



BlueSky designs and manufactures
the most reliable, innovative,
and advanced solutions to meet
difficult process piping challenges.



A Freudenberg Oil & Gas Technologies Company



PRODUCTS & CUSTOM SOLUTIONS

Our static, dynamic, and specialty pipe connectors and joints, as well as our custom engineered systems and equipment, surpass our clients' demanding expectations

STATIC PIPE CONNECTORS

Our reliable static pipe connectors are designed to ASME's codes and standards for use in piping systems that require high integrity seals in severe service applications. BlueSky's static pipe connectors deliver outstanding performance under extreme conditions.

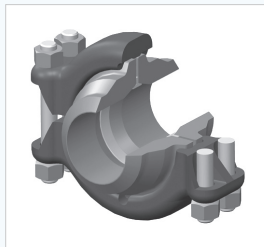


BlueLock™ SOLUTIONS

MODULAR
PRODUCT



Pressure vessel nozzles and closures, process piping, compressors, pumps, manifolds, valves



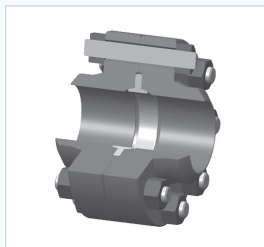
- Compact, robust design
- Highly reliable, self energized, pressure energized, all-metal seal
- High integrity seals for use in corrosive, erosive, cyclic, high pressure, high temperature applications
- Highly resistant to external loads
- Easy and fast assembly and disassembly

i Available in 1/2" through 36", up to ASME 4500# pressure class and temperatures up to 1500°F, in a wide range of materials

CompLock™ SOLUTIONS



High pressure vessel closures, process piping, compressors, pumps, manifolds, valves, FPSO



- Compact, lightweight design
- Highly reliable, self energized, pressure energized, all-metal seal
- High performance alternative to conventional flanges
- Improved performance results in reduced maintenance costs

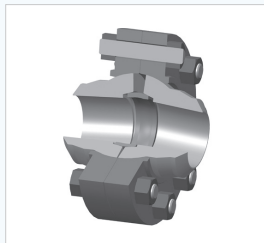
i Available in 1/2" through 24", ASME 600 to 2500# pressure class and temperatures up to 1500°F, in a wide range of materials

AlignLock™ SOLUTIONS

MODULAR
PRODUCT



Modular systems, manifolds, limited flexibility pipes with inevitable misalignment, skid systems, confined spaces



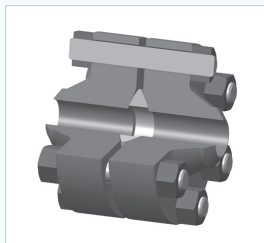
- Compact, lightweight design; custom configurations available
- Accommodates up to 10° of total piping misalignment
- Highly reliable, self energized, pressure energized, all-metal seal

i Available in 1/2" through 24", ASME 150 to 2500# pressure class and temperatures up to 1500°F, in a wide range of materials

LensLock™ SOLUTIONS



High pressure chemical industry flanges, polymer plant piping systems



- Conforms to MSS SP-65
- Configurations available on request: weld-neck, socket-weld, slip-on, lap joint, threaded flanges, and more
- Seal ring is softer than flange to maintain flange-seal face integrity for frequently made-up connections
- Sealed by spherical faced seal ring on conical-faced flange

i Available in 3/4" through 6", up to ASME 4000# pressure class and temperatures up to 1500°F, in a wide range of materials

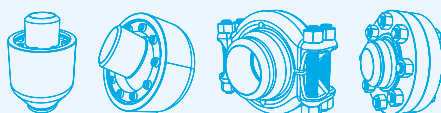
Modular™ SOLUTIONS

Our line of Modular Solutions™ spools, fabricated in a cost efficient manufacturing facility, are hydrotested for fast installation on site.

Our dynamic team of professionals can guide you through customizing a solution to fit your specific project requirements.

Customization

Spool configurations can be customized using any of our Modular Solutions™ products.



Assembly

Your spool configuration is pre-assembled in our state-of-the-art manufacturing facility.



DYNAMIC PIPE JOINTS

These innovative, high pressure, high temperature dynamic pipe joints are designed to ASME's codes and standards to reduce pipe stress in systems that develop high bending loads due to thermal and/or mechanical movement.

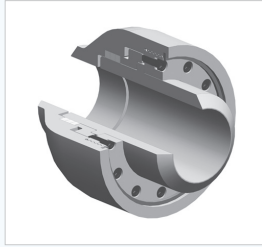


RotaPipe™ SOLUTIONS

MODULAR
PRODUCT



Oil extraction systems using thermal processes such as SAGD, cyclic steam, THAI, and SAP.



- › Compact, robust, lightweight design machined from near-net forging
- › 360° of rotational freedom
- › Hard faced bearing surface reduces friction and wear
- › High strength packing compression screws
- › Independent packing compression
- › Field adjustable packing for lower maintenance costs

i Available in 1" through 24", up to ASME 1500# pressure class and temperatures up to 1500°F, in a wide range of materials

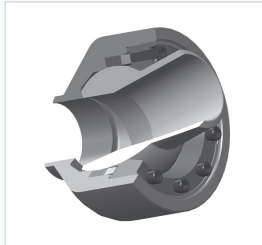


FlexBall™ SOLUTIONS

MODULAR
PRODUCT



Oil extraction systems using thermal processes such as SAGD, cyclic steam, THAI, and SAP



- › Compact, robust, lightweight design machined from solid forging
- › 360° of rotational freedom and 30° total flex capability
- › Chrome plated ball for superior wear and smoother performance
- › Independent packing compression
- › Field adjustable packing for lower maintenance costs

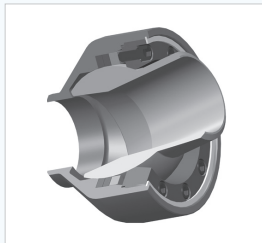
i Available in 1" through 24", up to ASME 2500# pressure class and temperatures up to 1500°F, in a wide range of materials



SolarBall™ SOLUTIONS



Concentrated solar power parabolic mirror trough systems



- › Compact, robust, lightweight design
- › 360° of rotational freedom and 30° total flex capability
- › High integrity seal designed for cyclic conditions
- › Specially coated bearing surfaces for low operating torque, superior wear, and smoother performance
- › Independent packing compression

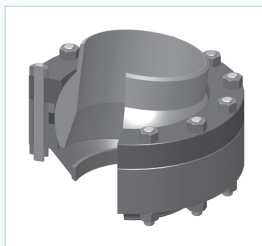
i Available in 2" through 4", up to ASME 600# pressure class and temperatures up to 1500°F, in a wide range of materials



FlexBall-300™ SOLUTIONS



Storage tank settlement; central heating plants



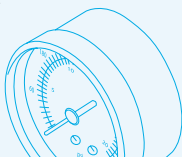
- › Ideally suited for tank settlement
- › Thermal expansion of steam piping
- › 24° total flex capability
- › Chrome plated ball for superior wear and smoother performance
- › Latest technology in compression packing for a reliable seal and low maintenance

i Available in 8" through 24", up to ASME 300# pressure class and temperatures up to 1500°F, in a wide range of materials



Testing

All spools are hydrotested to ensure they are in accordance with the highest industry standards.



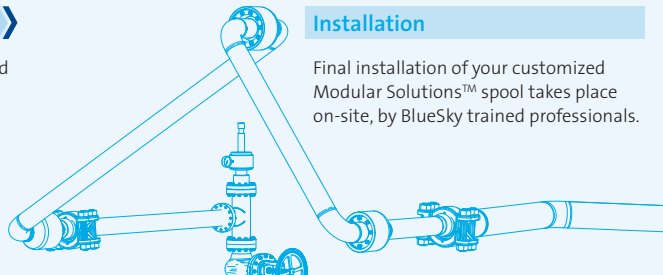
Transport

Assembled spools are then transported directly to your job site.



Installation

Final installation of your customized Modular Solutions™ spool takes place on-site, by BlueSky trained professionals.



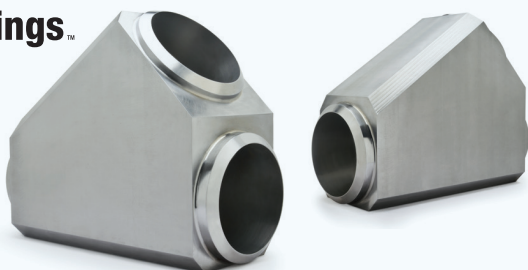
SPECIALTY PIPE FITTINGS

BlueSky's unique ability to customize designs and build to exacting special requirements has made us the supplier of choice in providing custom solutions.

For more information on these and/or other specialty pipe fittings, please contact us toll-free at (866) 643-5999 or visit our website at blueskyprocess.com.



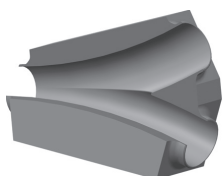
Wye Fittings[™] SOLUTIONS



Symmetric and Asymmetric Piggable Wyes

Subsea and onshore applications are available in symmetric and asymmetric configurations.

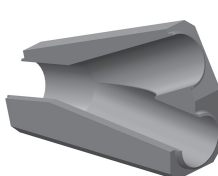
Smart Piggig Systems



True Wye Lateral

Machined on a 5-axis CNC horizontal boring mill, the branch and run ports are radiused to smoothly merge for smart piggig applications that can't tolerate abrupt direction changes.

Conventional Piggig Systems



Subsea and onshore oil and gas, piggig systems, steam blowdown lines

- Integrally machined from solid forging
- Maintains full pipe rating pressure
- Machined bores for minimal flow loss
- Design verified by code calculations and FEA

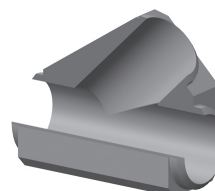
i Available in 3" through 36", up to ASME 4500# pressure class in a wide range of materials

Branch Connection

Branch connection lateral.

30° Wye Lateral

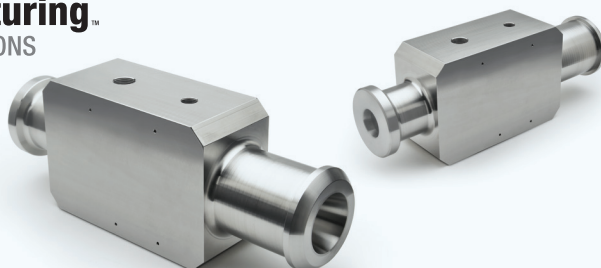
Branch and run ports intersect at a 30° angle to facilitate piggig.



Wye Lateral

Available in straight or reducing ports and in any angled branch configuration, the BlueSky Wye Lateral is designed and verified by FEA to ensure that the strength of the Wye Lateral matches that of the pipe.

Fracturing[™] SOLUTIONS

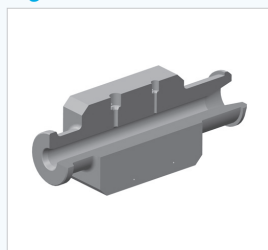


Mobile nitrogen fracturing

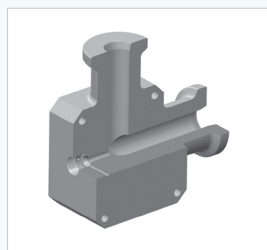
- Fittings designed for cryogenic fracturing applications
- For applications up to 15,000 psi
- BlueLock, Fig. 1502 union, and other high pressure connections available
- Custom designs available on request

i Available in a wide range of materials including 316SS and Nitronic 50

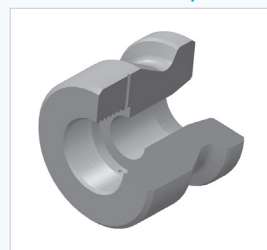
High Pressure Manifold



Elbow with HP Port



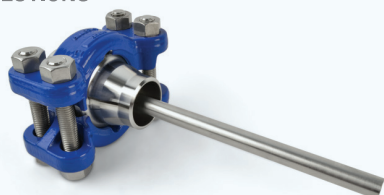
BlueLock x HP Adapter



Discharge Manifold



BlueLock Thermowell[™] SOLUTIONS



BlueLock Thermowell Assembly



Critical service piping and vessel applications

- Compact, robust design
- High pressure instrumentation applications
- Uses BlueLock sealing technology
- Custom designed for specific requirements
- Available in straight, tapered, and step probe configurations
- Connecting hubs available in standard butt-weld, cylindrical radius butt-weld, and stub-end nozzles

i Designed and verified by in-house calculation in accordance with ASME PTC 19.3-2010 and FEA as required; available in a wide range of materials

CUSTOM ENGINEERED SOLUTIONS

BlueSky's in-house design, engineering, and manufacturing expertise is the foundation that supports any requirements for custom solutions or the integration of our products.

For more information on these and/or other custom solutions, please contact us toll-free at (866) 643-5999 or visit our website at blueskyprocess.com.



Custom[™] SOLUTIONS



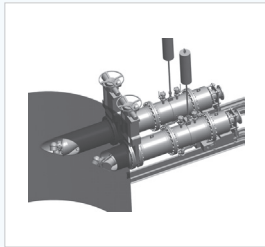
Remote Clamp System

- › Automated when integrated with a motor for assembly/disassembly
- › Highly reliable, self energized, pressure energized all-metal seal
- › Seal ring compressed/energized and bolted to hub
- › High integrity seals in cyclic, high pressure, high temperature applications
- › Zero fugitive emissions

i Standard sizes from 1/2" to 16"; larger sizes available

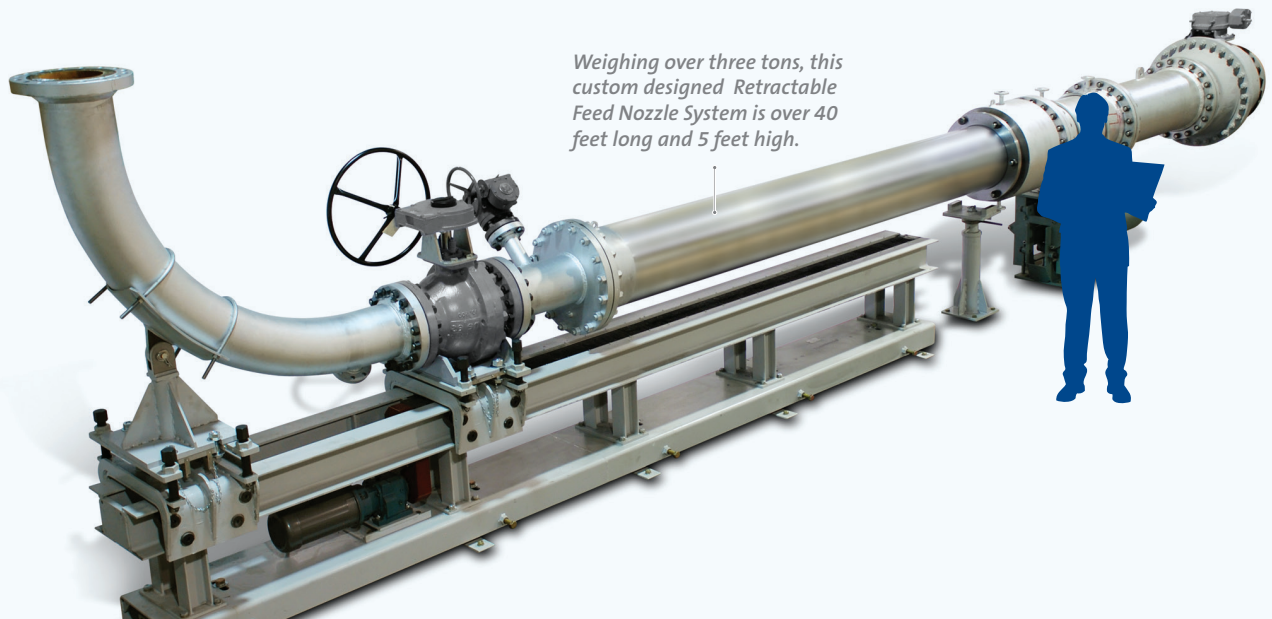


Custom[™] SOLUTIONS



Retractable Feed Nozzle System

- › Solid ceramic spray nozzles provide superior erosion resistance
- › Manifold: Designed for optimal distribution of the bitumen stream through the spray nozzles into the vessel
- › Bitumen feed pipe: Hard-faced pipe overlay on ID for erosion protection
- › Chrome plated cylinders on OD for corrosion protection and seal integrity
- › Abrasion resistant packing to ensure a long, leak-free seal life
- › Extraction mechanism via motor-operated linear drive assembly

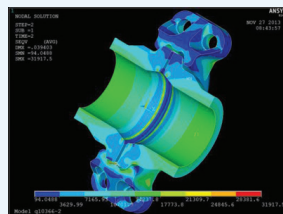


Weighing over three tons, this custom designed Retractable Feed Nozzle System is over 40 feet long and 5 feet high.

ENGINEERING DESIGN TOOLS

BlueSky utilizes the following in-house design tools:

- › Creo 3-D Solid Modeling CAD
- › ANSYS Finite Element Analysis (FEA)
- › In-House Research and Development Prototype Testing Facility



QUALITY CONTROL TOOLS

In addition to conventional equipment, BlueSky has these in-house tools:

- › Coordinate Measurement Machine (CMM)
- › Portable Coordinate Measurement Machine
- › Programmable Dot Matrix Marking Machine
- › Positive Material Identification (PMI)
- › Coating Thickness Gauge
- › Surface Finish Gauge
- › Hardness Gauge



THINK BLUESKY

BlueSky designs and manufactures innovative and advanced high performance products for severe service piping applications.

Our static pipe connectors, dynamic pipe joints, and specialty pipe fittings, as well as our custom engineered solutions, surpass our clients' demanding expectations. "Off-the-shelf" or custom, all our products are engineered and manufactured to withstand corrosion, erosion, and high and cyclic temperature and pressure, in accordance with the highest industry standards and within an ISO 9001 certified environment.

Our unique ability to quickly customize designs and build to exact customer requirements has made us the supplier of choice for many discriminating customers. We produce reliable customized solutions for the oil and gas, refining, energy, mining, and chemical sectors.

Your challenge is our focus; our solution is your success.

BLUESKY PRODUCTS IN YOUR INDUSTRY



OIL & GAS

Comprehensive piping solutions for the oil and natural gas industries, including heavy oil, refining, off-shore, upgrading, in situ, and de-frothing



ENERGY

Solutions for operations in harsh conditions in nuclear, solar, geothermal, and fossil applications



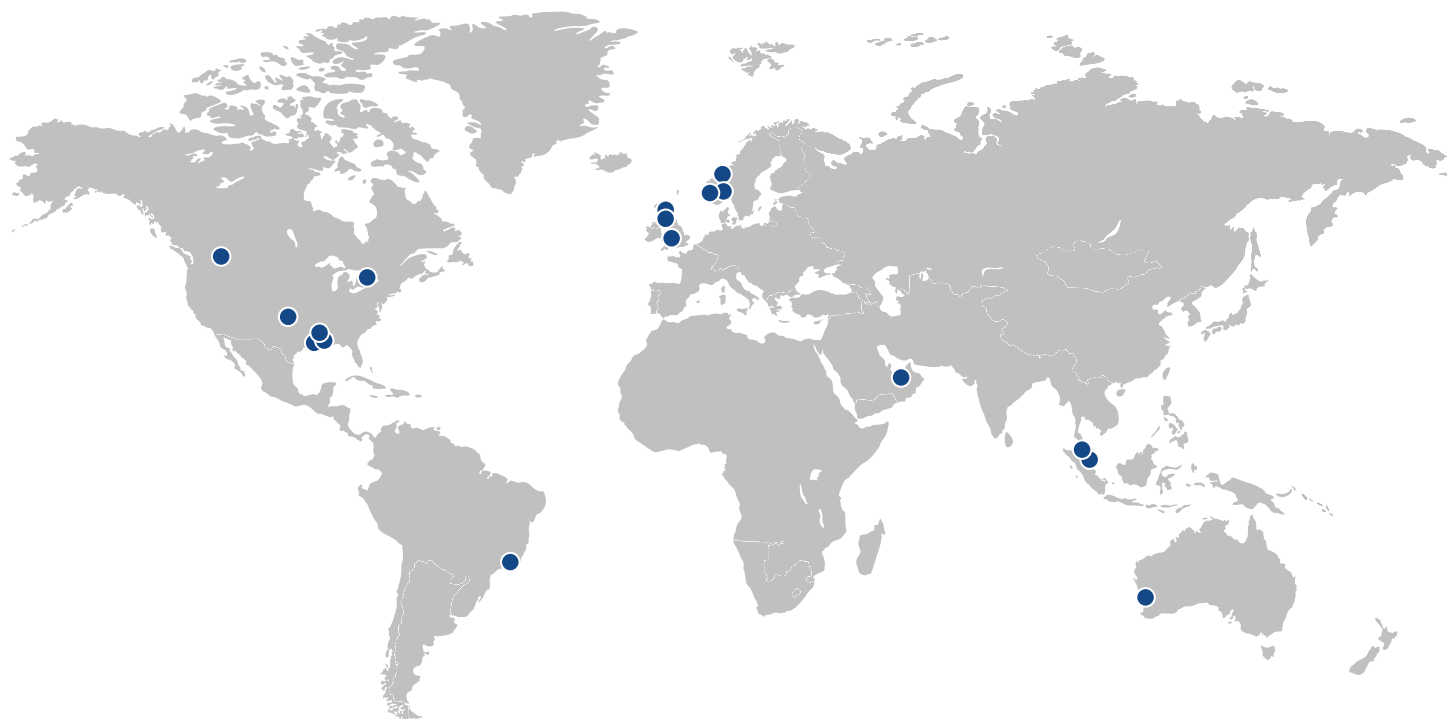
MINING

Solutions for complex processing plants that operate in oil sands, pressure acid leaching, and slurry piping



CHEMICAL

Robust solutions for the chemical industry, including cryogenic, polymer, petrochemical, and industrial gas applications



To learn more about
Freudenberg Oil & Gas Technologies:
www.fogt.com

Or contact us:
Sales@fogt.com

For more on BlueSky products:
www.blueskyprocess.com

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