

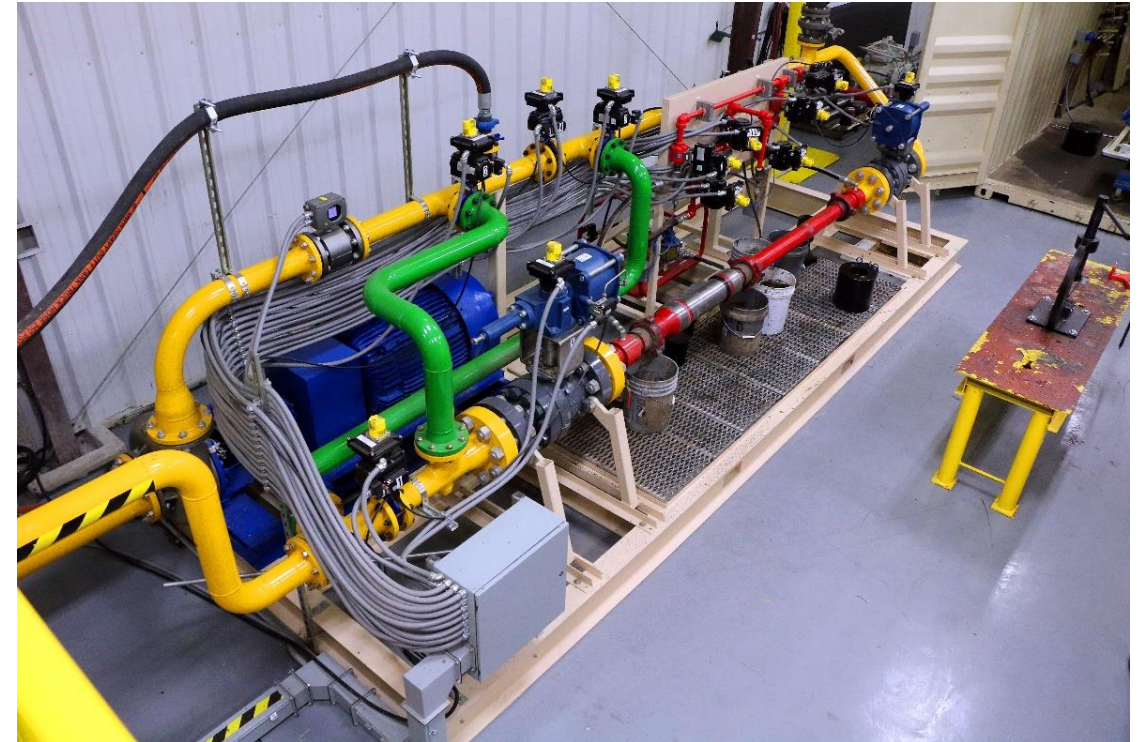
Antelope Oil Tool

Antelope is committed to the success of our clients' projects by manufacturing high quality casing and cementation equipment to improve performance either onshore, offshore and in deep-water applications.

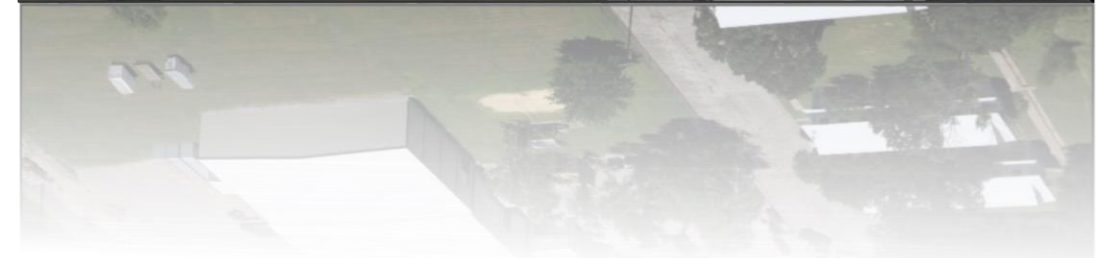
Distinctive Tools. Instinctive Service.

Distinctive Tools. Instinctive Service.

- Antelope Oil Tool & Mfg. Co. is a leading global supplier of high quality drilling tools and casing attachment products, with a legacy of outstanding service reaching back half a century. We've built our reputation and our strategy for the future on the same simple philosophy: put the customer first, whatever it takes.
- Founded in 1961 by Jesse E. Hall Sr.
- Purchased by Intervale Capital in June 2013 from Franks Int.
 - Primarily operated as a manufacturing facility by Franks for Halliburton's centralizers.
- Principal manufacturing facility in Mineral Wells, TX.
- New Focus: to create cutting-edge service company.
- Large investment in experienced technical sales and engineering staff, and in state-of-the-art new manufacturing equipment and technology.



- Corporate Headquarters - Houston, Texas
- Manufacturing Facilities:
 - Gant Road, Houston, TX – HPHT Float Equipment, Stage Tools
 - Luthe Road, Houston, TX – WearSox® Thermal Spray
 - Mineral Wells, TX – Centralizers
 - Edmonton, Alberta, Canada – IIC Float Equipment
 - Ravenna, Italy – MCC Composite Products
- Service Hubs – Houma, LA; Houston, TX; Corpus Christi, TX; Oklahoma City, OK; Odessa, TX; Sidney, Montana; Edmonton, Alberta; Ravenna, Italy and Aberdeen, Scotland
- Sales Offices – Houston, TX; Houma, LA; Odessa, TX; Oklahoma City, OK; Calgary, Alberta; Ravenna, Italy and Aberdeen, Scotland



Certifications, Licenses and Registrations ANTELOPE

- ISO: 9001 Registered
- API 10D Licensed
- API 5CT Licensed
- API Q1 Certified
- VAM Threading License
- Hunting's Threading License
- Tier 1 Tenaris License



Antelope's WearSox[®]: ON-THE-PIPE-SOLUTIONS

WearSox[®] is a revolutionary technology that enables oilfield Operators to reduce costs and increase efficiency in the drilling process through a thick, robust coating that provides centralization, stabilization and wear resistance to casing, and other downhole tools.

- A step-change in centralization technology using state-of-the-art spray metal technology to apply centralizers and stop collars directly onto customers' tubulars.



Houston, TX

- Thermal spray process used to create blades and stops.
- Patented metal spray application was developed for good wear resistance.
- Patented process allows for the direct application of centralizers onto casing at any location and in virtually any geometry.
- **Process:**
 - Twin wire arc spray
 - Uses (dried) shop compressed air
 - Low heat input to pipe ($= < 150^{\circ} \text{C}$)
 - No degradation of pipe metallurgy
 - No harm to internal plastic coating
 - Bond shear strength = +/- 10,000 psi
 - Hardness, RC = 62





- Deepwater Tieback Centralization
- 2 sets of three-blade centralizers offset by 60° and staggered down the casing
- Surge reduction
- optimal fluid bypass and standoff
- Approximately 200,000 feet run to date



- Low coefficient of friction .08 FF
- Mechanically bonded to casing
- Enhanced fluid bypass – min. effect on ECD's



- StopSox Stop device deploys bow centralizer
- 10,000 PSI Holding force
- Allows for spacing any location on casing joint, multiple if needed

Antelope's MCC: ON-THE-PIPE-SOLUTIONS

Antelope's revolutionary Multi-layer Composite Centralizer (MCC) combines industry-leading durability with superior performance in a structural centralizer that's easily installed anywhere. The composite materials are resistant to temperature, shear, impact, compression and surface adhesion, making it one of the most casing-friendly centralizers on the market. Its extremely low friction factor and high wear resistance make it a must-have oil tool for technically demanding wellbores.



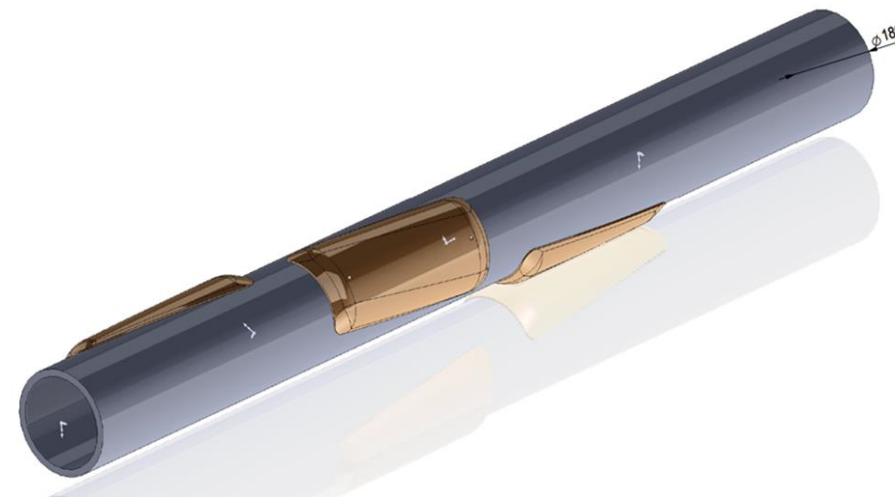
Spiral Blade
Centralizer

- Integrally bonded direct to tubular centralization
- Staggered placement to give optimal fluid bypass and ECD
- Very low friction coefficient
- Low impact geometry for restrictions/obstructions
- Flexibility of design for bespoke solutions
- Very robust construction – high mechanical properties



What is it exactly?

- Wear resistant zirconia composite layer
- Structural carbon fiber and Kevlar mat
- Structural carbon fiber mat
- SMC carbon fiber spacing layer
- Structural carbon fiber mat
- Carbon fiber adhesion mat



Properties - Mechanical Testing - In House Laboratory Ravenna

ANTELOPE

- Adhesion > 6,000 psi
- Temperature resistance > 374°F
- Compressive strength 42,000 psi
- Tensile strength 36,000 psi
- Impact resistance 33 feet drop ball, no damage



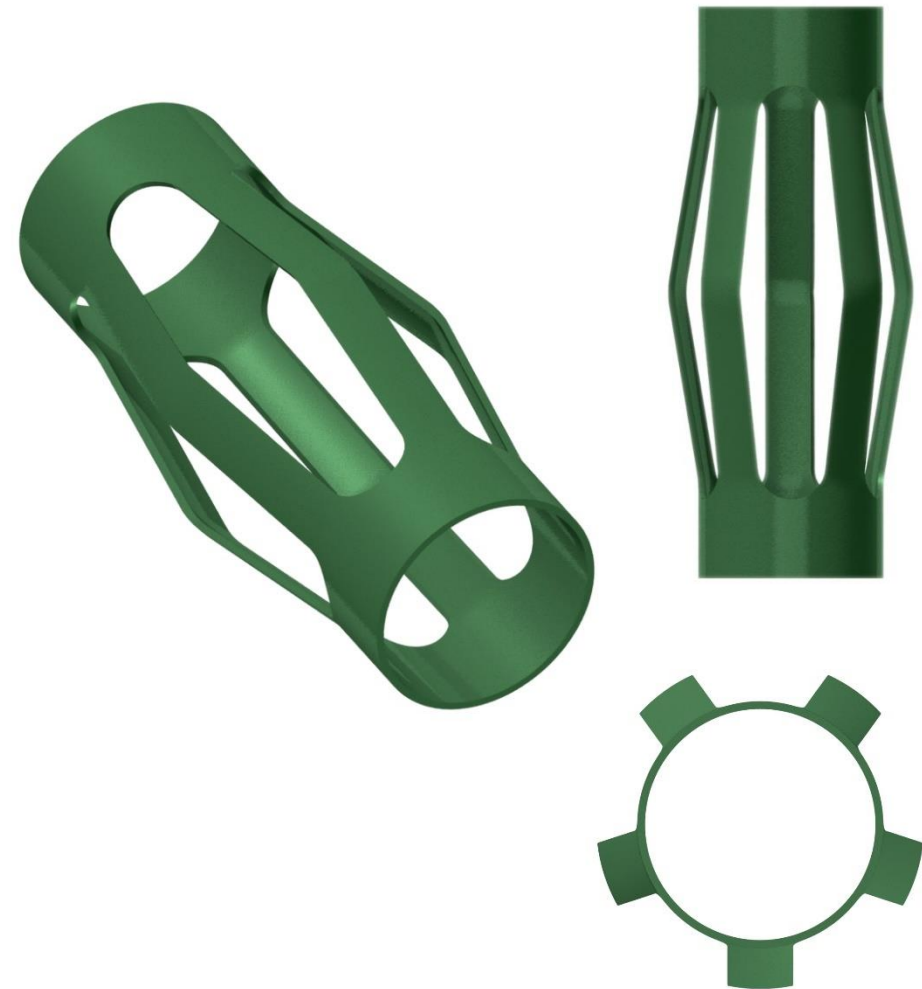
CENTRAMAX[®] STANDARD AND CT CENTRALIZER SERIES: ON-THE-PIPE-SOLUTIONS

The CentraMax[®] is Antelope's newest patented centralization design that delivers a solution to downhole challenges maximizing the ability to reach total depth.

The CentraMax® is a vigorous, laser-cut, heat-treated single material piece centralizer with a high restoring force. The metallurgic process strengthens the centralizer leaving its integrity intact under all well conditions. The centralizer is manufactured approximately to gauge hole diameter for easy installation requiring little to no starting force. Our experienced engineers have calculated the right downhole program to maximum stand-off capability, which provides low flow area encroachment to reduce ECD. The CentraMax® will decrease RIH time, increase flow by and prepare the well for a good cement job.

- Applications:

- Standard Wells
- High Angle Wells
- Extended Reach Wells
- Horizontal Wells

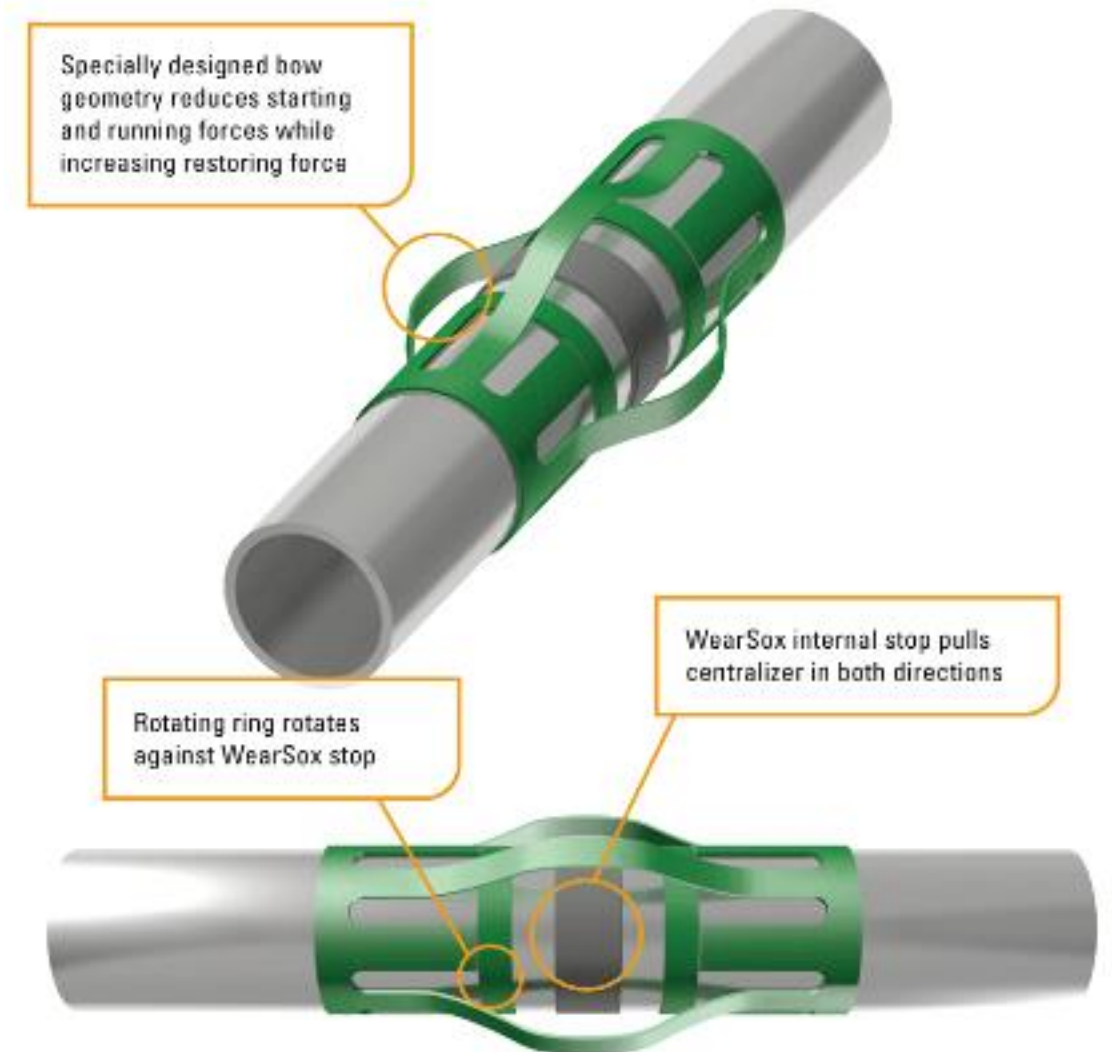


CENTRAMAX[®] CT CENTRALIZER SERIES: ON-THE-PIPE-SOLUTIONS

The CentraMax[®] CT Series is Antelope's line of close tolerance, single-piece centralizers for centralizing casing in the wellbore. The CT product line includes the RT1, PT1 and PI1 models that offer different bow geometrics, allowing you to choose the design that provides optimum centralization in any given well. All three product variations are cold-formed then heat-treated for ultimate durability and performance, and can easily be installed by our trained personnel.

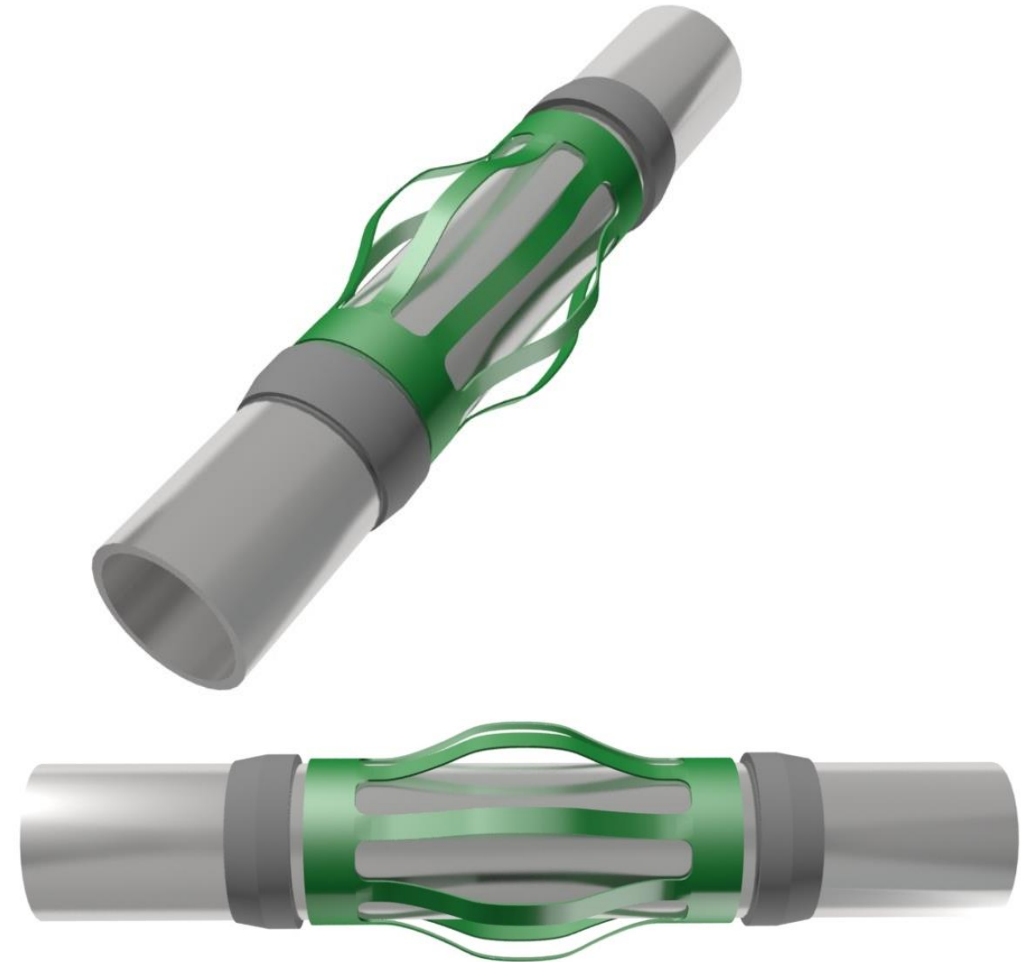
This close tolerance one-piece centralizer is pulled in both directions using an Antelope anchoring device inside the centralizer between inner rings, and allows the centralizer to freely rotate.

- Design allows for both reciprocation and rotation type applications.
- Centralizer is always pulled when installed over an internal anchor and/ or limiting device.
- For use when annular clearance between casing O.D. and restriction I.D. are sufficient (approx. 1/2" minimum of radial annular clearance is required).
- Zero welded Bows
- Reduced Lead Times & Cost to Operator
- Centralizer – US Patent No. 743,447



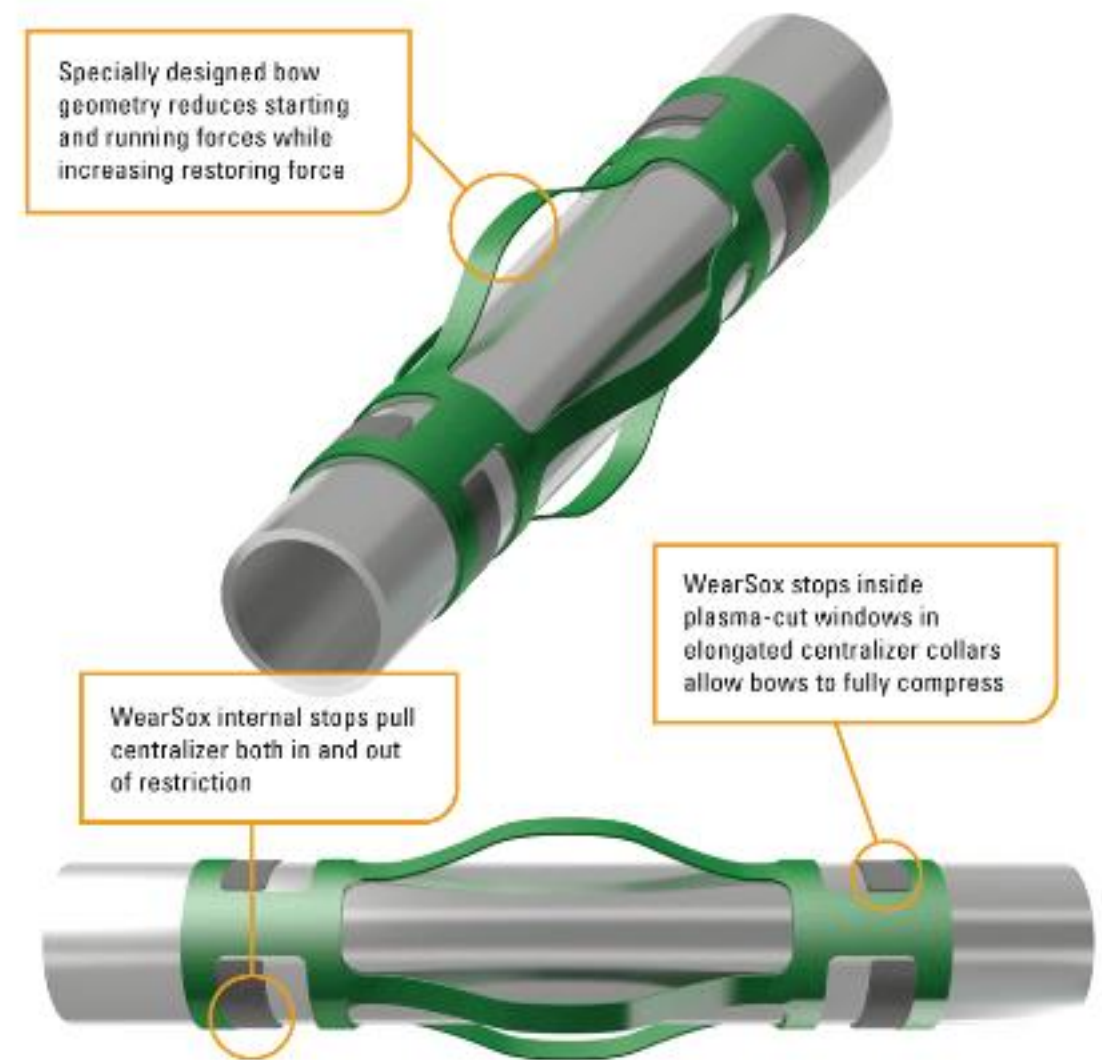
This close tolerance centralizer allows for both reciprocation and rotation type applications. It is always pushed when installed between two external Antelope anchoring devices. Specially designed bows allow the centralizer to be pushed into a restriction I.D. without increasing starting and running forces, while still providing an optimum restoring force inside the open hole section of the well.

- Design allows for rotating and reciprocating type applications.
- Centralizer is always pushed when installed between two anchors or limiting devices.
- For use when annular clearance between casing O.D. and restriction I.D. are sufficient (approx. 3/8" minimum of radial annular clearance is required).
- Zero welded Bows.
- Reduced Lead Times & Cost to Operator
- Centralizer – US Patent No. D717,837



Unique to the market, this single-piece centralizer option for ultra-close tolerance applications allows the centralizer to be pulled and/or reciprocated both in and out of the restriction with specially designed “windows” in the centralizer’s end collars. The PT1 can be anchored using Antelope’s WearSox® or MCC technologies.

- Design allows for reciprocating type applications.
- Centralizer is always pulled when anchors and/or limiting devices are installed in the “windows” of the centralizer’s end collars.
- For use when annular clearance between casing O.D. and restriction I.D. are sufficient (approx. 3/8” minimum of radial annular clearance is required).
- Zero welded Bows
- Reduce lead times & Cost to Operator.
- Centralizer – US Patent No. D718,342



- All tools are subjected to rigorous testing.
- Test facilities and software include test presses for API 10D starting, running and restoring force tests and for shear test.
- Third-party testing is also conducted for temperature pressure, tension and friction.
- All test results are shared with customers.

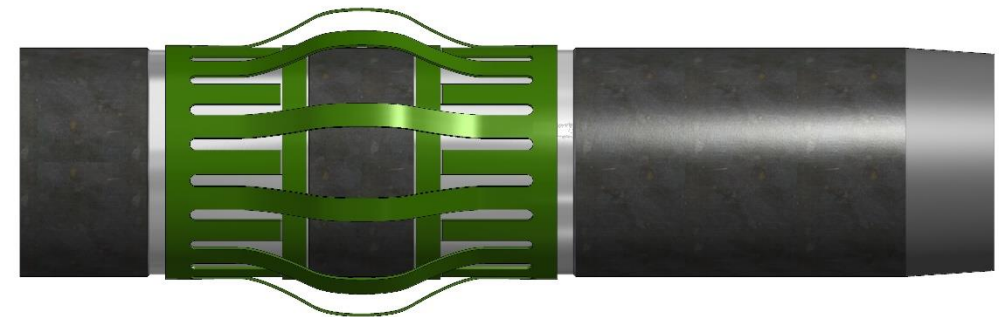
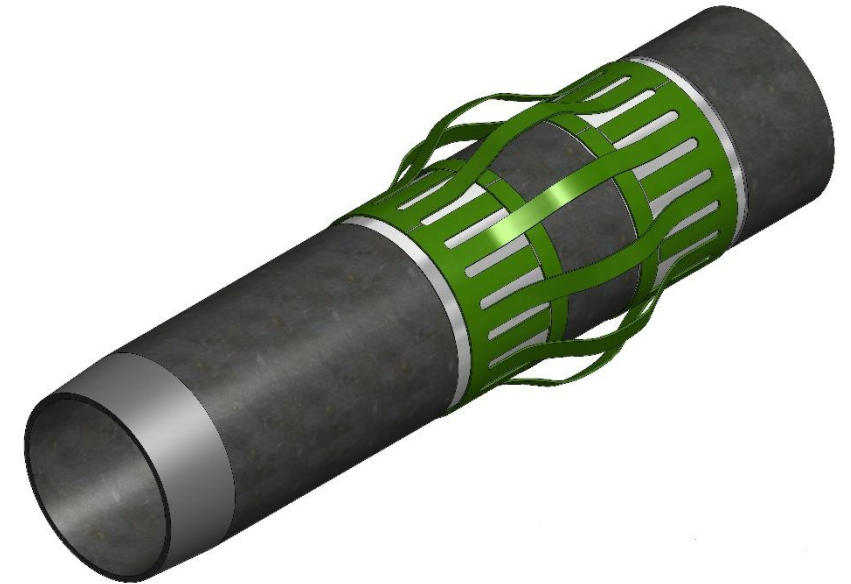


CENTRAMAX[®] CT CENTRALIZER SUBS SERIES: A DIFFERENT SOLUTION

Antelope's CentraMax[®] Centralizer Subs are suited for use when annular clearance casing O.D. and restriction I.D. are sufficient. The installation of our sub bodies reduces the centralizer's material stack, allowing the centralizer to safely and effectively pass through narrow I.D. restrictions. All of our CentraMax[®] Centralizer Subs are produced from a single piece of heat-treated steel, which minimizes potential weld and component failures, and provides optimum performance even with today's complex wellbore configurations.

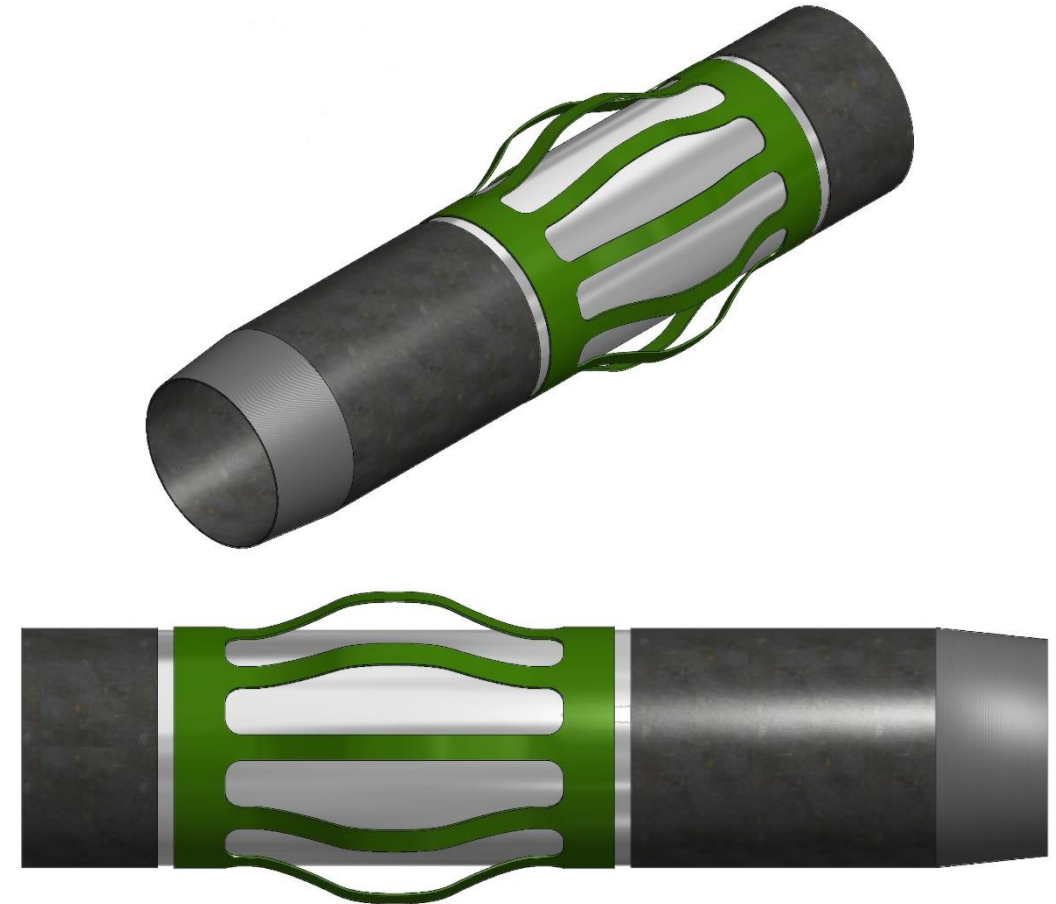
This close tolerance centralizer is pulled/reciprocated in both directions through the use of an internal machined integral sub body anchor, and allows the centralizer to rotate freely. The unique design prevents the machined sub body internal anchor from getting underneath the bows and the end collars, allowing the bows to fully compress, while adding safety and performance to the tool.

- Design allows for reciprocation and rotational type applications.
- Centralizer is always pulled when installed over the integral machined sub body anchor.
- For use when annular clearance casing recessed O.D. and restriction I.D. are sufficient (approx. ½" minimum of radial annular clearance is required).
- Sub body installation reduces the centralizer's material stack, which allows the centralizer to safely and effectively pass through narrow I.D. restrictions.
- Centralizer is produced from a single piece of heat treated steel, which minimizes potential weld and component failures, and provides optimum performance for today's most challenging wellbore configurations.
- **Centralizer** – US Patent No. D743,447
- **SUB Body** – Patent Pending



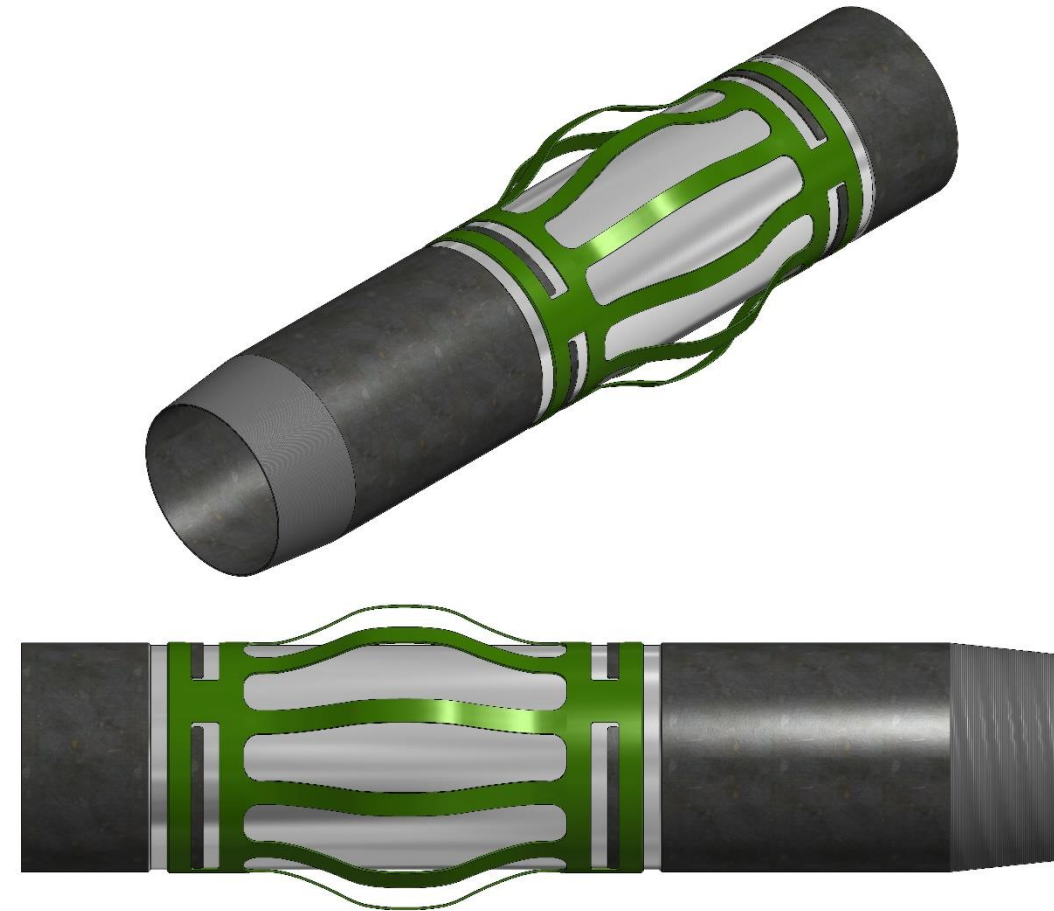
This close tolerance centralizer option for ultra-close tolerance applications allows the centralizer to be pushed and reciprocated both in and out of the restriction with specially designed bows, and is able to rotate freely.

- Design allows for rotation and reciprocation type applications.
- Centralizer is always pushed when installed between two integral machined sub body anchors.
- For use when annular clearance casing recessed O.D. and restriction I.D. are sufficient (approx. ¼" minimum of radial annular clearance is required).
- Sub body installation reduces the centralizer's material stack, which allows the centralizer to safely and effectively pass through narrow I.D. restrictions.
- Centralizer is produced from a single piece of heat treated steel, which minimizes potential weld and component failures, and provides optimum performance for today's most challenging wellbore configurations.
- **Centralizer** – US Patent No. D717,837
- **SUB Body** – Patent Pending



Unique to the market, this centralizer option for ultra-close tolerance applications allows the centralizer to be pulled/reciprocated both in and out of the restriction with specially designed “window” openings in the centralizer’s end collars, which are anchored with integral machined sub body anchors.

- Design allows for pulled and/or reciprocating type applications.
- Centralizer is always pulled when “windowed” centralizer end collars are installed over integral machined sub body anchors.
- For use when annular clearance casing O.D. and restriction I.D. are sufficient (approx. 3/16” minimum of radial annular clearance is required).
- Sub body installation reduces the centralizer’s O.D., stack, which allows the centralizer to safely and effectively pass through narrow I.D. restrictions.
- Centralizer is produced from a single piece of heat treated steel, which minimizes potential for weld and component failures, and provides optimum performance for today’s most challenging wellbore configurations.
- **Centralizer** – US Patent No. D718,342
- **SUB Body** – Patent Pending



ANTELOPE'S FLOAT EQUIPMENT:

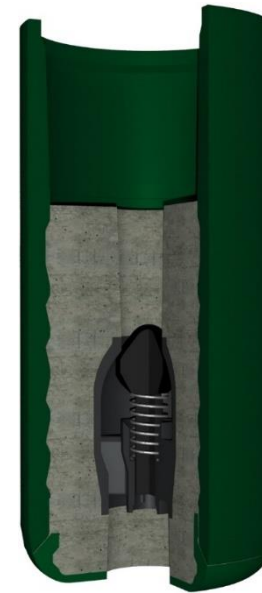
We've put our decades of experience to work crafting a full-featured class of float equipment that withstands the toughest downhole conditions. Our Float Shoes, Guide Shoes and Float Collars are designed for maximum toughness yet easy drill-out, with High Flow valves built to API RP10F requirements coming standard. Our float equipment is available in a range of sizes from 3-1/2" - 48", and can be optimized with side ports, down jets, up jets or automatic filling valves.

305/315 – Float Shoes

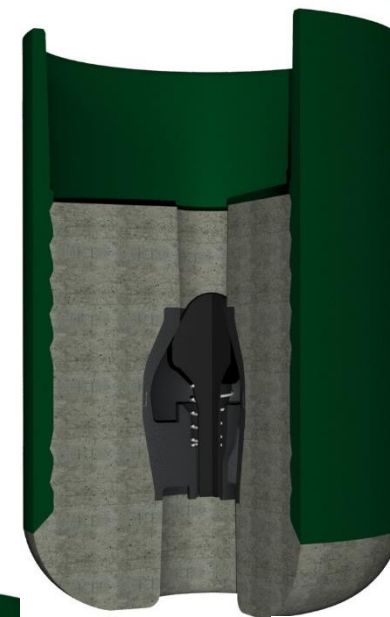
- The 305 and 315 Series Float Shoes feature Antelope's proven FGMax™ plunger valves, which ensure the casing can be floated to bottom and U-tubing prevented after cement displacement. The valve assembly is made from high temperature, high strength phenolic that is anchored to the float shoe body with a high strength cement that allows for easy drill-out.

340/350 – Float Collars

- The 340 and 350 are used to bump cement wiper plugs and provide an additional barrier against U-tubing, allowing for contaminated cement to be trapped within the casing shoe track. Like the 305/315 Series, the 340/350 Series Float Collars utilize the FGMAX™ plunger valves that are tested to API RP10F
 - Round nose on float shoe assist in guiding the casing to target depth
 - Large flow area ensures minimal abrasion which occurs on the valve
 - All phenolic plunger protects against erosion
 - Balanced spring force ensures sealing occurs through all pressures, including low differential pressure
 - Valve assembly made from high temperature, high strength phenolic allows for easy drill out
 - PDC and Tri-cone drillable



305 Float Shoe



315 Float Shoe



340 Float Collar



350 Float Collar

306/316 – Stab-In Float Shoe

- The 306 and 316 Series Stab-In Shoes are typically fitted with a round nose that helps guide the casing to the target depth. They can also be provided with ports (up, down or side) and various types of noses to suit different applications.

341/351 – Stab-In Float Collar

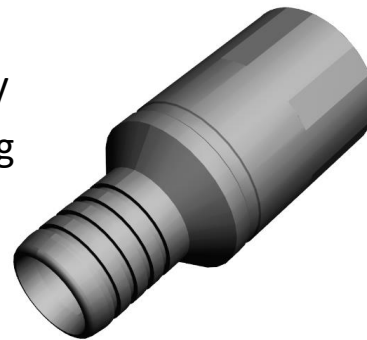
- With a valve assembly made from high temperature, high strength phenolic, the 341 Series Stab-In Collar features a balanced spring force that ensures sealing occurs even in low differential pressures. Like the 306 Series, it is ideal for large diameter casing, where cement can be pumped through the drill pipe or tubing, reducing circulation time and pump rates.
- Offshore well cementing where pumping through tubing is preferred
- Receptacle made from drillable aluminum alloy
- Stinger (361 Series) includes 4 o-rings providing a positive seal once stabbed into receptacle
- PDC and Tri-cone drillable



306 Stab-In Shoe



341 Stab-In Collar



361 - Stab-In Stinger



Drill Pipe Latch-In Dart



544 - Drill Pipe Centralizer

Flow-Guard Max™ 1

Valve Size:	2.5 In (63mm)
Valve Type:	Phenolic Plunger
API RP10F Rating:	Category IIIC
Tested Flow Rate:	10 BPM
Tested Flow Durability:	24 Hours
Temperature Rating:	400°F
Valve Back Pressure Rating:	5000 psi*
Inlet ID:	1.875 In
Minimum Flow Area:	2.76 in ²

*Backpressure rating of valve per parameter of API RP10F Category IIIC.

Flow-Guard Max™ 2

Valve Size:	3.5 In (89mm)
Valve Type:	Phenolic Plunger
API RP10F Rating:	Category IIIC
Tested Flow Rate:	10 BPM
Tested Flow Durability:	24 Hours
Temperature Rating:	400°F
Valve Back Pressure Rating:	5000 psi*
Inlet ID:	2.650 In
Minimum Flow Area:	5.52 in ²
Maximum Flow Rate:	20 bbl/min**

*Backpressure rating of valve per parameter of API RP10F Category IIIC.

**Valve tested to 20 bbl/min max flow rate.



700 - HPHT Float Shoe

- The 700 Series utilizes a cast-iron plunger valve that is capable of withstanding extreme well conditions, like pressures up to 10,000 psi in hydraulic fracturing. The erosion-resistant plunger ensures a positive seal even after 24 hours of circulation at 10 BPM.

730 - HPHT Float Collar

- The 730 Series is another high pressure/high temperature piece of float equipment made for casing strings with demanding conditions. It features an integrated latch-down profile for matching plugs capable of withstanding up to 10,000 psi bump pressure.
- Eccentric nose profile to guide casing through ledges
- Applications with high annular pressure and/or play bump pressure
- Sealing elements around valve housing ensures there are no leak paths

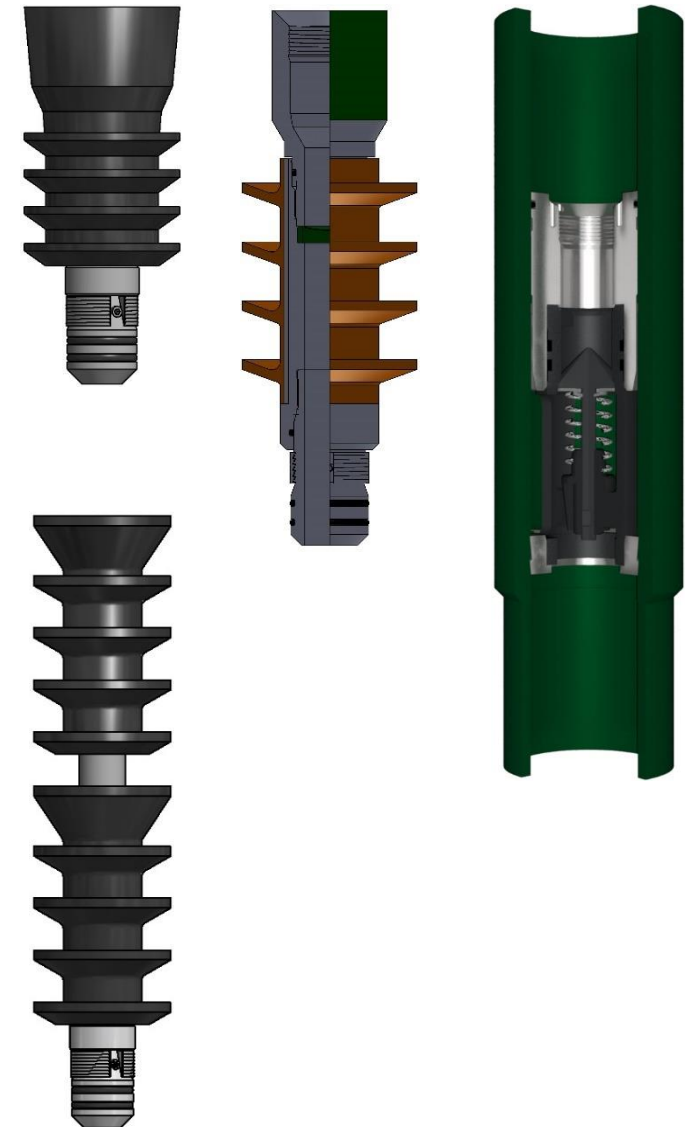


700 HPHT Float Shoe



730 HPHT Float Collar

- Antelope's latch-in plugs provide cost effective solutions for fluid separation and the removal of excess mud and cement film from the casing wall while cementing production tubing or completion strings. The ratchet latch system allows multiple bottom plugs to be run and latched into each other and into compatible Antelope float equipment. These latch-in plugs can withstand high plug bump and backpressures. Precision high pressure rupture discs allow the plugs to run through restrictions without premature rupture. HNBR wiper fins provide superior wear resistance and high temperature performance, eliminating the need for clean out or scraper runs.
 - Wear-resistant, high temperature HNBR fins provide efficient wiping and sealing for long casing and tubing strings at bottom hole circulating temperatures up to 350°F.
 - Ratchet latch system allows use of multiple bottom plugs into which a top plug can be latched for high plug bump and back pressure applications.
 - Top and bottom plugs latched into Antelope HPHT float equipment are capable of withstanding up to 10,000 psi plug bump pressure and 5,000 psi back pressure.
 - Top plugs latched into Antelope HPHT float equipment are rated to 10,000 psi plug bump and back pressure.
 - Compatible with Antelope Series 700 and 730 HPHT float equipment.
 - Minimum 1.5" ID through bottom plug for flow rates up to 8 BPM.



Cementing Wiper Plug

Cementing plugs helps in wiping casing ID and provides a barrier between cement and displacement fluids.

▪ SERIES 610/615 – STANDARD CEMENTING PLUGS

- Standard profile that is compatible with any float equipment that has a flat landing surface.

▪ SERIES 600/605 – NON-ROTATING CEMENTING PLUGS

- The Non-Rotating Cement Plugs are retrofitted with durable, high temperature plastic inserts to prevent plugs from spinning during drill out.
- Non-rotating cementing plugs have locking teeth on both the top and bottom plug and on specially designed Float Collars which allow the system to lock together during drill out.



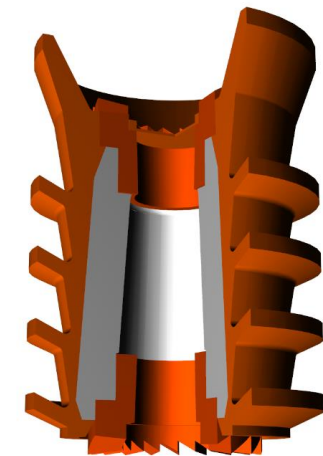
610



615



600



605

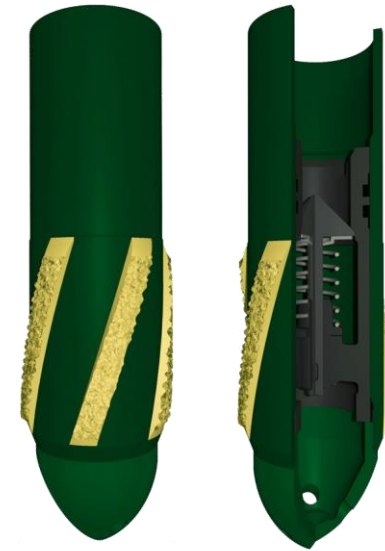
- 704: Reamer Shoe – without valve



- 707: Reamer Shoe – with cemented poured valve



- 708: Ream Shoe with Valve



- 322: Guide Shoe Texas Pattern



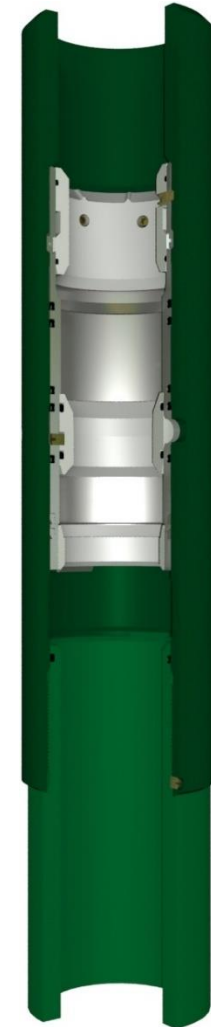
- 320: Guide Shoe with Cement Nose



STAGE CEMENTING COLLARS

Incorporating state of the art design provides for a robust tool that ensures optimal performance in even the harshest environments. Years of experience has enabled Antelope engineers to develop a tool that takes into account every possible variable that may affect the performance of the tool.

- This mechanical stage collar allows for cementing to be completed in long casing strings, where low cement displacement pressure is required due to weak formations. The robust double snap ring locking mechanism ensures the tool does not open after it is closed, and is able to withstand an upward force of 100,000 lb. minimum. Antelope's 500 Series, has minimal moving parts, which reduces the chance of failure.
 - Large pump through diameters allows for balls dropped and wiper plugs to pass through without affecting ongoing tool operation
 - Anti-rotation system for the inner-sleeve does not require holes through the tool body, and the unique anti-rotation system for the drillable seats enhances drill-out with PDC and roller cone bits
 - Single inner-sleeve design eliminates pressure traps and increases reliability
 - API box threads are integrated into the body of the stage tool
 - Short close tolerance seal length allows operations within well curvatures with dog leg severity (DLS) up to 12° per 100 ft.
 - The high density and length of the composite opening cone assures quick descent, even in high density drilling fluids
 - Available in 3-stage configuration
 - High temperature seals are available for temperatures above 300°F
 - Pump-down opening plug systems are available for highly inclined wells
 - Shut-off plug systems are available for setting casing packers and testing casing to high pressures
 - Available in 3-stage configuration
 - High temperature seals are available for temperature above 300°F
 - Pump-down opening plug systems are available for highly inclined wells
 - Shut-off plug systems are available for setting casing packers and testing casing to high pressures
- 500: 2-Stage Mechanical



- Antelope's 510 Hydraulic Stage Collar allows for cementing casing in multiple stages at any inclination with hydraulically opened sleeve system. Incorporating state-of-the-art design provides for a robust tool that ensure optimal performance in even the harshest environments.
 - Setting annulus casing packers in conjunction with stage collars
 - Stage collar may be opened immediately after first stage shut-off plug is landed
 - Minimal moving parts reduces chances of failures
 - Reduces risk of first stage cement setting above tool before opening
 - Large pump through diameters allows for wiper plugs and drop balls to pass through without affecting tool operation
 - Opening pressure setting is field adjustable
 - High burst and collapse pressures after closure of tool
 - Robust dual snap ring locking mechanism ensures the tool does not open after closure and is able to withstand 100,000 lb. minimum upward force
 - Well protected components ensure the tool is able to withstand drill-out damage or leakage
 - Multiple high pressure seals engaged around ports after closure ensures against pressure leakage
 - Standard stage collar materials are suitable for sour our service applications
 - Suitable for operating at temperature up to 300°F
 - All internal components within casing drift are PDC and Tri-cone bit drillable

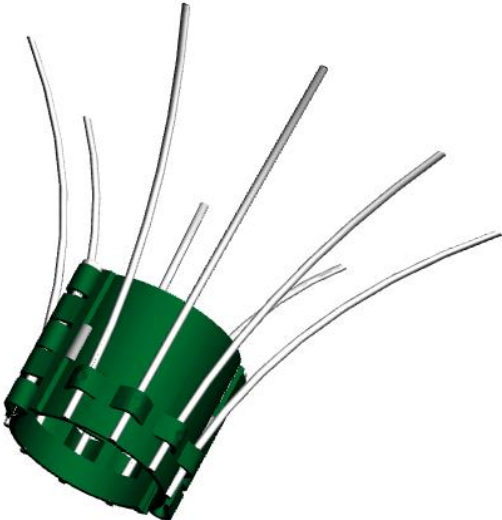
- 510: 2-Stage Hydraulic



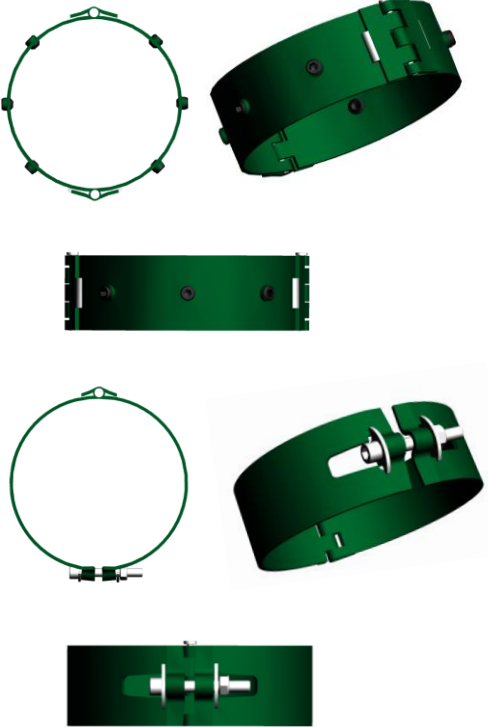
STANDARD PRODUCTS

- Wire Scratchers, Cable Wipers
- Stop Collars
- Positive / Rigid Welded Centralizers
- Hinged Standard Bow Centralizers
- Slip-On Standard Centralizers
- Imperial and Dual Contact Bow Centralizers
- Non-Welded Bow Spring Centralizers
- Specialty Close Tolerance Centralizers
- Cement Baskets
- Float Shoes, Float Collars and Guide Shoes
- Float Valves
- Premium Threading Services
- Placement, Standoff and Torque and Drag Modeling

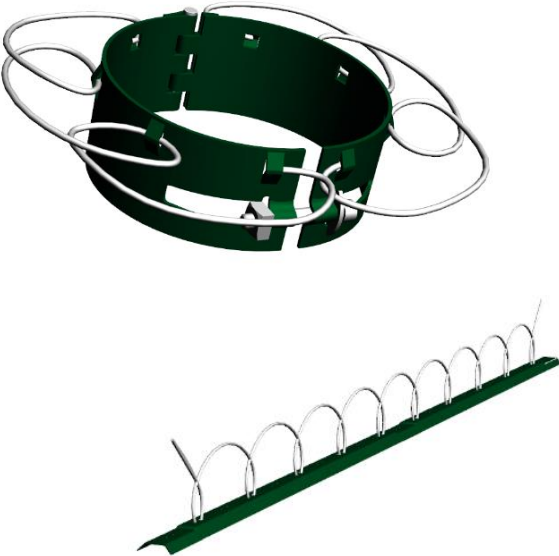
Wall Scratcher



Stop Collars



Cable Wipers



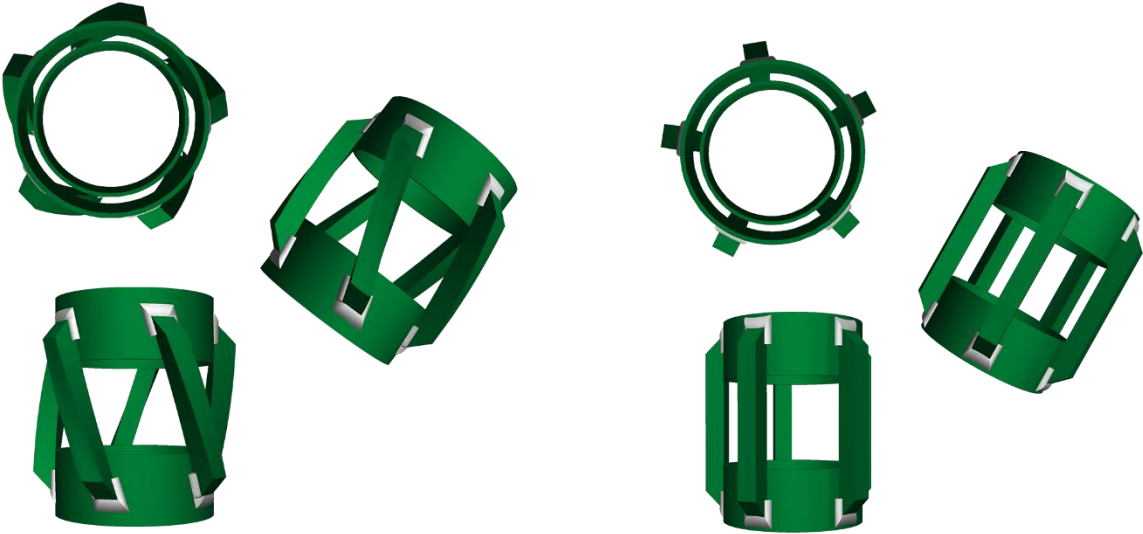
Solid Body



Solid Body Slip-On
Spiral Veins

Solid Body Slip-On
Straight Veins

Rigid



Rigid Slip-On Spiral Veins

Rigid Slip-On Spiral Veins

Standard Bow Spring Centralizers



Hinged Bow Spring Centralizer



Slip-on Bow Spring Centralizer



Slip-on Close Tolerance Bow Spring Centralizer



Dual Contact Bow Spring Centralizer

Questions?

Thank you for your time and attention!

Distinctive Tools. Instinctive Service.