WeldFit

Pipeline Products

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About the Company

WeldFit began over 49 years ago, building our reputation for quality and reliability. Today, we are a leading manufacturer of standard and custom products for the pipeline, oilfield, refining, and petrochemical industries. WeldFit products are manufactured in Houston, Texas for use throughout the United States and around the world.

The WeldFit engineering and manufacturing staff has many years of experience in designing and producing a wide variety of products to meet our customers' specifications. We have comprehensive machining and welding capabilities in addition to specialized skills and tooling for our extrusion processes.

WeldFit is ISO 9001 Registered.

WeldFit

Pigging Technologies

SURETRAP™ TRADITIONAL PIGGING SYSTEMS

WeldFit specializes in 4 inch through 48 inch nominal pipe size pigging systems with extruded branch outlets to produce single or multiple outlets on the barrel. WeldFit has 30+ years of pipeline experience with extruded outlets, welding and the fabrication of pigging systems where the design, engineering, manufacturing and testing are all performed in-house. Extruded outlets on pigging systems have several advantages over the more common welded branch connections, made possible by several key features.

Key Features and Benefits:

- No reinforcement pads required on branch outlets
- Eliminates tees and expensive girth welds on the outlets during field installation
- Oversized barrel to ease the handling and loading of pigs
- Flanged or weld end connections for field installation
- Eccentric reducer on launcher and concentric reducer on receiver to improve launching and receiving capabilities
- All connections are sized based on industry best practices and standards
- Primer coated and ready for customer's desired paint system or painted in accordance to customer's paint specifications
- Quick opening closure standard on all units
- Designed with the appropriate quantity and size of nozzles for vents, pressure gauges and drains
- Data package provided for code compliance
- Hydrostatic pressure tested in accordance to the applicable codes
- Designed to applicable safety design factor
- Inspected and designed in accordance to the applicable pipeline

Options:

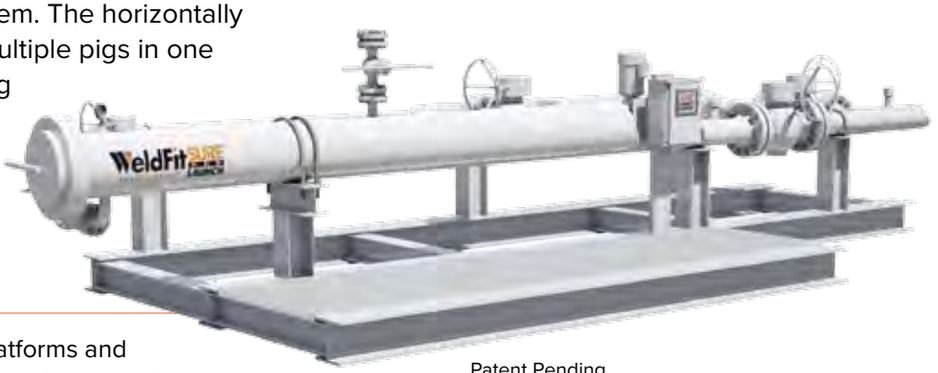
- Design for in-line inspection tools
- Pull nozzles for loading in-line inspection tools
- Corrosion coupon holders for monitoring internal corrosion rates
- Equalization lines to ease and improve the safety of loading and unloading pigs
- Skid mounted units available
- Corrosion resistant weld overlay of trap components for corrosive service applications
- Valve packages available upon request
- In-field application engineering, project management and commissioning services

Pigging Technologies

SURELAUNCH™ AUTOMATED PIGGING SYSTEMS

WeldFit specializes in the design, engineering, manufacturing and quality testing of automated pigging systems that can be utilized to perform four separate pigging functions: liquid recovery, cleaning, batching and in-line inspections.

The SURELAUNCH™ automated pigging system can launch any type of pig individually at pre-set launch intervals through the use of a logic-driven control system and an electrical drive system. The horizontally oriented launcher design is loaded with multiple pigs in one loading operation that allows the launching of a single cleaning pig, batching pig or spherical pig for both liquid and gas pipeline service applications.



Patent Pending

Key Features:

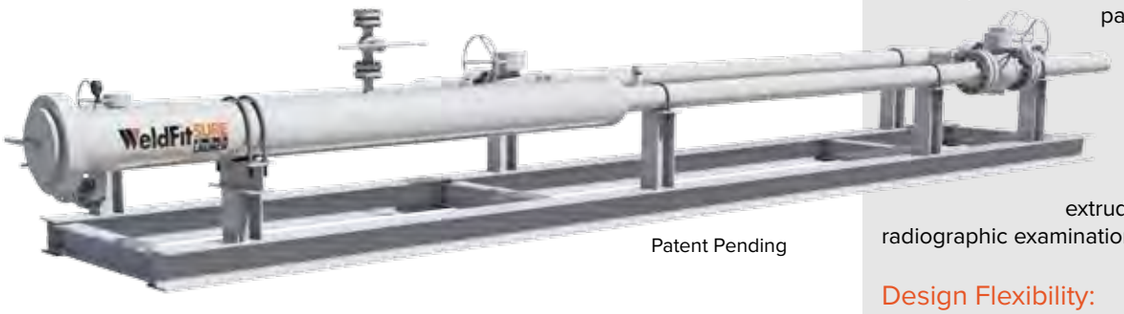
- Horizontal design eliminates access platforms and lifting equipment to reduce safety risks, transportation costs and field installation costs
- The mechanical launch mechanism ensures pig launches in high and low flow conditions.
- The flow-through barrel design of the automated pigging system removes the need to open and close valves for each pig launch, resulting in an increase of the valve operating service-life and a reduction of maintenance costs, environmental emissions and safety risk exposure.
- The electric drive system can be powered by 115 VAC or 24 VDC Class 1, Division 1 & 2 compliant power to eliminate supply gas, supply gas treatment and emissions.
- Launch system is controlled by drive system that allows any type of pig to be launched to meet operator's specific pigging requirements.
- Standard launcher is designed to accommodate up to seven cleaning pigs or length of typical in-line inspection tools.
- Standard receiver is designed to accommodate up to eight cleaning pigs or length of typical in-line inspection tools.
- Primer coated ready for customer desired paint system or painted to customer's paint specification
- Quick opening closure standard on all units
- Designed with the appropriate quantity and size of nozzles for vents, pressure gauges and drains
- Data Package provided for code compliance
- Hydrostatic pressure tested in accordance to the applicable codes
- All units are skid mounted
- Ethernet/IP address for remote access capabilities
- Designed to applicable safety design factor
- Inspected and designed in accordance to the applicable pipeline codes (B31.8, B31.4, B31.3, Sec. VIII Div. 1)

Pigging Technologies

SURELAUNCH™ AUTOMATED PIGGING SYSTEMS

Specifications:

- Sizes: 4” nominal to 42” nominal line pipe
- Barrel Capacity:
  - Launcher – 7 Cleaning pigs (2D) or length of one ILI tool
  - Receiver – 8 Cleaning pigs (2D) or length of one ILI tool
- Pressure Rating: ANSI 150#, 300#, 600#, 900# & 1500#
- Product: Liquid and Gas Service
- Product Temperature Range: -50° F to 150° F
- Power Options: 24VDC, 115VAC or 230 VAC
- HMI: EXOR eTOP507G 7” TFT widescreen
  - CPU – ARM CORTEX-A8 – 600 MHz
  - User Memory – 128 MB Flash
  - Serial – RS-232, RS-485, RS-422
  - Ethernet – Two 1-/100 Mbit with integrated switch
  - USB – Two Host Interfaces
  - Temperature Range: -25° F to 140° F
- Explosion Proof Rating: Class 1, Div. 2 Haz Loc
- Environmental Rating: NEMA 4X / IP66



Patent Pending

Options:

- Semi-automated capabilities without logic-driven controls
- Semi-automated systems can be equipped with electric drive motor or can be manually operated when electric power is not available
- Corrosion coupon holders for monitoring internal corrosion rates
- Pull nozzles for loading in-line inspection tools
- Overlays of trap components for corrosive service applications
- Valve packages available upon request
- In-Field application engineering, project management, training and commissioning services
- Extruded nozzles eliminate tees and reduce girth welds on the outlets during field installation

Extrusion Process:

Dies are used inside and outside of the part to control the outlet shape. Launcher and receiver sections are extruded hot or cold, depending on exact plate chemistry or requirements. Extrusion may be pre-formed in several stages, with proper heat treatment between operations.

Quality Assurance:

Extruded outlets allow for 100% radiographic examination of all welds and ensure the cross section transition is uniform. Resistance to notch-sensitivity and fatigue failures prevents future quality issues.

Superior Strength:

By moving the weld away from the highly stressed crotch area of the outlet, an extrusion offers a more reliable, proven connection than a welded-in or padded outlet. Fatigue cracking from cyclic or thermal loads is eliminated in some environments by extruded outlets. The butt weld of an extruded outlet also simplifies radiographic examination.

Design Flexibility:

Extruded launchers and receivers can offer design advantages unavailable with standard fittings. Design flexibility allows placement of outlets where you want them, along with varied specifications to meet stringent code requirements. Outlet configurations can be designed to maximize cost savings or minimize space requirements.

Skid Mounted Launchers and Receivers:

We offer a complete skid mounted package that can include a catch pan under closure door to prevent contamination of the environment; pig launching tray and overhead crane to simplify the loading and unloading of large diameter pigs or inline inspection tools.

Hot Tap & Line Stop Fittings

SURELOC™ LINE STOP FITTINGS

WeldFit's SureLoc™ Line Stop Fittings are used for line stop operation or when a SureLoc™ flow-through plug is needed to allow for pigging after hot tapping the line.

Key Features:

- SureLoc™ Flange and Blind Plug allow for retrieval of hot tapping valve upon completion of line stop procedure
- SureLoc™ Flow-Through (Guide Bar) Plug is available when flow through the outlet is required and the header is subject to future pigging
- Fittings can be supplied to meet ASME B31.3, B31.4, B31.8, or other pipeline design codes
- Standard fittings available for 4" through 48" pipe sizes with ASME Class 150, 300 and 600 flanges
- Larger fittings and higher pressure class flanges are available upon request
- All pressure containing welds are 100% radiographically inspected
- Compatible with industry standard hot tap and line stop equipment and procedures

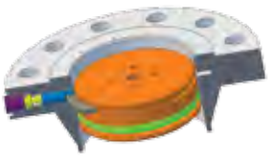


Figure 1: SureLoc™ Flange with a SureLoc™ Blind Plug

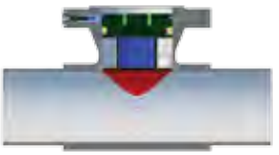


Figure 2: SureLoc™ Flange with a SureLoc™ Scarfed Nipple Plug

SPHERICAL FITTINGS

WeldFit's Spherical Fittings are designed for applications where space is limited. The outlet of the fitting can be installed on the side or bottom of the fitting as required by the project. Spherical Fittings utilize Weldfit's proven sureloc flanges and plugs to ensure reliability.

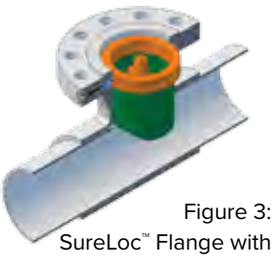


Figure 3: SureLoc™ Flange with a SureLoc™ Flow-Through Plug

DOUBLE BUTT WELD SURELOC™ FITTINGS

For use when bolted connections are not required. Typically a flanged weldneck valve is used to perform the hot tap and a flow through plug is installed. The flange is then cut off the valve and the expansion piping is welded directly to the valve.

WeldFit

Hot Tap & Line Stop Fittings

HOT TAP FITTINGS

WeldFit's Hot Tap Fittings have been used successfully in thousands of hot tapping operations around the world.

Key Features:

- Full branch or reduced branch fittings for use in hot tapping operations
- Supplied with ASME Class 150 through 2500 flanges with raised face or RTJ grooves
- Other flange classes available on request
- Tee available with a butt weld outlet, ready to be welded to a valve or other fitting
- Fittings with outlets through 48" NPS utilize extruded outlets
- Compatible with all major models of hot tapping equipment
- All pressure containing welds are 100% radiographed
- Back-up strips available

SPECIAL HOT TAP FITTINGS

WeldFit has the capability to design and manufacture Angle Fittings, 3-Way Fittings and other special fittings for any hot tap and line stop application.

Butt Weld Outlet Split Tee

3-Way Fitting

Pipeline Products

REINFORCING SADDLES

Full-Encirclement and Partial Reinforcing Saddles are used to provide reinforcement for branch outlets in accordance with ASME B31.3, B31.4, B31.8 and other applicable design codes.

Partial

Key Features:

- Available for size-on-size or reduced branch outlets down to 2"
- Many sizes and configurations available for immediate shipment
- Standard saddles available in A234 grade WPB and MSS SP-75 materials
- Stainless or high-yield stress material saddles can be manufactured in-house to meet customer requirements
- Part 1 through Part 5 Full-Encirclement Reinforcing Saddle styles available
- Saddles provided with a vent hole to prevent entrapment of gasses during welding

Part 1

Part 2

WeldFit

Quick Opening Closures

QUICK-OPENING CLOSURES

SURESEAL™

SureSeal™ quick-opening closures allow safe and quick access to systems independently of external tools. Quick-opening closures are pressure containing closure fittings that are beneficial when frequent access to pipelines and vessels may be required. The pressure lock containment on SureSeal provides safe access to pipelines and pressure vessels, eliminating the need for blind flanges. It requires no tools, operates in high-temperature environments, and allows access to pressurized systems within seconds. The operator friendly design reduces maintenance time by keeping internal corrosion to a minimum, using standard O-rings, and less moving parts. The technology is used in various oil and gas applications including but not limited to pig launchers and pig receivers. SureSeal meets all international industry standards, codes and is DOT compliant.

Design Features:

- Tool-less operation
- Standard O-ring sizes
- Face-seal design eliminates door sticking issue common on closures with radial seal designs
- True-bore design - internal diameter of closure can be fabricated to match internal diameter of mating component
- Self-aligning
- Standard design supplied with end bevel
- Optional single-piece flange design available to eliminate welding

Technical Specifications:

Size Range	6” – 24” Nominal Pipe Size
Design Code	ASME Pressure Piping Codes B31.4 and B31.8
Standard Pressure Classes	150#, 300#, 600#
Standard Design Parameters	1480 psig @100°F and a design factor of 0.5
Standard Corrosion Allowance	1/16”
Cyclic Service	Designed for a minimum of 7500 pressure cycles using Finite Element Analysis and the requirements of ASME Section VIII, Division 2.
O-ring material	Buna-N, Viton, or customer specified

Contoured Outlet Headers

CONTOURED OUTLET FITTING

The contoured outlet fitting is an integrally reinforced insert type branch connection that is available in butt-weld outlet configurations. Because they provide the extra thickness that may be required for reinforcement of branch connections locally, the thickness of the header or vessel can be sized based only on minimum thickness requirements. This can offer substantial savings in material and welding costs. When compared to fabricated connections using forged olets or pipe and repads, the design of the contoured outlet fitting provides the additional advantages of vastly improved stress distribution, easily radiographed butt-weld joints and possibly reduced weld thickness, which may avoid costly code-required post weld heat treatment.

When compared to fabrications using standard B16.9 fittings, contoured outlet fittings provide much greater design flexibility in outlet spacing and size combinations.

Key Features and Advantages:

- Fully inspected per the applicable material standard with additional inspection available upon request.
- Available outlet sizes range up to 48” and 4” thick.
- Available in common fitting and PVQ materials with special alloys available.
- Provides additional thickness only where required.
- Provides greater spacing and size options.
- Superior connection design.
- Can greatly reduce the number of girth seams required.

Standards:

- Accepted design in codes and standards.
- Can be designed to meet requirements of common piping codes and material standards, including: ASME/ANSI B31 piping codes, MSS SP-75, ASTM A234, ASTM A860

Extruded Headers

EXTRUDED OUTLET HEADERS & MANIFOLDS

WeldFit specializes in extruding branch outlets to produce single and multiple outlet headers and manifolds. Extruded outlets have several advantages over more common welded branch connections. First, they allow flexibility in the design, because reinforcement can be included in the neck of the extrusion. Second, they eliminate the header to branch weld, which is difficult to produce and not easily radiographically inspected. And third, extrusions are often more economical than welded connections, particularly for multiple outlet applications.

Key Features:

- Single or multiple outlet headers
- Branch sizes up to 48” NPS
- Size-on-size or reduced branch outlets
- Header wall thicknesses up to 4”
- Carbon, stainless, and alloy steels – including high-yield materials
- Designed to satisfy customer requirements and applicable codes

Slug Catchers & Custom Manufacturing

HARP STYLES

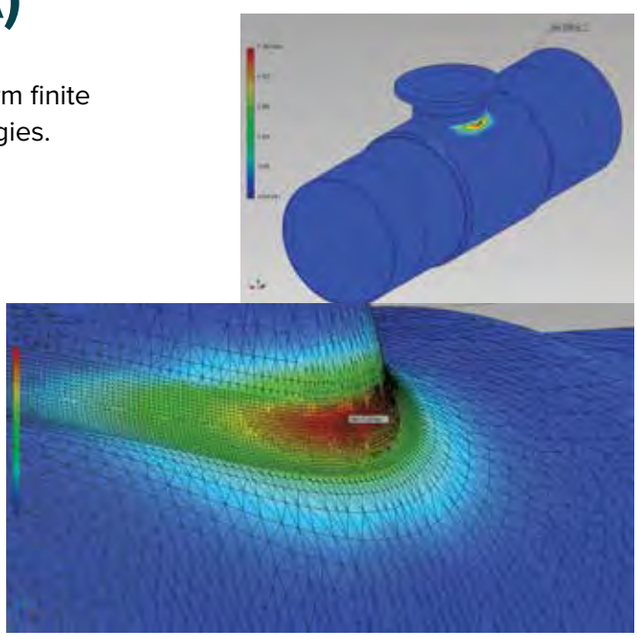
WeldFit specializes in the engineering, manufacturing and quality testing of harp or finger style slug catchers that can be utilized to perform liquid recovery and liquid management functions during two-phase operations and/or pigging operations. Extruded outlets on pigging systems and liquid recovery systems eliminate: fatigue cracking from cyclic and thermal loads; the need for reinforcement pads on the branched outlets; the installation of forged tee fittings; and additional girth welds during field installation.

Key Features:

- Harp Style Design
- Modular skidded systems that can be fabricated, shipped and assembled on-site
- Extruded outlets eliminate tees and reduce girth welds on the outlets during field installation
- Hydrostatic pressure tested in accordance to the applicable codes
- Inspected and designed in accordance to the applicable pipeline codes (B31.8, B31.4, B31.3, Sec. VIII Div. 1)
- Pressure Rating: ANSI 150#, 300#, 600# & 900#

Finite Element Analysis (FEA)

The WeldFit Engineering Department has the capability to perform finite element analysis utilizing the latest advanced software technologies. This simulation software provides WeldFit the means to analyze complex engineering designs before the manufacturing process begins. Potential or existing structural or performance issues can be identified and corrected prior to production.



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