VAREL
ENERGY SOLUTIONS

Well Construction Catalog

Casing Solutions

645936-45

FLOAT COLLAR

Premium Cement Filled Float Collar

Product

The cemented float collar includes premium fully composite V2 plunger valve that is tested to the highest standards of API 10F.

The float collar provides a landing point for casing wiper plugs and also an integral past of the shoe track to capture contaminated cement inside the string instead of the annulus.

Features

- Tightly controlled cementing process for valve installation
- Cement tested for compressive strength
- Fitted with high flow phenolic float valve
- Capable of withstanding pressures up to 10,000 psi to conduct casing integrity tests

Options

- Single, double & auto-fill valve options
- Ball deflector
- All API and premium connections
- All material casing grades available
- Non-rotating insert to match with VES Non-Rotating plugs for easy drill out
- 10K & 5K psi options
- 15K option available in 5-1/2 inch and smaller sizes

VAREL ENERGY SOLUTIONS

LATCH-IN FLOAT COLLAR

Premium Non-Cemented Float Collar

Product

The Varel Latch-in Float Collar features a high-pressure high-temperature non-cemented design. It has provisions to seal a series of high-pressure casing wiper plugs that separate fluid, eliminate casing stringers, and facilitate a casing pressure test.

Features

- Non-cemented design
- Increased flow-by area
- High temperature high pressure rated
- In-house manufacturing capabilities at global manufacturing facilities

Options

- Single or double valve options available
- Dedicated engineering support team
- Designed to meet specific application requirements
- 10,000 psi pressure rating
- All API and premium connections available
- All material casing grades available

VAREL ENERGY SOLUTIONS

V2 VALVE

Premium Float Valve with Auto-Fill

Product

The key component in float equipment used during casing installation and cementing operations prevents wellbore fluids from flowing back into the casing after it has been cemented. The auto-fill feature is ideal for pressure-sensitive formations and for accelerating casing running speed, making it particularly useful in close-tolerance annuli.

Features

- All composite 10,000 psi rated back pressure
- Patented-pending flow-activated AF12 auto-fill feature.
- 400F (203C) composite seal
- 36-Hour flow endurance at 15 BPM
- 24-Hour flow endurance at 20 BPM
- Low-pressure elastomer seals
- 100% tested in water-tight

Benefits

- Flow-activated AF12 auto-fill:
  - Negates premature auto-fill deactivation
  - Increases casing running speed
  - Reduces formation surge
- Suitable for extreme applications
- Easy and proven drillable design
- Low-flow and low-pressure sealing
- High Loss Circulation Material (LCM) Tolerant

VAREL ENERGY SOLUTIONS

DOMINUS™ VALVE

Premium HPHT Float Valve

Product

The Dominus Premium HPHT Valve is perfectly designed to withstand the harshest downhole conditions and effectively serve as a gas-tight barrier during critical cementing and completions operations. The valve technology is proven and tested to manage 15k psi pressures and 400 F in hydraulic fracturing. The non-cemented latch-in design matches plugs capable of withstanding 15,000 psi bump pressure with an erosion-free plunger for positive seal even after 36-hour flow endurance at 10 bpm. Whether floating production casing or facing extreme bottom hole temperature and/or hydrostatic pressure, the Dominus premium float valve sets the industry's bar.

Features

- Metallic construction
- Gas-tight sealing
- 205C (400F) working temperature
- High Loss Circulation Material (LCM) Tolerant
- Flexible single or double-valve configurations
- Latch in profile suitable for 10,000psi and 15,000 high temperature dual plug systems

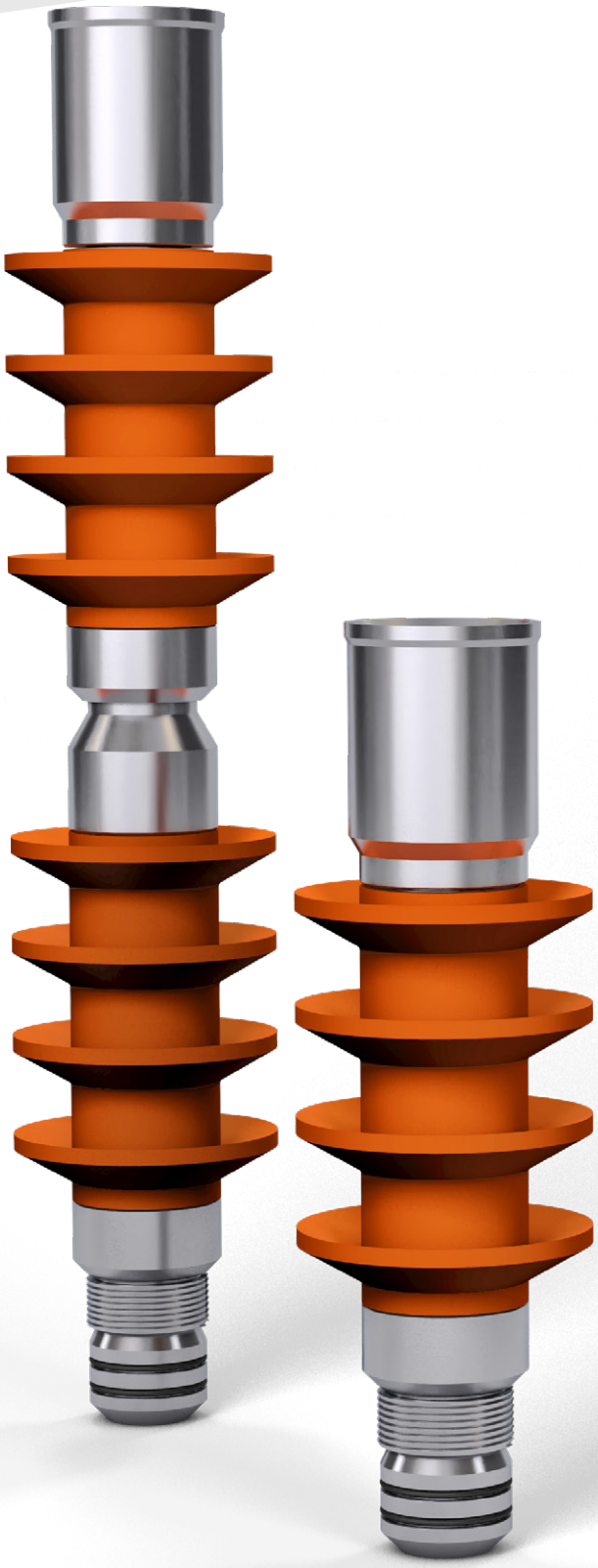
Benefits

- Proven and customer-preferred for extreme applications
- High-pressure and high-temperature sealing
- High Loss Circulation Material (LCM) tolerant
- Flexible single or double-valve configurations

VAREL ENERGY SOLUTIONS

LATCH-IN RUPTURE PLUG

For Long String Cementing Applications



Product

The Varel Latch-in Rupture Plug offers a unique design that can be used in multiple high pressure and high temperature cementing applications. These plugs provide optimum wiping efficiency to separate mud from cement and eliminate excess debris or stringers in casing.

The Varel Latch-in Rupture Plug features a high-quality rupture disk that allows for opening and injection into the well. The plug also has a locking mechanism which adds an extra well barrier when the plug is unopened. This plug can be used in multiple applications from conventional top/bottom plug cementing to injectable wet shoe systems.

Features

- Plug fins provide high wiping efficiency
- Provisions to land dissolvable balls for HP casing tests
- High temperature wiping fins
- 10,000 psi tested seals
- Large flow by area, minimizing pressure drop

Options

- Single and tandem plug options available
- Dedicated engineering support team
- Designed to meet specific application requirements
- 1000–6000 psi rupture disks available

VAREL ENERGY SOLUTIONS

LATCH-IN TOP PLUG

For Long String Cementing Applications

Product

The Varel Latch-in Top Plug offers a unique design that can be used in multiple high pressure and high temperature cementing applications. This plug provides optimum wiping efficiency to separate mud from cement and eliminate excess debris or stringers in casing.

The Varel Latch-In Top Plug is designed to provide a reliable mechanical barrier to help aid in the control of fluid and pressure from below conventional float equipment. Preventing the pressure from entering the casing after the cement job will allow the release of the bump pressure of the plug after the cement column is in place.

Features

- Plug fins provide high wiping efficiency
- High temperature wiping fins
- 10,000 and 15,000 psi bump rating
- High back pressure rating
- Latch-in mechanism allows for an additional barrier

Options

- Single and tandem plug options available
- Dedicated engineering support team
- Designed to meet specific application requirements

VAREL
ENERGY SOLUTIONS

FLOAT SHOE

Premium Cement Filled Float Shoe

Product

The cemented float collar includes premium fully composite V2 plunger valve that is tested to the highest standards of API 10F.

The float shoe is often run in conjunction with the float collar to guide the casing to total depth while providing an additional barrier against back-flow after cement displacement.

Features

- Tough durable profiled cement nose
- Cement tested for compressive strength
- Can be used in application where string rotation is required
- Default concentric nose design can be used in highly deviated wells

Options

- Up / Down jet side ports
- Single, double & auto-fill valve options
- Ball deflector
- All API and premium connections
- All material casing grades
- 10K & 5K psi options
- 15K option available in 5 1/2 inch and smaller sizes
- Multiple Nose Options: Aluminum Concentric or Eccentric Nose, Cement and Spade Nose

VAREL ENERGY SOLUTIONS

VALOR 1™

Bow Spring Centralizer

Product

Varel Energy Solutions VALOR 1 bow spring centralizer is a one-piece at-gauge semi-rigid bow. Manufactured from spring steel to allow with zero starting and running force to reach target depth in the first attempt. With upto 3X API restoring force, the VALOR 1 provides excellent stand-off for even cement displacement around the pipe.

Features

- Non-welded, robust one-piece design
- Suitable for rotation due to axial rigidity
- High restoring forces exceeds industry standards
- Spring steel flexible design significantly reduce running forces and allows easy passage through wellbore obstructions
- Gauge hole OD offering maximum standoff
- Suitable for onshore installation reducing rig time costs and HSE exposure

Options

- Centralizer placement / T&D analysis available
- Dedicated engineering support team
- Size range from 2-7/8 inch to 30 inch

VAREL ENERGY SOLUTIONS

VALOR HINGED™

Bow Spring Centralizer

Product

The VALOR HINGED bow spring centralizer is a hinged non-welded bow-spring centralizer designed to be latched onto the casing over a stop collar to facilitate pulling the centralizer in and out of the wellbore and large diameter casing that use weld on connectors.

Features

- Engineered and tested to exceed industry standards
- Low insertion & running forces
- High restoring forces
- Suitable for passing through well-bore / cased hole restrictions
- High quality spring steel grade

Options

- Centralizer placement / T&D analysis available
- Dedicated engineering support team
- Size range from 2-7/8 inch to 30 inch

VAREL ENERGY SOLUTIONS

VALOR SEMI-RIGID™

Bow Spring Centralizer

VALOR SEMI-RIGID

VALOR SEMI-RIGID bow spring centralizer specially designed with a double bow profile, increases restoring forces, reduces running force, and increases contact area for less bow penetration into the formation.

VALOR PO

Specifically designed flat-bottomed U-shaped blades are provided for maximum fluid flow-by and required rigidity when concentric casing strings are required for liner and packer setting in cased hole.

VAREL ENERGY SOLUTIONS

VALOR 1 VRC™

Product

The VALOR 1 VRC is a premium centralizer designed for optimum performance in under reamed and close tolerance applications. The single piece design with integrated stress relief blade profiles, allows the centralizer blades to flex in tight restrictions, yet return to OD giving restoring force that exceeds industry standards.

VALOR 1 VRC is a unique design and a premium addition to Varel Energy Solutions VALOR 1 centralizer family, providing robust, competent and consistent product performance.

Features

- Single piece, spring steel design
- Unique blade profile
- Stress relief blade features
- Low running forces
- High restoring forces with excellent standoff
- Competent and consistent performance
- Testing criteria exceeds industry standards
- Patent pending
- Patented hair-clip allows restoring and running forces to decouple at engineered points

Options

- Centralizer placement / T&D analysis available
- Dedicated engineering support team
- Designed to meet specific application requirements
- Sizes from 4-1/2 inch to 24 inch available

VAREL ENERGY SOLUTIONS

VALOR 1 SUB™

Inline Bow Spring Centralizer

Product

Varel Energy Solutions VALOR 1 SUB is an inline centralizer sub for under-reamed tight tolerance applications. These subs are designed and manufactured specifically to the client's requirements to ensure the best possible solution, minimizing surge and drag while maximizing standoff.

Features

- One-piece machined sub, spring steel design
- Fully rotatable
- Radius blade edges – casing friendly drag reducing shape
- Bi-directional and in-line design

Options

- Centralizer placement / T&D analysis available
- Dedicated engineering support team
- Product design to meet specific application requirements
- New sizes design and tested within two weeks
- Size range from 2-7/8 inch to 20 inch

VAREL
ENERGY SOLUTIONS

VICTUS SPIROLIZER™

Solid Blade Centralizer

Product

The VICTUS SPIROLIZER is a durable, zinc alloy, solid blade centralizer designed to reduce torque and drag while running casing. The blade design will create turbulence promoting 360° cement coverage.

Features

- Manufactured from zinc alloy providing:
  - High strength – allowing thinner wall sections giving maximum flow-by
  - Exceptional wear resistance – maximum standoff
  - Low coefficient friction – reducing torque & drag
  - Withstands temperatures up to 400°F
- 360° spiral blade configuration gives maximum standoff, assisting with hole cleaning & cement placement
- Self-cleaning blade design to reduce the risk of packing off

Options

- Centralizer placement / T&D analysis available
- Fully machinable allowing for custom ODs
- Split units available
- Size range from 2-7/8 inch to 13-5/8 inch

VAREL ENERGY SOLUTIONS

VICTUS PRO™

Pressed Steel Centralizer

Product

The VICTUS PRO is a steel, pressed vanes, spiral blade centralizer that has been specifically designed to centralize casing being run in the less demanding vertical & intermediate wells, where positive standoff is required, and torque & drag reduction is not deemed a critical requirement.

Features

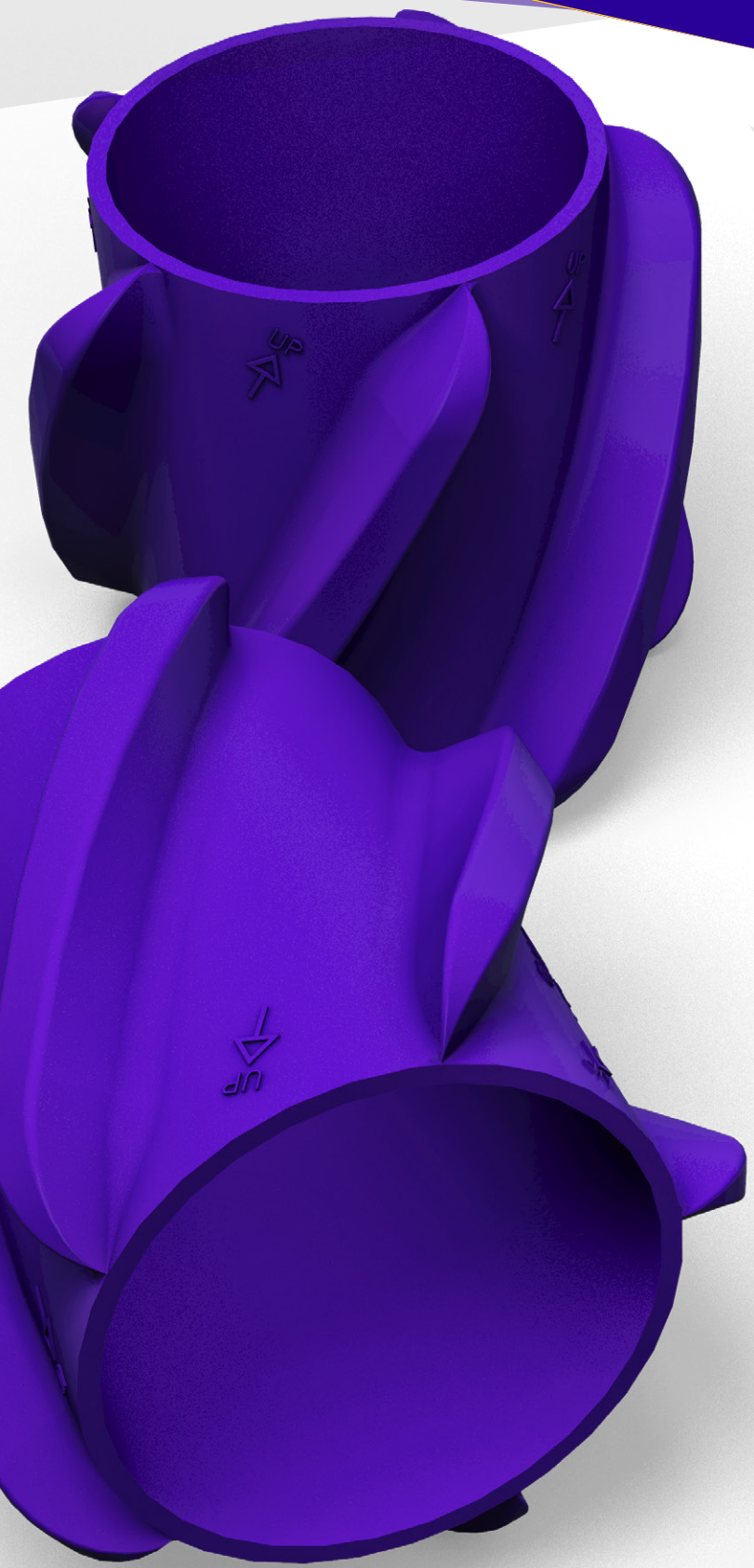
- Positive standoff spiral blade
- Maximum flow-by
- Blades tested to withstand 15-20 tons side loading

Options

- Dedicated engineering support team
- Centralizer placement / T&D analysis available
- VICTUS PRO ST (Straight Blade) available
- Size range from 2-7/8 inch to 30 inch

VAREL ENERGY SOLUTIONS

VICTUS LIGHT™



Product

VICTUS LIGHT is made from a premium composite compound that is light weight and provides good drag reducing abilities during running in hole.

The ultra-light weight of the VICTUS LIGHT reduces string weight that assists during running in hole.

Features

- Manufactured from premium composite compound providing:
  - High strength – allowing for best in class axial and side load forces without the need for re-enforcement
  - Exceptional wear resistance – maximum standoff
  - Low coefficient friction – reducing torque & drag
- Self-cleaning blade design to reduce the risk of packing off

VAREL ENERGY SOLUTIONS

VICTUS BLADERUNNER™

Ultimate Friction Reducing Centralizer

Product

The VICTUS BLADERUNNER ultimate friction reduction is designed to reduce cased hole running drag and maximize open hole standoff efficiency. Low friction blade inserts will reduce as liner is run through the previous casing string 360° blade form to aid running as the liner enters open hole. Low friction bands in the bore of the centralizer ensure extremely low start up torque when the liner is rotated during the cementing process.

Features

- Low friction bearings in bore ensure extremely low start-up torque
- Low friction blade inserts substantially reduce drag
- Maximize torque & drag reduction
- Solid single piece construction, no moving parts eliminate potential junk in the wellbore
- All VICTUS SPIROLIZER design features are incorporated

Options

- VICTUS BLADERUNNER 'BR' (Blade Runner), 'LD' (Low Drag) & 'LT' (Low Torque) available
- Centralizer placement / T&D analysis available
- Fully machinable allowing for custom ODs
- Size range from 2-7/8 inch to 13-5/8 inch

VAREL ENERGY SOLUTIONS

VICTUS RISER™

Heavy Duty Steel Centralizer

Product

The VICTUS RISER is a fabricated heavy duty steel centralizer that has been designed specifically for centralizing large bore casing inside risers, where conventional centralizers are not fit for purpose.

Features

- Heavy duty constructive
- High holding force
- Anti-vibration, high-tensile stainless-steel bolting system

Options

- Centralizer placement / T&D analysis available
- Anti-vibration, high-tensile stainless-steel bolting system
- Size range from 16 inch to 36 inch

VAREL ENERGY SOLUTIONS

VICTUS SAND CONTROL™

2 Piece Solid Body Centralizer

Product

The VICTUS SAND CONTROL Four Blade' is a zinc alloy, solid blade centralizer that has been specifically designed for sand control / gravel pack applications. A four bladed unit c/w reduced blade angle to maximize flow area, minimize back pressure and potential pack-off.

Features

- Positive standoff protects screen jackets from damage while running in through the wellbore and greatly assists with hole clean-up
- Fluid by-pass has been maximized to eliminate pack-off during clean-up and gravel pumping operations
- Manufactured from zinc alloy providing:
  - High strength – allowing thinner wall sections giving maximum flow-by
  - Exceptional wear resistance – maximum standoff
  - Low coefficient friction – reducing torque & drag
  - Withstands temperatures up to 400°F
- Maximum torque & drag reduction

Options

- Centralizer placement / T&D analysis available
- Split unit available
- Size range from 4-1/2 inch to 7 inch

VAREL ENERGY SOLUTIONS

CEMENT PLUG

Surface Release Cement Plug

Product

Varel Energy Solutions offers a non-rotating surface release cement plug, with a five wiper fin design, offering extremely effective casing wiping.

Features

- Five wiper fin conventional design for effective casing wiping
- Anti-Rotational heavy duty teeth prevents plugs from spinning during drill-out
- Tapered cone and receiver for easy engagement and landing
- Integral burst disk located in bottom plug
- PDC and roller cone bit drillable

Options

- Custom pressure burst disk available
- High temperature plugs available
- Conventional plug available

VAREL ENERGY SOLUTIONS

CEMENT BASKET

Product

The Slip On Welded Cement Basket comprised of slip-on type high strength with flexible bows that are mounted on the end collar. The cement basket has ability to accommodate much larger than nominal hole sizes. They are available in 4-1/2 inch to 30 inch sizes and any kind of specific sizes. With this type of design cement basket can be rotated and reciprocated. This type of Cement Basket is available with welded and non-welded convexshape bows.

Features

- Reduces hydrostatic pressure to protect weak formations exerted by cementing column
- Bow placement allows for maximum flexibility and fluid passage
- Sometimes utilized above the shoe to give extra support until the cement has set

Options

- 1. SH15-H Hinged Welded Cement Basket
- 2. SH15-NW-H Hinged Non-Welded Cement Basket
- These are available in 4-1/2 inch to 30 inch sizes. Any special sizes or combination can be made available on request

VAREL
ENERGY SOLUTIONS

CEMENT STAGE TOOL

Product

Varel's Cement Stage tool allows cementing of casing string in two stages. This tool sets the standard for reliability, cost effectiveness, and ease of use with outstanding built-in features and quality. They are the tools of choice when drilling requirements call for proven technology and low risk. The compact, simple design minimizes the number of moving parts and makes the tools easier to handle.

The tool's clear opening and closing indications at the surface accommodate the hydraulic conditions of the well for safer, more efficient operations. The internal sleeves increase reliability and prevent premature opening from formation restrictions on applied pressures. It reduces total pumping pressure in long casing strings.

Features

- Opening and closing pressure can be set for a wide range depending on well bore parameters
- Anti-rotation features in seats
- Easily drillable aluminum seats

Options

- These are available in 4-1/2 inch to 13-3/8 inch
- Mechanical or Hydraulic options avalible

VAREL
ENERGY SOLUTIONS

CEMENT RETAINER

Product

The Cast Iron Bridge Plug and Cement Retainer are dependable squeeze cementing tools that are utilized for zonal isolation, well abandonment, casing pressure tests, and stimulation. Varel cast iron products can be set by electric wireline or a hydraulic setting tool. The Cast Iron Bridge Plug is designed to be drilled out if necessary.

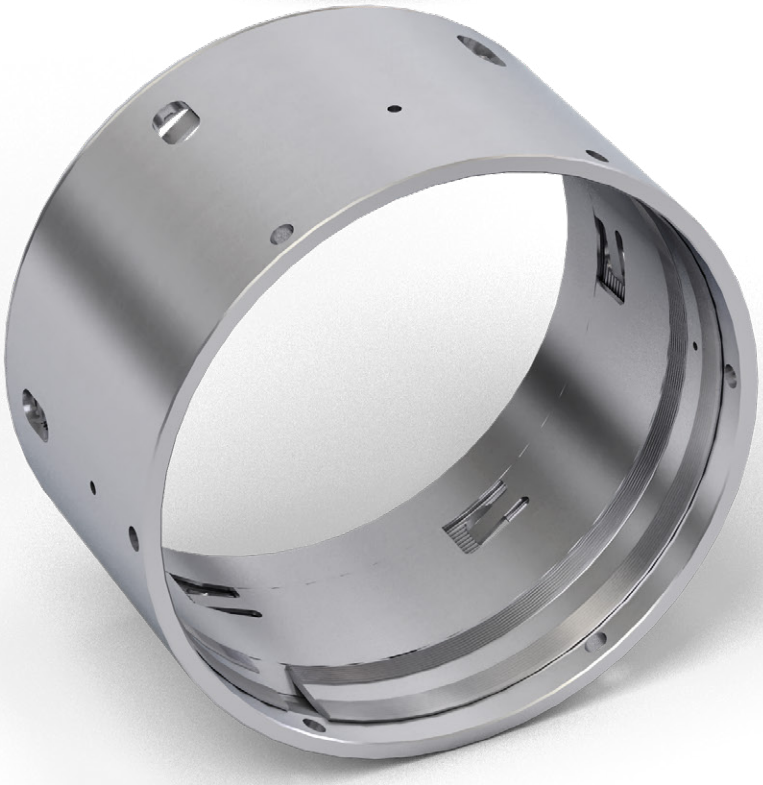
Features

- Drillable cast iron construction
- Sets securely in most casing, including many premium grades
- Anti-swab/anti-preset characteristics with 360 degree slips
- Packer element design prevents extrusion
- Setting force held in place by internal ratchet lock ring

VAREL
ENERGY SOLUTIONS

SPIROBITE™

Close Tolerance Stop Collar



Product

SPIROBITE is a high holding force, slim diameter stop collar for close tolerance applications. With no set screws and easy installation without the need for special assembly tools. An easy twist on assembly with robust gripping mechanism and no risk of back-off, allows for the SpiroBite to be fitted to all API casing grade, sizes and tolerance bands.

The slim profile ensures the collar can slide through the tightest restrictions, maintain a holding force more than conventional set screw type stop collars and the perfect partner for the VALOR 1 centralizer family.

Features

- Simple innovative design
- No specialist assembly tooling or personnel required
- Suitable for all API casing grades, sizes and tolerances
- Low profile
- No set screws or loose parts
- Bi-directional, high holding force
- Low assembly torque
- Anti back-off mechanism
- Simple, quick installation
- Assemble anywhere
- Patent pending

Options

- Dedicated engineering support team
- Designed to meet specific application requirements
- All casing size options available

VAREL ENERGY SOLUTIONS

STOP COLLARS

Stop Collars

Product

Varel Energy Solutions offer a range of stop collars to suit all centralizer options.

Ductile Iron

- One piece cast ductile iron stop collar
- High axial holding force

Heavy Duty

- Heavy duty one-piece steel collar
- High holding force

Steel

- Fabricated steel stop collar
- 1/2 inch UNC S.S set screws

Hinged Bolt

- Self lock in pins
- Low budget

Hinged Set Screw

- Easy installation
- 1/2 inch set screws

Hinged Spiral Nail

- Quick installation
- Spiral nail design

VAREL ENERGY SOLUTIONS

AQUEOUS®

Integrated Wet Shoe Track

Product

AQUEOUS, a proprietary slick body eccentric-nosed wet shoe track uniquely designed for predictable performance and reduction in overall operational costs. The modular, compact design consisting of four valves with provisions to seal a series of high-pressure casing wiper plugs that separate fluid, eliminate casing stringers, and facilitate a casing pressure test.

The AQUEOUS is the economics leader in casing shoe track technology.

Features

- The non-cemented Integrated Wet Shoe track is designed for 10,000psi forward (bump) and back pressure operation at 400°F
- Four integral float valves tested to 10,000psi
- System-matched “latch-in” wiper plug system with Double Bottom (1,000 psi) and Top Plug (3,000 psi) combination
- Proven eccentric nose design

Value Creation

- Ultra-short design allows the first full fracturing operation to commence closer to the shoe increasing wellbore exposure
- Enabling access to the formation without the use of toe sleeves or Tubing Conveyed Perforating (TCP)
- The system eliminates cost and risk of additional premium connections
- Proven eccentric nose designed to bypass unplanned casing obstructions
- High performance tandem wiper plugs reduce the risk of casing obstructions

Options

- Available in currently in 5-1/2 inch OD size
- Up jet (standard) or down jet side ports available
- All API and premium connections available
- All material casing grades available

VAREL ENERGY SOLUTIONS

PENOTRATOR™

Reamer Shoe

Product

The PENOTRATOR reamer shoe has been specifically designed to aid with the installation of any casing, liner or screen application where the operator has concerns over potential difficult wellbore conditions such as swelling shales, ledges and washed out areas within the wellbore.

Features

- Casing friendly tungsten carbide cutting structure
- Anti-aggressive left-hand blades minimize torque
- 360° cutting structure facilitates reaming past obstructions with or without rotation
- Wellbore seeking eccentric guide nose negotiates troublesome formations
- EZI-Drill® aluminum guide nose to aid drill-out without compromising nose strength
- Flow ports offering 360° flow area
- Slick body design helps reduce ECD
- One-piece milled steel body

Options

- Ball deflector / ball catcher options available
- All API and premium connections available
- All material casing grades available

VAREL ENERGY SOLUTIONS

PREDOTOR™

Reamer Shoe

Product

The PREDOTOR reamer shoe has been designed to be an uncompromising solution to today's most challenging wellbore conditions. The nose has an innovative profile design to aid in getting casing to T.D. by overcoming wellbore restrictions, but also includes integral hardfaced blades and optimized jetting, to ream and clean out the hole as the casing is run. The addition of PDC cutters on the outer shoulder of the PREDOTOR allows the shoe to efficiently ream and open the hole, where formation issues have impacted string progressing. The blades have tungsten carbide buttons to further assist with hole cleaning.

Features

- Innovative nose profile
- Hardfaced blades
- PDC to aid reaming
- Efficient drillout
- Aggressive right-hand blades
- Casing friendly carbide gauge buttons
- One-piece milled steel body

Options

- All API and premium connections available
- All casing grades and weight options
- Customized OD to suit client requirements

VAREL ENERGY SOLUTIONS

REAPER®

Aggressive Reamer Shoe

Product

The REAPER reamer shoe has been specifically designed to be an aggressive shoe for extreme wellbore conditions. The nose is designed to aid in getting casing to T.D. by using coated blades and optimized jetting to ream and clean out the hole as casing is run. The body blades have tungsten carbide buttons to further assist with hole cleaning.

Features

- Nose with integrated blades to assist with well-bore reaming and cleanout
- Wellbore seeking eccentric guide nose negotiates troublesome formations
- Casing friendly tungsten carbide cutting structure on body
- Aggressive right-hand blades
- 360° cutting structure facilitates reaming past obstructions with or without rotation
- One-piece milled steel body
- Optimized flow ports offering efficient hole cleaning
- Aluminum nose designed for fast and efficient drill-out
- Profiled nose to provide good cement key
- Junk slot area position on nose to keep blades clean

Options

- All API and premium connections available
- All material casing grades available

VAREL ENERGY SOLUTIONS

PILOT GUIDE SHOE

Slick Body Guide Shoe

Product

The Pilot Guide Shoe is a slick body aluminum nosed guide shoe to aid with the running of any casing, liner and screen applications. Utilized where the operator has concerns over potentially difficult wellbore conditions and a conventional cement nosed float shoe is not considered robust enough.

Features

- Wellbore seeking eccentric guide nose negotiates troublesome formations
- EZI-Drill® aluminum guide nose to aid drill-out without compromising nose strength
- Flow ports offering 360° flow area
- Slick body design helps reduce ECD

Options

- Concentric or other nose options available
- All API and premium connections available
- All material casing grades available

VAREL ENERGY SOLUTIONS

NOSE OPTIONS

Float & Reamer Shoe Noses

EZI-Drill Nose

The EZI-Drill® nose feature is designed to withstand high set down weights when running the casing to T.D. while being drilled out the aluminum will break into small chips to avoid 'bird-nesting' of the bit to allow for a quick drill-out.

Concentric

The concentric nose assists running casing/liner in difficult well-bore conditions by pathfinding over and around swelling formations. Can be manufactured in both aluminum and phenolic materials.

Spade

The spade nose is specifically designed for use on less demanding liner applications where only a setting sleeve is run, the spade nose assists running tool released. When set on bottom the spade nose shoe anchors the liner against the formation allowing the running tool to be rotated to release from the liner.

Composite

Incorporating the engineered EZI-Drill nose features, but produced from a robust and drillable composite material, for applications where drill-out may be a concern and anticipated set down loads during casing running may be less.

VAREL ENERGY SOLUTIONS

PILOT GUIDE SHOE FTR

Slick Body Guide Shoe with self-aligning nose

Product

The Pilot Guide Shoe is a slick body eccentric nosed guide shoe to aid with the running of any casing, liner and screen applications. Run in conjunction with EZI-Drill® Free-To-Rotate (FTR) eccentric nose, this is an ideal solution where the operator has concerns over potentially difficult wellbore conditions, where string rotation is not possible or preferred, FTR nose can self-align to navigate past obstructions.

Features

- Free-To-Rotate (FTR) self-aligning nose
- Wellbore seeking eccentric guide nose negotiates troublesome formations
- Flow ports offering 360° flow area
- Slick body design helps reduce ECD

Options

- Single & double valve options
- All API and premium connections available
- All material casing grades available

VAREL ENERGY SOLUTIONS

PILOT GUIDE SHOE LRL

Slick Body Guide Shoe with self-aligning lockable nose

Product

The Pilot Guide Shoe is a slick body eccentric nosed guide shoe to aid with the running of any casing, liner and screen applications. Run in conjunction with EZI-Drill® Lock-Rotate-Lock (LRL), a self-aligning eccentric lockable guide nose, engineered to freely orientate passed wellbore obstructions without mechanical intervention. When in its 'locked' position, the nose cannot spin and allows for efficient trouble-free drill out.

Features

- Lock-Rotate-Lock (LRL) self-aligning nose
- Wellbore seeking eccentric guide nose negotiates troublesome formations
- EZI-Drill® nose design to aid drill-out without compromising nose strength
- Fully locked during drill out
- Flow ports offering 360° flow area
- Slick body design helps reduce ECD

Options

- Single & double valve options
- Aluminum or composite nose options
- All API and premium connections available
- All material casing grades available

VAREL ENERGY SOLUTIONS

CASEBIT™

Casing While Drilling

Product

CASEBIT is used on casing strings to drill and/or set casing in one trip to T.D. eliminating additional trips and ensuring uninhibited delivery and positioning of the casing string every time. This product combines industry recognized PDF drill bit technologies, force balancing, cutting structure wear modelling, and computational fluid analysis with flexible manufacturing technology.

Features

- Asymmetric raised blades, blind holes, and other disconformities to accelerate during drill out and improve breakup
- Pressure controlled rupture port allows for continuous flow of drilling fluids or cement in the event of nozzle/port plugging
- Wide-open hydraulics approach limits body erosion, accommodates wide range of flow rates, and eliminates need for specialty nozzles
- Cutting structure optimized using proprietary SPOT-DN® Software
- Drillable alloy with PDC drill bit
- Full thru-bore after drill out
- Flow ports offering 360° flow area

Options

- Material choice driven by erosion concerns and finished diameter of product
- Fully flexible design available with varying blade count, tool OD, casing weights and premium connections
- All API and premium connections available
- All material casing grades available

VAREL ENERGY SOLUTIONS