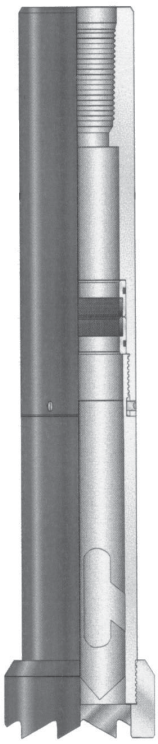
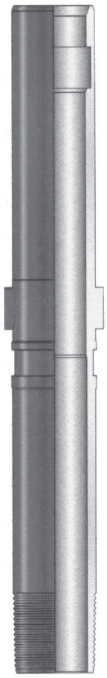
T-2 On-Off Tool





Classic Oilfield's T-2 On-Off Tool enables the tubing string to be disconnected above a packer for zonal isolation, tubing retrieval, and temporary zone abandonment. The tool contains an internal lock profile for landing a wireline plug to provide zonal isolation below the packer.

The tool has two basic components, the overshot mounted on the tubing string and the stinger mounted on the packer. The overshot disengages with either a standard left release or an optional right quarter-turn release. The washover shoe on the overshot cuts through debris allowing for easy engagement of the stinger. The seals in the tool are retrieved with the overshot to enable redressing at the surface.

Available with all common wireline profiles, the stinger works with industry-standard blanking plugs, standing valves and regulators.

APPLICATIONS

* Mechanical, hydraulic or wireline-set packer completions
* Zonal isolation above the packer
* Temporary abandonment of lower zones
* Tubing retrieval without disturbing the packer

FEATURES, ADVANTAGES AND BENEFITS

* The tool enables the packer to be used as a bridge plug for zonal isolation or the temporary abandonment of lower zones, saving rig costs.
* The tool can be full-pressure tested at the surface to save rig time.
* If specified at time of order, the tool can be pinned in a shear-up or shear-down position, providing compatibility with the packer setting and retrieving style.
* The standard left or optional right quarter-turn release provides simple operation on the rig.
* Bonded seals enable multiple disconnections without costly retrieval.
* The rugged, dependable design enables tubing retrieval without disturbing the packer.
* The washover shoe cuts through debris to release stuck equipment in the wellbore.

T-2 ON-OFF TOOL

SPECIFICATIONS

CASING (in./mm)	WASHOVER SHOE O.D. (in./mm)	STANDARD TUBING CONNECTION (in.)	RELEASE DIRECTION
3 1/2 88.9	2.775 70.49	1.9 HYDCS[1]	RIGHT
		1 1/2 EUE[2] 10 RD[3]	
4 1/2 114.3	3.750 95.25	2 3/8 EUE 8RD	RIGHT
			LEFT
5 1/2 139.7	4.516 114.71	2 3/8 EUE 8RD	LEFT
			RIGHT
			LEFT
7 177.8	5.875 149.23	2 7/8 EUE 8RD	RIGHT
		2 3/8 EUE 8RD	LEFT
		2 7/8 EUE 8RD	
		3 1/2 EUE 8RD	RIGHT
7 5/8 193.7	6.391 162.33	2 7/8 EUE 8RD	LEFT
9 5/8 244.5	8.255 209.68	2 7/8 EUE 8RD	LEFT
	8.265 209.93	4 1/2 EUE 8RD	

T-2 ON-OFF TOOL

SPECIFICATIONS (continued)

STANDARD TUBING CONNECTION	FULL OPENING (in./mm)	WIRELINE PROFILE							
		WF (in./mm)	WR (in./mm)	WN (in./mm)	WX (in./mm)	WXN (in./mm)	VX (in./mm)	VF (in./mm)	VOR (in./mm)
1.66 NU[1] 10 RD	1.250 31.75	—	—	—	—	—	—	—	—
	—	1.250 31.75	—	—	—	—	—	—	—
1.9 HYDCS	1.250 31.75	—	—	—	—	—	—	—	—
2 3/8 EU[2] 8 RD	—	—	—	—	—	—	1.500 38.10	—	—
	—	—	—	—	—	—		—	—
	—	—	—	—	—	—	—	1.750 44.45	—
	—	—	—	—	—	—	—	1.781 45.24	—
	—	1.781 45.24	—	—	—	—	—	—	—
	—	1.780 45.21	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	1.781 45.24
	—	1.810 45.97	—	—	—	—	—	—	—
	—	—	1.810 45.97	—	—	—	—	—	—
	—	1.810 45.97	—	—	—	—	—	—	—
	—	1.870 47.50	—	—	—	—	—	—	—
	—		—	—	—	—	—	—	—
	—	—	—	—	1.870 47.50	—	—	—	—
	—	—	—	—		—	—	—	—
	—	—	—	—	—	1.870 47.50	—	—	—
	—	—	—	—	—		—	—	—
	—	—	—	—	—	—	1.870 47.50	—	—
	—	—	—	1.875 47.63	—	—	—	—	—
	2.000 50.80	—	—	—	—	—	—	—	—
		—	—	—	—	—	—	—	—

T-2 ON-OFF TOOL

SPECIFICATIONS (continued)

STANDARD TUBING CONNECTION	FULL OPENING (in./mm)	WIRELINE PROFILE							
		WF (in./mm)	WR (in./mm)	WN (in./mm)	WX (in./mm)	WXN (in./mm)	VX (in./mm)	VF (in./mm)	VOR (in./mm)
2 7/8 EU* 8 RD	—	1.430 36.32	—	—	—	—	—	—	—
	—	1.780 45.21	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	1.870 47.50	—
	—	—	—	—	1.870 47.50	—	—	—	—
	—	2.250 57.15	—	—	—	—	—	—	—
	—		—	—	—	—	—	—	—
	—	—	—	—	—	—	—	2.301 58.45	—
	—	—	—	—	2.301 58.45	—	—	—	—
	—	2.301 58.45	—	—	—	—	—	—	—
	—	2.313 58.75	—	—	—	—	—	—	—
	—	—	—	—	—	2.313 58.75	—	—	—
	—	—	—	—	2.313 58.75	—	—	—	—
	—	—	—	—		—	—	—	—
	—	—	—	—		—	—	—	—
	—	2.875 73.03	—	—	—	—	—	—	—
	2.500 63.50	—	—	—	—	—	—	—	—
		—	—	—	—	—	—	—	—
3 1/2 EU 8RD	—	—	—	—	—	—	2.313 58.75	—	—
	3.000 76.20	—	—	—	—	—	—	—	—
		—	—	—	—	—	—	—	—
4 1/2 EU 8RD	—	—	—	—	—	—	3.813 96.85	—	—

* External Upset

OPTIONS

* The tool is available in a variety of materials.
* An optional right quarter-turn release is available for the overshot disengagement.
* The stinger is available with all common wireline profiles.

Pump-Out Plug Assembly

Classic Oilfield's Pump-Out Plug Assembly temporarily plugs the tubing and serves as a temporary bridge plug in the setting of a hydraulic packer. After the production string is landed or the well is prepared for production, the internal plug shears out when appropriate differential pressure is applied to the tubing, leaving a full opening with a wireline re-entry guide shoe on the tailpipe.

APPLICATIONS

* Setting a hydraulic packer
* Temporary plugging of the tubing during stimulation, acidizing or testing

FEATURES, ADVANTAGES AND BENEFITS

* The simple, field-proven design enables the application of pressure to the tubing to set a hydraulic packer reliably.
* Easily accessible shear screws enable shear values to be readily adjusted in the field, saving time.
* The internal plug shears out completely, leaving a full-opening ID for maximum production and a wireline re-entry guide shoe for the running in and out of wireline tools.

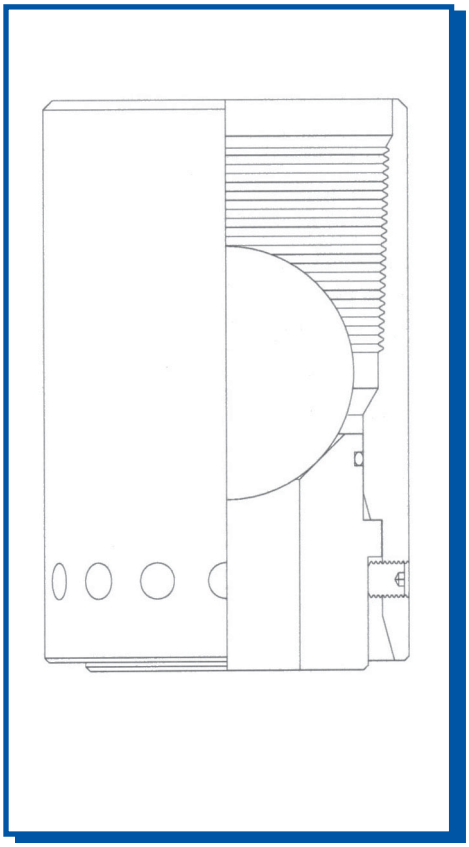
SPECIFICATIONS

TUBING (in./mm)	MAXIMUM O.D. (in./mm)	MINIMUM I.D. AFTER SHEAR-OUT (in./mm)	STANDARD THREAD CONNECTION BOX-UP (in.)
2 3/8 60.3	3.060 77.72	2.000 50.80	2 3/8 EU 8RD
2 7/8 73.0	3.690 93.73	2.500 63.50	2 7/8 EU 8RD
3 1/2 88.9	4.500 114.30	2.995 76.07	3 1/2 EU 8RD
4 1/2 114.3	5.000 127.00	3.750 95.25	4 1/2 8RD LTC

OPTIONS

* Premium Threads are available on request.

Pump-Out Ball Seat Assembly



The Classic Oilfield Pump-Out Ball Seat is available with various tubing connections to adapt to tailpipe run below hydraulic set packers. After the production string has been landed, the setting ball is dropped down the tubing. After the ball is on the ball seat, pressure applied to the tubing string will set the packer. Additional pressure will shear out ball seat. With the removal of the plug, the coupling serves as a wireline re-entry guide. Premium threads available upon request.

FEATURES

* Shear values easily adjusted in the field.
* Simple, field-proven design

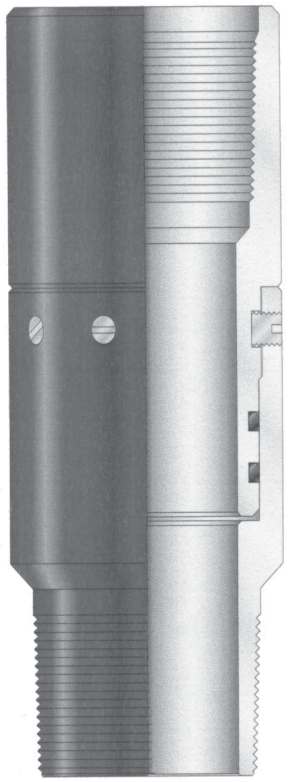
BENEFITS

* Full opening after shearout
* Wireline re-entry guide shoe on tubing string
* Premium threads available upon request

APPLICATIONS

* Provides ability to pressure the tubing to set a hydraulic packer

Shear-Out Safety Joint



Classic Oilfield's Shear-Out Safety Joint enables the positive release of the tubing string in completions with expected retrieval challenges. The joint is used between packers in single, dual and triple completions. It is also used when rotational release is not wanted.

The safety joint is easily adjusted in the field for various straight-pull release shear values. It can also be adjusted to compensate for hydraulic conditions that exist when the string is landed or that are created by well treatment.

APPLICATIONS

* Single, dual and stacked-packer completions
* Fracturing, acidizing and remedial workovers

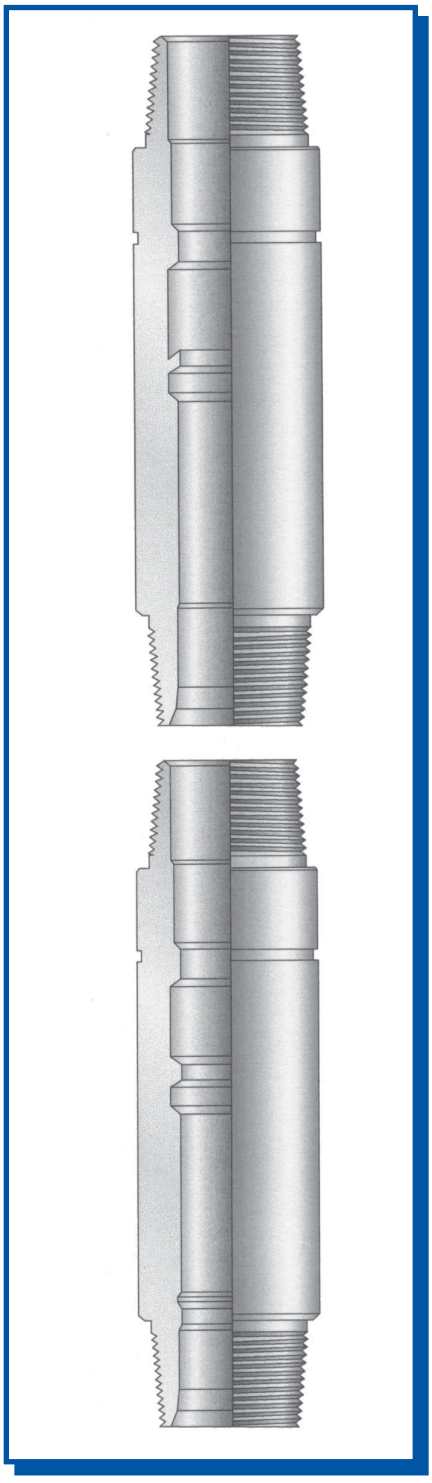
FEATURES, ADVANTAGES AND BENEFITS

* The simple design provides a reliable, inexpensive method for straight-pull emergency shear release
* Easily adjustable shear values compensate for hydraulic conditions.

SPECIFICATIONS

TUBING (in./mm)	SHEAR OUT SAFETY JOINT				
	MAX. O.D. (in./mm)	MIN. I.D. (in./mm)	STANDARD THREAD CONNECTIONS (in.)	SHEAR VALUE FULLY LOADED (lb/kg)	SHEAR PINS
1.9 48.26	2.688 68.275	1.61 40.894	1.9 NUE 10RD	16,250 7,371	5
2 3/8 60.325	3.067 77.800	2.0 50.8	2 3/8 EU 8RD	54,000 24,494	12
			2 3/8 NU 10RD		
2 7/8 73.025	3.688 93.675	2.5 63.5	2 7/8 EU 8RD	45,000 20,412	10
3 1/2 88.9	4.5 114.3	3.0 76.2	3 1/2 EU 8RD	63,600 28,848	12
			3 1/2 NU 10RD		
4 1/2 114.30	5.562 141.275	4 101.6	4 1/2 EU 8RD	55,000 24,948	12

Wireline Nipples



TX NIPPLE

The TX Nipple is a selective Landing Nipple that allows for the location and installation of many flow control devices such as blanking plugs, bottom hole chokes, etc.

This nipple has a locking groove which allows for the internal locking of the flow control device. The seal area provides a polished seal surface to pack off any flow control device.

The design of the TX Nipple allows for the running selection of many TX Nipples in the tubing string.

TXN NIPPLE

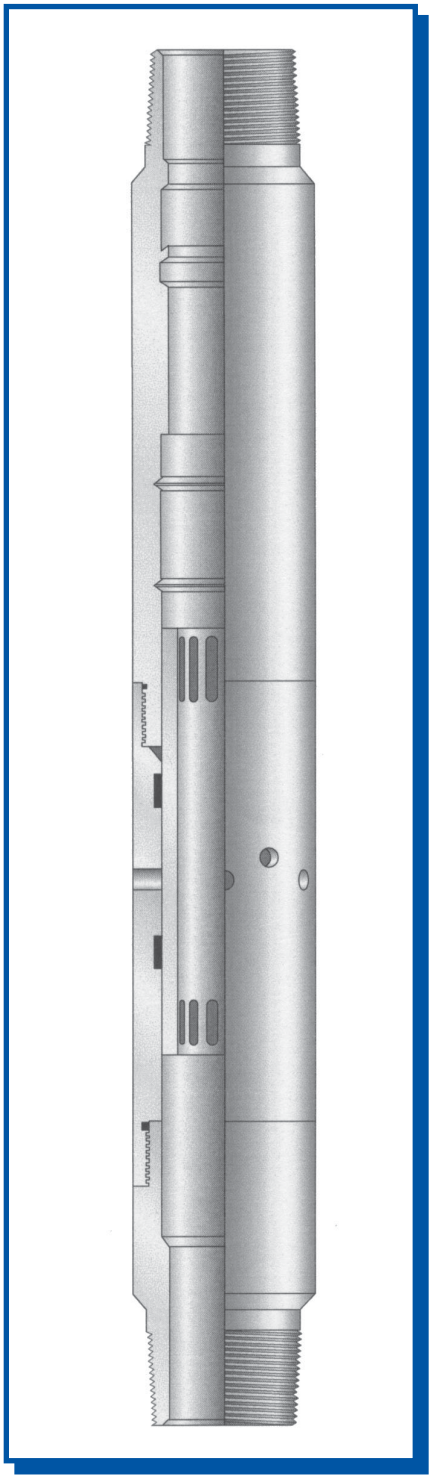
The TXN Nipple is a bottom No-Go Landing Nipple that allows for the location and installation of many flow control devices such as blanking plugs, bottom hole chokes, etc.

This nipple has a locking groove which allows for the internal locking of the flow control devices. The seal area provides a polished seal surface to pack off any flow control device. The bottom No-Go should provide the means to positively locate the appropriate flow control device into the TXN nipple.

SPECIFICATIONS

TUBING SIZE		TX / TXN SEAL BORE I.D.		TXN NO-GO I.D.		TXN / TXN LENGTH		TXN / TXN MINIMUM O.D.	
(in.)	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)
1.900	48	1.50	38.00	1.448	36.78	13.56	344.4	2.12	53.85
2 1/16	52	1.62	41.00	1.536	39.01	13.75	349.3	2.34	59.44
2 3/8	60	1.87	47.00	1.791	45.49	14.00	355.6	2.71	68.83
2 7/8	73	2.31	58.00	2.205	56.01	14.20	360.7	3.23	82.04
3 1/2	89	2.75	69.87	2.635	66.93	16.14	410.0	4.25	107.95
	89	2.81	71.42	2.635	66.93	16.14	410.0	4.25	107.95

TXA Sliding Sleeve



The TXA Sliding Sleeve is a downhole device normally screwed into the production tubing, allowing for communication between the tubing and the casing.

It is used to selectively produce zones in a multi-zone completion, stimulate and test zones, displace tubing or casing once the wellhead is installed, kill the well by circulation and allows for the circulation of treatment chemicals or agents.

The closing sleeve has replaceable, vee-type upper and lower seals to ensure maximum sealing integrity for extended periods of time downhole. The upper sub has a TX Nipple profile machined into it. This feature provides a profile to locate and lock into place various flow control devices which may be required from time to time.

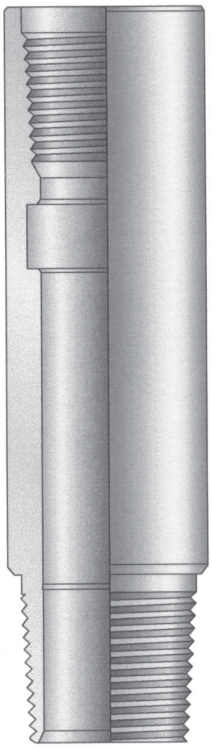
The TXA Sliding Sleeve is shifted open and closed with the TB Shifting Tool. The Shifting Tool can be dressed to either release automatically or to shear a pin to release.

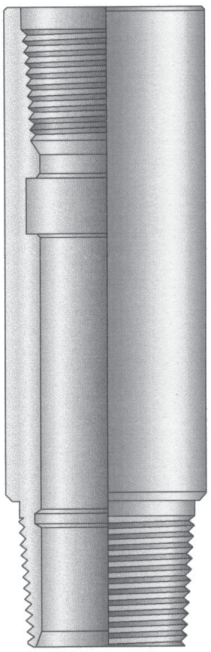
Upward jarring opens the sleeve and downward jarring closes it. The TXA Sliding Sleeve is designed to that normal wireline operations will not open or close it advertently.

SPECIFICATIONS

TUBING SIZE		SEAL BORE I.D.		FLOW AREA		LENGTH		NOMINAL O.D.	
(in.)	(mm)	(in.)	(mm)	($in.^2$)	(cm^2)	(in.)	(mm)	(in.)	(mm)
1.900	48	1.50	38	0.897	5.79	13.56	344.4	2.12	53.85
2 1/16	52	1.62	41	0.897	5.79	13.75	349.3	2.34	59.44
2 3/8	60	1.87	47	1.459	9.41	14.00	355.6	2.71	68.83
2 7/8	73	2.31	58	2.446	15.78	14.20	360.7	3.23	82.04
3 1/2	89	2.75	69	4.459	28.77	16.14	410.0	4.25	107.95

Wireline Nipples





TF NIPPLE

The TF Nipple is a selective or top No-Go Landing Nipple that allows for the location and installation of many flow control devices such as blanking plugs, bottom hole chokes, etc.

This nipple has a locking groove which allows for the internal locking of the flow control devices. The seal area provides a polished seal surface to pack off any flow control device.

One or more TF Nipples can be run in the string, depending on the circumstances. Care must be taken when selecting proper seal bore sizes.

TR NIPPLE

The TR Nipple is a bottom No-Go Landing Nipple that allows for the location and installation of many flow control devices such as blanking plugs, bottom hole chokes, etc.

This nipple has a locking groove which allows for the internal locking of the flow control devices. The seal area provides a polished seal surface to pack off any flow control device. The bottom No-Go shoulder provides the means to positively locate the appropriate flow control device into the TR nipple.

SPECIFICATIONS

TUBING SIZE		TF / TR SEAL BORE I.D.		TR NO-GO I.D.		TF / TR LENGTH		TF / TR MINIMUM O.D.	
(in.)	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)
1.900	48	1.43	36	1.385	35.18	10.5	266.7	2.109	53.57
		1.50	38	1.447	36.75				
2 1/16	52	1.56	39	1.510	38.35	10.7	271.8	2.250	57.15
		1.62	41	1.572	39.93				
2 3/8	60	1.78	45	1.728	43.89	11.3	287.0	2.560	65.02
		1.81	46	1.760	44.70				
		1.87	47	N/A	46.28				
2 7/8	73	2.25	57	2.197	55.80	13.1	332.7	3.109	78.97
		2.31	58	N/A	57.38				
3 1/2	89	2.75	69	2.697	68.50	14.3	363.2	3.687	93.65
		2.81	71	N/A	70.08				

TL Sliding Sleeve

The TL Sliding Sleeve is a downhole device normally screwed in the production tubing that allows communication between the tubing and the casing.

It is used to selectively produce zones in a multi-zone completion, stimulate and test zones, displace tubing or casing once the welhead is installed, kill the well by circulation and allows for the circulation of treatment chemicals or agents.

The closing sleeve has bonded lower seals to ensure maximum sealing integrity for extended periods of time downhole. The upper sub has a TF Nipple profile machined into it. In addition to allowing for the proper shifting of the sleeve, it provides a profile to locate and lock into place various flow control devices which may be required from time to time.

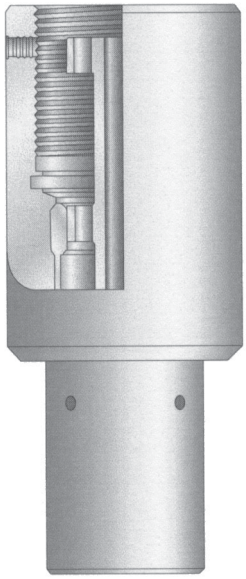
OPERATION

The TL Sliding Sleeve is shifted open and closed with the TD-2 Shifting Tool. Upward jarring opens the sleeve and downward jarring closes it. The TL Sleeve is designed so that normal wireline operations will not open or close it inadvertently.

SPECIFICATIONS

TUBING SIZE		SEAL BORE I.D.		FLOW AREA		LENGTH		STANDARD O.D.	
(in.)	(mm)	(in.)	(mm)	($in.^2$)	(cm^2)	(in.)	(mm)	(in.)	(mm)
1.900	48	1.43	36	1.893	12.21	10.5	266.7	2.109	53.57
		1.50	38						
2 1/16	52	1.56	39	1.893	12.21	10.7	271.8	2.250	57.15
		1.62	41						
2 3/8	60	1.78	45	2.839	18.32	11.3	287.0	2.560	65.02
		1.81	46						
		1.87	47						
2 7/8	73	2.25	57	4.138	26.70	13.1	332.7	3.109	78.97
		2.31	58						
3 1/2	89	2.75	69	6.106	39.40	14.3	363.2	3.687	93.65
		2.81	71						

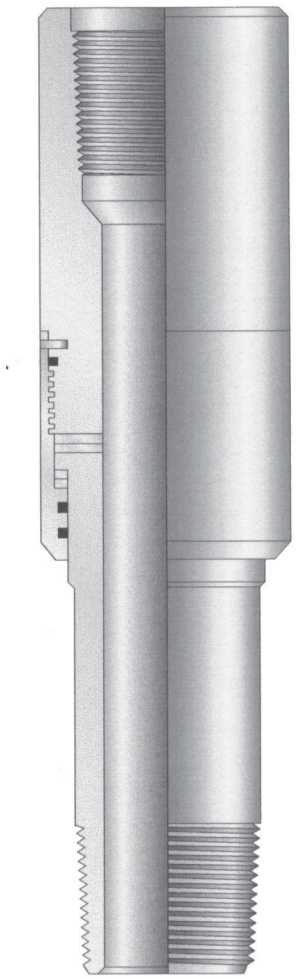
L Nok-Out Assembly



The L Nok-Out Assembly may be run on the bottom of tubing using the tubing to Nok-Out Adapter. This system may be used for snubbing applications, or when tail pipe is run below the packer.

The plug is expended using sinker bars on sandline or endless tubing. Most common A.P.I. and Premium Tubing Connections are available.

Downhole Swivel



The Downhole Tubing Swivel was designed for use in deviated well conditions when a downhole tool such as a tubing anchor or packer is to be installed.

The Tubing Swivel is normally installed between the tubing bottom and the tool, thus allowing the tubing tail pipe to remain stationary while the tubing above the swivel turns freely. This allows for ease in setting the Tubing Anchor or Packer.

Another application for this swivel is in horizontal re-entry wells where it is desirable to install tail pipe in the bend section.

In this situation, the Tubing Swivel is installed below the desired tool. This allows the tool and the tubing above the swivel to be freely manipulated, without the hole drag caused by the tubing extending into the bend section.

Downhole Clutch

The Downhole Tubing Clutch was designed for the purpose of utilizing a tubing anchor while operating a tubing rotator.

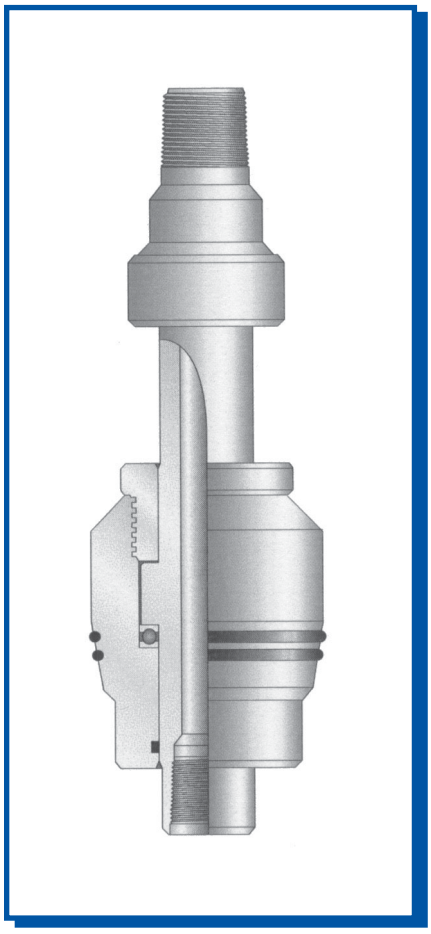
It is primarily used in deviated wells, where a Tubing Anchor is required to straighten out the tubing string, thus avoiding excessive wear caused by the sucker rods.

OPERATION

After setting the Tubing Anchor, the Tubing Clutch is pulled into tension in order to shear the shear pins, thus allowing the upper half of the Clutch and tubing string to move up. This disengages the clutch and allows the Tubing Rotator to turn the tubing while leaving the tubing in tension.

To release the Tubing Anchor, simply lower the tubing string, re-engage the Downhole Clutch and release the Tubing Anchor as normal.

T Rotating Sub



The T Rotating Sub is primarily used in pumping wells which require periodic rotation of the tubing string to prevent extensive wear from sucker rod movement. Rotation of the tubing string can prolong tubing life and reduce expensive workovers. It is also used where a rotational By-Pass Valve is incorporated as part of a completion string. The string can be rotated to open the tubing to the annulus, then rotated again to close the valve.

The T Rotating Sub is designed to allow tubing to be supported at the dognut but still allow easy rotation of the tubing string.

Designed to the shortest serviceable length, this unique rotating sub can be installed on existing wellheads with minimum change required to the lengths involved.

NOTE:

This assembly cannot be used alone with a downhole anchor or anchor catcher. If an anchor or anchor catcher is required, a Downhole Clutch must be used with the T Rotating Sub.