2019/2020
PRODUCT CATALOG

WELLFIRST

CONTACT US

WELLFIRST

Headquarters

Canada
Calgary: 403.370.0867
United States
Houston: 832.693.2933

Canada Service Centres

Lloydminster: 780.808.8788
Bonnyville: 780.826.6290
Nisku: 403.370.0867
Grande Prairie: 587.297.1370

United States Service Centres

East Texas: 903.738.0894
West Texas: 832.693.2933
South Texas: 830.317.0456
Longview Texas: 903.757.6300

Manufacturing

Saudi Arabia: 966.13.896.1202
Oman: 968.2440.3775

Sales: 403.370.0867

TABLE OF CONTENTS

WELLFIRST

Liner Hangers & Accessories

WELLFIRST

ENDURO Running & Setting Tool

The Enduro-ST with Enduro-RT tandem Setting and Running Tools are premium liner running tools. Boasting innovative design features intended to put any liner into place, even in the most demanding hole conditions.

Features

- 48 square inches of setting area
- Most straightforward and robust running/setting tool available; stab-in and automatic hydraulic release
- One tool sets and retrieves all WellFirst Liner Hangers and Packers
- Extremely high setting force capability; can set any WellFirst hanger/seal with 17MPA pump rating
- Simple adapter kits accommodate different sizes of hanger and seals
- Simple operation and redress, field adjustable sheer setting
- High torque through capabilities (up to 8,000ft/lbs)
- Emergency threaded and secondary emergency 1/6-turn shear release
- De-pressurization of the work string/full circulation indicates full release
- Once unset, circulation is to the bottom of the hanger/seal or circulation string
- Pressure test any RLH or RLP once the packer is set. Pressure test can be completed before disconnecting from Liner Packer to ensure liner does not move down hole

ENDURO Liner Hanger Packer

The ENDURO RLH features proprietary slip and elastomer technology providing the most reliable hanger in both setting and retrieving operations. Designed to exceed expectations over a wide range of completion operations including, secondary liner systems, FCD strings and sand control. The Enduro running and setting tools and are designed for extreme high torque operations, including rotating the liner into position.

Features

- 3000PSI @ 572F / 21MPA @ 300C Temp rating
- High temperature and pressure applications
- Innovative pre-heating manufacturing process, results in less then 1% minimum initial seal degradation
- As elastomer wear takes place over time, the RLH can be re-energized to extend the life of the Packer
- 360 degree slip phasing allows the customer to set inside casing that might be prone to failure
- A built- in thermal tie-back eliminates the need to seal into a long tie-back
- A one-piece internal mandrel ensures the liner hanger will never separate during the retrieval
- Hydraulic over mechanical release provides a safer, more reliable retrieval method
- High torque rating through the setting tool and liner hanger (8000 ft/lbs)
- Smallest O.D. of any competing liner hanger
- High pressure conventional elastomer available upon request
- Sizes range from 7X4-1/2" to 13-3/4" X 9-5/8"
- Pressure test the RLH once the packer is set. Pressure test can be completed before disconnecting from Liner Packer to ensure liner does not move down hole

ENDURO Liner Top Packer

The Wellfirst Enduro RLP is a premium liner top seal that is designed for use in a wide variety of applications. The seal utilizes a propriety blend of elastomer that is ideal for operation in primary conditions with high pressures and temperatures. When used in conjunction with the ENDURO Running Tool and other liner circulation tools, the robust design is ideal for rotating and circulating liners into position. A large beveled liner entry facilitates liner re-entry for work-over or tractor operations.

Features

- 3000PSI @ 572F / 21MPA @ 300C Temp rating
- High temperature and pressure applications
- Innovative pre-heating manufacturing process, results in less then 1%minimum initial seal degradation
- As elastomer wear takes place over time, the RLP can be re-energized to extend the life of the Packer
- A built- in thermal tie-back eliminates the need to seal into a long tie-back
- High torque rating through the setting tool and liner hanger (8000 ft/lbs)
- Smallest O.D. of any competing liner hanger
- High pressure conventional elastomer available upon request
- Sizes range from 7X4-1/2" to 13-3/4" X 9-5/8"
- Pressure test the RLP once the packer is set. Pressure test can be completed before disconnecting from Liner Packer to ensure liner does not move down hole

Hollow Point Liner Hanger

The RLH Hollow Point Liner Hanger allows customers to convey slotted liner or wire wrapped screen into the horizontal section of the wellbore, set and release from the Liner Top Packer and set the retrievable Bridge Plug all in a single step.

Features

- Eliminates entire second trip for the WRS Bridge Plug
- Circulation is possible through the setting tool until the setting ball is inserted into the tubing string and lands on the ball seat. Once setting is complete, circulation between annulus and tubing through the setting tool is possible.
- High torque capability allows the customer to manipulate the casing through any downhole issues. (8000 ft/lbs)
- Plug in place is pressure tested prior to running downhole. Eliminating an additional failure point that is common with competitors products.
- Thermal and Conventional elastomer's available
- Built in tieback receptacle is included standard
- Ability to pressure test and re-pack off the elastomer at any point in the future. Completed in a single trip this can extend the life of the liner hanger and reduce unwanted sand or water production.
- Sizes range from 7X4-1/2" to 13-3/4" X 9-5/8"

Enduro Sizing Chart

ENDURANCE® Liner Hanger and Liner Top Packer											
Liner x Casing	Casing Size	Casing Weight	Liner Size	Liner Weight	Max O.D.	Liner x Casing	Casing Size	Casing Weight	Liner Size	Liner Weight	Max O.D.
in	in	lb/ft	in	lb/ft	in	mm	mm	kg/m	m	kg/m	mm
4-1/2 x 6-5/8	6.63	28.00-32.00	4.50	9.50-15.10	5.38	114.3 x 177.8	168.4	41.67-47-62	114.3	14.14-22.47	136.6
	6.63	35	4.50	9.50-15.10	5.35		168.4	52.09	114.3	14.14-22.47	135.9
4-1/2 x 7	7.00	23.00-26.00	4.50	9.50-15.10	6.05	114.3 x 177.8	177.8	34.23-38.69	114.3	14.14-22.47	153.67
	7.00	26.00-29.00	4.50	9.50-15.10	5.95		177.8	38.69-43.16	114.3	14.14-22.47	151.13
	7.00	29.00-38.00	4.50	9.50-15.10	5.69		177.8	43.16-56.55	114.3	14.14-22.47	144.53
5X7	7.00	23.00-26.00	5.00	11.50-18.00	6.05	127.0 x 177.8	177.8	34.23-38.69	127.00	17.11-26.79	153.67
	7.00	26.00-29.00	5.00	11.50-18.00	5.95		177.8	38.69-43.16	127.00	17.11-26.79	151.13
	7.00	29.00-38.00	5.00	11.50-18.00	5.69		177.8	43.16-56.55	127.00	17.11-26.79	144.53
5 x 7-5/8	7.63	33.70-39.00	5.00	11.50-18.00	6.37	127.0 x 193.7	193.7	50.15-58.04	127.00	17.11-26.79	161.8
5-1/2 x 7-5/8	7.63	24.00-29.70	5.50	14.00-23.00	6.65	139.7 x 193.7	193.7	35.72-44.20	139.70	20.83-34.23	168.91
	7.63	29.70-33.70	5.50	14.00-23.00	6.56		193.7	44.20-50.15	139.70	20.83-34.23	166.62
	7.63	33.70-39.00	5.50	14.00-23.00	6.41		193.7	50.15-58.04	139.70	25.30-52.09	162.81
7 x 9-5/8	9.63	29.30-40.0	7.00	17.00-35.00	8.43	177.8 x 244.5	244.5	43.60-59.53	177.80	25.30-52.09	214.12
	9.63	40.00-53.50	7.00	17.00-35.00	8.25		244.5	59.53-79.62	177.80	25.30-52.09	209.5
	9.63	53.50-58.40	7.00	17.00-35.00	8.16		244.5	79.62-86.91	177.80	25.30-52.09	207.26
6-5/8 x 8-5/8	8.63	24.00-36.00	6.63	20.00-24.00	7.59	168.3 x 219.10	219.1	35.72-53.57	168.30	29.76-35.72	192.79
	8.63	40.00-49.00	6.63	28.00-32.00	7.31		219.1	59.52-72.92	168.30	41.67-47.62	185.67
8-5/8 X 11-3/4	11.63	42.00-65.00	8.63	24.00-49.00	10.25	219.1 X 298.4	298.4	62.50-96.72	219.1	35.72-72.92	260.35
9-5/8 x 13-3/8	13.38	54.50 - 68.00	9.63	32.30 - 58.40	12.00	244.5 x 339.7	339.7	81.10-101.19	244.5	48.07-86.91	304.8

WELLFIRST CEMENT SEAL HYDRAULIC LINER HANGER PACKER

The Wellfirst Cement Seal Liner Top Packer is a large seal bore packer. The hydraulic setting chamber is built into the packer. There is no need for additional setting tools in the string. Run in conjunction with the Wellfirst 3J Running Tool, which provides a 10,000psi/69MPA pressure rated Tie-Back. The Cement Seal Packer can also be run with a Stage Tool& Debris sub below the Packer. Once the Cement job is complete, the user can release from the liner top seal receptacle with a 1/4 turn.

Tie-Back frac string can be run with a straight sting in/mechanical release, or straight sting in/out.

Features

- Works in conjunction with 3J Seal Bore Receptacle
- Full bore design
- No special setting tools required
- Dual stage hydraulic release & set
- Stage Tool/Debris Sub compatible
- Anti-Preset mechanism
- Top & Bottom Slips

RECOMMENDED				
Packer Size	**Weight**	**Hole Size**	**Tool OD**	**Seal Bore**
In/mm	**lbs/ft-kg/m**	**In/mm**	**In/mm**	**In/mm**
4.0" x 7.0"	23.32	6.094 - 6.366	5.88	4
101.6	34.2	154.79 - 161.70	149.23	101.6
Packer Size	**Setting Area**	**Setting Initiation**	**Pressure**	**Max Setting**
In/mm	**in3/cm3**	**psi/mpa**	**psi/ma**	**psi/mpa**
4.0" x 7.0"	5.809	1,375	3500.00	4,500
101.60 x 177.80	37.48	9.48	24.13	31.02

WELLFIRST CEMENT SEAL HYDRAULIC MECHANICAL LINER TOP PACKER

The Wellfirst HM Cement Seal Liner Top Packer is a large seal bore hanger packer. Run in conjunction with the Wellfirst Running Tool, which provides a 10,000psi/69MPA pressure rated Tie-Back. The HM Cement Seal Packer can also be run with a Stage Tool & Debris sub below the Packer. Once the liner is landed on depth, the hydraulic anchor can be activated, allowing the user to release from the liner before the cement job. Once the cement job is completed the 10K rated elastomer can be mechanically set using compression with the tubing.

The Tie-Back frac string can be run with a straight sting in/ mechanical release, or straight sting in/pull out.

Features

- Works in conjunction with 5', 10', or 20' Seal Bore Receptacle
- Full bore design
- No Risk of of premature hydraulic setting of element
- Dual setting hydraulic slips with mechanical set elastomer
- Stage Tool/Debris Sub compatible
- Anti-Preset mechanism while running in hole
- Top & Bottom anchor slips

WELLFIRST CEMENT SEAL
HYDRAULIC MECHANICAL LINER TOP PACKER

Liner Top Packer	
Outer Casing Size	7.00 in (177.8 mm)
Inner Casing Size	4.50 in (114.3 mm)
Weight Range	17 - 26 lbs/ft (25.92- 38.69 kg/m)
Maximum OD	6.00 in (152.4 mm)
Minimum ID	4.00 in (101.6 mm)
Length of Tool	97.7 in (2484.1 mm)
Top Connection	4.50 ACME **LH** (BOX)
Bottom Connection	4.50 - 8RD LTC (PIN)
Recommended Hole Size	6.094 in (154.8 mm) - 6.366 in (161.7 mm)
Hydraulic Anchor	
Outer Casing Size	7.00 in (177.8 mm)
Inner Casing Size	4.50 in (114.3 mm)
Weight Range	17 - 26 lbs/ft (25.92- 38.69 kg/m)
Maximum OD	6.00 in (152.4 mm)
Minimum ID	3.97 in (100.8 mm)
Length of Tool	37.5 in (952.5 mm)
Top Connection	4.50 - 8RD LTC (BOX)
Bottom Connection	4.50 - 8RD LTC (PIN)
Recommended Hole Size	6.094 in (154.8 mm) - 6.366 in (161.7 mm)
Running Tool Assembly	
Maximum OD (Dogs In)	4.75 in (120.7 mm)
Maximum OD (Dogs Out)	6.00 in (152.4 mm)
Minimum ID	2.00 in (50.8 mm)
Length of Tool	83.3 in (2115.8 mm)
Top Connection	3.50 - IF (BOX)

Bridge Plugs and Retainers

WELLFIRST

Hollow Point Bridge Plug

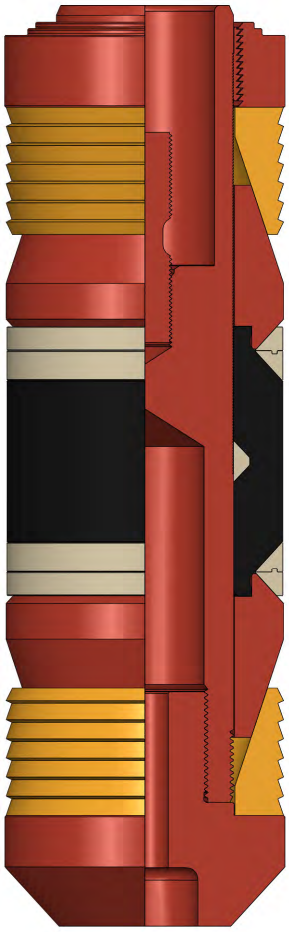
The RLH Hollow Point Bridge Plug allows customers to convey a Thermal Retrievable Bridge Plug into the Wellbore to provide isolation from below. Setting itself apart from a standard Permanent or Retrievable Plug is the ability for the customer to rotate or push through potential impairments without risk of prematurely functioning the setting tool or plug.

Features

- Circulation is possible through the setting tool until the setting ball is inserted into the tubing string and lands on the ball seat. Once setting is complete, circulation between annulus and tubing through the setting tool is possible.
- High torque capability allows the customer to manipulate the plug through any downhole impairments.
- Thermal and Conventional elastomer's available
- Fully Retrievable and redress-able for future use
- High slip area coverage reduces unnecessary strain on customers intermediate casing

DB Bridge Plug

The WELLFIRST Premium Cast Iron Bridge Plug designed to run on electric line. Rated between 2000 - 10,000 psi differential and 300°F from above and below.



Features

- Field Proven Design
- Constructed of drilable materials
- Top set with shear stud
- Standard packing element rated at 300°F
- One piece slips

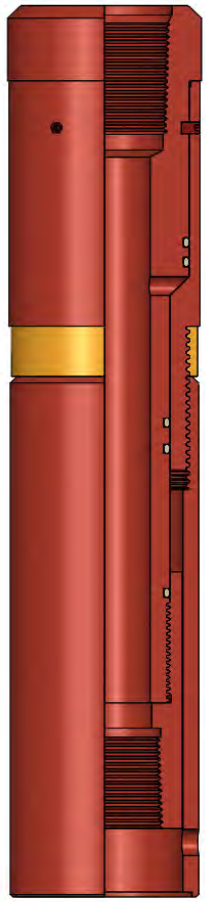
Benefits

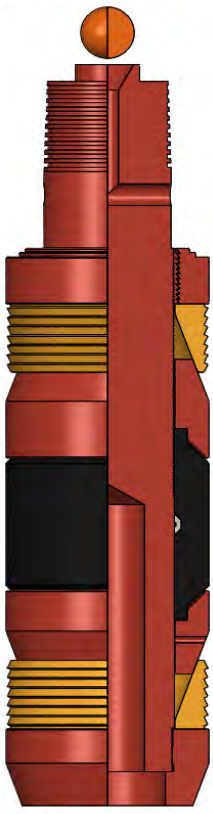
- Rating to 2,000 psi to 10,000 psi differential from above and below at 300°F
- Runs on existing electric line setting tools
- Sets in P-110 casing
- High temperature packing elements available upon request
- No tension mandrel required
- Retaining rings to assist in preventing element extrusion

Applications

- Well abandonment
- Temporary and permanent zonal isolation
- Fracturing

HMI Bridge Plug





The WELLFIRST HM-1 bidge plug is designed to set with a combination of hydraulic pressure and mechanical pull. The HM-1 bridge plug requires a setting tool.

Features

- Field Proven Design
- Constructed of drill-able materials
- Right hand rotation release setting tool from plug
- Standard packing element rating at 300°F
- One piece slips

Benefits

- One setting tool sets plugs for 4 1/2 in. through 5 1/2 in. casing by changing setting sleeves
- Set with a combination of hydraulic pressure and mechanical pull
- Excellent for use in deviated applications
- Available in high pressure and low pressure on most sizes

Applications

- Well abandonment
- Temporary and permanent zonal isolation
- Squeeze Cementing
- Fracturing
- Deviated well-bores

WRS Retrievable Bridge Plug

The WRS Bridge Plug is a wire-line set, retrievable bridge plug used for zone isolation, surface equipment repair, or any other application in which a reliable retrievable bridge plug is required. WRS Plugs can be run on wire-line, coiled tubing or jointed pipe.

Features

- Safe releasing - when releasing, the WRS Retrieving Tool automatically opens the bypass to allow pressure to equalize before the plug is released.
- Short, compact design allows setting in applications where the setting area is restricted, such as between perforated intervals
- When using a special adaptor, records may be run below the plug. The system allows recorders to br run inside a tube below the plug to prevent damage to the recorders while running and retrieving
- The WRS may be lubricated into wells under pressure on wire-line or on coiled tubing

Applications

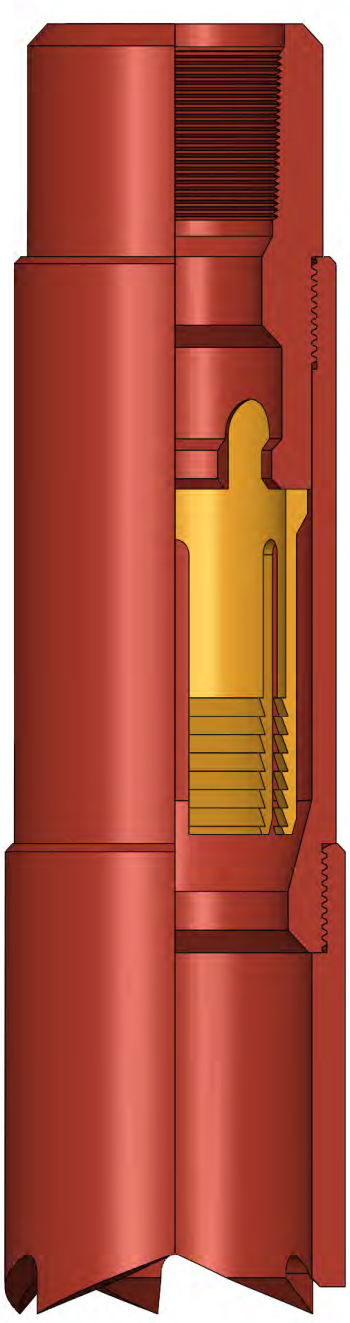
- Well suspension
- Temporary zonal isolation
- Isolation for logging Intermediate well-bore

WRS Retrieving Tool

The WRS Retrieving Tool is used to retrieve the WRS Retrievable Bridge Plugs.

Features

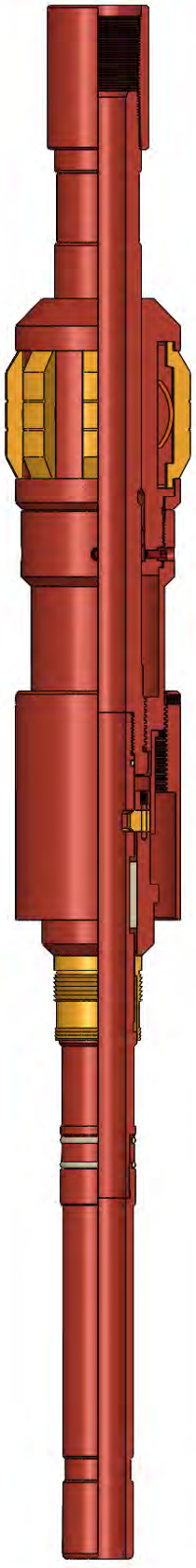
- The WRS Retrieving Tool features a unique soft grapple system that allows the overshot to engage the plug with minimal force and makes coiled tubing retrieval easier and more reliable then with competing products
- The WRS Retrieving Tool is designed to allow sand or other debris to be efficiently and reliably circulated off the WRS before latching on.



WRS Retrieving Tool					
WRS Size		WRS Maximum O.D.		WRS Connection	
in	mm	in	mm	in	mm
4-1/2"	114.3	3.75	95.3	2-3/8 EUE	30.3 EUE
5	127.0	3.75	95.3		
5-1/2"	139.7	4.38	111.3	2-7/5 EUE	73.0 EUE
7	177.8	5.00	127		
8-5/8"	219.1	7.30	185.4		
9-5/8"	244.5	8.34	211.7		
10-3/4"	273.0	9.50	241.3		

Mechanical Cement Retainer Setting Tool

The Mechanical Cement Retainer Setting Tool is used to run, set and operate a cement retainer (with mechanical slips) using tubing or drill pipe.



Features

- One step Set and Cement
- Large bore I.D. available to prevent washout of valve

Mechanical Cement Retainer Setting Tool		
Casing O.D.	**Thread Connection**	**Connection**
In	**mm**	**in**
mm	**mm**	**daN**
4-1/2"	2-3/8 EUE	20,000
114.3		
5.0		
127.0	60.3	8,900
5-1/2"		
139.7		
6-5/8"	2-7/8 EUE	30,000
168.3		
7.0		
177.8		
7-5/8"		
193.7	73	13,350
8-5/8"		
219.1		
9-5/8"		
244.5		
10-3/4" and higher available upon request		

Wellfirst Cement Retainer

Features

- Cast Iron drillable design
- Simple, surface-controlled valve automatically closes when stronger is removed
- Converts between mechanical and wireline set by changing top slips
- Temperature rating to 400°F

Benefits

- Allows pressure testing before squeeze
- Valve protects sensitive zones in low-fluid wells
- First drill out time saves rig time

Applications

- Zonal abandonments
- Surface casing gas migration

High Flow Cement Retainer

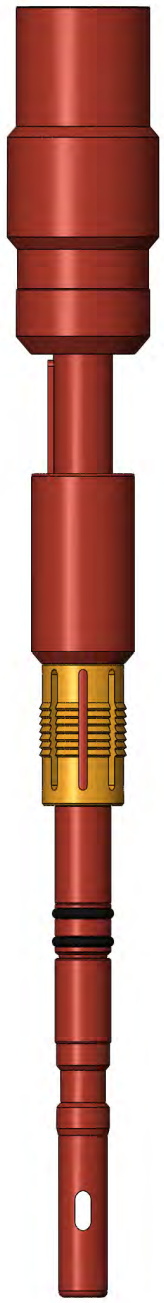
Features

- Large flow area for fluid dumping as in a disposal or large cement squeeze where large amounts of media is needed
- The bypass ports are aligned for maximum fluid movement with minimum turbulence
- When the valve is open the seals are protected from fluid erosion
- The valve sleeve is pressure balanced to prevent sudden opening from creep

Benefits

- Allows pressure test before cement squeeze
- Fast Drill out time
- Large Bore prevents wash out of valve applications
- Surface Coring Gas Migration
- Cement squeeze on low formation pressure zones

Latch Style Cement Retainer Stinger



The Latch Style Cement Retainer Stringer is used to operate the valve system in the wireline set Cement Retriever. The snap latch is run on the bottom of the tubing and automatically locates in the retainer bore. The snap-latch seal unit seals in the cement retainer bore and the collect system engages the latch thread at the top of the retainer bore. The collect on the snap latch requires 5,000 to 10,000 lbs. (2,200 to 4,500 daN) force to snap out the retainer bore. The exact amount of force will depend on the size of the retainer and the amount of time the collet is engaged and disengaged. The snap latch allows for sufficient movement to open and close the valve while maintaining a seal in the cement retainer bore. The tubing is simply picked up to close the valve and set down to open the valve.

If it is not possible to remove the snap latch from the bore with a straight pull, then the collet maybe disengaged with right-hand rotation.

Latch Style Cement Retianer Stringer			
Casing O.D.		Connection	
in	mm	in	mm
4-1/2"	114.3	2-3/8" EUE	60.30
5"	127		
5-1/2"	139.7	2-7/8" EUE	73.00
6-5/8"	168.3		
7"	177.8		
7-5/8"	193.7		
8-5/8"	219.1		
9-5/8"	244.5		
10-3/4" are available upon request			

Mud Motor & Mills

WELLFIRST

Thru-Tubing Mud Motors

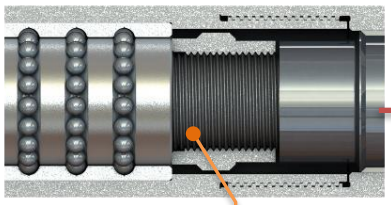
Mud Lubed Bearing Series

HIGH TORQUE DRIVE LINE ASSEMBLY

- One piece flex shaft design
- Minimized mechanical energy losses
- High rotational speed capabilities

REINFORCED MANDREL CONNECTION

- Proprietary threaded connection
- Design minimizes fatigue and distributes stress concentrations



BEARING LOWER END

- Microsynt™ Radial Bearing
- Three Way Locking System
- Highly reliable mandrel catch system

THRUST BEARING STACK

- Exceptional wear and impact resistance
- Consistently high performance in mud lubricated environments

WELLFIRST

THE BADGER COMPLETIONS HYBRID PDC TOOL

Wellfirst milling tools are designed to maximize cutting life, provide stable operating, and ensure cuttings returned to surface are small. The Badger hybrid design leverages the strengths of PDC technology alongside a composite carbide cutting structure to deliver a drill bit uniquely constructed to mill composites and metals.

Premium high impact cutters withstand most demanding milling jobs

Rearward jets maximize junk slot evacuation and maximize TFA

Narrow junk slots ensure plug debris is milled and not pumped uphole

Guage pads armoured to ensure casing drift is

Thread specifications as per customer requirements

Bullet Profile mazimizes durability and diamond volume

Steel body construction provides maximum toughness

OD size ranging from 3.875" to 4.625" Custom sizes available

BADGER

Casing Patch Systems

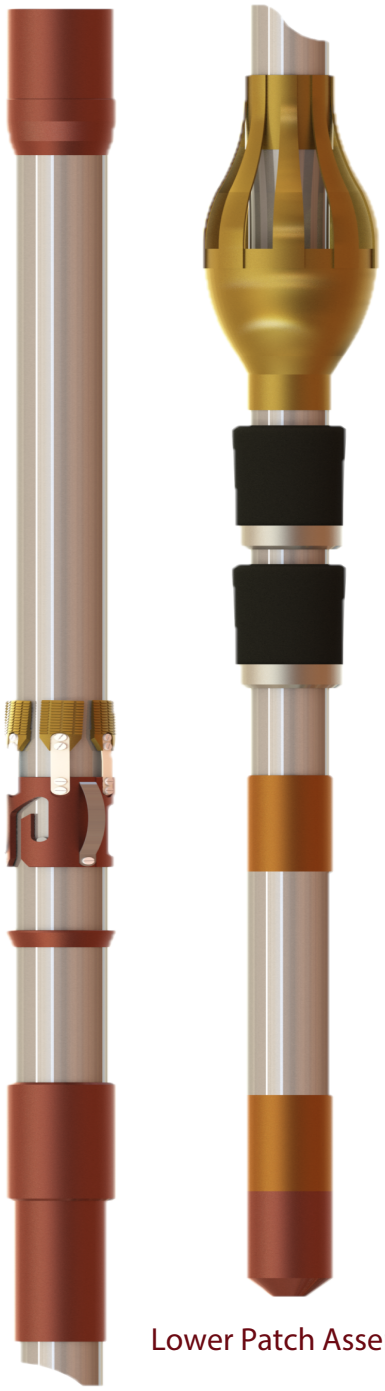
WELLFIRST

Cemented Slimhole Casing Patch

The Cemented Slimhole Casing Patch allows customers to repair casing that has reached or is about to reach critical failure. Customers will be able to land a new intermediate casing and cement it into place without effecting their horizontal liner / perforations or their wellhead design.

Features

- Requires no hydraulic function. No risk of premature setting during cementing operations
- Ability to rotate and reciprocate casing during the cement job.
- Largest slip coverage of any competing product ensures that the existing casing will not be damaged during the setting of the hanger assembly
- BHA can accommodate any casing thread that the customer may require
- Eliminates expensive hydraulic set inflates, stage tools and Liner Hangers
- No change required to the wellhead
- Patch can be any length required by the customer
- Can be set at any depth in the Intermediate wellbore



Lower Patch Assembly

Upper Patch Assembly

Gas Vent Pumping Packer

The Gas Vent Pumping Packer is a simple, inexpensive method to isolate casing leaks or non-productive perforations in a rod pumping production installation. The interval between cups is adjustable to any length.

Features

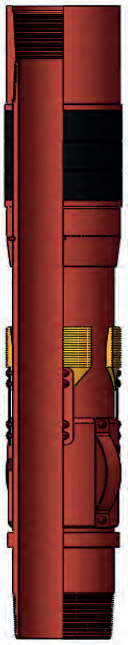
- Inexpensive method to isolate casing leaks
- Interval between cups adjustable to any length
- Capable of venting gas to surface past isolated zone

Applications

Isolate casing leaks or non-productive perforations in a rod pumping production installation. The Gas Vent Packer will allow the capability for venting to the surface past the isolated zone preventing gas locking of the pump.

Gas Vent Pumping Packer									
Size		O.D.		I.D.		Packer			
						Maximum O.D.*		Minimum O.D.*	
in	mm	in	mm	in	mm	in	mm	in	mm
4-1/2"	114.30	2.375	60.33	3.00	76.20	3.750	95.25	2.687	68.25
5-1/2"	139.70	2.375	60.33	3.00	76.20	4.625	117.48	2.750	69.85
5-1/2"	139.70	2.875	73.03	4.00	101.60	4.625	117.48	3.188	80.98
7	177.80	2.375	60.35	4.00	101.60	5.000	127.00	2.750	69.00
7	177.80	2.875	79.03	4.50	114.30	5.000	127.00	3.188	80.98

Sure Seal Retrievable Casing Patch



WELLFIRST manufactures a Sure Seal Liner Patch Assembly using standard API casing patch pipe. The patch has bonded steel to rubber one-piece nitrile element. This allows for superior seal integrity and reliability.

The Lower Sure Seal Assembly is designed to hold the upper assemblies compression weight while setting and give a reliable seal upon packing off of both elements.

Features

- Designed for 178mm, 25.3kg/m to 34kg/m casing
- Mechanical set and mechanical release
- Easily retrieved
- Rated for 21,000kPa differential pressures
- High temperature elements up to 370°C are available upon request
- Patch assembles are addressable and reusable
- Both have dual ratchet locking pack-off systems

Sure Seal Liner Patch Assembly					
Diameters		**Grade of Material**		**Ratings**	
Inside	125.7 mm	**Mandrels**	K55	**Collapse Pressure**	27,860 kPA
Drift	122.6 mm	**Setting Sleeve**	L80	**Internal Yield Burst Pressure**	31,160 kPA
Outside	159.0 mm	**Setting Cone**	4140 HT	**Body Yield Strength**	121,000 daN
		Molded Rings	4140 HT	**Joint Yield Strength**	11,200 daN

Wedge Wire Sand Screen

The all-welded wire wrapped base pipe screen is leading the industry in superior construction, durability and quality. With a proven record, it is a simple choice for reliable sand free production, whether it's from your vertical or horizontal oil well. The Wedge Wire Sand Screen allows the user to maximize the open area to flow while maintaining a strict gauge as low as 0.003" (75 micron). There are no solder strips., weld beads or lugs to block the oil flow. The large inlet area allows higher production rates with lower entrance velocities and minimal pressure drop in comparison to others sand control devices.

Gauge spacing of the all-welded screen is permanent. Your specific gauge is maintained down-hole under the roughest handling.

High quality 304L stainless steel is the standard material used in the manufacture of sand control screens. Special alloys are available for special conditions.

Features

- Proven reliability
- Unique to each well
- Permanent gauge opening
- Largest inflow area possible
- Outstanding strength and durability

One-Trip Liner Running Assembly Tool

The One-Trip Liner Running Assembly Tool is a great time-saving running tool systems that saves the oil company multiple trip time at an economical tool price.

The One-Trip Liner Running Assembly allows the liner/screen assembly to be run and set into place with the production string, then released off of the liner and land the tubing string to desired depth. The liners can be circulated into place with the inner sting running tool (a). The liners may also be pulled out of the hole by simply forward circulating through the running tool (a), landing back into the One-Trip Running Assembly (b), and then pulling out of the hole.

The Steel Circulating Valve is a steady all steel float valve system that allows circulation through the inner string to assist in landing liners in depth. The all steel system is great for thermal application or going through hard debris fill in the hole with a cutting spade on the bottom of the tool.

Packers and Accessories

WELLFIRST

AS-1 Retrievable Packer

The AS-1 Retrievable Packer is one of the most reliable and versatile mechanically set packer. It may be used in any production application and is best suited for treating, testing and injecting in shallow to deep pumping or flowing wells. It features a large internal bypass to reduce swab-bing when running or retrieving. When the packer is set, the bypass closes and when retrieving, the bypass opens before releasing the upper slips to allow pressure equalization.

Features

- Bypass below upper slips to wash debris when valve is open
- Bypass is open before upper slips released
- Can be set with tension for shallow well
- Can be left in tension, compression or neutral
- Quarter-turn right hand set, right hand release

Applications

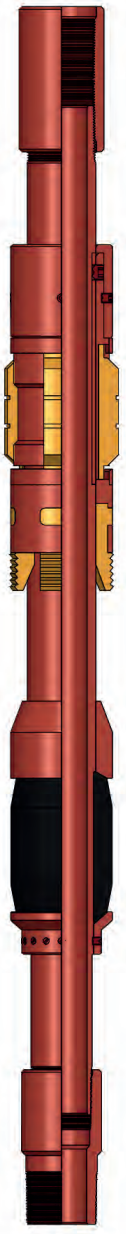
- Zonal Testing
- Casing Testing
- Injection / Disposal Wells

AD-I Tension Packer

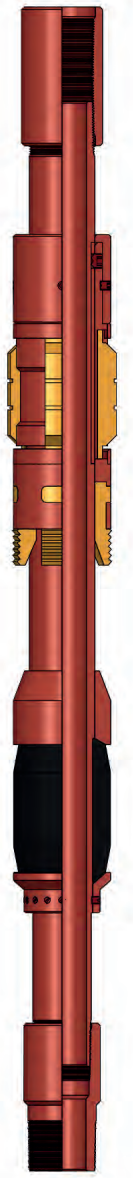
The AD-I tension packer is a compact, economical, retrievable packer. Primarily used in water-flood applications, it can also be used for production, treating operations and when a set-down packer is impractical. And because the AD-I is tension-set, it is ideally suited for shallow wells where set down weight is not available.

Coiled Tubing Tension Packer

The Coiled Tubing Tension Packer is a tension set mechanical packer designed to be used on coiled tubing, but may also be run on conventional tubing if required. The unique design of the Coiled Tubing Packer allows the packer to be set and released without tubing rotation. The packer also incorporates a secondary adjustable shear release that may be used to unset the packer if normal releasing procedures don't work. The packer operates on a continuous automatic J system. Each time the packer is moved downward then up in the well bore the J system automatically moves from either the running to the set position or alternatively from the set to running positions.



Shear Set / Shear Release Tension Packer



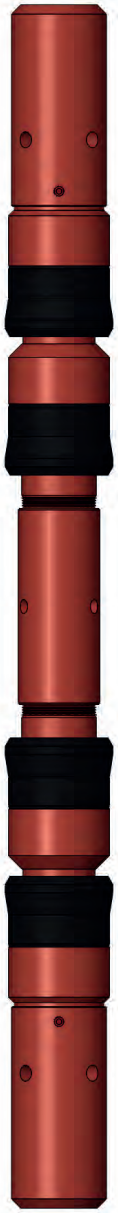
The Wellfirst Shear Set/Shear Release Tension Packer is an economical , tension set, packer that is designed to b e run on the Shear Set/Shear Release Tension Packer Running Tool. The packer is designed for low pressure applications where circulating the packer into the hole is is desired yet the packer must act as a bridge plug to prevent fluid intrusion from below after the running string has been removed from the well. An example, application may be chasing and holding down a wiper plug that has migrated up hole.

Features

- Proven slip and element design interchangeable with other manufacturers
- Mechanical set design with J-slot for simple jointed tubing movement during settings
- Tension set with adjustable shear mechanism for limiting pack-off force applied to element
- Locking ring holds pack-off set force into the element and slips after the packer is set and the running tool has been retrieved from the hole
- Straight pull tension release using industry standard fishing overshot
- Industry standard float valve allows circulation through the packer while running in and prevents fluid intrusion from below when the packer is left down-hole in the set position

Shear Set / Shear Release Tension Packer								
Casing			Packer			Running Tool		
OD - mm (in)	Weight kg/m (lb/ft)	Mx OD mm (in)	Fish Neck OD mm (in)	Max Working Pressure Below Element - kPa (psi)	Part No.	Max OD mm (in)	Thread Up	Part No.
177.8	25.30 - 29.76	159.16	77.85	7,000	102762	159.16	88.9 EUE Box	104265
7.00	17.0 - 20.0	6.27	3.07	1015		6.27	3-1/2 EUE Box	

Stage Stimulation Tool



The Stage Stimulation Tool (SST) is a cup-type packer assembly specifically designed to isolate and selectivelt acidize predetermined intervals of perforations. The SST can be set to isolate an interval as small as 12 inches. The specially designed cups and a large built in annular by-pass, make the SST easy to run and retrieve. Drag blocks, using Inconel springs, provide drag for a positive method of opening and closing the by-pass valve. The SST uses a retrievable drop bar to blank off the bottom of the tool. If used in highly deviated wells, a blow plug may be substituted.

Features

- Long-Lasting, heavy-duty, basket-type casing cups with full backup
- Simple operation
- Retrievable drop bar
- If required, a drop bar may be retrieved on wire-line
- Large interval by-pass for ease of running and pulling

Stage Simulation Tool					
Casing		Packer			Thread Connection
Size in	Weight Range lb/ft	Product Number	Min Bore in	Thimble O.D. In	
4 1/2	9.5 - 13.5	10-027-4500	1.25	3.771	2 3/8 EUE
5 1/2	20 - 23	10-027-5501	1.75	4.5	
	15.5 - 17	10-027-5502		4.652	
	13 - 15.5	10-027-5503		4.781	
7	32 - 35	10-027-7001	2.25	5.78	2 7/8 EUE
	23 - 26	10-027-7002		5.94	
	17 - 20	10-027-7003		6.21	
8 5/8	40 - 49	10-027-8500		8.41	
9 5/8	47 - 53.5	10-027-9500		8.25	
mm	kg/m		mm	mm	
114.3	14.1 - 20.19	10-027-4500	31.8	95.8	2 3/8 EUE
139.7	29.8 - 34.2	10-027-5501		114.3	
	23.1 - 25.36	10-027-5502		117.5	
	19.3 - 23.1	10-027-5503		121.4	
177.8	47.6 - 52.1	10-027-7001	44.5	146.8	2 7/8 EUE
	34.2 - 38.7	10-027-7002		150.9	
	25.3 - 29.8	10-027-7003		157.7	
219.1	59.5 - 72.9	10-027-8500	57.2	213.6	
244.5	69.9 - 79.6	10-027-9500		209.6	

Straddle Packer Selective Acidizing Tool

The straddle Packer Selective Acidizing Tool is an ideal straddle packer applications involving short intervals. The design of the packer allows spacing from 1 ft (0.3m) up to 3.3 ft (1m). It works equally well for selective testing of perforations. The Three-Turn Rotational Circulating Valve is usually run in conjunction with this tool. Often a fluid Control Valve and/or a Type C Collar Locator is used in conjunction with the Straddle Packer.

Features

- Reliable three-elememnt pack-off system
- Spacing as small as 1 ft (0.3m)
- Simplicity of operation

Tubing Accessories

WELLFIRST

Dissolvable Pump Out Plugs

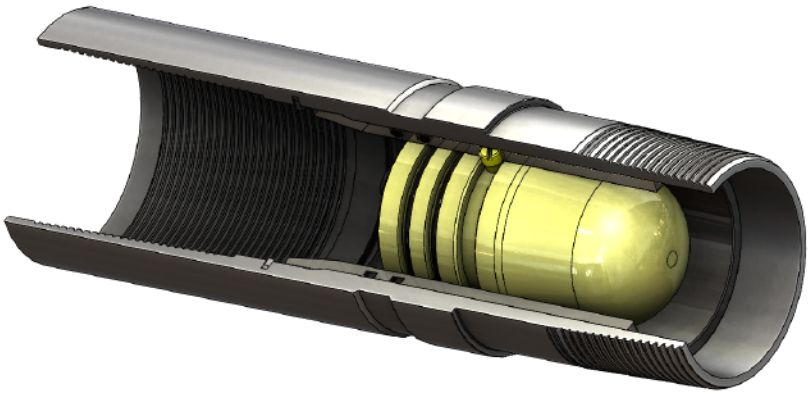
WELLFIRST Dissolvable Pump Out Plugs are a patent pending system designed for maximizing tubular performance in extended reach lateral sections. Atmospheric air is harnessed to provide bouyancy between twin plugs installed at the heel and toe in the lateral portion of the well. The plugs are removed from the inner diameter of the tubular using shear pins after the string has landed. Decreased friction provides a safer, more efficient tubular run while protecting the integrity of the wellbore.

Features

- **Customizable designs suitable for all threaded connection types**
- **Dissolvable alloy plug with tapered profile allows passage through restrictions**
- **Utilizes atmospheric air to minimize borehole friction**
- **Calibrated shear screws ensure reliable actuation pressure**
- **High strength alloy construction**

Benefits

- **Longer Lateral sections may be drilled and completed**
- **Mitigate costs of auxilliary equipment**
- **Protect tubulars**
- **Ensures a junk-free wellbore**
- **Minimizes bore restriction**



Thermal Hydraulic Tubing Drain

Fike Thermal Hydraulic Drains provide a positive method to equalize the fluid level in tubing strings without mechanical manipulation. The rupture disc assembly contains a 7/8" opening area. Appropriate production practices include the Thermal Hydraulic Tubing Drain as standard equipment in all wells to eliminate the potential hazards associated with pulling wet tubing strings.

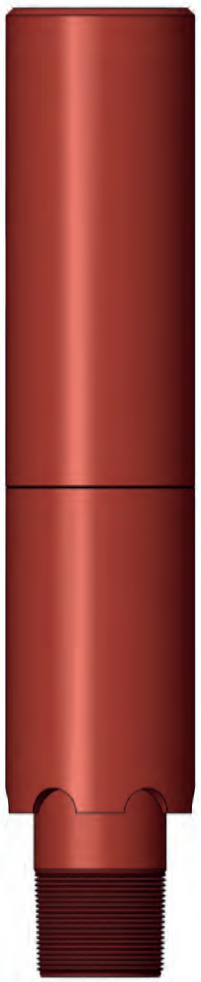
Features

- Provides a positive indication of open drain
- Eliminates shear pin devices
- Provides the highest accuracy and reliability
- Resists Corrosion
- One plug, available in three pressures for all tubing sizes, lowers inventory and cost
- Eliminates mechanical moving parts
- Eliminates fragile O-rings damaged during assembly causing failure in the field

Sizes

The Thermal Hydraulic Tubing Drain is available in the following standard nominal sizes, using standard API EUE tubing threads. Non-Standard configurations are available on an engineered design basis. Full tubing inside diameters is standard in all nominal (stock) sizes.

ON-Off Connector Skirt



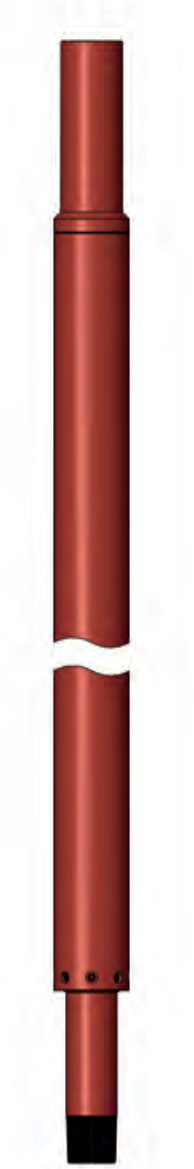
The On-Off Connector Skirt is compact, reliable, fully sealing, J-type tubing disconnect device that automatically engages and releases with a small amount of left-hand rotation. It is designed for use with right-hand release locking type double-grip retrievable packers, or with a locking type right-hand release seal unit in a permanent packer. The unit composed of two main components: the mandrel, which is attached directly to the packer mandrel, and the overshot, which is attached directly to the tubing string. A wire-line profile is commonly integrated into the mandrel portion of the tool which would allow a blanking plug to be installed in the mandrel and would allow the packer to act as a temporary bridge plug. The On-Off connector Skirt design incorporates a moulded high pressure sealing system that ensures reliable sealing even with repeated disconnections with differential pressure.

Features

- Disconnects with 1/3 turn left-hand rotation at the tool
- Molded seal system with full metal backup maintains its integrity even when disconnecting the unit with different pressure
- Suitable for use with the Limit 75 Mechanical Packer or most similar packers by other manufacturers
- The On-Off Mandrel must be used for wire-line setting Limit 75 Mechanical Packer
- Available with most common wire-line profiles cut directly into the one-piece mandrel
- Available with most common tubing threads

On-Off Connector Skirt					
Casing Size		Overshot O.D.		Tubing Size	
in	mm	in	mm	in	mm
4 1/2	114.3	3.75	95.3	2 3/8	60.33
5 1/2	139.7	4.50	114.3	2 7/8	73.00
7	177.8	5.75	146.1		

Splined Expanion Joint



The Splined Expansion Joint is designed for single or dual string c completions to accommodate tubing movement to prevent undo stress on the tubing string and packer. The Type A expansion joint incorporates heavy-duty splines that allow the operator to rotate the string through the expansion joint at any point throughout the stroke. The Expansion Joint may be shear pinned at one-foot intervals throughout it's full stroke length. Standard lengths are two, four, six and ten feet. Non-standard lengths are available on advanced order.

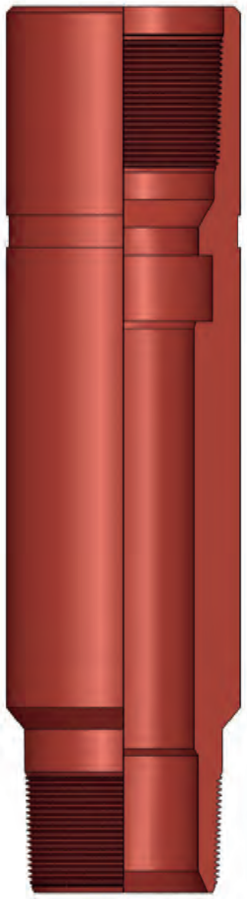
The Expansion Joint is available in a wide variety of body, seal materials and thread connections to meet virtually all environments.

Features

- Full length heavy-duty spline system
- Shear easily adjustable throughout stroke length
- 10,000 psi pressure rating (most sizes)
- Solid one-piece mandrel
- Available in materials for H2S or CO2 service
- Easily serviced and re-dressed

Splined Expansion Joint							
Tubing Size	**Max O.D.**	**Min I.D.**	**Thread Connection**	**Available Stroke**	**Pressure Rating**	**Tensile Rating**	**Torque Rating**
in mm	lbs/ft kg/m	in mm		ft m	psi kg/cm²	lb kg	ft/lb kg/m
2 3/8	3.75	1.93	2 3/8 EUE (Box Up, Pin Down)	2,4,6,8	10,000	30,000	2,000
60.3	95.30	49.00				13,608	277
2 7/8	4.50	241.00	2 7/8 EUE (Box Up, Pin Down)			120,000	2,500
73	114.30	62.00				54,432	346
3 1/2	5.30	3.00	3 1/2 EUE (Box Up, Pin Down)	0.6,1.2,1.8,3.1	703.07	130,000	3,500
88.9	134.60	76.20				59,968	484
4 1/2	6.53	3.88	4 1/2 EUE (Box up, Pin Down)			170,000	5,000
114.3	165.90	98.40				77,112	691

SCX Profile Nipple



The SCX is a tubing profile nipple designed for use with top no-go or selective wire-line flow control equipment. The SCX nipple contains a close tolerance polished seal surface, a locking groove and a top no-go shoulder. The top no-go shoulder and groove are utilized for the location and installation of top no-go devices and the locking groove to locate and lock selective locks. As standard, all profile nipples are manufactured from high quality alloy steels that meet NACE MR-01-75 (latest edition) specifications. SCX profile nipples are also available in other materials for high corrosion applications and are also available with anti-corrosion coatings and hard coatings. SCX profile nipples are available with API connections (including EUE with seals) or with most premium tubing connections. Every SCX nipple is individually checked to ensure each and every nipple meets high quality standards. When designing a completion, the location and size of the profile nipples must receive careful consideration to assure that the versatility and functionality of the completion design are maximized.

Features

- Integral one-piece design with polished close tolerance seal bore and locking groove
- Accepts a wide variety of readily available locks and accessory equipment
- Other specialized flow control equipment

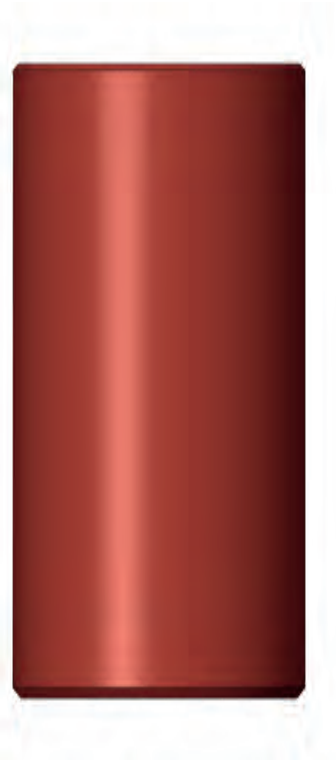
Applications

For installation of:

- Blanking plugs to shut off or isolate flow within a well
- Bottom hole chokes, check valves and instruments
- Other specialized flow control equipment

SCX Profile Nipple					
Nominal Tubing Size		Seal Bore I.D.		Standard O.D.	
in	mm	in	mm	in	mm
1.9	48.3	1.50	38.10	2.13	54.10
2 1/16	52.4	1.63	41.30	2.34	59.40
2 3/8	60.3	1.88	47.60	2.71	68.80
2 7/8	73.0	2.31	58.80	3.23	82.00
3 1/2	88.9	2.75	69.90	4.25	108.00

Re-Entry Guide



The Re-Entry Guide is used on the bottom of an EUE tubing string as an economical way to facilitate the easy re-entry of wire-line tools back onto the tubing string. The EUE Re-Entry Guide has an EUEbox up and a smooth tapered lead-in on the bottom.

Features

- Economical design
- O.D. same as a tubing coupling
- Available in special clearance O.D.

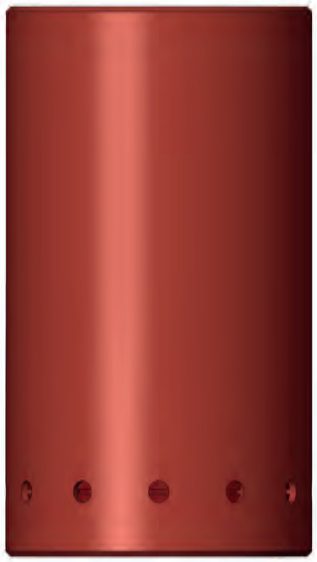
Applications

It is recommended that a re-entry guide to be used on the bottom of all EUE tubing strings where no special assemblies, such as TCP equipment, are attached to the string.

Re-Entry Guide			
EUE Tubing Size		Maximum O.D.	
in	mm	in	mm
2 3/8	60.3	3.061	77.7
2 7/8	73	3.688	93.7
3 1/2	88.9	4.500	114.3
4 1/2	114.3	5.563	114.3

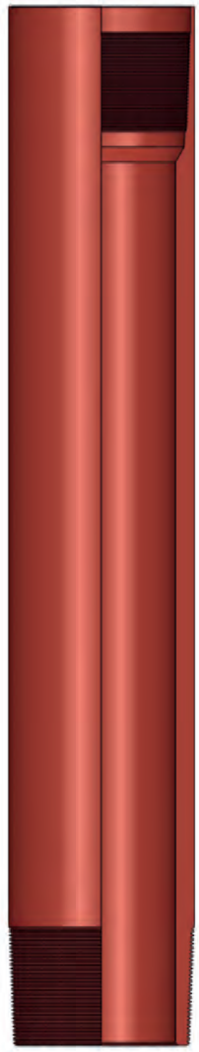
Tubing Pump-Out Plug

The Tubing Pump-out Plug provides a single-use, pressure actuated method of providing a safe, reliable and economical method of temporarily sealing the tubing ID during running of the tubing string. The Pump-out Plug is designed to be run on the bottom of the tubing string and to be expended when required by pressuring up the tubing. The expended plug portion that remains in the well is manufactured from materials which can be drilled up with a standard rock bit. The Tubing Pump-out Plug trip pressure may be adjusted by removing or adding shear screws.



Tubing Pump-Out Plug						
Tubing		O.D.		Max Number of Shear Screws	Pressure Pin Shear	
in	mm	in	mm		psi	kPa
2 3/8	60.3	3.063	77.8	12	377	2,600
2 7/8	73.0	3.688	93.7	12	261	1,800
3 1/2	88.9	4.500	114.3	12	174	1,200

Blast Joint / Flow Coupling



Blast Joints are used in a tubing string to cover the area across a flowing ser of perforations that could cause abrasive damage to the outside of the tubing string. Flow Couplings are identical to Blast Joints but their purpose is to minimize abrasion damage cause by flow turbulence inside of the tubing string. This type of turbulence usually occurs before and after a change in diameter within the tubing string, such as occurs across a wire-line retrievable safety valve. This product is available in several different materials. As standard joints are made from high strength low allow steel but are also available in low allow steels suitable for H2S service and in higher allows for high corrosion applications. They are available with API or premium connections and can be manufactured in any length up to 20 feet (6m).

Features

- Reduces possibility of tubing failure due to abrasion
- Available in a wide variety of materials, connections and lengths to meet the requirements of nearly any application
- OD is made to be compatible with the type of tubing used
- Full tubing drift size

Applications

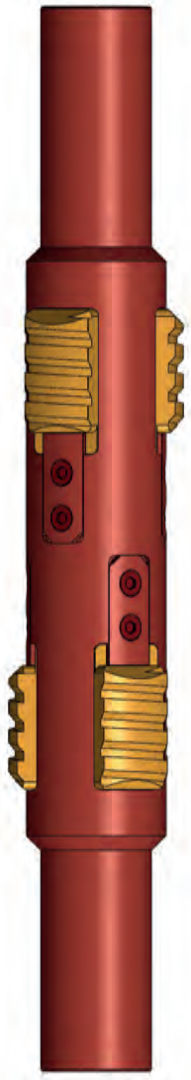
Any applications in which localized wear due to abrasion of fluids, solids or gases, either internally or externally, could potentially be a problem.

Blast Joint with API EUE Connections					
EUE Tubing Size		O.D.		Standard Lengths	
in	mm	in	mm	ft	m
2 3/8	60.3	3.061	77.7	2,4,6,8,10	0.5,1,2,3
2 7/8	73	3.688	93.7		
3 1/2	88.9	4.500	114.3		
4 1/2	114.3	5.563	141.3		

Service Equipment

WELLFIRST

Casing Scraper

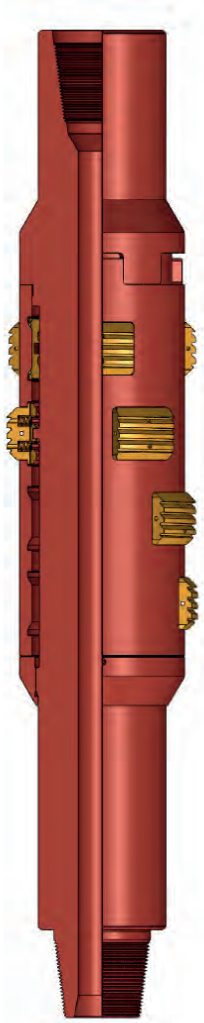


The Casing Scraper is a spring type, mechanical casing scraper, featuring a large by-pass area between the blades to allow circulation of debris. The body is constructed of the highest quality steel, with individual self-sharpening blades using Inconel springs. This scraper removes mill scale, burrs, cement sheath, mud cake and any foreign matter from the inside wall of the casing. The process provides a smooth, clean surface for the effective sealing of production packers and test tools. The Casing Scraper operates well when reciprocated vertically. Normally, rotation is not necessary unless restrictions are encountered. In areas where packers or other tools are to be set, the scraper should be reciprocated through this area two or three times to ensure the casing wall is clean and smooth.

Features

- One-piece allow steel body
- Full 360° coverage of casing wall
- Large by-pass area between the blades circulation
- Corrosion resistant leaf springs ensure constant blade tension
- All thrust and rotational loads are carried by the scraper body and not by the retaining screws
- Tough alloy self-sharpening steel blades are designed for extra-long wear
- Scrapers have an API Reg Box Down for installation above drill bits

Drift Lock Casing Scraper



The Drift Lock Casing Scraper is unique in it's design. It allows for the full internal diameter of the casing to be scraped clean of debris and at the same time, it allows the user to validate a drift measurement of the wellnore.

During deployment, the scraper blades groove profile rotates the housing and blade assembly in a counter clockwise rotation which positions the scraper blades into collapse to drift orientation. In this position, the scraper blades will only collapse into the drift dimension that they are designed to gauge. The blades are designed to extend beyond the maximum allowable API casing ID for each weight of casing, to ensure full casing ID contact. As well, they are designed with sufficient overlap to ensure full circle scraping of the casing ID, while running in hole. Cycling the Drift Lock up and down will efficiently clean your desired interval, as well, it will ensure that your casing is free of impairments.

At any point during deployment, should the drift lock hang up on an impairment, simply pick up, rotate to the left, the blades will become unsupported to a fully collapsed engineering dimension. At which point the user is able to travel through the impairment, to further scrape and gauge casing further down-hole. The standard offering setup, so that each weight range of casing is able to be gauged as per API drift specification. If the need arises, these tool can be setup for a minimum drift diameter, or with differing end connections, as specified by the end user.

Features

- Full bore ID scraping
- Collapsible to required drift diameter
- Hardened faces for longevity of the components
- Full ID Tubing body
- No elastomer's - temperature inert

Casing Scraper						
Size	Weight Range	I.D. Range		Blade Diameter		Thread Connection
		Min	Max	Collapsed	Extended	
in	lb/ft	in	in	in	in	
4 1/2	9.5 - 13.5	3.910	4.090	3.62	4.42	2 3/8 EUE Box Up 2 3/8 Reg Box Down
5	11.5 - 18	4.276	4.460	4.00	4.80	
5 1/2	13 - 26	4.548	5.044	4.50	5.28	2 7/8 EUE Box Up 2 7/8 Reg Box Down
6 5/8	17 - 34	5.595	6.135	5.38	6.34	3 1/2 EUE Box Up 3 1/2 Reg Box Down
7	17 - 38	5.920	6.538	5.71	6.72	
7 5/8	20 - 39	6.625	7.125	6.25	7.26	
8 5/8	20 - 49	7.511	8.191	7.25	8.41	4 1/2 API Reg Box Down Pin Up
9 5/8	29.3 - 53.5	8.535	9.063	8.20	9.29	
10 3/4	32.8 - 65.7	9.560	10.192	9.20	10.53	
mm	mm	mm	mm	mm	mm	
114.3	14.1 - 20.1	99.3	103.8	91.9	112.2	2 3/8 EUE Box Up 2 3/8 Reg Box Down
127.0	17.1 - 26.8	108.6	115.8	101.6	121.9	
139.7	19.3 - 38.7	115.5	128.1	114.3	134.1	2 7/8 EUE Box Up 2 7/8 Reg Box Down
168.3	25.3 - 50.5	142.1	155.8	136.6	161	3 1/2 EUE Box Up 3 1/2 Reg Box Down
177.8	25.3 - 56.5	150.4	166.1	145	170.6	
193.7	29.8 - 58.0	168.3	180.9	158.7	184.4	
219.1	29.8 - 72.9	190.8	208	184.1	213.6	4 1/2 API Reg Box Down Pin Up
244.5	43.6 - 79.6	216.8	230.2	208.2	235.9	
273.0	48.8 - 97.7	242.8	258.9	233.6	267.4	

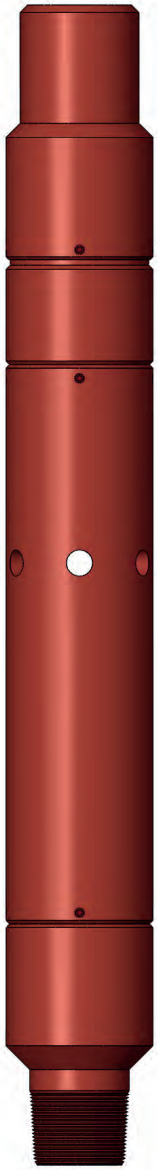
Collar Locator / Drag Body

The Collar Locator/Drag Body may be assembled either as a drag assembly to provide friction between the tubing string and the casing wall or as a mechanical collar locator to correlate the tubing depth to a well log. Used as a drag assembly, the Collar Locator provides a simple reliable method of providing drag to facilitate the operation of rotational tools such as the rotational circulating valve, which is commonly used in selective injection operations. The drag pads are energized with acid resistant leaf springs to ensure reliable operation.

The Collar Locator may be converted to a collar locator simply by replacing the drag pads with locator keys. The design of the locator keys allows the keys to expand into the recess of an API casing collar as it passes through the collar. The results in a momentary increase in tubing force as the key is forced to collapse in order to move out of the collar recess. The keys are designed to give the most positive indication when the Collor Locator is moved upward through the collar. The action of the Collar Locator passing upward through the collar will be felt in the tubing string at surface. The Collar Locator is commonly run with service tools that require accurate positioning in the well.

The Collar Locator may be used either as a fixed locator (cannot turn on the mandrel and provides drag) or as a freely rotating locator that is free rotate on the mandrel. To convert the Collar Locator to a freely rotating version, the top coupling on the locator is replaced with a standard tubing coupling.

Three Turn Rotational Circulating Valve



The Three-Turn Rotational Circulating Valve is a rotational pressure pressure balanced valve that is opened or closed b three turns to the right or left respectively. This valve can be run with SST tools, straddle packers, inflatables, packers, etc. allowing communications between tubing and annulus.

Features

- Rated to 5,000 psi differential pressure
- Large ports allow fluids to pass through easily when circulated

Operations

- Three turns to the left to close
- Three turns to the right to open

Tubing Swivel

The Tubing Swivel is used to provide a means of rotating the tubing while circulating with treating lines attached to the tubing. The Tubing Swivel is usually used for operating various service tools such as circulating valves, when used with selective acidizing tools. It is also suitable for any circulating operations requiring rotation.

IT IS NOT RECOMMENDED FOR HEAVY DRILLING OR MILLING OPERATIONS.

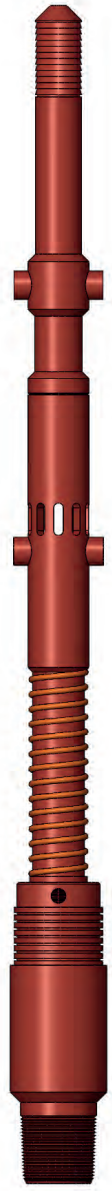
Retrieving Head

The retrieving Head is used to retrieve the PI-J and K Valve Retrievable head permits wash-over operations to remove sand and debris from the top of the bridge plug.

Retrieving Head				
Size	**A**	**B**	**C**	**D**
in	**in**	**in**	**in**	**in**
2 3/8 EUE	22.8	2 3/8 EUE	3.380	3.750
2 7/8 EUE	28.3	2 7/8 EUE	4.525	5.745
mm	**mm**	**mm**	**mm**	**mm**
60.30	580	60.30	85.80	95.20
73.00	720	73.00	114.90	145.90

PI-J Equalizing Valve

The PI-J Valve is a heavy-duty component that, when used in conjunction with a right-hand set/right-hand release double-grip production packer, converts the packer into a temporary bridge plug. The bridge plug can be used for isolation during fracturing, acidizing, cementing. The plug can also be used for isolation during well-head changes or pressure tests. Casing leaks can also be found by running the bridge plug in conjunction with a left-hand set/left-hand release double-grip packer. A PI-J Retrieving Head is run in conjunction with the plug to allow for successful retrieval.



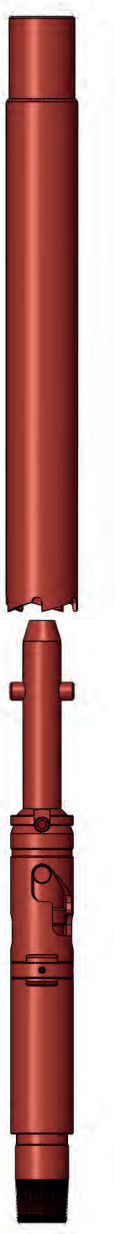
Operation

- One-piece alloy steel body
- Full 360° coverage of casing wall
- Large by-pass area between the blades for circulation
- Corrosion resistant leaf springs ensure constant blade tension
- All thrust and rotational loads are carried by the scraper body and not by the retaining screws
- Tough alloy self-sharpening steel blades are designed for extra-long wear
- Scrapers have an API Reg Box Down for installation above drill bits

Casing Scraper						
Size	Weight Range	I.D. Range		Blade Diameter		Thread Connection
		Min	Max	Collapsed	Extended	
in	lb/ft	in	in	in	in	
4 1/2	9.5 - 13.5	3.910	4.090	3.620	4.420	2 3/8 EUE Box Up 2 3/8 Reg Box Down
5	11.5 - 18.0	4.276	4.460	4.000	4.800	
5 1/2	13.0 - 26.0	4.548	5.044	4.500	5.280	2 7/8 EUE Box Up 2 7/8 Reg Box Down
6 5/8	17.0 - 34.0	5.595	6.135	5.380	6.340	3 1/2 EUE Box Up 3 1/2 Reg Box Down
7	17.0 - 38.0	5.920	6.538	5.710	6.720	
7 5/8	20.0 - 39.0	6.625	7.125	6.250	7.260	
8 5/8	20.0 - 49.0	7.511	8.191	7.250	8.410	4 1/2 API Reg Box Down Pin Up
9 5/8	29.3 - 53.5	8.535	9.063	8.200	9.290	
10 3/4	32.8 - 65.7	9.560	10.192	9.200	10.530	
mm	mm	mm	mm	mm	mm	
114.3	14.1 - 20.1	99.3	103.8	91.9	112.2	2 3/8 EUE Box Up 2 3/8 Reg Box Down
127.0	17.1 - 26.8	108.6	115.8	101.6	121.9	
139.7	19.3 - 38.7	115.5	128.1	114.3	134.1	2 7/8 EUE Box Up 2 7/8 Reg Box Down
168.3	25.3 - 50.5	142.1	155.8	136.6	161.0	3 1/2 EUE Box Up 3 1/2 Reg Box Down
177.8	25.3 - 56.5	150.4	166.1	145.0	170.6	
193.7	29.8 - 58.0	168.3	180.9	158.7	184.4	
219.1	29.8 - 72.9	190.8	208.0	184.1	213.6	4 1/2 API Reg Box Down Pin Up
244.5	43.6 - 79.6	216.8	230.2	208.2	235.9	
273.0	48.8 - 97.7	242.8	258.9	233.6	267.4	

K-Style Equalizing Valve

The K-Style Equalizing Valve is a high-pressure valve that converts a neutral set packer to a retrievable bridge plug. This tool transfers right-hand torque to a double-grip packer for setting on tubing. It releases the tubing from the packer and leaves a bridge plug in the well. To retrieve the plug, the valve is re-engaged, the packer equalized and torque can then be applied to release the packer.



Features

- Pressure balanced equalizing system
- Large bypass area
- Reliable bonded seals
- Left-hand releasing automatic jay
- Bypass can be operated without releasing the packer
- Bypass is open during running and pulling
- Half-turn activation

K-Style Equalizing Valve					
Casing Size		O.D.		Connection	
in	mm	in	mm	in	mm
4 1/2	114.3	3.75	95.3	2.375	60.3
5	127.0	3.75	95.3	2.375	60.3
5 1/2	139.7	4.50	114.3	2.375	73.0
5 1/2	139.7	4.50	114.3	2.875	73.0
7	177.8	5.50	139.7	2.375	60.3
7	177.8	5.50	139.7	2.875	73.0
7 5/8	193.7	5.50	139.7	2.875	73.0
8 5/8	219.0	7.31	185.7	2.875	73.0
9 5/8	244.5	8.19	208.0	2.875	73.0

SCL Sliding Sleeve

The SCL Sliding Sleeve is run as an integral pat of the tubing string and is used to open or close full communication between the annulus and the tubing. The SCL sleeve contains a pressure balanced inner sleeve, which can be shifted up to open communication between the tubing and annulus or down to close. The sleeve is designed to work reliably even with repeated shifting under high differential pressure. The SCL Sliding Sleeve contains a CF profile nipple in the top sub and an additional polished seal surface in the bottom sub that allows a variety of flow control devices, instrumentation etc. to be installed in the sleeve.

The SCL Sliding Sleeve is available in several material and thread connections.

Features

- Pressure balanced design and seal design allows reliable shifting in all conditions using wire-line
- Integral CF profile nipple
- Design of inner sleeve prevents the shifting tool from being blown up the tubing when shifting with gas differential
- Several sleeves may be used in the same tubing string
- Available with smaller IDs for use in heavy wall tubing strings
- Manufactured with box up and pin down to help prevent the sleeve from being inadvertently installed upside down
- Utilizes common shifting tools and accepts a wide variety of readily available locks and accessory equipment
- Large flow area - when open, the area of the ports is larger then the tubing ID area

Applications

- Displacement of fluid either to assist production, killing the well, or to re-establish production
- Allows different zones within a well to be selectively produced
- For installation of locks, chokes, instrumentation etc. in the tubing storage

SCL Sliding Sleeve			
Tubing Size	Minimum I.D.	Maximum I.D.	Profile
in	in	in	
mm	mm	mm	
2 3/8	1.875	2.91	1.875 (47.6 mm) CF
	47.600		
	1.812		1.812 (46.0 mm) CF
60.3	46.000	73.9	
	1.781		1.781 (45.2 mm) CF
	45.200		
2 7/8	2.312	3.41	2.312 (58.7 mm) CF
	58.700		
73	2.250	86.6	2.250 (57.2 mm) CF
	57.200		
3 1/2	2.812	4.5	2.812 (71.4 mm) CF
	71.400		
88.9	2.750	114.3	2.750 (69.9 mm) CF
	69.900		

SXCA Sliding Sleeve

The SXCA Sliding Sleeve is run as an integral part of the tubing string and is used to open or close communications between the annulus and the tubing. The SCXA Sliding Sleeve contains a pressure balanced inner sleeve than can be shifted up to open communication between the tubing and annulus or down to close, using wire-line. The sleeve is designed to work reliably even with repeated shifting under high differential pressure. The SCXA Sliding Sleeve contains SCX Profile Nipple in the top sub and an additional polished seal surface in the bottom sub that allows a variety to flow control devices, instrumentation etc. to be installed in the sleeve. The SCXA sleeve is available in several material and thread combinations.

Features

- Pressure balanced design and seal design allows reliable pressure containment and easy shifting in all conditions
- Integral SCX Profile Nipple
- Inner sleeve design allows equalization of pressure before fully opening the sleeve
- Several sleeves may be used in the same tubing string
- Manufactured with pin up and pin down
- Utilizes common shifting tools and accepts a wide variety of readily available locks and accessory equipment
- Large flow area - when open, the are of the ports is larger at the tubing ID area

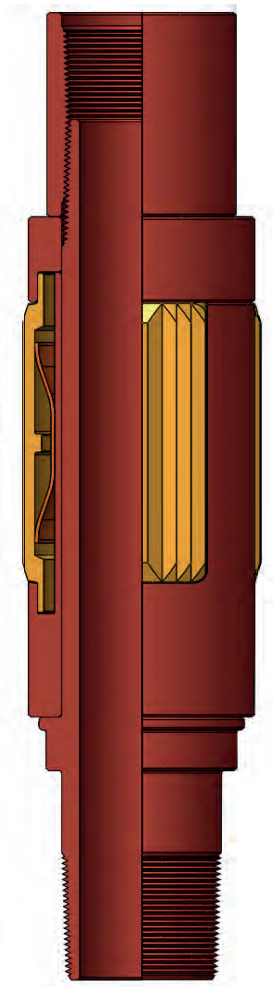
Applications

- Displaces fluid either to assist production, killing the well or to re-establish production
- Allows different zones within a well to be selectively produced
- For installation of locks, chokes instrumentation etc. in the stubbing string

SCXA Sliding Sleeve						
Tubing Size		Seal Bore I.D.		Maximum O.D.		Model
in	mm	in	mm	in	mm	
2 3/8	60.3	1.875	47.6	3.09	78.5	21-1875-X
2 7/8	73.0	2.313	58.7	3.75	95.2	21-2313-X
3 1/2	88.9	2.750	69.8	4.28	1087	21-2750-X

Type C Anti-Rotation Anchor

The Type C Anti-Rotation Anchor is used to prevent tubing back off in-progressive cavity pump applications. Run as an integral part of the tubing string, the anchor automatically sets when tubing torque is present to prevent rotation of the tubing string.



Features

- Compact design allows for a large gas by-pass area
- Rocker drag slip for reliable setting and releasing
- No set screws
- One-piece mandrel

Operation

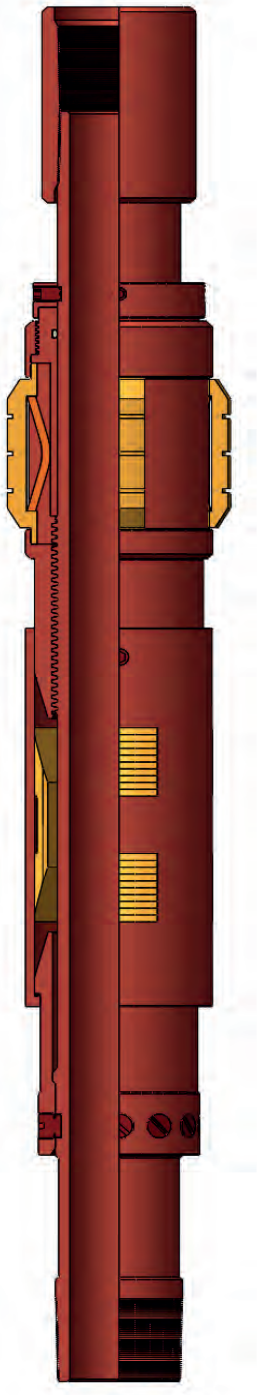
The Type C Anti-Rotation Anchor is simply run to depth with the pump. When torque is applied to the tubing the wickers on the rocker drag slip engage the casing to prevent the tubing from turning.

To release, rotate the tubing a small amount to the left to ensure the slips are disengaged and retrieve.

Type C Anti-Rotation Anchor							
Casing				Anchor			Torque Tested
O.D.	Weight	Min.. I.D.	Max I.D.	Max O.D. Body	I.D.	Standard Box X Pin	
in	lbs/ft	in	in	in	in	in	
mm	kg/m	mm	mm	mm	mm	mm	
5 1/2	13.0 - 20.0	4.78	5.04	4.50	2.44	2 7/8 EUE	2,500
139.7	19.3 - 29.7	121.30	128.10	114.30	62.00	73	348
7	17.0 - 26.0	6.28	6.54	5.68	3.00	3 1/2 EUE	4,000 555
177.8	25.2 - 38.7	159.40	166.00	114.28	76.20	88.9	
8 5/8	24.0 - 44.0	7.63	8.19	7.25	3.00	3 1/2 EUE	
					76.20	88.9	
219	35.7 - 65.5	193.70	208.00	184.00	4.00	4 1/2 EUE	
					101.60	114.3	
9 5/8	32.0 - 53.5	8.44	9.00	8.00	3.00	3 1/2 EUE	
					76.20	88.9	
244.5	47.6 - 79.6	214.20	228.60	203.00	4.00	4 1/2 EUE	
					101.6	114.3	

Type C Heavy-Duty Tubing Anchor Catcher

The type C Heavy-Duty Tubing Anchor Catcher provides a reliable method of anchoring the tubing in rod pumped wells. The Type C utilizes drag blocks with corrosion resistant springs and heavy-duty slips to ensure long life and to minimize repair costs. The Type C is available in either the more common left-hand set/right-hand release version for use in situations where the possibility of right-hand torque in the tubing string is a problem. All Type-C anchors come with an adjustable (in 5,000 lb. increments) secondary shear release.



Features

- Corrosion resistant shear screws
- Secondary shear system is easily adjusted in the field without disassembling the tool
- Reliable slip retraction system to insure safe retrieval
- The positive stop system design insures the anchor cannot jam in the released position
- The wear resistant drag blocks with Inconel springs combined with heavy-duty one-piece slips reduce repair costs
- One-piece mandrel

Type C Heavy-Duty Anchor Catcher					
Casing		Anchor			Product Number
O.D.	Weight	Body Max O.D.	Mandrel I.D.	EUE Box x Pin	
in	lb/ft	in	in	in	
4 1/2	9.5 - 11.6	3.75	2.000	2 3/8	20-125-4500
5 1/2	13.0 - 20.0	4.5	2.441	2 7/8	20-125-5500
6 5/8	17.0 - 32.0	5.75	3.000 or 2.441	3 1/2 or 2 7/8	20-125-6500
7	17.0 - 38.0				20-125-7000
9 5/8	32.3 - 47.0	7.76			20-125-9500
mm	kg/m	mm	mm	mm	
114.3	14.14 - 17.3	111.13	50.800	60.325	20-125-4500
139.7	19.34 - 29.8	114.3	61.976	73.025	20-125-5500
168.28	25.3 - 47.6	146.05	76.200 or 61.976	88.900 or 73.025	20-125-6500
177.8	25.3 56.5				20-125-7000
244.48	48.1 - 69.9	197.1			20-125-9500