Sealing Integrity for Oil and Gas - Application Based Solutions
Safety and emissions compliance are essential to hydrocarbon refineries. Garlock companies offer not only ideal sealing solutions to meet these stringent requirements, but also a number of other products and services that provide the highest level of operational efficiency to result in bottom-line improvement in process yield.

Garlock programs for the Oil & Gas industry include solutions for on-site maintenance, turnkey emission monitoring and repair programs, Integrated Pollution Prevention Control reporting, comprehensive plant sealing, specialty projects and low emissions through the use of products such as 1303-FEP and EVSP 9000. Each solution offers a cost effective approach to meet your requirement for plant operation and maintenance. From simple solutions to critical applications, we meet your sealing needs for today and the future.
A culture of safety.

The Garlock family of companies is acknowledged as the global leader in high-performance fluid sealing products, committed to a culture of safety-- making the world safer, sustainable and more reliable.

Our commitment to safety stems from our workplace culture and dedication to sealing integrity. We embrace safety not only for our employees, but for all of our customers as well. Our sealing products and solutions are tested to meet or exceed industry and regulatory agency standards. That’s a standard that defines who we are, and what Garlock stands for.

Through innovation and engineering excellence we strive to exceed the requirements of Oil and Gas users globally. Our product portfolio is designed to provide solutions for the most demanding circumstances and is supported by our teams of engineers at all our locations.
Sealing products for the **Oil and Gas** industry.

The Garlock family of companies play a major role in providing sealing solutions for the Hydrocarbon Processing Industry. Garlock’s products and technical expertise can help you cut costs, improve efficiency, and reduce downtime to ensure uninterrupted production.

Garlock’s technical experts and a network of authorized distributors provide prompt service and delivery anywhere in the world.
Applications — Pressure Vessels

As the performance expectations of pressure vessels has intensified within facilities, Garlock has developed products that match those needs. The high temperature THERMa-PUR™ gasket family allows Garlock to meet the highest temperature applications down to the standard materials that are used daily in many applications.

Recommended Products:

**FLEX-SEAL® Spiral Wound Gasket**
Application: Manways, handholes and auxiliary flanged connections
Media: steam
Filler/Facing Material: 4122 THERMa-PUR™ and Graphite

**GRAPHONIC® Gasket**
Application: Manways, handholes and auxiliary flanged connections
Media: steam
Filler/Facing Material: 4122 THERMa-PUR™ and Graphite

**Kammprofile Gasket**
Application: Manways, handholes and auxiliary flanged connections
Media: steam
Filler/Facing Material: 4122 THERMa-PUR™ and Graphite

Applications — Piping, Flanged Connections

Flanged connections, extensive piping runs and large sprawling complexes are where you will find many of Garlock’s products.

Recommended Products:

**GYLON® Styles 3510, 3545**
Application: Flanged joints
Media: hydrocarbons, acids, caustics, solvents

**Gasket Styles 3128, 3125SS, 3125TC**
Application: Flanged joints
Media: hydrocarbons, corrosives, steam, boiler feed, condensate

**FLEX-SEAL® Spiral Wound Gasket**
Application: Flanged joints
Media: hydrocarbons, corrosives, steam, boiler feed and condensate

**GRAPHONIC® Gasket**
Application: Flanged joints
Media: hydrocarbons, corrosives, steam, boiler feed and condensate

**Kammprofile Gasket**
Application: Flanged joints
Media: hydrocarbons, corrosives, steam, boiler feed and condensate
Recommended Products:

**Blue DURA-TUFF® WSP**  
Application: fluid end plunger packing  
Media: sand, water, chemicals

**Valve Seals**  
Application: fluid end replaceable valve seal  
Media: sand, water, chemicals

**Pony Rod Seal**  
Application: Drive end oil seal and rod scraper  
Media: hydraulic fluid, atmospheric debris

**MULTI-SWELL® 3760**  
Application: pump access covers  
Media: hydraulic fluid, atmospheric debris, sand, water, chemicals

**Applications — Pumps**

In the Oil and Gas sector, reciprocating, centrifugal and rotating pumps are all utilized in the refining and transmission process. Each pump style has its own requirements and the Garlock portfolio of packings and expansion joints meets all those necessities.

**Recommended Products:**

**Compression Packing Style 98**  
Applications: pump packing  
Media: filled and unfilled asphalt, cat cracker slurry, boiler feed, condensate, crude oil

**Compression Packing Style 1333-G**  
Applications: pump packing  
Media: boiler feed, condensate, crude oil, non-abrasive services

**Compression Packing Style 5889**  
Applications: pump packing  
Media: strong chemicals

**Expansion Joint Styles 204 and 206**  
Applications: piping  
Media: boiler feed, condensate
Applications — Diesel Generators

Generators often have service conditions that challenge the flange connections to deliver high performance. As a result, Garlock has a portfolio of Expansion Joints and high temperature THERMa-PUR™ spiral wound gaskets specifically designed to meet those requirements.

**Recommended Products:**

- **Expansion Joint Style 206 (ABS, CRN Approved)**  
  Application: piping offset, vibration  
  Media: boiler feed, condensate, exhaust

- **4122 FLEX-SEAL™ Spiral Wound Gaskets (ABS Approved)**  
  (API 6FB Fire Safe approved)  
  Application: Flanged Joints  
  Media: hydrocarbons, corrosives, steam, boiler feed and condensate, high temperature exhaust  
  Filler/Facing Material: 4122 THERMa-PUR™

Applications — Pump Jack Stuffing Box

The stuffing box assembly that houses the gland seal prevents the leakage of water, steam or oil and we have a range of cone and stuffing box packings to suit these applications.

**Recommended Products:**

- **DURAGOLD™ Cone Packing**  
  Application: Hercules Style Stuffing box gland packing  
  Media: oil, water

- **Fluid Seal Cone Packing**  
  Application: Hercules and Jack Box Style Stuffing box gland packing  
  Media: oil, water

- **LubriPak™ Packing**  
  Application: Cross Twin Stuffing box gland packing  
  Media: oil, water

- **Blue DURATUFF® Cone Packing (Anti-Extrusion)**  
  Application: Hercules Style Stuffing box gland packing  
  Media: steam, oil, water, H₂S, CO₂
Applications — Heat Exchangers

In heat exchanger equipment, flanges and bolts tend to expand and contract. The compressive force is typically increased to counteract the effects. As a result we have a full range of materials reducing the need for overtorquing.

Recommended Products for Thermal Cycling, Severe Chemicals and Damaged Flanges:

FLEX-SEAL® Spiral Wound Gasket
Application: Tube and Shell Heat Exchanger flanges
Media: hydrocarbons
Filler/Facing Material: 4122 THERMa-PUR™, Graphite

GRAPHONIC® Gasket
Application: Tube and Shell Heat Exchanger flanges
Media: hydrocarbons
Filler/Facing Material: 4122 THERMa-PUR™, Graphite

Kammprofile Gasket
Application: Tube and Shell Heat Exchanger flanges
Media: hydrocarbons
Filler/Facing Material: 4122 Therma-Pur, Graphite

Recommended Products for Severe Chemicals:

GYLON® Style 3545 Gasket and Style 3510 (Caustics)
Application: Tube and Shell Heat Exchanger flanges
Media: hydrocarbons, acids, caustics

G.E.T. and TEPHONIC® Gasket
Application: Tube and Shell Heat Exchanger flanges
Media: hydrocarbons, acids, caustics

Kammprofile Gasket
Application: Tube and Shell Heat Exchanger flanges
Media: hydrocarbons
Filler/Facing Material: Graphite, Gylon, 4122

Recommended Products Damaged Flanges Thermal Cycling:

Style 3128 Graphite Sheet
Application: Tube and Shell Heat Exchanger flanges
Media: hydrocarbons

GYLON® Style 3545
Application: Tube and Shell Heat Exchanger flanges
Media: hydrocarbons, acids, caustics

G.E.T. and TEPHONIC® Gasket
Application: Tube and Shell Heat Exchanger flanges
Media: hydrocarbons, acids, caustics

Kammprofile Gasket
Application: Tube and Shell Heat Exchanger flanges
Media: hydrocarbons
Filler/Facing Material: Graphite, GYLON®, 4122

GRAPHONIC® Gasket
Application: Tube and Shell Heat Exchanger flanges
Media: hydrocarbons
Filler/Facing Material: 4122 THERMa-PUR™, Graphite
Applications — Sucker Rod Pump
(Reciprocating plunger pump)

Sucker Rods produce a unique set of operating requirements with constantly moving components. Garlock provides engineered solutions for these pump and rod applications.

Recommended Products:
Valve Cups (API, Lip Type, Wood Style)
Application: Down hole reciprocating plunger pump
Media: oil, water

Pressure Actuated ("PA") and Composition Rings
Application: Down hole reciprocating plunger pump wiper
Media: oil, water

Seat Cups
Application: Down hole reciprocating plunger pump hold down seal
Media: oil, water

Applications — Pipeline Isolation

With the need for the security of flange connections as the industry transmits all kinds of product across the globe, Garlock has the full range of isolation products for these transmissions. The new ElectroStop® range of isolation fittings complement the PSI® / Pikotek® isolation joints and provide the most comprehensive and secure portfolio available to the market.

Recommended Products:
ElectroStop®
Application: Electrical isolation
Media: hydrocarbons, corrosives, steam, boiler feed and condensate

VCXT
Application: Critical service extreme temperature electrical isolation
Media: hydrocarbons, corrosives, steam, boiler feed and condensate

VCS
Application: Electrical Isolation and High Integrity Sealing
Media: Hydrocarbons, Gas and Corrosives.

VCFS
Application: Fire Safe Electrical Isolation and High Integrity Sealing
Media: Hydrocarbons, Gas and Corrosives
With the wide range of valves available today, Garlock has a high integrity portfolio of gland and valve packings including the renowned EVSP packings and the Low Emission 1300 packings.

**Recommended Products**

**FLEX-SEAL®, GRAPHONIC®, Kammprofile Gaskets**  
Application: Ball, gate, globe, slide valves, body to bonnet seal  
Media: hydrocarbons, hydrogen, solvents, saturated steam

**Compression Packing Style 9000 EVSP - Low Emission Engineered Set**  
Application: Valve stem packing  
Media: hydrocarbons, hydrogen, solvents, saturated steam

**Compression Packing Style 1303-FEP Low Emission Packing**  
Application: Valve stem packing  
Media: hydrocarbons, hydrogen, solvents, saturated steam

**Compression Packing Style 5888**  
Application: Valve stem packing  
Media: strong chemicals

Where the frac manifold has a varied arrangement of fittings and valves on both the up and downstream of each tree, the Garlock range of packings and gaskets are designed to provide the highest levels of seal integrity.

**Recommended Products**

**VCS**  
Application: Well head flanges, Critical service electrical isolation  
Media: hydrocarbons, corrosives, steam, boiler feed and condensate

**Ring-Type Joint Gaskets**  
Application: API 6A Gate Valve flanges, frac manifolds, wellhead flanges  
Media: hydrocarbons, hydrogen, solvents, saturated steam, frac fluids

**Compression Packing Style 1303-FEP (Spool/DieFormed)**  
Application: Valve stem packing  
Media: hydrocarbons, hydrogen, solvents, saturated steam, Frac Fluids

**Compression Packing Style 9000-EVSP (Engineered Set)**  
Application: Valve stem packing  
Media: hydrocarbons, hydrogen, solvents, saturated steam, Frac Fluids
Applications — Through Wall Piping Connections

Many of these applications involve connections where the pipe is penetrating a wall, floor or ceiling and sealability is required between the pipe and the penetrated surface. Through wall applications are an area where a mechanical seal needs to be utilized in order to reach complete sealability.

Recommended Products:

**LINK-SEAL® Modular Seal**
Application: Through wall penetration
Media: hydrocarbons, corrosives, steam, boiler feed and condensate

**End Seals, Wall sleeves and Compact Seals**
Application: Through wall penetration
Media: hydrocarbons, corrosives, steam, boiler feed and condensate

If you need further technical support, please feel free to reference resources on our website at www.garlock.com.
Applications — Single Buoy Mooring (SBM) or Single-Point Mooring (SPM)

In order to make the transition of the loading or offloading of gas or liquid as safe and efficient as possible, Garlock’s expansion joints and KLOZURE® oil seals help keep the fluids running smoothly. Garlock has a suite of products to withstand the harsh corrosive environments.

Recommended Products:

Expansion Joint Style 204 EPS (ABS Certified)
Application: Offshore Buoy applications, rugged conditions
Media: hydrocarbons

KLOZURE® Oil Seal Model 23
Application: Offshore Buoy applications, rugged conditions
Media: hydrocarbons

Applications — Low Load Fluid Sealing Piping and Flanged Connections

Where the industry has applications that involve connections that do not allow high bolt loading, Garlock produces an array of products that will seal under low load.

Recommended Products

EDGE® Spiral Wound Gasket
Application: Flanged Joints
Media: hydrocarbons, corrosives, steam, boiler feed and condensate

Kamprofile Gasket
Application: Flanged Joints
Media: hydrocarbons, corrosives, steam, boiler feed and condensate

GRAPHONIC®
Application: Flanged Joints
Media: hydrocarbons, corrosives, steam, boiler feed and condensate

Graphite Sheet Styles 3128, 3125SS, 3125-TC Gaskets
Application: Flanged Joints
Media: hydrocarbons, corrosives, steam, boiler feed and condensate
Metallic Gaskets

THERMa-PUR™
Style 4122-KAMM Gasket
The THERMa-PUR™ Kammmprofile gasket carries the same properties as the THERMa-PUR™ gasket family, however can match the flange rating for pressure and PxT. An extreme gasket for extreme applications.

Jacketed Gasket
Garlock manufactures the complete range of jacketed exchanger and manhole seals. Custom configurations are available in a wide range of materials and styles to provide solutions for almost any application.

FLEXSEAL® Spiral Wound Gasket
Garlock’s FLEXSEAL® spiral wound gaskets with Controlled Density™ technology provide consistent compressibility. This process of precise winding density control provides a gasket designed to meet your specified seating stress and assures consistent sealing of your most critical fluids.

G.E.T. Gasket
GET™ (Graphite Expanded Polytetrafluoroethylene) gaskets are field rugged and extremely versatile. They provide reliable fail-safe operation under relatively low bolt load (e.g., 150# pipe flanges) thereby avoiding potential damage to human health, plant equipment and the surrounding environment.

TANDEM™ Spiral Wound Gasket
The TANDEM Spiral Wound Gasket is chemically-resistant and fire-safe. It has a PTFE envelope that withstands aggressive chemicals and corrosive media and the spiral wound seals to the ID of the pipe bore.

GRAPHONIC® Gasket
Corrugated metal core encapsulated by soft sealing elements. Excellent for high temperatures and corrosive chemicals. Works well in less-than-perfect flanges and thermocycling applications.

TEPHONIC® Gasket
The TEPHONIC Gasket is chemically inert, forms a tight seal under low bolt load, and conforms to minor sealing surface imperfections. The TEPHONIC also withstands temperatures up to 500°F (260°C).
Style 98
Manufactured from high purity (95+ carbon assay) premium carbon staple yarn. Individual yarns are single-end coated and single-end dried prior to braiding with high temperature non-petroleum based lubricant with graphite dispersion. Ideal forumps or valves.

Style 1333-G
Garlock Style 1333-G is braided from graphite fiber reinforced flexible graphite yarns and high purity graphite filament yarns that appear on the corners as well as throughout the body of the packing. The graphite reinforcement of the flexible graphite yarns provide greater tensile strength. The placement of the graphite filament yarns add abrasion resistance for rotary services and anti-extrusion resistance for valve applications. No additional end ring material is required for valve installations.

Style 1303-FEP
Style 1303-FEP is manufactured from a proprietary yarn consisting of several strands of high purity GRAPH-LOCK® contained by an INCONEL filament jacket. This INCONEL wire filament is only 0.004” diameter, making the finished braid non-scoring and thermally conductive. Is in compliance with the most stringent VOC and VHAP emissions regulations.

Style 9000 EVSP Simplified
The 9000 EVSP Simplified set combines two superior Garlock products - Style 98 carbon packing and cup and cone GRAPH-LOCK® die-formed rings. The nearly chemically inert set expands radially when the glad is tightened for a positive valve stem OD seal as well as stuffing box ID seal. The 9000 EVSP set is extremely useful in hydrocarbon industry processing, or any valve application where elimination of encrustation, chemical attack, or health hazard is required.

Style 5888 PTFE Packing
This dimensionally stable, firm, high-density PTFE continuous filament fiber packing is similar to Style 5889, but most useful in slower shaft speed applications. Its PTFE dispersion provides a low friction finish and prevents leakage through the braid. Style 5888 is resistant to all chemicals but molten uranium salts. Completely asbestos-free, with very little water absorption, this packing is often used in check and needle valve stems, reciprocating rods, rams, and plungers, and safety injection system valves.

Style 5889 PTFE Packing
A continuous filament PTFE fiber. Style 5889 is a dimensionally stable yet relatively soft and flexible packing. Treated with PTFE dispersion and an inert ingredient, it’s an excellent choice for high speed rotary shaft service in most volatile applications. Pre-shrunk to avoid packing wear and shaft scoring, Style 5889 is also very non-porous. It’s often found in sump pumps, chlorinators, alkaline softeners, strong acid situations, coke plant hot oil pumps, reciprocating rods, rams and plungers.
Expansion Joints, KLOZURE® Oil Seals, Hydraulic Component

Style 204
Style 204 spool-type expansion joints can be constructed as single- or multiple-arch types. They connect pipe flanges in concentric or eccentric tapers, to join piping of unequal diameters. The Style 204 is fully lab- and field-tested for long life and exceptional reliability. High pressure and vacuum-resistance increases safety and ensures suitability for wide range of applications.

Style 204EPS
Style 204EPS (Extreme Pressure Service) is a fully customizable abrupt arched expansion joint for rigid piping systems. This rubber expansion joint is to be used in applications where necessary rated pressures exceed those of the Garlock Style 204 designs. Style 204EPS is available in concentric or eccentric designs.

Style 206 EZ-FLO®
EZ-FLO® expansion joints contain a single wide flowing arch, eliminating the need for filled arches on slurry services. Garlock EZ-FLO® expansion joints have successfully served all major industries, including pulp and paper, steel, waste and water, HVAC, power generation, chemical, petrochemical and marine.

Model 23
Model 23 is your repair-in-place sealing solution for your primary metals application. It is a split seal that allows for easy installation, and results in a short MTTR. Because of the molded-in finger spring, spring dumping is prevented. Material selection includes MILL-RIGHT®, N, ES and V as well as silicone and shaft diameters of 3” (76.2mm) and up.

Pony Rod Seal
Garlock’s pony rod seal was specifically designed for the harsh conditions experienced by well service plunger pumps in hydraulic fracturing, cementing, acidizing, and mud pumping applications. The dual functional seal excludes contamination with a heavy duty urethane excluder, keeping contamination out of the pumps drive crank case, while retaining lubrication with an engineered elastomer sealing lip, extending power end component life.

Blue DURATUFF® Cone Packing
Blue DURATUFF cone packing fits into all stuffing box designs that use traditional cone packing. Top and bottom Blue DURATUFF components are used in conjunction with LUBRIKUP® DURATUFF® components to extend packing life for upright or inverted set designs. Sets can be designed to optimize performance based upon stuffing box design, service conditions, and user requirement.
Hydraulic Components

DURAGOLD™ Cone Packing
Packing that is formulated for excellent resistance to petroleum oils and gasoline. DURAGOLD™ uses the same compound as our Regular formulation, with the addition of brass flakes designed to eliminate foreign material buildup on the polish rod. DURAGOLD™ has excellent heat resistance and flexibility in low temperatures.

Fluid Seal Cone Packing
Fluid-Seal™ rod packing incorporates the proven theory of lip-type action (sealing from pressure), with space provided between each ring to assure a perfect, non-binding fluid seal for lubrication of the rod. This packing requires no tightening. It performs best when run loose (finger-tight). Normal operating pressure expands the lips to compensate for wear until the packing is completely worn out.

LubriPak™ Rod Packing
LUBRIPAK™ rubbers (2 sets per package) are made in all polished rod sizes for Type B and X stuffing boxes. Special rubber compounds of proper durometer assure excellent service under all operating conditions.

Blue DURATUFF® Well Service Packing
Blue DURATUFF® was designed to provide maximum sealability for high pressure well service pumps. The proprietary material was developed to eliminate extrusion and provide excellent abrasion resistance for fracturing, acidizing and cementing pumps.

Valve Cups
LUBRIKUP™ Valve Cups are available in API design, Lip-Type and our original Wood-Type design in hard, medium and soft densities. Product compositions are duck and rubber, and our premium reinforced material is specially formulated for LUBRIKUP™, along with our Lo-Friction material.

Style 8950 Pressure Actuated Ring
The LUBRIKUP® “PA” ring is designed to give superior service in the time-tested pressure-actuated plungers used extensively in the oil industry. Field tests have shown excellent ring life and high pump efficiency.

Seat Cups
LUBRIKUP™ Type HR Seating Cups are manufactured to comply with API Standard 11AX. Molded in proper density, the cups assure precision fit in a seat formed in accordance with API standards. Type HR Seating Cups are available in Regular Composition, Hi-Temp, and Nylon-Plastic.

Type “B” and Resistoil Composition Rings
LUBRIKUP® Type “B” flange and split composition rings are made from a blend of duck and rubber specially compounded for oil well pumping. Each ring is precision ground to assure uniformity of bearing contact in precision barrel tube or working barrel.
GRAPH-LOCK® 3125
Pure exfoliated graphite material handles extreme temperatures, resists nearly all non-oxidizing chemicals, and offers excellent compressibility and low creep relaxation. Available in homogeneous material, or with metallic or non-metallic inserts.

GRAPH-LOCK® Style 3128
HOCKDRUCK®
High performance multi-layer graphite with 316SS inserts provides high compressive strength, blow-out resistance, excellent handling properties and improved tightness.

GYLON® Style 3510 Gasket
GYLON Style 3510 offers chemical resistance within a wide range of chemicals for a wide variety of applications. Best suited for media of strong caustics, moderate acids, chlorine, gases, water, steam, hydrocarbons, cryogenics and aluminum fluoride. Style 3510 also offers improved performance over conventional PTFE and cuts operational costs through reduced fluid loss, energy consumption, maintenance and inventory cost.

GYLON® Style 3545 Gasket
Our innovative Style 3545 offers a tighter seal by highly compressible PTFE outer layers sealing under low bolt load which is suitable for many non-metallic flanges. The pure PTFE makeup withstands a wide range of chemicals and can easily be cut from larger sheets, reducing inventory costs and downtime.

MULTI-SWELL® Style 3760 Gasket
Creating compressive load in light weight flanges in oil and water services, this gasket will seal where most others will not. MULTI-SWELL® performs well in flanges that might crush an elastomer gasket and is easy to cut and handle.
VCS Gasket
Extreme, high-reliability sealing and electrical isolation solution for critical service applications. Seals and isolates all pressure ratings through ANSI 2500 class and API 10,000 psi service. The VCS withstands severe service conditions including temperature and pressure fluctuations as well as corrosive environments, including high concentrations of CO₂ and H₂S, produced water and aggressive inhibitors.

VCXT Flange Insulating Set
The Pikotek® VCXT flange insulating set is comprised of an insulating gasket, insulating sleeves, insulating washers and metal backing washers. The insulating gasket is constructed from a machined metal core utilising a unique serration profile. The metal core is faced with a high performance sealing material incorporating proprietary vermiculite based sealing technology. Correct gasket location is ensured by the inclusion of a high performance spacer ring, located around the periphery of the serrated metal core.

VCFS Gasket
The VCFS provides complete flange electrical isolation with tandem seal technology. PTFE sealing system has 20+ years successful track record. The VCFS offers e-ring sealing systems and is dual purpose fire safe and backup. It has passed API 6FB, 3rd Edition Fire Test. Best if used in conjunction with cathodic protection systems. The VCFS mitigates potential flange rotation and provides a tighter seal under low bolt loads.

LINK-SEAL® Modular Seal
From ductile iron to pre-stressed concrete to metal or plastic pipe, conduit or cables - whatever your application - LINK-SEAL® modular seals will effect a hydrostatic seal capable of holding 20 psig (40 feet of static head) between the pipe and the penetration cylinder through which the pipe passes.

Ring Type Joint Gaskets
High temperature and pressure applications require a high integrity seal and ring type joints meet that need. Manufactured in accordance to the API 6A standard and designed to seal up to 5000 psi. Also for use on high integrity vessel joints, drilling and completion equipment.

ElectroStop® Monolithic Isolation Joints
The ElectroStop® monolithic isolation fittings will serve as a positive leak proof, long lasting block against the flow of electric current in all piping systems. When the ElectroStop® isolation fitting is buried, you bury maintenance costs forever - an especially important feature for system operators and engineers. The ElectroStop® eliminates short circuits and provides a welded in line isolation joint that proves maintenance free particularly in below ground pipe systems.