



Safe, Reliable Quality

Mechanical Services & Solutions

Serving Refining, Petrochemical, Gas, Offshore,
Power Generation and Pulp and Paper Projects Worldwide

ISS
INDUSTRIAL SPECIALTY SERVICES
BY BRAND SAFWAY

Industrial Specialty Services (ISS) provides safe, smart and reliable integrated services and solutions, including:

Hot Tapping, Line Stopping and Pipe Freezing. 1

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ISS operates from the following locations, and provides services to the refining, petrochemical, gas, power, pulp & paper, offshore and subsea markets throughout North America, South America and other strategic international regions.

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Beaumont, TX 77705
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Chicago, IL
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East Chicago, IN 46312
T 708 793 6960

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4900 Railroad Street
Deer Park, TX 77536
T 713 987 9117

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2881 31st Ave. #1
Greeley, CO 80633
T 855 746 4477

Houston, TX
1423 Wadsworth Street
Houston, TX 77015
T 281 286 8500

Kenilworth, NJ
12 Sidney Circle
Kenilworth, NJ 07033
T 908 686 6369

Lake Charles, LA
600 Bayou Pines E., Ste. F
Lake Charles, LA 70601
T 337 433 8522

McKees Rock, PA
501 Robb Street
McKees Rock, PA 15136
T 855 746 4477

Moss Point, MS
8001 Hwy. 90
Moss Point, MS 39562
T 228 285 8231

Nederland, TX
120 N. 11 Street
Nederland, TX 77627
T 409 729 1846

Pampa, TX
114 N. Naida Street
Pampa, TX 79065
T 855 746 4477

Prairieville, LA
18321 Swamp Road
Prairieville, LA 70769
T 225 677 1200

Sarnia, ON
345 St. Clair Street
Sarnia, ON N7T 7H8
T 519 336 8200

Swedesboro, NJ
740 Veterans Drive
Swedesboro, NJ 08085
T 856 467 2533

Westlake, LA
476 Nnrs Road
Westlake, LA 70669
T 713 987 9117

Hot Tapping, Line Stopping and Pipe Freezing

Hot tapping allows an opening to be cut or drilled into a pipe that is carrying product under pressure.



Line stopping is the process of inserting a plugging head into a pipeline to temporarily block the flow of product or to isolate a section of pipe while diverting the product flow using a bypass.



Hot tapping and line stopping services require an in-depth understanding of the flow rate, temperature, pressure and nature of the material in the line. With over 35 years of experience, ISS personnel have the expertise to tackle each unique application.

Features

- › ½"–60" diameter tap sizes
- › Boring bar stroke (reach) of over 110"
- › Available off the shelf for up to 1,480 psig maximum operating pressure and temperatures as high as 700° F
- › Custom designs and packers available
- › Power driven with pneumatic motor drives or single or dual hydraulic motor drives
- › Full range of equipment
- › Cutter and pilot repairs with high-speed steel and/or carbide materials
- › Complete high-pressure pipe plugging system for temporary blockage of pipelines and pipe systems when isolation is not an option
- › Standard system designed for 1000 psig and 100 °F differential across the plugging head.
- › Pivoting head is result of decades of design enhancement and refinement

Hydraulic Bolt Torquing/Tensioning



The controlled application of torque on a bolted flange joint connection ensures even distribution and uniform displacement of pressure on the gasket area. Specific applications are determined based upon the critical nature of the flange and the pressure, temperature and material that will be passing through the line. All bolting activities are performed by technicians trained to ASME-PC1-2013.

Torque, Tensioning and Stud Removal

- › Hydraulic torque wrenches
- › All stud sizes
- › Heavy hex sizes
- › Socket and low clearance link
- › Tensioning tools
- › Nut splitting and metal disintegration
- › Stud removal services

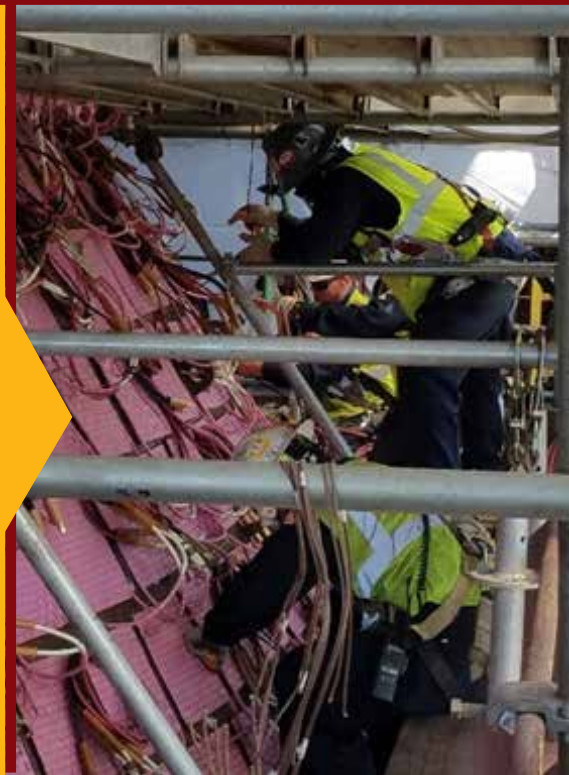
Flange Integrity Management Systems

- › Cost savings with pre-planning
- › Critical flange management
- › Data storage/management
- › Ensure quality
- › Mitigate/minimize risk



Heat Treatment

Using a computer-controlled and encrypted system with earth leakage protection and the most advanced control and expansion system in the industry, our highly trained technicians deliver the most advanced heat treatment processes in the industry. In accordance with AWS D10.10 and WRC 452, our heat treatment processes meet all code requirements and provide innovative control and efficient thermal results.



Expansion Features

We can place the equivalent of 18 control console circuits in the space of a conventional six-way and are able to expand the control capabilities of our mobile rigs from 24 points to 48 controls and 48 monitors. For every control circuit (TC) each unit has, we can link one additional monitor, and we can provide four thermocouple readings for every control circuit. In addition, our proprietary software allows us to link up to 14 machines (for a total of 84 TCs and 84 monitors). This greatly reduces the amount of passive labor required to monitor and control the process. Each unit has the ability to communicate via a hardwire, Bluetooth or 900 MHz spread spectrum radio.

Services and Applications

- › Localized post-weld heat treatment (PWHT)
- › Hydrogen bake-out
- › Controlled weld preheating
- › Line thaws
- › High-velocity combustion PWHT
- › Refractory dry-outs
- › Process start-ups
- › Space heating
- › Coatings curing
- › Fixed and temporary hearth furnaces
- › Induction heating
- › Induction bolt removal
- › Finite element analysis (FEA)
- › Equipment sales and rentals
- › Calibration services



Line Isolation and Localized Hydrostatic Weld Testing

We have a full complement of line isolation and weld testing equipment designed to service lines from ¾" to 36" in diameter – and larger. This service allows hot work to be safely performed on open-ended piping by creating an upstream vapor barrier using a double block and bleed isolation plug. Build-up of back pressure is alleviated via a through port vent that allows any pressure to be vented away from the work area. Localized hydrostatic weld testing is another value-added service, which can be provided with the same tool. The weld testing is performed by straddling the weld with a seal on each side. The annular space between the seals is pressurized to the desired hydrostatic test pressure.

Flange weld testing reduces the volume of water and the amount of time associated with conventional hydro-testing. This saves costs, while also reducing the environmental impact associated with large-volume water requirements for typical hydro-tests.



Leak Sealing Services

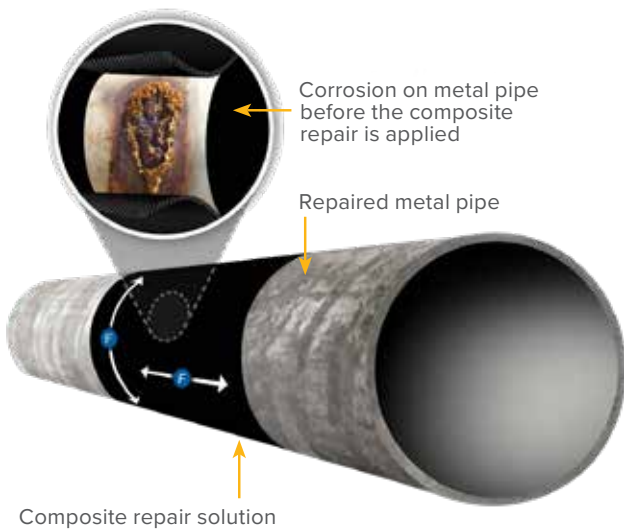
Whether designing a custom solution for a flange connection or providing a customized wrap to address an area of piping such as an elbow or other configuration, ISS offers a full complement of solutions for addressing leaks. All leak sealing solutions are customized for the size, temperature, pressure, and chemistry of the product that is leaking and the runtime to get our client safely to their next scheduled maintenance shutdown. ISS has an exclusive agreement for the application of a polyurea coating system that works to reinforce structural stability in pipelines and other structures, potentially saving clients millions of dollars in replacement costs.



Designed to address the run time desired and the specific hazards involved. ISS does not use a one-solution-fixes-all approach.

Composite Repair Services

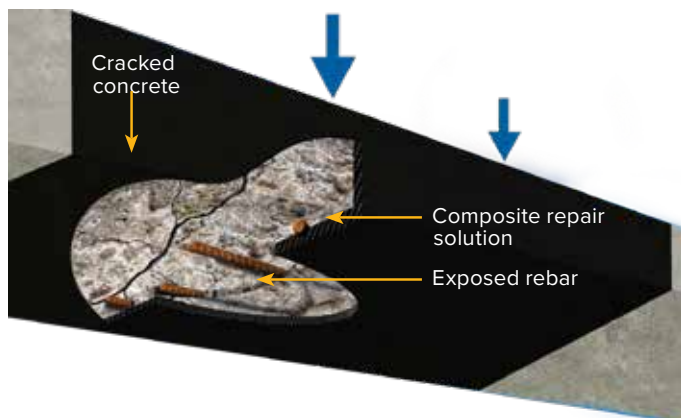
HOOPS



AXIAL - COMPRESSION



FLEXURAL



In compliance with ASME PCC-2, ISS provides a wide array of engineered composite repair options to improve the mechanical integrity and operational reliability of piping systems, tanks, support columns and beams, as well as many concrete structures. Utilizing various types of tested and ASME-approved applications, ISS adds years of life to existing facility components by combining the best available materials with custom engineering to ensure compliance and integrity.

Engineered composite repairs consider various stresses and match appropriate repair materials to ensure compliance.

Engineered Composite Applications

- › Piping systems
- › Support columns
- › Beams
- › Tank floors, walls and roofs
- › Process equipment

Benefits

- › Adds 10 – 20+ years of life
- › Avoids costly replacement
- › Brings structures and piping back to original specifications
- › Eliminates unplanned downtime
- › Offers corrosion and fire protection
- › Creates value by adding strength and integrity using ASME PCC-2 compliant guidelines

Key Features

- › Engineered to ensure compliance
- › Easy to install
- › Binds glass/carbon fiber using urethane, ester & polymeric agents
- › Uses fiber-glass, carbon-fiber and Kevlar components for strength

Metal Disintegration

STUDBUSTERS® employs state-of-the-art technology through its metal disintegration machines (MDM) – the most powerful units available today in the world. Our metal disintegration technology can completely remove a stud, 3 inches in diameter and 5½ inches deep, in less than two and a half hours, with absolutely no damage to the female threads in the tapped hole.

How it Works

The MDM technology uses graphite, moly copper or aluminum, depending on the type of burn required, to become a high energy, low voltage, thermal shock-producing source. The electrode in the machine vibrates up and down at a rate of 3,600 times per minute. Each time the electrode touches the piece to be burned, an arc is struck. The arc has a temperature at point of contact of approximately 5,300 ° F. A constant supply of fresh water is pumped down through the electrode causing the molten metal to thermally break down and, at the same time, flushes the thermally shocked metal back out the discharge hole. The discharged pieces are normally less than 10 microns in size – smaller than a grain of sand. The water also acts as a heat exchanger; the only portion to get hot is the small area in contact with the tip of the electrode, unlike drilling where heat from the bit transfers to the matted portion. The MDM maintains everything at ambient temperature, except what needs to be removed.

Key Features

- › Removes any size, and burns any configuration, from 40 thousandths of an inch to 5" in diameter, in one pass
- › Larger studs or holes can be made using multiple passes
- › MDM is 40% faster than conventional drilling on average
- › Easily removes glazed or hardened studs and bolts

Metal Disintegration Removal Times

(with nominal thread engagement)

Stud Size	MDM Time
2"	40 mins.
2½"	1 hr. 40 mins.
3"	2 hrs. 20 mins.
3½"	3 hrs.
4"	3 hrs. 55 mins.
4½"	4 hrs. 10 mins.
5"	5 hrs. 30 mins.
6"	7 hrs. 35 mins.

STUDBUSTERS® can safely and effectively remove studs and bolts of all shapes, sizes and metal types.



Stud and Bolt Removal

In most cases, even the largest studs are removed in seconds with no heat build-up in the threaded housing, and no damage to the threaded portion.



Our stud removal services, STUDBUSTERS® and specialized tools have revolutionized the industry, saving time and money in the removal of studs, bolts and pins.

Using traditional removal methods, which are often extremely labor intensive, approximately half of the studs removed will incur damage to either the housing, the studs, or both. The primary reason these methods prove to be ineffective is side loading, the mechanical binding of the threaded surfaces against each other.

Our techniques and tools solve the side-loading problem. Attached to an air gun, our tool fits over the stud. When the air gun is turned on, the jaws on the inside of the stud are forced inward (centripetal force) by two cams machined on the inside diameter of the stud tool. The jaws ride on the cams until they close and lock on the stud. These jaws are 180° apart, creating an equal gripping force around the stud. The tool is designed to be center driven, which transfers 99 percent of the energy from the air gun to the tool and stud. The torque and harmonics from the air gun break the static hold on the stud and allow it to be freed. Consequently, the tool locks on the stud and, thus, becomes part of the stud. If the stud does not rotate within 10 seconds of the tool actuation, the stud is deemed to be seized and cannot be removed via this method. This removes the likelihood of the threads being destroyed by a forced removal.

Key Features

- › Removes all side-loading problems
- › Equipment powered with pneumatic energy through air guns
- › Reduces stud torsion
- › Does not bounce on stud

Stud Removal Times

Stud Size	Time
½" to 1"	2 secs.
1⅛" to 1½"	3 secs.
1⅝" to 2"	4 secs.
2⅛" to 2¾"	7 secs.
3" to 4"	10 secs.
4" to 5"	12 secs.



LDAR, Analytic and Audit Services



ISS offers 150 years of management experience, cutting-edge technology and a highly effective data management system to our clients, while ensuring regulatory compliance with USEPA Method 21 and other mandated requirements.

Services

- › LDAR training and consulting
- › Appendix P El Paso sampling
- › BWON/HRVOC sampling
- › High flow sampling
- › TO-14 and TO-15
- › Carbon canister monitoring
- › Optical imaging — AWP and GHG
- › Cooling tower leak tracking
- › Method 21 and specialized inspections
- › Regulatory audits and compliance management
- › Documentation and data storage
- › Reporting and quality assurance programs
- › Customized reporting, KPIs and QA/QC
- › Identification and tagging of new construction and existing facilities
- › Site-specific procedures
- › Annual training for Consent Decree's
- › Acoustic monitoring
- › Fence line monitoring
- › Smart P&ID population and upkeep

Key Features

- › More than 210 LDAR-trained professionals
- › Expertise in Guideware, LeakDAS, and other LDAR software
- › Large geographic footprint across U.S.
- › Client-preferred technology
- › All industries served
- › Web-based database



We provide experienced personnel, equipment and the technical expertise to ensure our clients are compliant with the fugitive emissions monitoring mandated by regulations and enforcement actions.

Field Machining

Specialized field and shop machining services include flange facing up to 120 inches, drilling/tapping, precision line boring, standard and heavy wall pipe-cutting and beveling as well as milling pump bases. Various methods include: small and large diameter boring bars, portable lathes, mag-base drills, specialty milling equipment and metal disintegrators for time sensitive stud or nut removal. Tight tolerances and exact surface finish achieved.



Milling

- › Pump and motor bases
- › Exchange partition
- › Keyways in shafts
- › Access doors

Shaft and Journal Turning

- › Up to 32" diameter
- › O-ring grooves
- › Re-establish journal-bearing surfaces
- › Out-of-round gear seats on shaft
- › Resize shaft ends
- › Minimal disassembly
- › No need for shaft to rotate

Flange-facing

- › Up to and above 120"
- › All types: flat, raised face, RTJ and clamp-type flanges
- › Portable O.D. and I.D. mount machines

Pipe Cutting and Beveling

- › Up to 120"
- › Any wall thickness
- › All materials machined: carbon, stainless steel, chrome, P91, exotic alloys
- › Counter boring, taper boring, schedule reduction
- › Standard, compound and J bevels as well as special configurations
- › Valves, elbows, tees and other components
- › Minimal radial and axial clearance needed

Boring

- › Line boring
- › Hole boring in headers for weldolets and tube stubs
- › Boring of nozzles in vessels
- › Buckets, loaders and other articulated equipment
- › Valves, pumps and rotating equipment

Valve Repair

ISS provides complete repair of all makes and types of isolation valves, control valves, actuators and positioners. Our trained technicians utilize their experience, factory training and attention to detail to provide prompt and reliable valve repair service and work with site project management to control costs and meet scheduled deadlines. Our extensive repair libraries ensure our clients' valves are repaired per the manufacturer's specifications.

Services and Applications

- > All makes and styles
- > Isolation valves
- > Control valves
- > Instrumentation and controls
- > Valve internal repair
- > Valve modifications
- > Non-return valves
- > Packing programs
- > Actuation
 - > Electric
 - > Hydraulic
 - > Pneumatic

ISS has four 53-foot machine shop support trailers in addition to vans for smaller on-site projects.



Call ISS at 1.855.RING.ISS (1.855.746.4477) for all of your specialty mechanical service needs, and experience the safest, most productive solutions in the industry.

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