on the pipelines without the need of specialized tools and skillset.

Installation, maintenance and seal replacement can easily be done by available field personnel with basic tool kits on site.



MATERIAL SPECIFICATIONS:

Shell and Side Bar:

ASTM A105, A106, A516, A216 Gr. WCB Casting or equivalent.

Fasteners:

Standard / PTFE Coated Studs & Nuts: ASTM A193 B7 / ASTM A194 2H

Seal:

Single die moulded or slit Nitrile rubber typically Buna N / Viton. Special sealing materials can be provided upon request.

Coating:

Red Oxide coating on the clamp body for Topside applications. Marine Grade Yellow coating on the clamp body for subsea applications.

Cathodic Protection:

Sacrificial anodes are installed on Subsea Clamps.

HOT TAP AND LINE STOP FITTING (1/2" to 66")

- Hot Tapping Fitting
- Line Stop Fitting with LOR and Blind Set
- Hot Tap 3 Way Tee Fitting with LOR and Blind Set
- Line Stop 3 Way Tee Fitting with LOR and Blind Set
- RF Pad with Branch
- Weld on let Hot Tap Fitting
- Thread on let Hot Tap Fitting

DESIGN CRITERIA:

All above fitting are designed according to ASME B31.3 /4/8 and fabrication accordingly ASME Section VIII.

INSPECTION:

NDT Inspection as per Section V

SUITABLE FOR:

ASTM A106GR A/B/C , API 5L X42/46/52/56/60/65/70, ASTM A333 & SS306/306L/308/308L/316/316L

DESIGN PRESSURE:

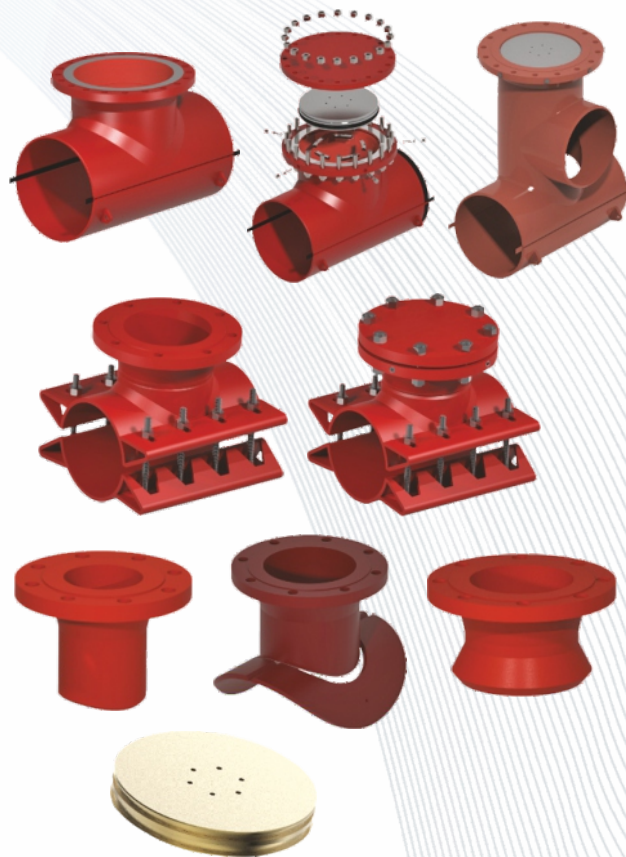
Up to 150 Bar (#150,#300, #600) with RF and RTJ Design

DESIGN TEMPERATURE:

-20°C to 280°C

FITTING TYPE:

Available in Forged and Fabricated



HOT TAP AND LINE STOP ADAPTER (1/2" to 66")

- Hot Tapping Adapter
- Line Stop Adapter without Bypass
- Line Stop Adapter with Bypass
- Angle Tap Adapter
- Folding Plugger Adapter
- Petersen Gas Bag Launcher

DESIGN CRITERIA:

All above Adapter are designed fabricated accordingly ASME Section VIII.

INSPECTION:

NDT Inspection as per Section V

SUITABLE FOR:

TDW, F4, PTS, ENR, Mirage, TEAM, Propipe and any other Custom Design as per Client Requirements.

DESIGN PRESSURE:

Up to 150 Bar (#150,#300, #600) with RF and RTJ Design

DESIGN TEMPERATURE:

-20°C to 280°C



CUTTERS AND PILOT DRILLS (1/2" to 66")

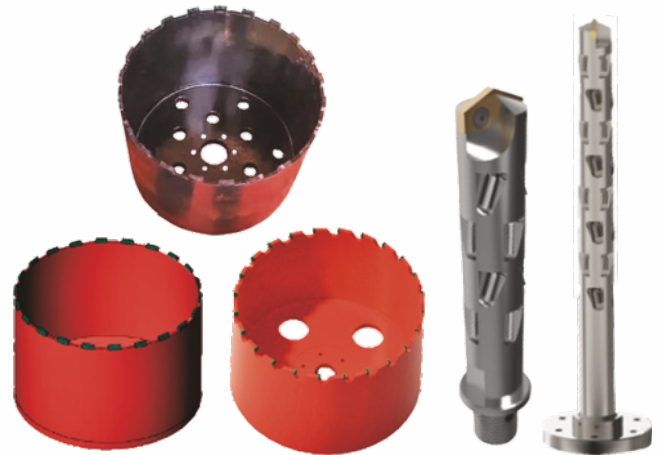
- Hot Tap Cutters
- Line Stop Cutters
- Angle Tap Cutters
- Tank Tap Cutters
- Cutters for HDPE & GRP Pipeline
- Pilot Drills with Single U Rod (Single Piece)
- Pilot Drills with Multi Stage U Rods for High Flow Application (Single Piece).

INSPECTION:

NDT Inspection as per Section V

SUITABLE FOR:

TDW, F4, PTS, ENR , Mirage, TEAM, Propipe and any other Custom Design as per Client Requirements.

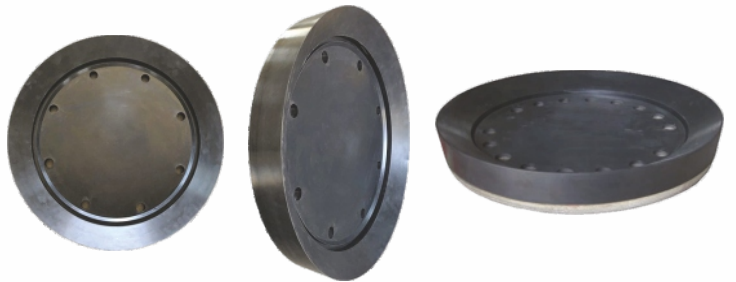


LINE STOP SEALING ELEMENTS

- NBR High Pressure Sealing Element 4"-56"
- Viton High Pressure Sealing Element 4"-56"
- Folding Plugger Low Pressure Sealing Element - 24"- 66".

SUITABLE FOR:

TDW, F4, PTS, ENR , Mirage, TEAM, Propipe and any other Custom Design as per Client Requirements.

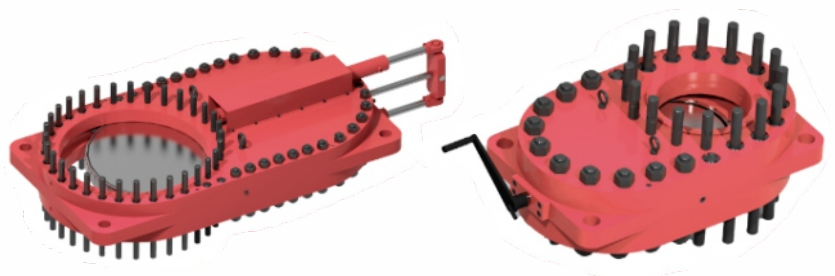


SANDWICH VALVES

- Manual Operated - 4-18 Inch.
- Hydraulic Operated - 18- 48 Inch.

DESIGN PRESSURE:

Up to 150 Bar (#150,#300, #600)
with RF and RTJ Design.



TRITORC EQUIPMENTS PVT. LTD.

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