



KLINGER Engineered Solutions





KLINGER Engineered Solutions - Select the correct product for the job.



FULL TURNKEY MECHANICAL OFFERING INCORPORATING:

- » Mechanical maintenance
- » Joint integrity management QA/QC
- » On-site valve reconditioning
- » On-site gasket manufacturing and inventory control
- » On-site flange face machining

THE COST OF LEAKING JOINTS:

Loss of containment may have catastrophic results. They harm brand image, facilities, employees, and the environment. We at KLINGER emphatically believe that all bolted joint leaks can be avoided, and we drive our people, processes, and clients to achieve this goal.

ENGINEERING AND TECHNICAL CONSULTANCY

KLINGER assists with the development of a best practice Joint Integrity Program

- » In the preparation and planning of any construction or maintenance activity, we can assist with the development of a best practice Joint Integrity Program
- » This can include a JIP gap analysis, review, and development of procedures, and the implementation of a Flange Management System
- » Joint troubleshooting and engineering support as well as expert guidance on joint integrity-related issues

COMPLIANCE

We assure the correct processes, procedures, and standards are being met

- » On-site QA/QC compliance
- » During any on-site construction or maintenance activities, we perform a full QA/QC service of all joint integrity work
- » Our teams of specialist joint integrity personnel drive and monitor the implementation of the client's joint integrity program, ensuring compliance, and providing full traceability that the client's mandated procedures and standards have been met.

IN-SITU VALVE REFURBISHMENT - READY WHEREVER YOU ARE:

- » By bringing this service to you, we can offer a swift turnaround, cost efficiency, and minimise the impact on project scheduling and equipment
- » Reducing your downtime and maximising the efficiency of your shuts

want their valve testing and repair services on-site and on-demand.

ON-SITE FACILITY INCLUDES

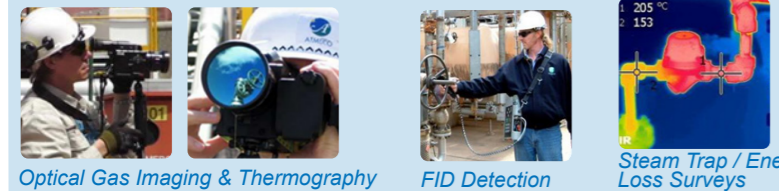
- » Test bench clamping system
- » Workstations for valves assembling/disassembling
- » Computer registration and certification system
- » Low/high-pressure air compressor station with storage system
- » Portable machines for grinding and lapping
- » Toolroom metal turning lathe with D.R.O
- » Jib crane (500KG)
- » Electrical installation
- » All necessary accessories
- » Documentation cupboards
- » Office desk / small workbench
- » Large tool/components storage shelves

KLINGER is one of the only companies in the region offering specialist component integrity, leak detection and repair (LDAR) capabilities.

KLINGER TECHNOLOGIES

KLINGER deploys a range of cutting-edge technologies and data systems as part of the service to our clients

- » Optical Gas Imaging (OGI)
- » Fast-response Flame Ionization Detection (FID)
- » Thermography
- » Data capture systems
- » Secure online data management and reporting



SHUTDOWN/PROJECT MANAGEMENT

Incorporating a 5-phase management system:

- » Preparation and planning
- » Detailed planning
- » Pre-Shut preparation
- » Turnaround execution
- » Start-up handover

A ONE-STOP SINGLE-SOURCE SOLUTION FOR YOUR NEXT PROJECT OR SHUTDOWN

- » Eliminates all hassles of dealing with multiple contractors
- » Single source responsibility
- » One point of contact for a turnkey solution
- » Saving in cost and time

EXECUTION

We provide skilled personnel and state-of-the-art equipment for flange management activities

- » On-site execution
- » We supply skilled field services personnel to directly execute any controlled bolting, on-site flange machining, on-line leak sealing, and on-site QA/QC of all flange management.



VALUE ADD

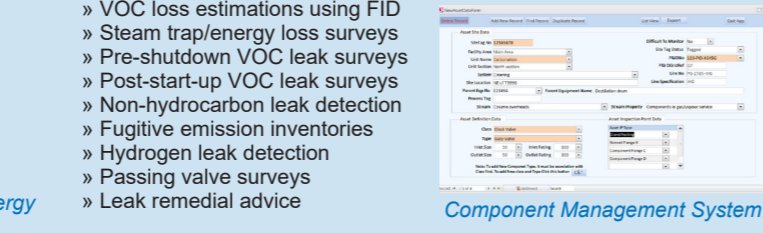
- » Assets remain on location
- » Elimination of the potential for miscommunication
- » Reduction in time required for turnaround/shutdown servicing
- » Eliminating the potential for damages sustained during shipping
- » Increased control
- » Increased efficiency



INTEGRITY SURVEYS

The services offered for the detection of hydrocarbon leaks to the atmosphere include:

- » Turnaround support services for component management
- » Leak Detection and Repair (LDAR) programs
- » Secure online web-based data systems
- » VOC leak detection in the operating process
- » VOC loss estimations using FID
- » Steam trap/energy loss surveys
- » Pre-shutdown VOC leak surveys
- » Post-start-up VOC leak surveys
- » Non-hydrocarbon leak detection
- » Fugitive emission inventories
- » Hydrogen leak detection
- » Passing valve surveys
- » Leak remedial advice



KLINGERS' On-Site Machining Service is geared to provide the industry with fast, economical solutions to in-situ maintenance.

FLANGE FACING FEATURES

- » Precise, robust, compact, and portable
- » Internally and Externally mounted machines, operate in any orientation
- » Standard and compact flange facing, "O" ring grooves, RTJ and V grooves, weld preparation, etc.
- » On Site Machines achieve surface finishes from 6.3mm Ra to 1.6mm Ra

MILLING

On-site 3-Axis Milling machine complements the flange facing machines, whereby division plates in heat exchangers can be milled to ensure a uniform finish. The milling machine is also suitable for the milling of O-ring grooves, crane pedestals, heat exchanger repair, motor and pump mounting pads, steel mill housing and turbine split line machining.



SPECIALISED INJECTION COMPOUNDS

Our exclusive use of the TEAM INC. range of compounds is specifically purposed to suit specific temperatures, pressure, and service. Compounds are injected into live leaking components or used in conjunction with a KLINGER custom repair enclosure to encapsulate and seal the leaking component. All compounds are developed and manufactured in-house under the strictest quality control processes. Compounds are tested for suitability and compatibility with all mediums of use and documented in our ChemCheck data book.

TREVITESTING

Developed and patented worldwide by TEAM INC. Trevitesting is fast, safe, and efficient. Operated following strict control procedures centered on ISO 9001. Trevitest can be used with most safety and relief valves manufactured for use in steam, air, gas process, and water systems. These include conventional spring valves, torsion bar valves, and pilot-operated valves.

HOT TAPPING EQUIPMENT SUPPLY

We offer the design, engineering, and manufacture of a full range of TEAM INC. hot tapping and line-stopping fittings, equipment, and accessories.

KLINGER IS THE SOLE AGENT FOR AFRICA

The CTI Shield/Seal™ is a thin-walled metallic tube insert, made of highly durable alloys, from copper-based alloys to stainless steel and nickel-based alloys.

Available Materials also include alloys for high-temperature service.

The Shield/Seal™, besides repairing tube end erosion/corrosion, will restore tube-to-tube sheet hole integrity, permit proper mechanical tube cleaning, and in many cases restore leaking, plugged tubes to full operation. Once expanded, the shields then become integral with the parent tubes.

Under pressure LEAK SEALING, keeping critical piping and pressure equipment on-line, therefore maximizing Asset Uptime.

- » Facility integrity threats such as leaks or wall thinning can be extremely costly to operators if left unresolved.
- » KLINGER's on-line leak sealing and mechanical repair team are available 24/7, adding value to customer operations by maximising the availability of critical equipment, reducing steam-raising costs, minimising environmental emissions, and enhancing safety.
- » At KLINGER, we pride ourselves on being able to deal with any integrity threat from the most routine valve-packing leak to the most complex high-pressure, hydrocarbon-piping repair.
- » We do so with industry-leading safety, responsiveness, and compliance. All damage equipment and leak sources are repaired by our local technicians with the added insight and support of our global engineering group TEAM INC.
- » Our association with TEAM INC. is unique as the process was developed by them and have spent nearly 100 years perfecting it. We've handled just about every imaginable leak-sealing application – safely and successfully.

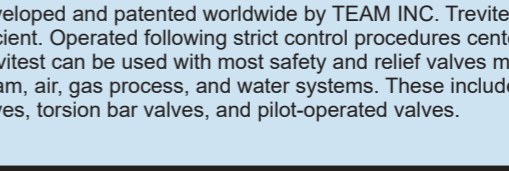
IN-HOUSE DESIGN AND FABRICATION OF ALL PRESSURE ENCLOSURES

All designs are conducted by Professional Engineers and approved by appointed 3rd party AIA and verified by Design Verification Engineers (DVE) as stipulated in SANS 347.



TREVITESTING is the hot testing of valves while operations continue, as well as the cold testing of valves on-site and in the workshop. Trevitesting will increase efficiency and save your organisation money from day one.

The result is a certified test allowing correctly performing valves to remain in service for longer periods, as well as fully documenting valves that do not meet the correct performance criteria, by our experienced personnel, so that they can be repaired or replaced as soon as possible.



KLINGER IS THE SOLE AGENT FOR AFRICA

- » Hot tapping machines (range ¾" to 42")
- » Line stopping equipment (up to 54" 102 Bar)
- » Power packs
- » Fabricated hot tapping and line stop fittings
- » Closure flanges and completion plugs
- » Line stop sealing elements (Buna-Nitrile: EPDM: Viton)
- » Sandwich valves
- » Accessories

