

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 is 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 wireline 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 molded 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 differential 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 wireline setting the Limit 75 Mechanical Packer.
- Available with most common wireline 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	4.5	114.3	2-7/8	73.0
7	177.8	5.75	146.1		



The Re-Entry Guide is used on the bottom of an EUE tubing string as an economical way to facilitate the easy reentry of wireline tools back into the tubing string. The EUE Re-Entry Guide has an EUE box 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 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	73.0	3.688	93.7
3-1/2	88.9	4.500	114.3
4-1/2	114.3	5.563	141.3

# 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	4.50	114.3	12	174	1,200

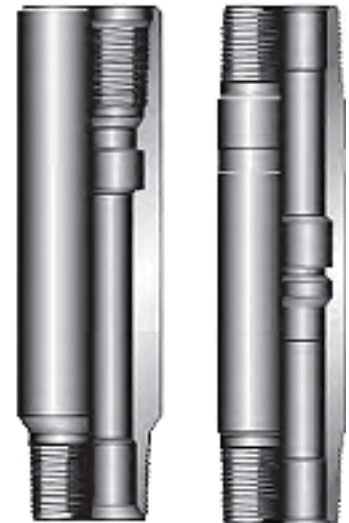
# Landing Nipples

Flow Control

WELLFIRST Landing Nipples are profiled subs that feature an internal seal bore and profile to accept a locking device to anchor flow control accessories. A variety of seal bores and lock profiles are available. Landing nipples are available full opening, or with a no-go restriction to provide a positive stop for a flow control device. Landing nipples are sized to match tubing sizes and can be run above or below production packer systems to provide varying flow control options in the completion or production string.

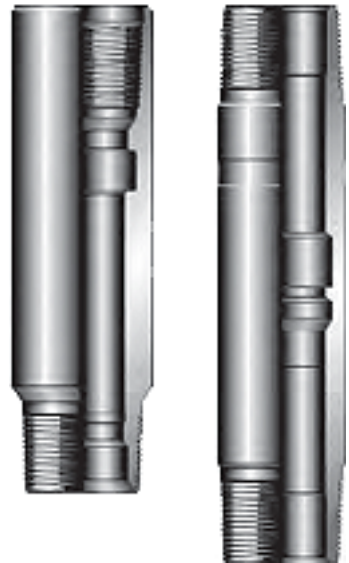
## Features

- Nipples are designed to accept common wireline flow control devices.
- Available in materials to suit a variety of well conditions. L-80 materials are standard.
- Bores are honed to provide for optimum sealing.
- Frac hardening is available upon request.



LNF

LNX



LNR

LNXN

Landing Nipples				
Tubing in/mm	Selective Nipples		No-Go Nipples	
	LNF Seal Bore I.D. in/mm	LNX Seal Bore I.D. in/mm	LNR Minimum I.D. in/mm	LNXN Minimum I.D. in/mm
1.660 42.20	1.187 30.15		1.135 28.83	
	1.250 31.75			
1.900 48.30	1.437 36.50		1.385 35.18	
	1.500 38.10	1.500 38.10	1.447 36.75	1.448 36.78
2.063 53.60	1.562 39.67		1.510 38.35	
	1.625 41.28	1.625 41.28	1.572 39.93	1.536 39.01
2.375 60.30	1.781 45.24		1.728 43.89	
	1.812 46.02		1.760 44.70	
	1.875 47.63	1.875 47.63	1.822 46.28	1.791 45.49
2.875 73.00	2.062 52.37		1.978 50.24	
	2.250 57.15		2.197 55.80	
	2.312 58.72	2.312 58.72	2.260 57.40	2.205 56.00



The SCF Profile Nipple is a tubing profile nipple designed for use with top no-go or selective wireline flow control equipment. The SCF Profile Nipple contains a close tolerance polished seal surface, a locking groove, and a top no-go shoulder. The top no-go shoulder and groove is utilized for the location and installation of top no-go locks such as FWG lock. Selective locks such as FSG lock utilize the locking groove to locate and lock. As standard, all profile nipples are manufactured from high quality alloy steels that meet NACE MR-01-75 (latest edition) specifications. SCF Profile Nipples are also available in other materials for high corrosion applications, and are also available with anticorrosion coatings and hard coatings. SCF Profile Nipples are available with API connections (including EUE with seal) and are also available with most premium tubing connections. Every SCF Profile 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 close tolerance seal bore and locking groove**
- **Accepts a wide variety of readily available locks and accessory equipment**
- **Standard O.D. of nipple is the same as the coupling O.D. Nipples are also available with special clearance O.D.s, if required.**
- **Available in a wide variety of materials, coatings and threads**

## Applications

For the installation of:

- **Blanking plugs to shut off or isolate flow with in a well**
- **Bottom hole chokes**
- **Check valves**
- **Instruments**
- **Other specialized flow control equipment**

SCF Profile Nipple							
Nominal Tubing Size		Seal Bore I.D.		Maximum O.D.*		Minimum O.D.*	
in	mm	in	mm	in	mm	in	mm
1.9	48.3	1.437	36.5	2.10	54.91	2.10	53.6
		1.500	39.1				
2-1/16	52.4	1.562	39.7	2.325	59.06	2.250	57.2
2-3/8	60.3	1.781	45.2	3.06	77.7	2.560	65.0
		1.812	46.0				
		1.875	47.6				
2-7/8	73.0	2.250	57.2	3.69	93.1	3.109	79.0
		2.312	58.7				
3-1/2	88.9	2.750	69.9	4.50	114.3	3.687	93.6
		2.812	71.4				



The SCR Profile Nipple is a tubing profile nipple designed for use with bottom no-go wireline flow control equipment. The SCR Profile Nipple contains a close tolerance polished seal surface, a locking groove, and a bottom no-go ring. The bottom no-go shoulder is utilized for the location and installation of bottom no-go locks, such as an RZG lock. As standard, all profile nipples are manufactured from high quality alloy steels that meet NACE MR-01-75 (latest edition) specifications. SCR Profile Nipples are also available in other materials for high corrosion applications and are also available with anticorrosion coatings and hard coatings. SCR Profile Nipples are available with API connections (including EUE with seals) and are also available with most premium tubing connections. Every SCR Profile 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. The SCR Profile Nipple is generally used as the only profile nipple or the bottom most profile nipple in the tubing string.

## Features

- Integral one-piece design with polished close tolerance seal bore no-go ring and locking groove
- Accepts readily available locks and accessory equipment
- O.D. of nipple is the same as the coupling O.D.
- Available with special clearance O.D.
- Available in a wide variety of materials, coatings, and threads

## Applications

For the installation of:

- Blanking plugs to shut off or isolate flow with in a well
- Bottom hole chokes
- Check valves
- Instruments
- Other specialized flow control equipment

SCR Profile Nipple									
Nominal Tubing Size		Seal Bore I.D.		No-Go I.D.		Maximum O.D.*		Minimum O.D.*	
in	mm	in	mm	in	mm	in	mm	in	mm
1.9	48.3	1.437	36.5	1.385	35.2	2.10	53.6	2.10	53.6
		1.500	39.1	1.447	36.8				
2-1/16	52.4	1.562	39.7	1.510	38.4	2.325	59.06	2.250	57.2
2-3/8	60.3	1.781	45.2	1.728	43.9	3.06	77.7	2.560	65.0
		1.812	46.0	1.760	44.7				
		1.875	47.6	1.822	46.3				
2-7/8	73.0	2.250	57.2	2.197	55.8	3.69	93.1	3.109	79.0
		2.312	58.7	2.259	57.4				
3-1/2	88.9	2.750	69.9	2.697	68.5	4.50	114.3	3.687	93.6
		2.812	71.4	2.759	70.1				

\* The O.D. of SCR Profile Nipples is dependent on the tubing connection. These amounts illustrate the possible range within the nipple O.D. that may be varied to accommodate tubing conditions.



The SCXN is a tubing profile nipple designed for use with bottom no-go flow control equipment. The SCXN Profile Nipple contains a close tolerance polished seal surface, a locking groove and a bottom no-go shoulder. The bottom no-go shoulder is utilized for the location and installation of bottom no-go locks. As standard, all profile nipples are manufactured from high quality alloy steels that meet NACE MR-01-75 (latest edition) specifications. SCXN Profile Nipples are also available in other materials for high corrosion applications and are also available with anticorrosion coatings and hard coatings. SCXN profile nipples are available with API connections (including EUE with seals) or with most premium tubing connections. Every SCXN Profile 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. The SCXN is generally used as the only profile nipple at the bottom most nipple in the tubing string.

### Features

- **Integral one-piece design with polished close tolerance seal bore no-go ring and locking groove**
- **Accepts readily available locks and accessory equipment**
- **Available in a wide variety of materials, coatings, and threads**

### Applications

For the installation of:

- **Blanking plugs to shut off or isolate flow with in a well**
- **Bottom hole chokes, Check valves and Instruments**
- **Other specialized flow control equipment**

SCXN Profile Nipple							
Nominal Tubing Size		Seal Bore I.D.		No-Go I.D.		Standard O.D.	
in	mm	in	mm	in	mm	in	mm
1.9	48.3	1.500	38.1	1.448	36.8	2.13	54.1
2-1/16	52.4	1.625	41.3	1.536	39.0	2.34	59.4
2-3/8	60.3	1.875	47.6	1.791	45.5	2.71	68.8
2-7/8	73.0	2.313	58.8	2.205	56.0	3.23	82.0
3-1/2	88.9	2.750	69.9	2.635	66.9	4.25	108.0



The SCX is a tubing profile nipple designed for use with top no-go or selective wireline 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 anticorrosion 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**
- **Available in a wide variety of materials, coatings, and threads**

## Applications

For the installation of:

- **Blanking plugs to shut off or isolate flow with in 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	1.500	38.1	2.13	54.1
2-1/16	52.4	1.625	41.3	2.34	59.4
2-3/8	60.3	1.875	47.6	2.71	68.8
2-7/8	73.0	2.313	58.8	3.23	82.0
3-1/2	88.9	2.750	69.9	4.25	108.0



# SCL Sliding Sleeve

The SCL Sliding Sleeve is run as an integral part 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 combinations.

## Features

- Pressure balanced design and seal design allows reliable shifting in all conditions using wireline.
- 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 than 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 string



SCL Sliding Sleeve			
Tubing Size	Minimum I.D.	Maximum O.D.	Profile
in	in	in	
mm	mm	mm	
2-3/8	1.875	2.91	1.875 (47.6 mm) CF
	47.6		
	1.812 *		
60.3	46.0	73.9	1.812 (46.0 mm) CF
	1.781 *		1.781 (45.2 mm) CF
	45.2		
2-7/8	2.312	3.41	2.312 (58.7 mm) CF
	58.7		
	2.250 *		
57.2			
3-1/2	2.812	4.50	2.812 (71.4 mm) CF
	71.4		
	2.750 *		
69.9			

\* Non-standard sizes.

# SXCA Sliding Sleeve

The SCXA 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 that can be shifted up to open communication between the tubing and annulus or down to close, using wireline. The sleeve is designed to work reliably even with repeated shifting under high differential pressure. The SCXA Sliding Sleeve contains a SCX 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 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 area of the ports is larger than 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 tubing 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	108.7	21-2750-X





Fike Thermal Hydraulic Tubing 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

## Operation

The Thermal Hydraulic Tubing Drain is simple in design and utilizes applied hydraulic pressure to rupture the membrane, which opens the fluid port to the casing annulus, with no restrictions. The Thermal Hydraulic Tubing Drain should be installed box up and pin down at the desired depth in the tubing string. For hydrostatic head at the drain, and determination of the proper disc pressure (psi), multiply 0.433 psi/ft by the drain depth. Then select the disc with an additional 2,000 psi above the nominal fluid load.

Note : Disc Selection is calculated from pressure differential.

## 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 on all nominal (stock) sizes.

Hydraulic Tubing Drain								
Nominal Size		Outside Diameter		Drift Diameter		Total Length		Part Number
in	mm	in	mm	in	mm	in	mm	
2-3/8	60	3-1/16	78	1.901	48	7	178	A8327-1
2-3/8	60	3-5/8	92	1.901	48	7-1/4	184	A8327-4
2-7/8	73	3-5/8	92	2.347	60	7-1/2	191	A8327-2
2-7/8	73	4	102	2.347	60	7-3/4	197	A8327-5
3-1/2	89	4-1/2	114	2.867	73	8-1/8	206	A8327-3
4	102	5	127	3.351	85	8-3/8	213	A8327-6
4-1/2	114	5-9/16	141	3.833	97	8-5/8	219	A8327-7

Burst Pressures					
(All of the sizes listed above are available in each of the following opening pressures)					
Nominal Size		Part Number	Burst Pressure		Part Number
psig	atm		in	mm	
1,500	102	A8219-1	4,500	306	A8219-4
2,000	136	A8219-5	5,000	340	A8219-8
2,500	170	A8219-2	5,500	374	A8219-9
3,000	204	A8219-6	6,000	408	A8219-10
3,500	238	A8219-3	6,500	442	A8219-11
4,000	272	A8219-7	7,000	476	A8219-12

Burst Pressure/Temperature Conversion Table					
(Theoretical calculation of temperature vs. burst pressures)					
72°F psig	100°F psig	200°F psig	300°F psig	400°F psig	500°F psig
1,500	1,488	1,428	1,410	1,395	1,407
2,000	1,984	1,904	1,880	1,860	1,876
2,500	2,480	2,308	2,350	2,325	2,345
3,000	2,976	2,856	2,820	2,790	2,814
3,500	3,472	3,332	3,290	3,255	3,283
4,000	3,968	3,808	3,760	3,720	3,752
4,500	4,464	4,284	4,230	4,185	4,221
5,000	4,960	4,760	4,700	4,650	4,690
5,500	5,456	5,236	5,170	5,115	5,159
6,000	5,952	5,712	5,640	5,580	5,628
6,500	6,448	6,188	6,110	6,045	6,097
7,000	6,944	6,664	6,580	6,510	6,566



The Tubing Drain provides a single use, pressure actuated system for providing a reliable and economical method of opening up communication between the tubing and annulus. It is designed primarily for use on rod pumped wells to provide a reliable method of draining the tubing in cases where the pump and/or valve cannot be retrieved with the rod string by pressuring up the tubing against the pump. The drain can also serve as an emergency method of killing the formation. The Tubing Drain is activated by differential pressure in favor of the tubing. Removing or adding shear screws can adjust the trip pressure. Once activated, the Tubing Drain cannot be closed.

Note: Differential pressures below are based on actual test results. No less than two shear screws spaced at 180 degrees should be used. Screws should be spaced evenly around the circumference. Shear value may possibly vary by 10%.

Note: The 2-3/8 and 2-7/8 EUE size tubing drains use the 000-151 shear screw. The 3-1/2 uses the 000-008 shear screw

Tubing Drain						
Tubing Size		Maximum O.D.		Max. Number of Screws		
in	mm	in	mm			
2-3/8	60.3	3.250	92.5	6		
2-7/8	73.0	3.625	92.1	6		
3-1/2	88.9	4.50	114.3	5		
Differential Trip Pressure vs. Number of Shear Screws						
No. of Shear Screws	2-3/8 EUE		2-7/8 EUE		3-1/2 EUE	
	psi	kPa	psi	kPa	psi	kPa
2	2,100	14,500	2,500	17,200	1,800	12,400
3	3,000	20,700	3,100	21,400	2,700	18,600
4	3,950	27,200	4,200	29,000	3,600	24,800
5	4,900	33,800	5,000	34,500	4,250	29,300
6	5,700	39,300	5,800	40,000	—	—

The Oil and Gas Separator tool is designed to help separate foam gas from heavy and conventional oil in horizontal applications and laid out directional wellbores. The unique feature of the Oil and Gas Separator is its ability to allow gas to flow up casing annular and not interfere with the pump production. The unique field proven design maintains production intake on the horizontal well bottom while insuring minimal gas intake. It allows the gas to rise to the top of the liner, flow along the liner top, and migrate to the surface, while the higher density oil lying on bottom is able to flow to the production intake on the Oil and Gas Separator.

The tool is run on the bottom of the pump or tubing and landed as per pump intake. No functioning is needed to set or release.

### Advantages

- **Simplicity of design allowing minimal chance of functional failure**
- **Minimal servicing**
- **The unique continuous bottom intake is always maintained even when rotating tubing string.**
- **Large intake area for maximum flow intake**
- **Ease of running**

Oil and Gas Separator					
Casing Size		O.D.		Connection	
in	mm	in	mm	in	mm
4-1/2	114.3	3-3/4	95.3	2-3/8	60.3
5-1/2	139.7	4-1/2	114.3	2-7/8	73
7	177.8	4-1/2	114.3	3-1/2	88.9
8-5/8	219.0	7	177.8	3-1/2	88.9

Same for all casing weight above 219 mm

