

TESTING SERVICES EUROPE

SERVICE CATALOG



COMPANY INFORMATION

TESTING SERVICES EUROPE was built on safety and innovation and continues to be an industry leader through skilled employees and patented technologies.

Testing Service Europe (in short TSE) is privately owned and global specialty industrial service company based in Zwijndrecht. Since 2005, Testing Services Europe represents Carber in Europe. The Carber technology is a worldwide patented technology.

We provide trained and experienced technicians and professional, timely services driven by a Health, Safety, and Environmental program that reflects our commitment to safety. Our services increase safety, decrease downtime, reduce environmental impact and provide cost savings.

Testing Services Europe has developed a set of core values that define who we are individually and as a company. These basic principles are the foundation of everyone within the organization.

TSE CORE VALUES:

Safety & Quality
First and foremost.

Committed Leadership Through Collaboration
Leadership by example; corporately and individually. Progress occurs when courageous, skillful leaders seize the opportunity to change things for the better through collaboration with our customers and employees.

Service Excellence
Service with superior value; to accept nothing but the best in ourselves, our products and our services.

Integrity
We will be trustworthy, honest, genuine and loyal in every action.

Innovation
Defines our past, propels us into the future and provides us with a strong market position through better technology and processes.

Safety is deeply embedded in our culture.



WORLD LEADER IN HYDROTESTING AND ISOLATION TECHNOLOGIES

SERVICES

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SCHEDULE A LUNCH & LEARN

COLD CUTTING & BEVELING

Testing Services Europe has safe cutting equipment to cut & bevel lines anywhere in Europe.

TSE's cold cutting method is the safest means available to cut existing pipe. No sparks or open flames are present at any time during the cutting & beveling process effectively eliminating risk of ignition of contents.

When utilizing this cutting method, the ID wall of the pipe is only penetrated in the last few seconds of the cutting process. This greatly reduces exposure of the contents of the pipe to personnel and environment.

Because there is no spark or flame produced, cold cutting does not require lines to be gas free. In most instances this also eliminates the need to obtain a hot work permit to simply cut a piece of pipe.



Our precision machining capabilities allow technicians provide fast, accurate cuts on lines that do not need to be gas-free.

Cold cutting & beveling is the first step in the Cut/Isolate/Test System for a quick and safe tie-in. By bundling these services, there is no need to hire multiple specialty contractors.



Reference Specifications:

Current Size Range: 2" up to 42". (51mm to 10674mm). Other sizes to be discussed and upon request.

Wall Thickness: Up to 4" (102 mm)

Pipe Material: All

Bevel Type: All standard + custom bevels/landings & combination bevels

Power: Pneumatic or Hydraulic

Out of round pipe: Yes

Hot-work permit required: No in most cases

COLD CUTTING & BEVELING



TSE technicians perform several turnarounds per year. Whether you need one cut made in an emergency situation or an entire plant cut for disassembly, TSE is available to help keep your facility moving forward.

Due to the physical dimensions and safety benefits, Cold Cutting is ideal in an offshore setting where space is limited and safety is critical. Tool design allows for operation in tight spaces and can easily operate within 15cm of radial clearance. With notice the cutting machines can be modified upon request.

Benefits of cold cutting technology:

- Since no flames are used and no sparks are produced, potentially hazardous lines do not need to be gas-free; there is no risk of combustion.
- Cuts and bevels simultaneously.
- Ability to perform cuts under fresh air if lines are hazardous.
- Many sizes of cold cutting equipment are light and portable, eliminating the need for lifting equipment.
- Clamshell type assembly allows for easy installation onto existing pipe.
- Can be remotely operated from any distance.
- Ability to cut out-of-round pipe.
- Engineered step-down feature allows a machine to cut one size smaller pipe (e.g. 6" machine can also cut 4" pipe).
- Can cut out existing welds with minimal material loss.

No cut is too large or too small.



ISOLATION SERVICE

The Isolation Service provides a better way to isolate pipes for hot-work than traditional methods.

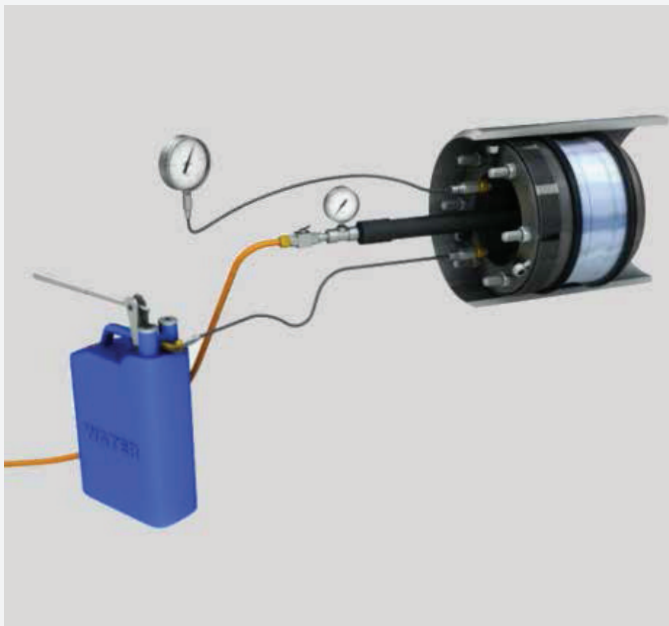
The patented Isolation tool safely isolates a line for hot-work, guaranteeing safe keeping of property, equipment and personnel by creating a proven, 100% positive pressure vapor barrier against residual contents in the pipe. Installing a plumber's plug or similar device and hoping for the best is never best practice.

TSE technicians are ready to isolate your lines to make your hot-work project safe, allowing your project to be done quickly, at a lower cost and significantly reduced risk when compared to traditional methods.

Reference Specifications:

Current Size Range: 0.75" up to 42" (19mm to 1050mm)
Larger sizes can be custom built.

Pipe Material: All



TSE Isolation Benefits

- Ability to monitor seal and ensure safety of hot-work.
- Triple vapor barriers; one is positively pressured.
- Vent upstream activity safely away from hot-work.
- Vent gauge to monitor upstream activity.
- Pressure restraining capability in the event of upstream pressurization.



WELD TESTING

The Isolation service can eliminate much of the prep-work associated with a tie-in such as:

- Numerous blinds/scaffolds can be eliminated
- Extensive steaming and cleaning can be eliminated, as lines do not need to be 100% gas free
- Can be installed under supplied air; supplied air not required while isolation is in place

Application Benefits

- Almost any non-flammable medium can be used for the isolation
- The CARBER tool can be used for a hydrodynamic isolation for high temperature procedures such as bake-outs, stress relief, or pre-heat
- Tool can accommodate a multi-schedule pipe design
- Can be used to isolate through elbows and tees
- The design of the tool requires a minimal length of pipe to allow proper installation
- Pitted pipe does not need to be made smooth for the Isolation tool to form a complete seal
- Lifting equipment is not needed for most sizes



The Isolation tool has been used globally to safely isolate lines with no hot-work incidents. This is why facilities around the world have written this tool into their procedures and best practices.

To ensure safety during an isolation, every technician has stop-work authority when monitoring an isolation that is in place.

Creating and making CARBER Tools

CARBER tools are manufactured in our state of the art ISO 9001:2008 certified manufacturing facility.

Each one of our tools pass a rigorous quality program which includes standard NDT on critical components. Engineering and manufacturing our tools to the highest standards from high-grade materials means our tools are ready for their job regardless of the application or environment.



SCHEDULE A LUNCH & LEARN

WELD TESTING

The Weld Test Service utilizes patented technology for a safer, quicker, and cheaper way to hydrotest new welds.

Our CARBER weld testing technology allows a single weld to be isolated and hydrotested without the need to fill the entire line or system. Single welds are isolated during the hydrotest, significantly reducing the amount of test medium used. Most applications only require ounces of medium to complete a hydrotest.

Our Weld Test service is fully capable of meeting ASME B31.1/B31.3 standards as well as ASME BPV V & VIII, API 510 & 570. Our weld test technology can hydrotest welds beyond 150bar.

Reference Specifications:

Current Size Range: 0.75" up to 42". (19 mm to 1050mm)
Larger sizes can be custom built.

Test Pressure: Standard up to 150 bar. Beyond 150bar to be discussed and upon request.

Pipe Material: All

Out of Round Pipe: Yes

Testing Medium: Any non-flammable liquid



Large weld? No problem.

The CARBER Weld Test tool can be custom manufactured to any diameter.

Pictured is a 102" weld test using a total of 1/2 gallon of test medium at 17bar.

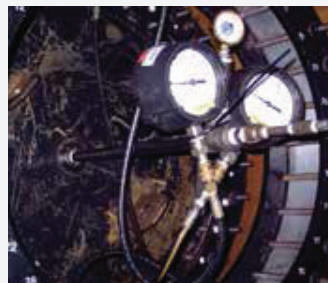
Setup and testing was completed faster than the line could have been filled for a traditional test.



72" out of round weld test using less than 0.33 gallons of water.



Weld Test Tool testing a new tie-in weld.

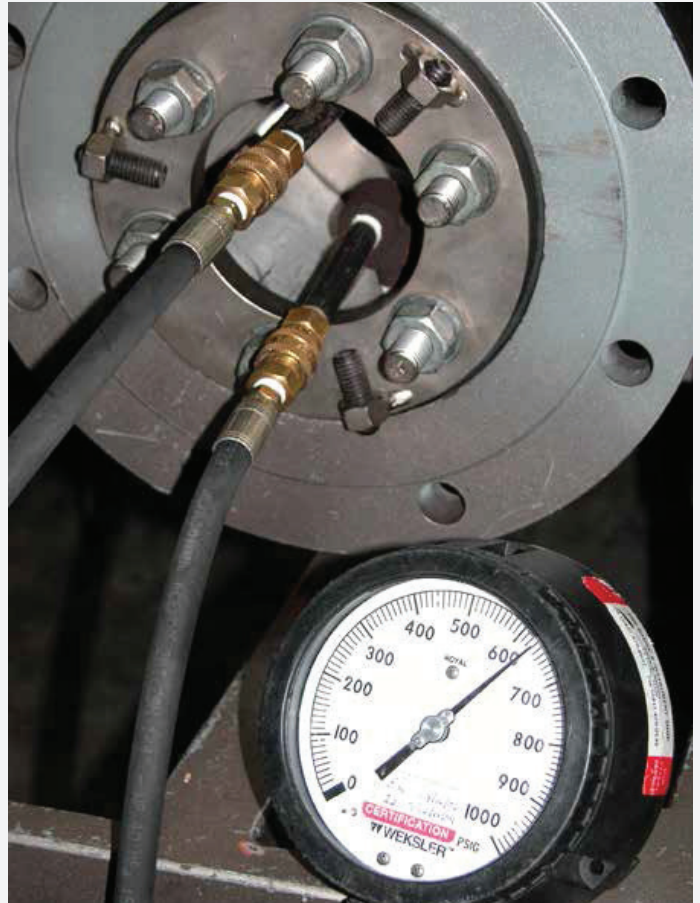


Testing a 36" weld with a 36" Isolation in place.

WELD TESTING

Advantages of the Weld Test Service

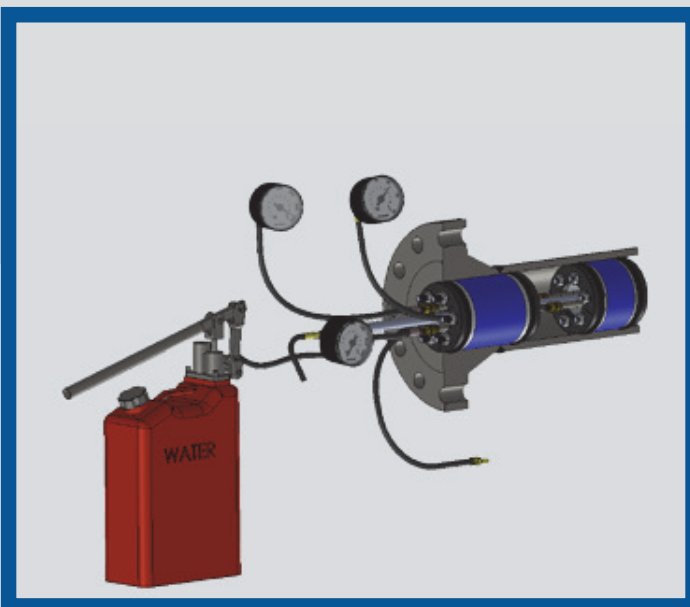
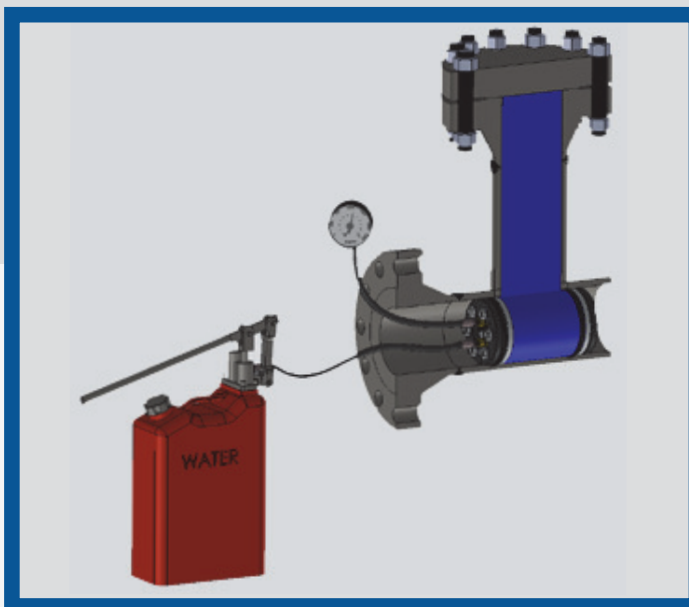
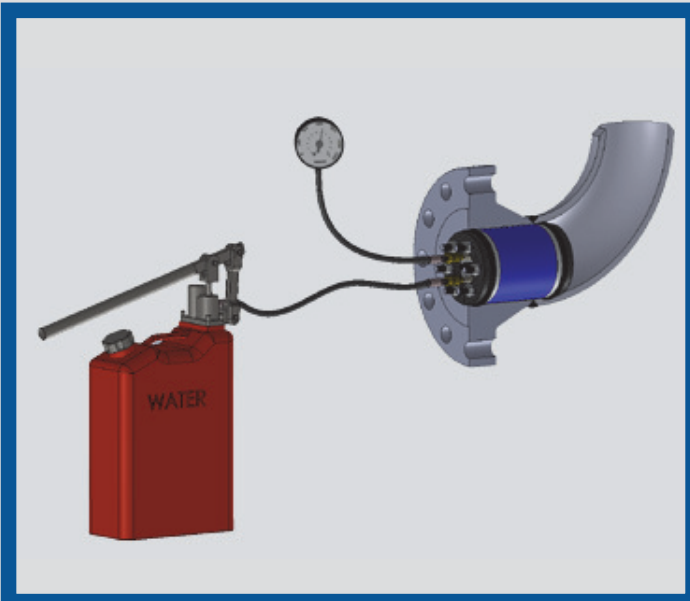
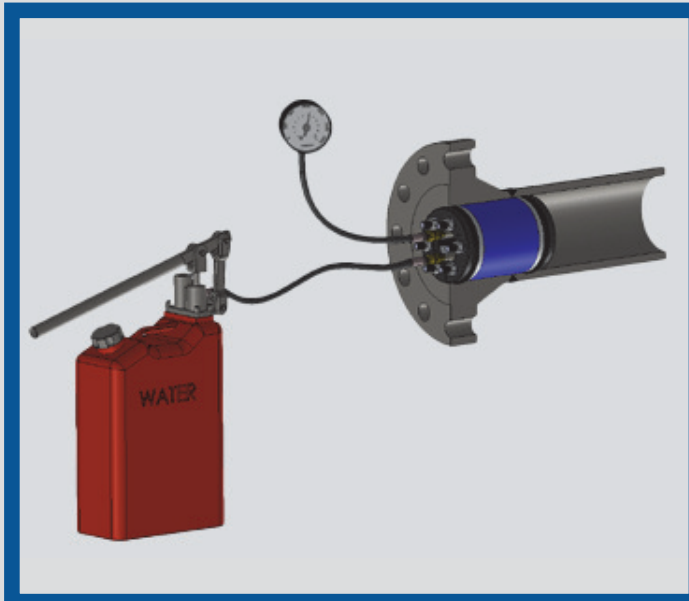
- Perfect for testing tie-in welds on existing piping systems; eliminates installation of hydro blinds.
- Can test gasket faces; including newly machined surfaces.
- No post-hydro dry out phase required; nitrogen can be circulated through the tool to dry moisture.
- Ability to use test medium that is best for the system (e.g., glycol, mineral oil, peanut oil, etc.).
- Can be used simultaneously with CARBER Isolation for lines 8". (203.2 mm) and larger.
- Virtually no contained energy in the tool during testing due to small amounts of medium.
- Lightweight system eliminates the need for heavy lifting equipment (i.e., 42" XS tool is 110kg. with heaviest component only weighing 38kg.).
- Due to small amount of medium, there is minimal risk to environment during reclamation process of test medium.



Our service center has a full set of Isolation and Weld Test tools in the most common sizes. Our proven tools and experienced technicians are available on a 24-hour basis. Whether you have an emergency that needs attention quickly or a large turnaround spanning many months, TSE is here to keep your facility in production.



SCHEDULE A LUNCH & LEARN



The Weld Test Service can test many different piping systems and scenarios, including:

- Flanges (weld neck, socket-weld, slip-on, orifice)
- Branch Connections (o-lets, PI's, TI's, Instrument taps)
- Orifice flange root valves
- Wall thickness transitions
- Flange to elbow/reducer/tee
- Out of round pipe
- Butt-welds - within reach

Top Left: Hydrotesting a standard pipe and flange with Weld Test Tool.

Top Right: Elbow and flange during hydrotest with Weld Test Tool.

Bottom Left: Hydrotesting a branch connection with a Weld Test Tool.

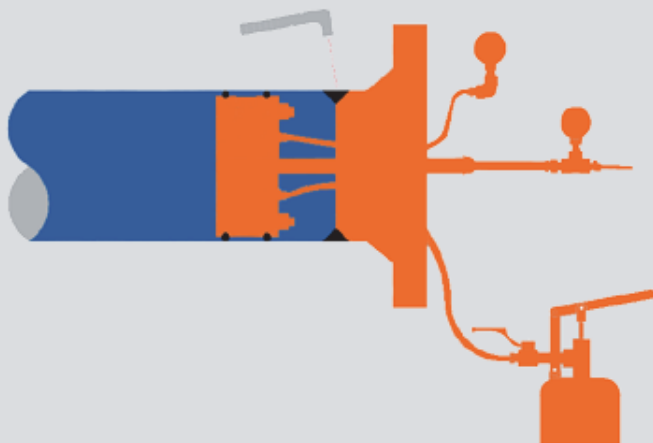
Bottom Right: Hydrotesting a hazardous line with Isolation Tool in place (lines 8 in. and larger). The Isolation Tool remains in place to allow technicians to not be required to have supplied-air during the hydrotest of the new weld and flange.



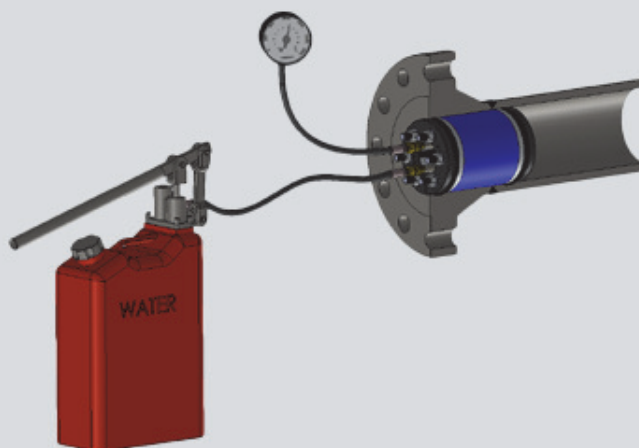
Proposed Tie-In



Step 1: Cold-Cut & Bevel the line



Step 2: Isolate line for hot-work



Step 3: Hydrotest the new weld

The CARBER Cut/Isolate/Weld Test System can significantly reduce the time and cost associated with a tradition tie-in to an existing system.

To execute the proposed tie-in using traditional methods, the new line would be purged and cleaned for torch cutting. Then grinders would be used to bevel the pipe and a new flange welded into place. The new lines then need to be blinded and the entire system filled with test medium and pressurized to ensure integrity of the new welds.

The requirements for this series of operations could include blinding, scaffolding, lead/asbestos abatement, insulation removal, heat/steam tracing, etc., and the time required to fill the system for a hydrotest and post-hydro dry out.

CARBER technology can eliminate the time and cost associated with many of these operations.

Step 1: Cold-cut & bevel the line. This saves time and lowers cost by reducing cleaning associated with hot-work and simultaneously cutting and beveling the pipe. Safety is increased through the elimination of hot-work.

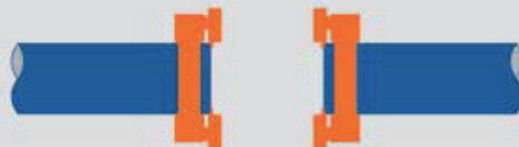
Step 2: Isolate line for hot-work. This step also eliminates extensive cleaning traditionally associated with this task. Safety is increased through a constantly monitored 100% positive pressure vapor barrier present during the welding process.

Step 3: Hydrotest the new weld. Significant time and cost is saved during this step by avoiding filling the entire system with test medium and reclaiming it after the test is complete.

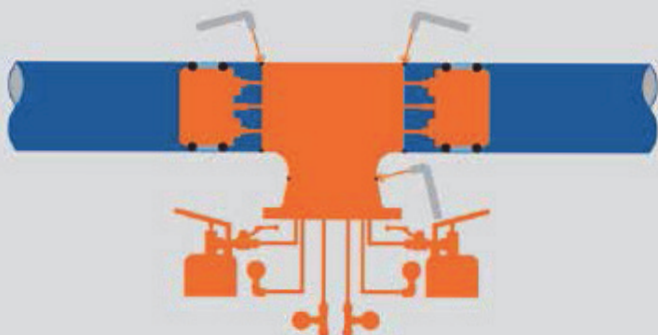
SCHEDULE A LUNCH & LEARN



Step 1: Layout pipe to be cut



Step 2: Cold-Cut & Bevel the pipe



Step 3: Isolate both sides of pipe during weld procedure



Step 4: Hydrotest all new welds on the fitting and pipe

Planning steps for use of CARBER technology for installation of a tee fitting.

Step 1: Layout the pipe to be cut.

Step 2: Simultaneously cut and bevel both sides of existing pipe for new fitting. Our cold cutting system simultaneously cuts and bevels, leaving the pipe end prepped for welding without additional grinding.

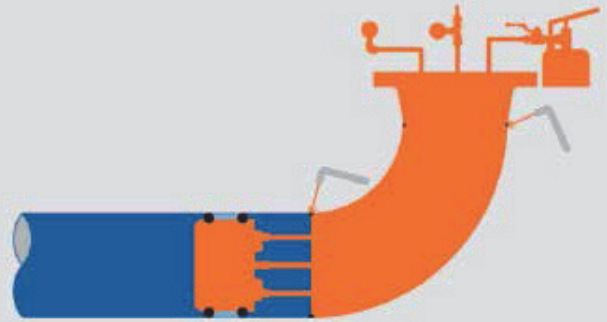
Step 3: Isolate both sides of existing pipe during weld procedure. The CARBER Isolation tool can fit through turns as required for tee fittings. This allows easy removal of the tool once the isolation is complete.

Step 4: Hydrotest all new welds on the fitting and the pipe. The CARBER Weld Test tool is also capable of fitting through turns required for installation into a tee fitting. This allows CARBER to provide safe and quick hydrotests of the new welds that join your fitting to the pipe as well as the new flange on your tee.

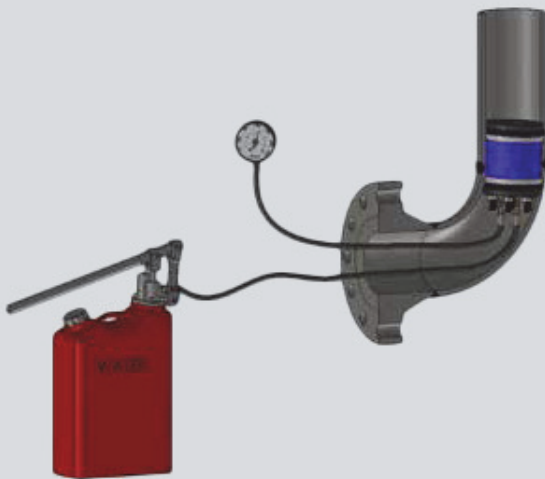
The CARBER Cut/Isolate/Test system can be used for many applications and installations of various fittings. CARBER also offers assistance in planning your new tie-in to help eliminate many other processes that slow your schedule and keep facilities offline for longer periods of time.



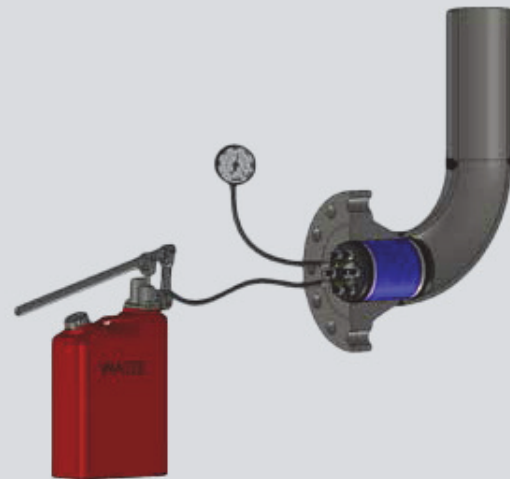
Step 1: Cold-Cut & Bevel the pipe



Step 2: Isolate the pipe for welding of elbow and flange



Step 3: Test elbow to pipe weld



Step 4: Test flange to elbow weld

Planning steps for use of CARBER technology for installation of an elbow fitting.

Step 1: Cold cut and bevel the pipe.

Step 2: Isolate the pipe for welding of elbow and flange. TSE installs isolation tool while customer fits and welds elbow and flange.

Step 3: Hydrotest elbow to pipe weld. In long radius elbows the Weld Test tool can pass through the radius to complete a Weld Test from the fitting to the pipe.

Step 4: Hydrotest flange to elbow weld. The flange to elbow weld as well as the fitting and heat affected area

is tested without blinding and filling the new system. This eliminates the need for large amounts of test medium.

For fittings on hazardous pipes 8 in. and larger the Isolation can remain in place while the new welds for the fitting and flange are tested. This reduces the need for supplied air during the hydrotesting process.

SCHEDULE A LUNCH & LEARN

NOZZLE TESTING

Nozzle Testing is an innovative hydrotesting procedure for testing new nozzles on any vessel.

Our technicians can hydrotest your new nozzle connection without filling the entire vessel and without the need to weld a cap to the inside shell. Some vessels simply cannot withstand the complications and weight involved with filling to capacity and pressurization to perform a traditional hydrotest.

TSE has a more efficient way to hydrotest nozzles with less test medium and at a fraction of the time.

The Nozzle Test tool is engineered for each vessel and meets the requirements for ASME Section VIII Division 1.



The Nozzle Testing Service significantly reduces downtime required to test nozzle connections by only testing the welded nozzle.

Low volume of test medium required assures accurate results and makes reclamation hazard free and cost efficient.



Reference Specifications:

Test Pressures:

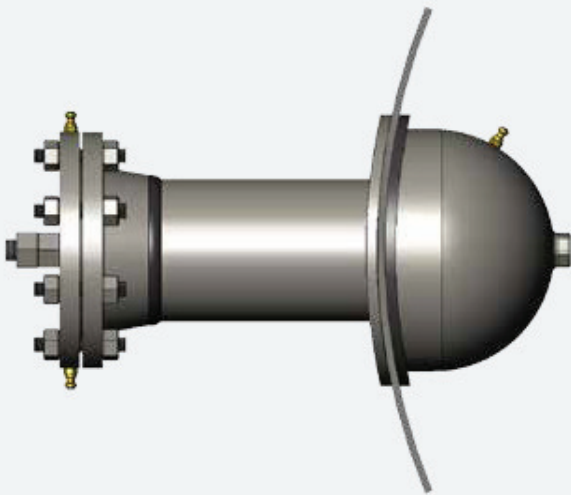
1" to 4" - 25.4mm to 101.6mm - up to 68.95 bar

6" and larger - 152.4mm and larger - up to 34.47 bar

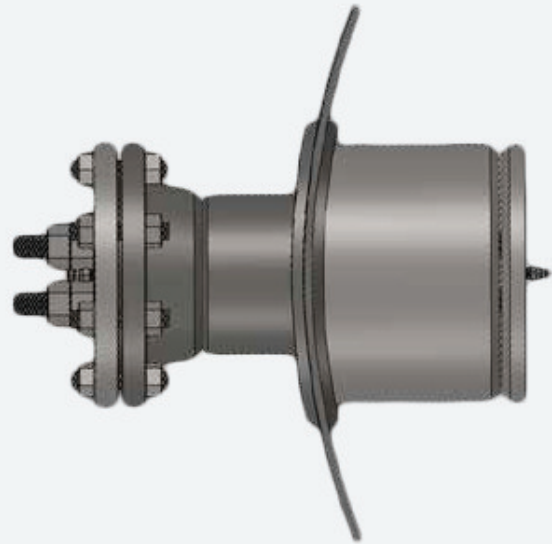
Required from Customer:

- Vessel Diameter
- Nozzle Length & Diameter
- Vessel Entry Procedures
- Flange Rating
- Test Pressure
- Size of Vessel Entry Port

NOZZLE TESTING



The Single-bolt Nozzle Test Tool is perfect for testing small nozzle connections. A seal is created on the inside vessel wall to allow the new nozzle to be filled with test medium and brought to pressure.



The Multi-bolt Nozzle Test Tool allows for larger nozzles to be tested without filling the vessel. The multi-bolt design ensures the larger diameter seal is created against the vessel wall to allow pressurization.

Advantages of Nozzle Testing:

- Significantly reduces downtime required to test nozzle connections by only testing the new nozzle.
- The entire vessel is not subject to undue pressure during hydrotesting.
- Small quantity of medium required provides a safe environment in which to conduct test.
- Lightweight tools reduce the need for heavy lifting equipment to put the testing equipment in place.
- Eliminates the need to fill the entire vessel.

TSE also has a split-cap design nozzle test tool to accommodate man-ways. Testing man-ways requires that the test tool is larger than the actual opening to form a proper seal. Our split-cap tool is perfect for testing man-ways because it can be disassembled to allow entry into the vessel.

When testing the only man-way of a vessel, access to enter or exit during the hydrotest is required. TSE has the technology to perform these tests. The patented Open Top Hat Nozzle Test Tool allows larger nozzles or man-ways to be tested much more efficiently while allowing access to the vessel.



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TSE