



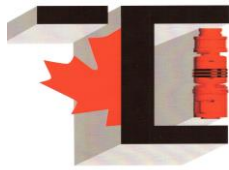
TCI L-2 On-Off Tool

The TCI L-2 is a tubing seal receptacle that allows the isolation of a lower zone using a wire line blanking plug. The tubing string can be disconnected and removed from the well. When the tubing is re-run the overshot portion of the tool automatically re-engages on the slick joint, when landed.

Features:

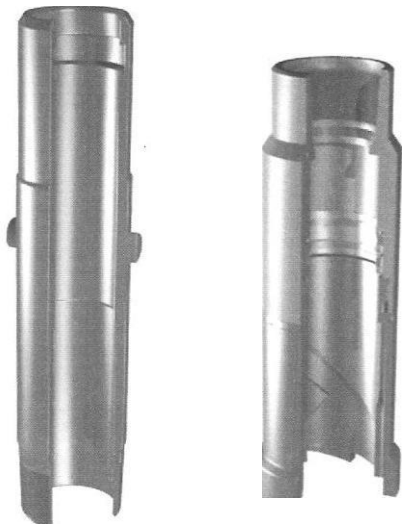
- Blanking plug seats in the top of the slick joint to prevent build up of debris inside tools.
- Bonded seals for reliable sealing and disconnects / re-connects.
- Slick joint available with machined profile to accept any common wire line plugs.
- Overshot designed to allow for rotation through debris.
- J-slot provides for a positive connect or disconnect.
- Available with right or left hand release option.
- Designed to withstand pressure differentials up to (69000 kpa) 10000 psi.

SELECTIVE PROFILE		NO-GO I.D	
BAKER F MINIMUM I.D in/mm	OTIS X MINIMUM I.D in/mm	BAKER R MINIMUM I.D in/mm	OTIS XN MINIMUM I.D in/mm
1.187 30.15		1.135 28.83	
1.250 31.75			
1.437 36.50		1.385 35.18	
1.500 38.10	1.500 38.10	1.447 36.75	1.448 36.78
1.562 39.67		1.510 38.35	
1.625 41.28	1.625 41.28	1.572 39.93	1.536 39.01
1.781 45.25		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
2.062 52.37		2.197 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



TCI L-2 On-Off Tool

CASING O.D. in/mm	TUBING O.D. in/mm	TOOL O.D. in/mm	TCI PART REFERENCE
4.5 114.3	2.375 60.3	3.75 95.25	TO.10.Q.37.23
5.5 139.7	2.375 60.3	4.50 114.3	TO.10.Q.45.23
	2.875 73.0	4.50 114.3	TO.10.Q.45.27
7.0 177.8	2.375 60.3	5.875 149.23	TO.10.Q.58.23
	2.875 73.0	5.875 149.23	70.10.Q.58.27



Other sizes available, call TCI for Availability.



TCI Landing Nipples

The TCI landing nipples are profile 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 nipple 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.

Feature:

- Nipples designed to accept common wire line 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 available upon request.

TUBING in/mm	SELECTIVE NIPPLES		NO-GO NIPPLES	
	BAKER F SEAL BORE I.D. in/mm	OTIS X SEAL BORE I.D. in/mm	BAKER R MINIMUM I.D. in/mm	OTIS XN 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 45.25		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 58.75	2.312 58.75	2.260 57.40	2.205 56.00

* Other sizes and material grades available upon request.





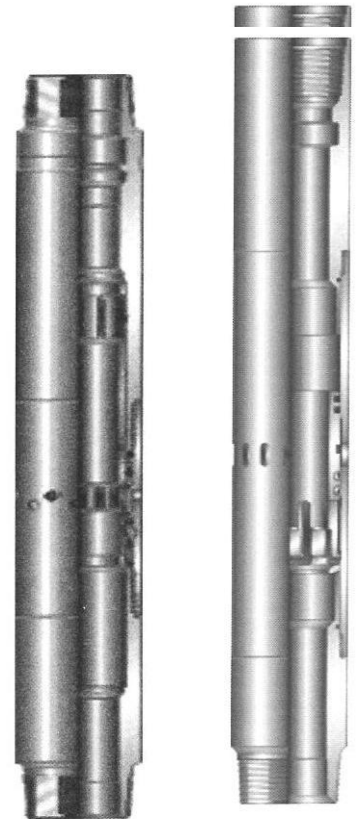
TCI Sliding Sleeves

The TCI sliding sleeve is installed in the production tubing string. The sleeve is a device that controls flow or movement of gas and wellbore fluids between the annulus and the tubing. An internal sleeve which is opened and closed using standard wire line procedures is utilized. Standard with the profile at the top and a polished bore below the communication ports.

Features:

- Available with a standard wire line profile
- Available in up opening and down opening configuration
- Multiple sleeves may be run in a single tubing string and opened/closed on a single wire line run
- Standard B shifting tool is used to open and closed the sleeve
- Standard material for H₂S service
- Available as full bore (no profiles)

TUBING in/mm	NOMINAL OD in/mm	TUBING MOUNTED SLIDING SLEEVES	
		BAKER STYLE F SEAL BORE ID in/mm	OTIS STYLE X SEAL BORE ID in/mm
2.375 60.30	3.12 79.2	1.784 45.24	
	3.12 79.2	1.812 46.02	
	3.12 79.2	1.875 47.63	1.875 47.63
2.875 73.0	3.75 95.3	2.250 57.15	
	3.75 95.3	2.312 58.72	2.312 58.72
3.50 88.9	4.275 108.6	2.750 69.85	2.750 69.85
	4.290 108.9	2.810 71.37	2.810 71.37





Underbalancing Pressure Sub - Non-ported
Product N^o. 31-21

Purpose

The TCI Burst **Sub** is used in a perforating system to provide an economical method of achieving an underbalanced condition between the tubing and wellbore formation. The tool incorporates a high strength ceramic dome which prevents communication between tubing and tubing / casing annulus until a detonating bar is dropped from surface. This tool can be used in other applications where the operator requires the formation to be surged after or during stimulation. This tool should not be used for snubbing operations.

Operation

The non-ported Burst sub is installed in the tubing string normally above a packer to create the desired underbalanced condition. This tool prevents fluid from entering the tubing string above the packer, tubing maybe run completely dry or partly filled. When the operator is ready to detonate and fire the perforating the guns, a drop bar is released into the tubing from surface thus passing through the tool which shatters the ceramic dome, the drop bar continues on down the tubing string to fire the perforating gun(s) exposing the wellbore to this underbalanced condition.



*Click on image for
an larger view*

Specifications

Underbalancing Pressure Sub - Non-ported (Product N ^o . 31-21)				
Thread Size and Type	2 3/8" EUE Pin (60.33 mm)	2 7/8" EUE Pin (73.0 mm)	3 1/2" EUE Pin (88.9 mm)	4 1/2" EUE Pin (114.3 mm)
Assembly Number	31-2106041-00	31-2107341-00	31-2108941-00	31-2111441-00
Pressure Rating	10,000 psi (69 mPa)	10,000 psi (69 mPa)	10,000 psi (69 mPa)	4,000 psi (27 mPa)
Tensile Strength	Manufactured from P-110 / L-80 for H2S applications / API Material			
Maximum Temperature	400°F (204°C) with 90 Durometer Viton O-rings			
Minimum ID	1.99" (50.54 mm)	2.44" (61.97 mm)	2.995" (76 mm)	4.00" (101.6 mm)
Maximum OD	3.04" (77.23 mm)	3.66" (92.96 mm)	4.50" (114.3 mm)	5.75" (146 mm)
Length	12.4" (314 mm)	12.9" (327 mm)	13" (330 mm)	54" (1371 mm)
Shipping Weight	14 lbs (6.35 kg)	21.2 lbs (9.63 kg)	32.3 lbs (14.68 kg)	65 lbs (29.5 kg)
Redress Kit Number	31-2206040-99	31-2207340-99	31-2208940-99	31-2211440-99

*NOTE: Standard EUE connections, premium thread connections available on request.



TCI Tubing Tester

The TCI Tubing Tester Sub is designed to allow testing of the tubing string before beginning high pressure treatments, or before setting a Completion Packer.

It may be placed anywhere in the string and is treated like an ordinary Tubing Coupling or Cross Over Sub. When at depth, a Phenolic Ball is pumped down to the Tubing Tester and the tubing pressured up to the required test pressure. After testing the ball is reverse circulated out of the tubing and operations carried on as usual.

The Tubing Tester is available for all common tubing sizes.



TCI Pump Out Plug

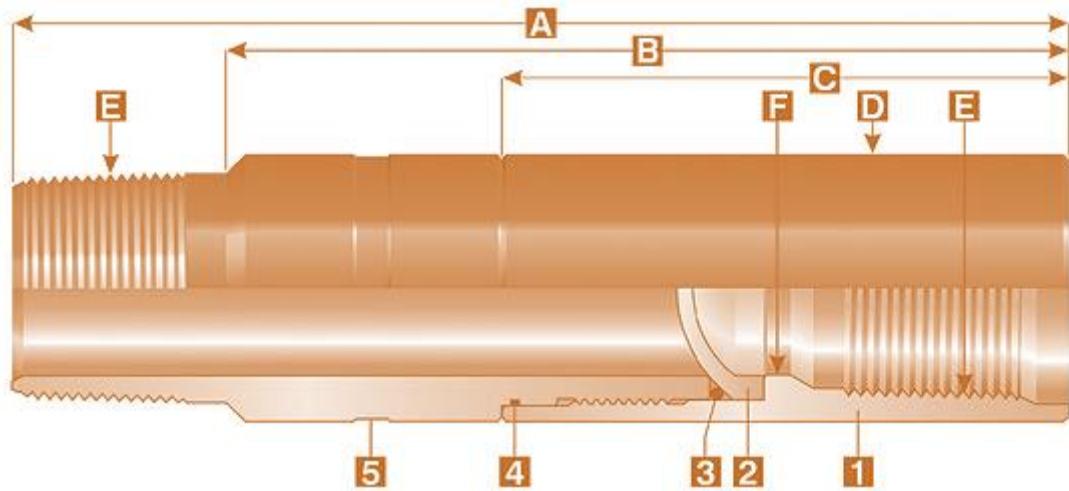
The TCI Pump Out Plug may be used as a temporary plug to facilitate setting of hydraulic packers. The plug may be manufactured solid or with a hole and ball seat. A ball is dropped into a seat in the Pump Out Plug, and pressure applied on the tubing to set the packers and shear out the seat.

This Pump Out Plug is available in all common tubing sizes and threads, with either a Half Mule Re-Entry Guide down or with a pin down.



31-21 Underbalancing Pressure Sub - Non-ported, Dimensional Data

Dim	31-2106041-00		31-2107341-00		31-2108941-00		31-2111441-00	
	In	mm	In	mm	In	mm	In	mm
A	8.0	203.2	12.82	325.6	12.9	327.6	54	1371
B	9.89	251.2	10.18	258.5	10.11	256.7	49	1244.6
C	6.65	168.9	6.75	171.4	7.25	184.1	27	685.8
D	3.04	77.2	3.66	92.2	4.50	114.3	4.50	114.3
E	2 ³ / ₈ " EUE	60.33 EUE	2 ⁷ / ₈ " EUE	73.0 EUE	3 ¹ / ₂ " EUE	89.9 EUE	4 ¹ / ₂ " EUE	114.3 EUE
F	1.995	50.6	2.44	62.0	3.00	76.2	4.00	101.6





TCI PREMIUM TUBING DRAIN VALVE

The TCI Premium Tubing Drain Valve allows for the tubing string to be drained prior to tripping, avoiding problems associated with pulling a “wet string”.

The TCI Premium Tubing Drain’s shear value is easily adjusted by simply adding or removing shear screws. The TCI Premium Tubing Drain is activated by increasing the tubing pressure, causing the sleeve to shear the shear pins and open the large drainage ports to the annular space above the pump.

This simple design allows for easy redressing with a TCI Premium Tubing Drain Valve Repair Kit.

Tubing Drain Size		Maximum OD		Minimum ID		Max # of Screws	Shear PSI / Screw	Max Shear PSI	Total Length	
inch	mm	inch	mm	inch	mm				inch	mm
2 3/8" EU	60.3	3.38"	85.9	2.00"	50.8	6	900	5,400	11 1/2"	292.1
2 7/8" EU	73.0	3.88"	98.6	2.441"	62.0	6	800	4,800	12 1/4"	311.2
3 1/2" EU	88.9	4.50"	114.3	2.992"	76.0	6	720	4,320	13 1/2"	342.9
4 1/2" EU	114.3	5.50"	139.7	4.00"	101.6	10	435	4,350	17 1/8"	435.0
4 1/2" NU	114.3	5.20"	132.1	4.00"	101.6	10	435	4,350	17 1/8"	435.0
5 1/2" LTC	139.7	6.22"	158.0	4.97"	126.2	6	500	3,000	20"	508.0

TCI is pleased to offer other connection sizes and types

*Please allow +/- 10% variances in shear ratings