

WLTC Retrievable Bridge Plug

The WLTC Retrievable Bridge Plug is designed to perform all tasks normally required of a tubing run packer-type bridge plug and can be quickly converted to run and set on wireline. It is designed to be rugged and compact (the 4-1/2" size is only 63 inches long).

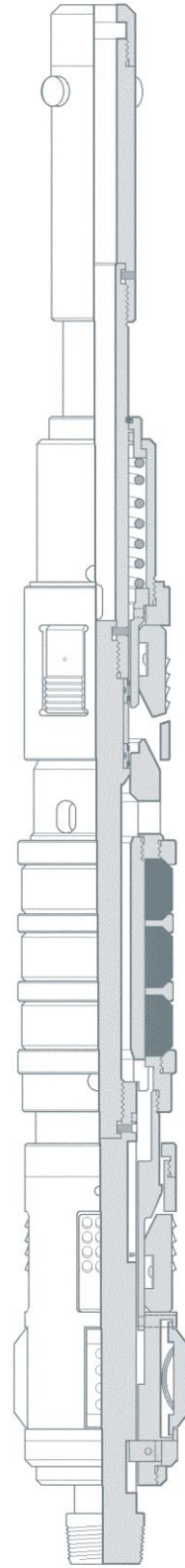
When run on tubing, the WLTC can be set deep or shallow because the packing element system can be energized with compression or tension. This bridge plug will withstand high differential pressures from above or below, while its internal bypass valve is easily opened to equalize fully prior to release.

Activated slips are always on the low-pressure side with the WLTC design, ensuring that a tight pack-off is maintained. When run on tubing, a circulation passage through the tool reduces the need for swabbing by allowing fluid to bypass internally. When set, another passage allows effective washing of sand and debris above the elements, ensuring easy release and retrieval.

Standard equipment on the WLTC Retrievable Bridge Plug includes tungsten carbide-tipped slips and drag blocks, which are long-lasting and allow for easy setting in the hardest casings. TCI's Spring Loaded Overshot is used to run (tubing set) and retrieve (tubing or wireline set) the WLTC Bridge Plug.

Size	CaSing WT.	Tool Od	Size	CaSing WT.	Tool Od
2 ⁷ / ₈	8.6-8.7	2.125	7	32-38	5.750
2 ⁷ / ₈	6.4-6.5	2.300	7	23-29	5.970
3 ¹ / ₂	9.2-10.2	2.781	7	17-23	6.188
3 ¹ / ₂	7.7-9.3	2.844	7 ⁵ / ₈	33-39	6.453
4	9.5-11.0	3.281	7 ⁵ / ₈	24-29	6.672
4 ¹ / ₂	13.5-16.6	3.640	8 ⁵ / ₈	40-49	7.312
4 ¹ / ₂	9.5-13.5	3.750	8 ⁵ / ₈	32-40	7.500
5	15-18	4.125	8 ⁵ / ₈	24-32	7.844
5	11.5-15	4.250	9 ⁵ / ₈	43.5-53.5	8.250
5 ¹ / ₂	17-23	4.500	9 ⁵ / ₈	36-47	8.438
5 ¹ / ₂	14-20	4.641	9 ⁵ / ₈	29.3-36	8.594
5 ¹ / ₂	13-15.5	4.781	10 ³ / ₄	45.5-55.5	9.500
6 ⁵ / ₈	24-32	5.500	10 ³ / ₄	32.75-45.5	9.688
6 ⁵ / ₈	20-24	5.750			

All dimensions listed in inches.





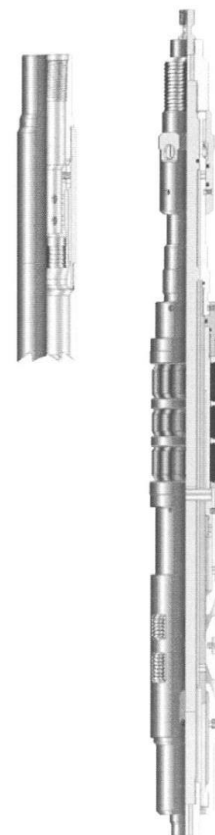
TCI CWRP Retrievable Bridge Plug

The TCI CWRP is a Retrievable bridge plug that can be run on electric wire line or in conjunction with a hydraulic setting tool on tubing. The plug is a compact, quick running bridge plug that features a three piece element with steel gauge rings. Bi-directional slips provide simple, affective anchoring to the casing. The pressure equalizing system allows the plug to be unset with a straight pull.

Features:

- Holds pressure from above and below.
- Three piece packing element systems provides for reliable, proven performance.
- Caged bidirectional slips for maximum performance.
- Manufactured from rugged alloy steel for optimum reliability in severe conditions.
- Balanced equalizing system.
- Pressure equalizes prior to releasing.
- Straight pull to release plug.
- Optional sand line or coil tubing retrieving (must be indicated to service rip before running).
- Cost effective.
- Differential pressures of 10,000 psi (69 Mpa)

CASING OD in/mm	WEIGHT RANGE lb/ft / kg/m	MAX OD in/mm	SETTING RANGE		TCI PART REFERENCE
			MINIMUM in/mm	MAXIMUM in/mm	
4.50 114.3	9.5-13.5 14.14-20.1	3.800 96.50	3.920 99.57	4.280 108.71	TL.10.W.37.23
5.00 127.0	11.5-13.0 17.11-19.30	4.250 107.95	4.490 114.05	4.560 115.82	TL.10.W.42.23
	15.0-18.0 22.32-26.78	4.060 103.20	4.276 108.61	4.408 111.96	TL.10.W.40.23
5.50 139.7	13.0-15.5 19.34-23.06	4.730 120.14	4.950 125.73	5.044 128.12	TL.10.W.47.23
	15.5-17.0 23.06-25.30	4.641 117.88	4.892 124.26	4.950 125.73	TL.10.W.46.23
	17.0-20.0 25.30-29.80	4.500 114.3	4.780 121.41	4.890 124.30	TL.10.W.45.23
7.00 177.8	17.0-20.0 25.30-29.76	6.230 158.20	6.456 163.98	6.538 166.07	TL.10.W.62.27
	23.0-26.0 34.23-38.69	6.002 153.0	6.276 159.41	6.366 161.70	TL.10.W.60.27
	29.0-32.0 43.16-47.60	5.900 149.20	6.090 154.69	6.180 157.10	TL.10.W.59.27
	35.0-38.0 52.10-56.60	5.660 143.70	5.920 150.40	6.000 152.50	TL.10.W.56.27





TCI WR-CW BRIDGE PLUG

The TCI WR-CW Bridge Plugs are a proven and reliable retrievable bridge plug. They are commonly used for zone or well isolation during fracturing , acidizing, cement squeezing , testing or up-hole/surface repair operations.

The double acting slips securely anchor the Bridge Plug against pressure differentials from above or below. The three element pack off design ensures reliable sealing at high pressures and temperatures .

The equalizing valve design allows pressure differential to be equalized before going through the upward releasing motion. No rotation is required to release either the WR or the CW Bridge Plug.

.. WIRELINE OR HYDRAULIC SET

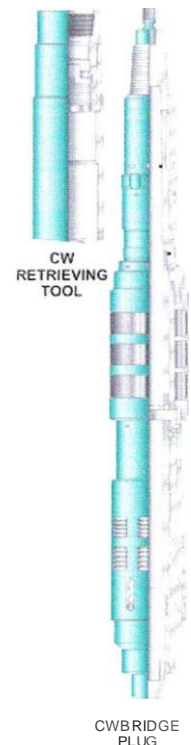
..MAY BE RAN AND RETRIEVED ON WIRELINE, COIL OR JOINTED PIPE

..THREE ELEMENT SYSTEM FOR RELIABLE OPERATION

..PROVEN EQUALIZING SYSTEM FOR SAFE, RELIABLE RELEASE

..ONE PIECE, DOUBLE ACTING SLIPS

.. REQUIRES STRAIGHT PULL, NO ROTATION TO RELEASE





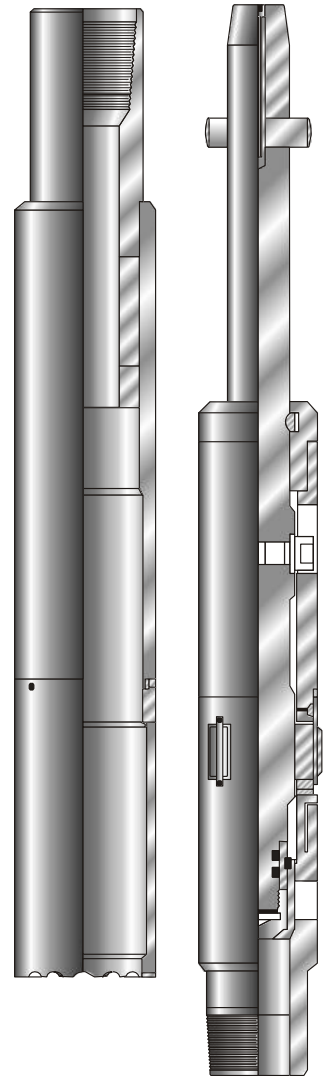
TCI "K" CONNECTOR VALVE

The TCI "K" Connector Valve is a high pressure mechanically operated valve used to convert a double grip retrievable packer to a bridge plug. The *TCI "K" Connector* design allows pressure to equalize above and below the packer is released. The running retrieving tool is locked to the valve eliminating accidental separation.

Running: Run the bridge plug to depth and pick up holding left-hand torque, set down while maintaining left-torque (this will engage j-pin in locked position) and pick up holding left hand torque will release the running retrieving tool from the valve.

Retrieving: Circulate debris from top of Bridge Plug and lower retrieving tool until engaged. Apply right hand torque and pick up allowing pressure to equalize before proceeding with packer release.

- ◆ EQUALIZES PRESSURE BEFORE PACKER IS RELEASED
- ◆ BONDED SEALS FRO REPEATED USE UNDER PRESSURE
- ◆ SAFETY DOGS ELIMINATE ACCIDENTAL SEPARATION
- ◆ AUTO JAY RETRIEVING TOOL FOR EASY CONNECTING
- ◆ 10,000 PSI PRESSURE RATING





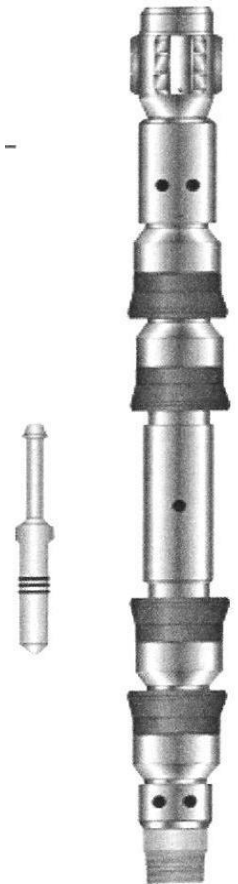
TCI Selective Cup Treating Tool (SCTT)

The TCI SCTT is a cup style selective treating tool. The tool is design for selective acidizing of predetermined perforating intervals. Interval length can vary from 0.3 m (12”) to any desired length by the addition of spacer tubing pup joints. A built in bypass makes the SCTT easy to run and retrieve. A drag block assembly provides a positive method for controlling the optional circulating valve. A retrievable dart is used to blank off the lower portion below the stimulation ports.

Features:

- Used to selectively acidize multiple intervals in a single run.
- Heavy duty reinforced casing cups.
- Backup cups for increased pressure rating.
- Large internal bypass making it easy to run and retrieve.
- Optional rotational circulating valve.
- Fluid control valve available for low pressure/ low fluid level wells.
- May be run with a swab packer assembly.

CASING OD in/mm	WEIGHT RANGE lbs/ft / kg/m	MAX OD in/mm	MIN ID in/mm	TREAD CONNECTION	TCI PART REFERENCE
4.50 114.3	9.5-13.5 14.14-20.09	3.771 95.5	1.250 31.80	60.3 mm EUE	TE.05.W.37.23
5.0 127.0	11.5-15.0 17.11-22.32	1.125 104.80	1.250 31.80	60.3 mm EUE	TE.05.W.41.23
5.5 139.7	13.0-15.5 19.34-23.06	4.781 121.4	1.750 44.50	60.3 mm EUE	TE.05.W.47.23
	15.5-17.0 23.06-25.30	4.625 117.5	1.750 44.50	60.3 mm EUE	TE.05.W.46.23
	20.0-23.0 29.76-34.22	4.50 114.3	4.778 121.36	60.3 mm EUE	TE.05.W.45.23
7.0 177.8	17.0-20.0 25.3-29.76	6.210 157.7	2.250 57.20	73.0 mm EUE	TE.05.W.62.27
	23.0-26.0 34.23-38.69	5.940 150.91	2.250 57.20	73.0 mm EUE	TE.05.W.59.27
	32.0-35.0 47.6-52.10	5.780 146.80	2.250 57.20	73.0 mm EUE	TE.05.W.57.27





TCI By-Pass Valve

The TCI By-Pass Valve is a rotational circulating valve designed for use with the TCI SCTT Selective Tools. This valve opens or closes off communication between the tubing and the annulus.

The valve is used to bypass tubing fluid when running or retrieving Selective Tools, and if required can also be used for circulation of fluids.

The By-Pass Valve features a pressure balanced sleeve design which allows for easy operation of the valve under high differential pressures. Specially designed chemical and wear resistant seals ensure reliable and trouble free operation.

Exclusive to this valve are the Thrust Bearings which allow for easy operation under tension or compression loads.

Operation

The By-Pass Valve is opened by rotating 3 turns to the right and closed by rotating 3 turns to the left.



TECHNICAL DATA

CASING O.D.	BY PASS VALVE PRODUCTION	VALVE O.D.	VALVE I.D.	EUE THREAD
in/mm		in / mm	in/mm	
4 1/2 114.3	TQ.06.U.37.23	3.75 95.2	1.93 49.0	2 3/8 60.3
5 127.0				
5 1/2 139.7				
6 5/8 168.3				
7 177.8	TQ.06.U.50.27	5.00 127.0	2.44 62.0	2 7/8 73.0
8 5/8 219.1				
9 5/8 244.5				



TCI MFCV FLUID CONTROL VALVE

The Model "M" Fluid Control Valve is a pressure activated valve used to provide, surface control over fluids. Particularly suited to injection wells with low reservoir pressures by supporting the hydrostatic head in the tubing.



Applications:

- Typically used in conjunction with a selective stimulation tool or straddle type packer to provide fluid control when selectively acidizing low fluid levels
- Selective scale removal
- Chemical treatments

Features:

- Operates using differential pressure and is not dependent on well depth
- Prevents loss of expensive chemical in low fluid level wells
- Utilizes chemical and wear resistant seals to ensure problem free operation
- Protects sensitive formations by holding displacement fluids in tubing
- Sand line or wireline retrievable
- Surface controlled by tubing pressure
- Meters precise volumes of liquids

SPECIFICATIONS			
Tubing (in)	Max Valve OD (in)	Seating Nipple ID (in)	Part Number
2-3/8	1.865	1.812	4 10-238-181
	1.928	1.875	4 10-238-187



Drag Assembly



TCI Drag Assembly

The Drag Assembly is designed with Drag Blocks and Inconel Springs. It is commonly run with Selective Acidizing equipment to anchor the bottom hole assembly, thus enabling torque transmission to rotational valves.

The centralizing effect of the Drag Assembly increases tool life, especially in Cup Type Acid Tools.



TCI Collar Locator

The Mechanical Casing Collar Locator provides a simple and reliable method of locating Casing Collars with the Tubing String to correlate the tubing depth to the logged depth. This tool is commonly run with Selective Acidizing Tool assemblies to locate the perforation depth.

The Collar Locator is installed as an integral part of the Tubing String. To operate properly it must be installed above any Drag Block Assemblies or tools using Drag Blocks or Springs. The Collar Locator is designed to indicate the collars when moving the tubing up. Spring loaded pads on the Locator expand into the recess of the Casing Coupling. The additional force required to collapse the pads again in order to pass through the coupling, is indicated at surface.

The tubing may be rotated freely through the Collar Locator without having to rotate the pads in the casing.



TCI SR-1 Retrievable Packer

The SR-1 Retrievable Packer is a versatile, full bore, double grip packer used for stimulation and production testing operations and is especially suited for applications in deep, high pressure wells.

This packer uses hydraulic hold down slips, operated by pressure from below the packer to secure the packer in place when high tubing pressures are encountered. A locking mechanism in the packer keeps the By-Pass closed during high pressure injection operations



TCI SR-2 Retrievable Packer

The SR-2 Retrievable Packer is used in applications where excessive bottom hole pressures or injection pressures are not expected, and sufficient tubing weight is available to keep the packer set. This packer is identical to the SR-1 except that it does not use the hydraulic hold down assembly.



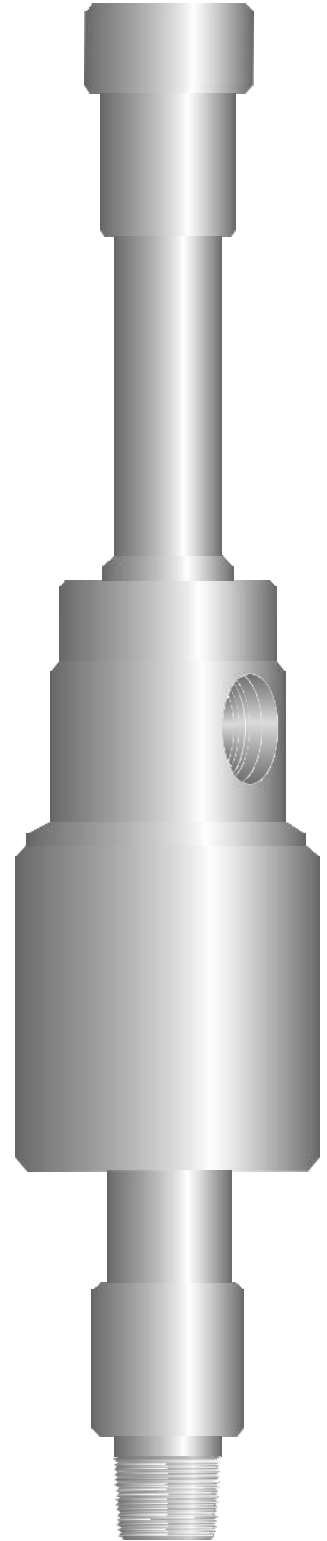
TCI TUBING SWIVEL

The TCI Tubing Swivel provides a safe means of rotating the tubing string while circulating with a treating line connected. It is primarily used in conjunction with the SST or Selective Tools, to provide a means of operating the By-Pass Valve while the treating line is connected.

It can also be used to facilitate the operation of other TCI Packers, or for light drilling.

When using this swivel, it is strongly recommended that the treating line be secured to the Tubing Swivel with a suitable safety chain or cable.

TUBING O.D.	PRODUCT NUMBER	OPERATING LOAD RATING		EUE THREAD	LINE PIPE CONNECTION
		LBS	daN	IN/MM	IN/MM
2 7/8 73.0	10-015-0250	100,000	44,500	2 7/8 73.0	2
3 1/2 88.9	10-015-0350	135,000	60,000	3 1/2 88.9	50.8





TCI HORIZONTAL WELL STIMULATION IMPROVES PRODUCTION USING HIGH PRESSURE JETTING TECHNOLOGY



Well Stimulation Overview

Oil inflow into the wellbore from unconsolidated sandstone reservoirs can be restricted in several ways. The restricting mechanisms can be difficult to identify and effectively treat. Heavy oil wells with long perforated liners also pose the challenge of low bottom hole pressure causing lost circulation during intervention. One of the first means of treating wellbore inflow problems is to apply an effective wellbore clean out program. TCI's well cleaning technology effectively removes debris from the wellbore while also applying direct hydraulic jetting pressure to the open hole, casing wall and slotted perforations or screens.

Job Parameters



- 5 extended reach horizontal heavy oil injection and producing wells.
- Job design consisted of tubing lock up analysis, pump pressure calculations, tubing sizing, annular flow path pressure drop prediction and tool string design.
- Slotted Liner: 114mm and 139mm
- Liner Tie Back String: 114 mm
- Vertical Depth: 480 m TVD
- Total Depth: 2300 mMD - 2900 mMD
- BHP: 3,000 kPa – 5,000 kPa
- Work over Fluid: Fresh Water

Results

- Production increase of 25 x.
- Nozzles maintaining original specification and Roturn-Jetting tool not requiring repair.
- Wells were "TD'd" in a field where getting to bottom has been a rare occurrence.
- Net volume of sand and asphaltene recovered greater than casing capacity.



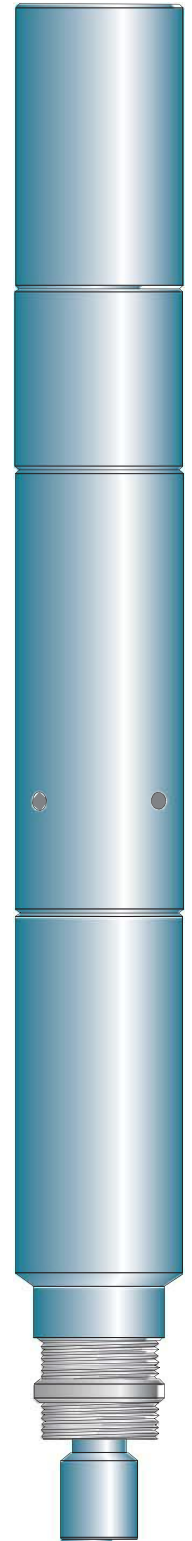
The **TCI B Hydraulic Setting Tool** is used to run and set on Tubing, Coiled Tubing or Drill Pipe most packers which are normally set on wireline. It is especially applicable for use in deviated wells where it is not practical to run the tools on wireline or in situations where a Wireline Unit is not available.

The B Setting Tool uses a bottom connection identical to the Baker E-4 Pressure Setting Assemblies. It is uniquely designed so additional piston sections may be added in order to lower the required setting pressure.

OPERATION

This Setting Tool uses the same adapters for running as are used with a Baker E-4 Wireline Setting Tool.

The B Setting Tool is run into the desired setting depth and the ball is dropped to the ball seat in the tool. (When used on Coiled Tubing the ball is run in place). Sufficient pressure is applied to set and pack off the packer. The pressure or combination of pressure and tubing tension, then shears the Shear Stud or Ring, freeing the Setting Assembly from the packer. The Setting Tool will automatically drain the Tubing String as it is being pulled.



SPECIFICATIONS							
SETTING TOOL SIZE	TOOL BODY OD		EQUIV. E-4 ASSEMBLY	MAXIMUM SHEAR RATING		THREAD	
	IN	MM		LBS	daN	Size	Connection
						IN / MM	
10-271-0181	1.81	46.0	5#			1.00 25.4	LPT
10-271-0300	3.50	88.9	10#			2 3/8 60.3	EUE
10-271-0350	3.50	88.9	10#	35,000	15,500	2 3/8 60.3	EUE
10-271-0425	4.25	107.9	20#	50,000	22,200	2 7/8 60.3	EUE



TCI PUMP TUBING BAILER

The TCI Pump Tubing Bailer is a fast and efficient way to clean out sand or other fill from a well. It is an efficient mechanical pump capable of removing large volumes of fill in a single trip. **The TCI Pump Tubing Bailer** does NOT need hydrostatic differential pressure in order to operate and WILL NOT need to have some fluid circulation in extremely low fluid wells.

Large volume of sand or fill can be cleaned out in one trip. The debris chamber is adjustable to accommodate any amount of sand or fill to be retrieved. The bailer assembly is designed with circulating drain ports eliminating the pulling of wet strings.

A Spaded or saw tooth bit on bottom of assembly allows rotation through compacted sand.

PRODUCT FEATURES

- * Heavy duty construction
- * Operation simplicity
- * Circulating drain valve eliminates wet strings
- * Economical
- * Cleanout can be accomplished in one run

OPERATION PROCEDURES

The TCI Pump Bailer Assembly is made up on the tubing string with the required amount of chamber between the pump assembly and the valve assembly. The pump assembly must be spaced out so that it will be below the fluid level in the well for it to operate properly. Once on bottom, the pump is stroked up and down. As the sand is pumped up into the fill pipe, it is necessary to move the pump assembly down so that the bottom of the pump is always contacting the top of the fill. If necessary, the assembly may be rotated. Continue this operation until either bottom is reached or the fill pipe is full (will stop making hole).

When pulling, the tubing will drain automatically.



TCI SC Unloader Valve

The full bore SC Unloader allows equalization of tubing and annulus pressures when run in conjunction with the T Squeeze Packer. It is always recommended that this Unloader be used when running the T Squeeze Packer. Downward force opens the Unloader.



TCI T Squeeze Packer

The T Squeeze Packer is a full bore Tension Packer designed specifically for Squeeze Cementing, Acidizing, Testing or Fracturing operations. The use of this packer is especially desirable under conditions where the pressure differential is from below and the use of a Compression Packer is prohibited. The opposing slips enable the T Squeeze to remain packed off during pressure reversals.

This Packer uses a dependable three element system to reliably hold high pressures at high temperatures. A simple adjustment can convert the R-104 to left hand or right hand set. Normally the SC Unloader Valve is run in conjunction with the T Squeeze Packer to allow equalization of tubing and annulus pressures.

Considered the best tension set service packer available it is well suited for repeated and continuous use under the harshest of conditions.



TCI T Squeeze Packer

TECHNICAL DATA

CASING					PRODUCT NUMBER	GAUGE RING O.D.	PACKER BODY O.D.	MIN BORE	EUE THREAD	TCI SC UNLOADER PRODUCT
O.D.	WEIGHT		I. D.							
in/m m	lb/ft	kg/m	in	mm		in/mm	in/mm	in/mm	in/mm	
4 1/2 114.3	13.50	20.1	3.920	99.6	TX.10.W.37.23	3.800 96.5	3.75 95.3	1.933 49.1	2 3/8 63.0	TZ.10.W.37.2 3
	11.60	17.3	4.000	101.6						
	10.50	15.6	4.052	102.9						
	9.50	14.1	4.090	103.9						
5 127.0	18.00	26.8	4.276	108.6	TX.10.W.40.23	4.062 103.2	4.00 101.6			
	15.00	22.3	4.408	112.0	TX.10.W.42.23	4.250 108.0				
	13.00	19.3	4.494	114.1						
	11.50	17.1	4.560	115.8						
5 1/2 139.7	26.00	38.7	4.548	115.5			TX.10.W.42.23			
	23.00	34.2	4.670	118.6	TX.10.W.45.23					
	20.00	29.8	4.778	121.4						
	17.00	25.3	4.892	124.3						
	17.00	25.3	4.892	124.3	TX.10.W.46.23	4.641 117.9				
	15.50	23.1	4.950	125.7	TX.10.W.47.23	4.728 120.1				
	15.50	23.1	4.950	125.7						
	14.00	20.8	5.012	127.3						
13.00	19.3	5.044	128.1							
6 5/8 168.3	32.00	47.6	5.675	144.1	TX.10.W.55.27	5.500 139.7	5.500 139.7	2.474 62.8	2 7/8 73.0	TZ.10.W.45.2 7
	28.00	41.7	5.791	147.1						
	24.00	35.7	5.921	150.4	TX.10.W.56.27	5.658 143.7				
	20.00	29.8	6.049	153.6						



CASING					PRODUCT NUMBER	GAUGE RING O.D.	PACKER BODY O.D.	MIN. BORE	EUE THREAD	TCI SC UNLOADER PRODUCT
O. D.	WEIGHT		I. D.							
in/mm	lb/ft	kg/m	in	mm		in/mm	in/mm	in/mm	in/mm	
7 177.8	38.00	56.6	5.920	150.4	TX.10.W.56.27	5.658 143.7	5.75 146.1	2.474 62.8	2 7/8 73.0	TZ.10.W.45.27
	35.00	52.1	6.004	152.5						
	32.00	47.6	6.094	154.8	TX.10.W.58.27	5.875 149.2				
	29.00	43.2	6.184	157.1						
	26.00	38.7	6.276	159.4	TX.10.W.60.27	6.023 153.0				
	23.00	34.2	6.366	161.7						
	20.00	29.8	6.456	164.0	TX.10.W.62.27	6.230 158.2				
	17.00	25.3	6.538	166.1						

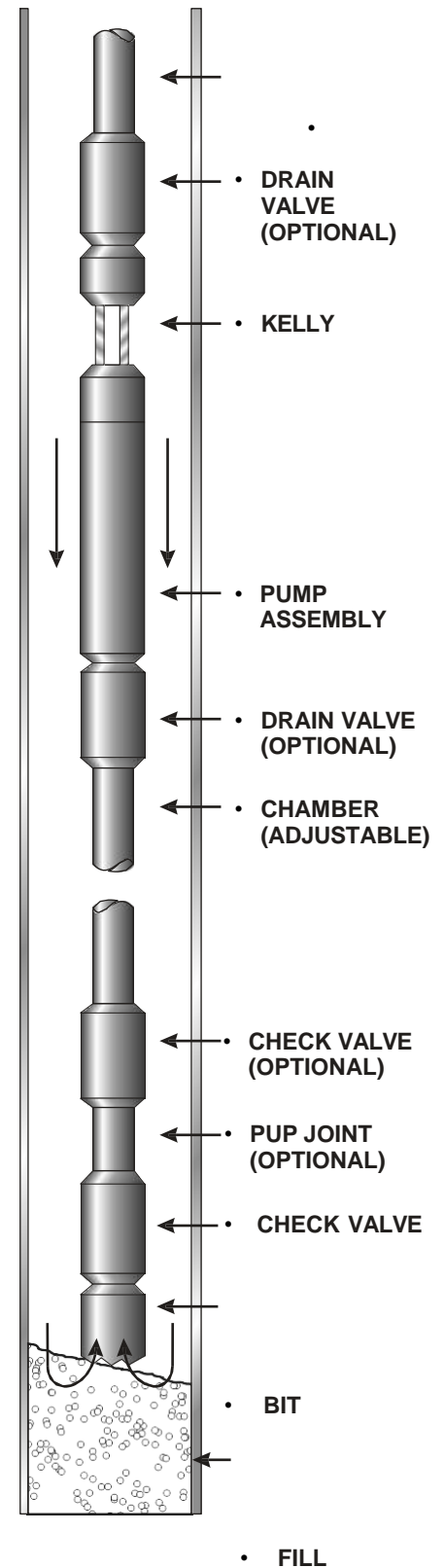
TECHNICAL DATA

TCI SC Unloader Valve
TZ.10.W.37.23
TZ.10.W.45.27

SIZE	O.D.		I.D.		BOX UP EUE	PIN DOWN EUE
	in/mm	in/mm	in/mm	in/mm		
200	3.75	95.3	1.995	50.8	2 3/8 60.3	2 3/8 60.3
250	4.50	114.3	2.441	62.0	2 7/8 73.0	2 7/8 73.0

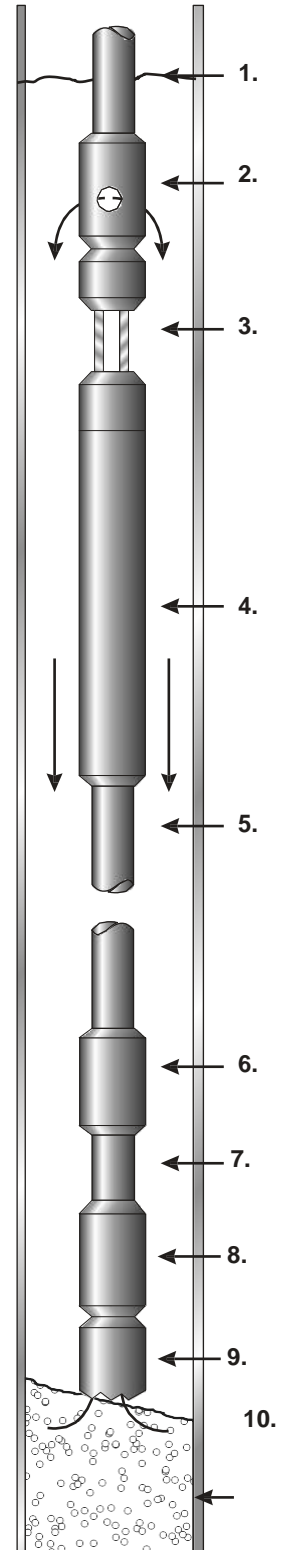


1. **FLUID LEVEL:** The bailer is a hydrostatic tool that operates by having an overbalance of fluid in the well.
 2. **DRAIN VALVE:** The Drain Valve allows the tubing to drain while tripping out.
 3. **KELLY:** The Kelly provides the transmission of torque from the tubing string to the bit.
 4. **PUMP ASSEMBLY:** Applied compression to the pump assembly opens the main valve and the annular overbalance forces the fluid and sand in through the bottom trap valves and up into the tubing chamber. The sand and debris collect in the cavity pipe above the valves, while the fluid goes through the pump assembly and is discharged into the tubing above.
 5. **DRAIN VALVE:** The Drain Valve eliminate pressure build up in the adjustable chamber.
 6. **CHAMBER:** The Chamber is made up of tubing to accommodate the amount of estimated fill.
 7. **CHECK VALVE:** The Check Valve is of either flapper or ball design. The function of the valve is to maintain fill trapped in the adjustable chamber until surface is reached. The second Check Valve is run in case first Check Valve fails.
 8. **PUP JOINT:** Space out Check Valves.
 9. **CHECK VALVE:** As per item 7.
- JET SUB: TO HELP CLEAR FILL ON SUCTION OPTIONAL**
11. **BIT:** Different bit types available dependent upon fill to be encountered.
 10. **FILL:** Completion or maintenance sand, surplus frac-sand or debris where well cannot be circulated.





1. **FLUID LEVEL:** The Fluid Level must be maintained above the circulating valve for the pump tubing bailer to function correctly.
2. **CIRCULATING VALVE:** The valve has two functions with the first being of recycling of fluid during pumping operations. The second function is to drain tubing while tripping out.
3. **KELLY:** The Kelly provides the transmission of torque from the tubing string to the bit.
4. **PUMP ASSEMBLY:** Reciprocation of the pump assembly draws fluid and sand in through the bottom valves and up into the tubing chamber. The sand and debris collects in the cavity pipe above the valves, while the fluid goes through the pump assembly and is discharged into the annulus.
5. **CHAMBER:** The Chamber is made up of tubing to accommodate the amount of estimated fill.
6. **CHECK VALVE:** The Check Valve is of either flapper or ball design. The function of the valve is to maintain fill trapped in the adjustable chamber until surface is reached. The second Check Valve is run in case first Check Valve fails.
7. **PUP JOINT:** Space out Check Valves.
8. **CHECK VALVE:** As per item 6.
9. **BIT:** Different bit types available dependent upon fill to be encountered.
10. **FILL:** Completion or maintenance sand, surplus frac-sand or debris where well cannot be circulated.





TY.10.W.0181 (1.81 OD)

Setting Tool with 4 Staging Pistons

Tool OD: 1.810" ±0.005"
 Tool OAL: 70.62"
 Stroke: 3.50"
 Working Pressure: 6000 psi
 Collapse Pressure (API): 4000 psi
 Temperature Rating: Depends on type of o-rings used. Typical nitrile o-rings Have a range of -58°F to 230°F.

The setting pressure required to shear a given stud with formation pressure inside the well is given by the formula:

$$P_s = \frac{F_s + .307P_f}{7.61}$$

Where:

P_s = Setting Pressure, psi
 F_s = Setting Force (Shear Stud), lbf
 P_f = Formation Pressure, psi

The above formula is based on a setting tool with 4 staging pistons and 1 activating piston. Each staging piston provides 1.46in² of area while the activating piston provides 1.77in², for a total of 7.61in² of area. The .307 term in the equation is the area of the stem of the activating piston acted on by formation pressure. The above formula does not include the effect of o-ring drag which will increase the setting pressure slightly

Setting Tool with 5 Staging Pistons

Tool OD: 1.810" ±0.005"
 Tool OAL: 76.5"
 Stroke: 3.50"
 Working Pressure: 6000 psi
 Collapse Pressure (API): 4000 psi
 Temperature Rating: Depends on type of o-rings used. Typical nitrile o-rings have a range of -58°F to 230°F.

The setting pressure required to shear a given stud with formation pressure inside the well is given by the formula:

$$P_s = \frac{F_s + .307P_f}{9.07}$$

Where:

P_s = Setting Pressure, psi
 F_s = Setting Force (Shear Stud), lbf
 P_f = Formation Pressure, psi

The above formula is based on a setting tool with 5 staging pistons and 1 activating piston. Each staging piston provides 1.46in² of area while the activating piston provides 1.77in², for a total of 9.07in² of area. The .307 term in the equation is the area of the stem of the activating piston acted on by formation pressure. The above formula does not include the effect of o-ring drag which will increase the setting pressure slightly



10-271-0350-00-00		
Number of Pistons	Effective Piston Area	Pressure Required to Generate 35,000#
1	7.068	4950 PSI
2	13.351	2620 PSI
3	19.633	1780 PSI
4	24.916	1350 PSI
5	32.198	1085 PSI

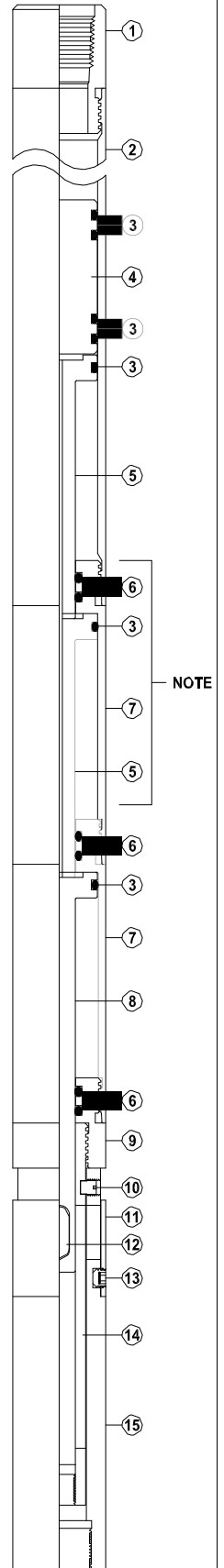
10-271-0425-00-00		
Number of Pistons	Effective Piston Area	Pressure Required to Generate 50,000#
1	7.068	7075 PSI
2	13.351	3750 PSI
3	19.633	2550 PSI
4	24.916	1930 PSI
5	32.198	1550 PSI

**ASSEMBLY: 10-271-0181-00-00**

1. Lubricate all seal surfaces and threads before assembly
2. Screw top sub (1) into oil cylinder (2)
3. Install o-ring (3) onto activating piston (4) and intensifier piston (5). Slide Activating Piston (4) and Intensifier piston (5) into oil cylinder (2).
4. Install o-ring (6) into piston housing (7) and screw into oil cylinder (2).
5. Install o-ring (3) onto intensifier piston (5) and slide into piston housing (7).
6. Install o-ring (6) into piston housing (7) and screw onto piston housing (7).
7. Repeat steps 4 & 5

NOTE: these parts can be added or deleted as a group to increase or decrease the number of stages in the setting tool (see dwg note)

8. Install o-ring (3) onto drive piston (8) and slide into piston housing (7).
9. Install o-ring (6) into lower cap (9) and screw into piston housing (7). Screw key sleeve (14) into lower cap (9).
10. Slide key retainer (11) up to lower cap (9)
11. Slide lower sleeve (15) over key sleeve (14) and line up slots in the lower sleeve (15), key sleeve (14) and drive piston (8) and install key (12). Slide key retainer (11) down and install set screw (13).
12. Push the lower sleeve (15) up until the holes line up with the groove on the key sleeve (14) and install shear screw (10).

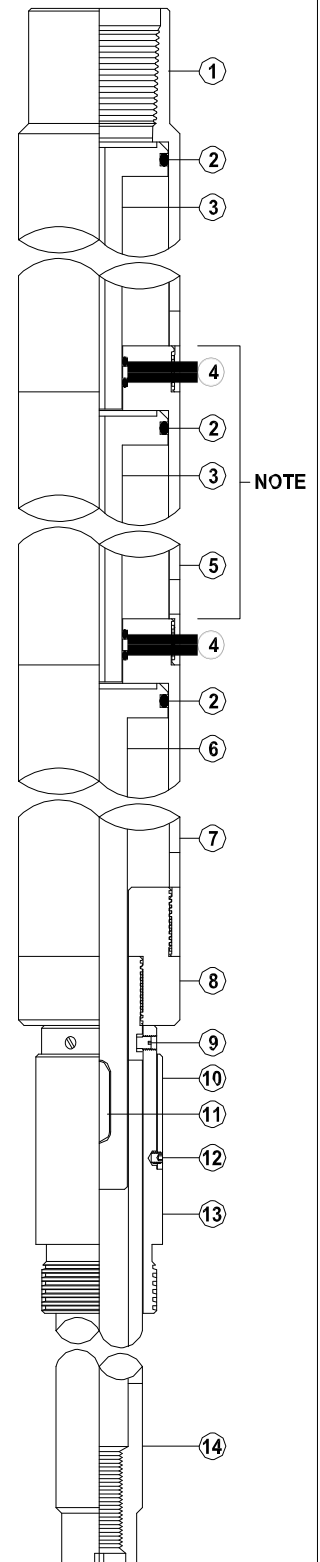


**ASSEMBLY: 10-271-03XX-00-00**

1. Lubricate all seal surfaces and threads before assembly
2. Install o-ring (2) onto intensifier piston (3) and slide into upper piston housing (1).
3. Install o-ring (4) into middle piston housing (5) and screw into upper piston housing (1).
4. Install o-ring (2) onto intensifier piston (3) and slide into middle piston housing (5).
5. Repeat steps 3 & 4

NOTE: these parts can be added or deleted as a group to increase or decrease the number of stages in the setting tool (see dwg note)

6. Install o-ring (4) into lower piston housing (7) and screw into middle piston housing (7).
7. Install o-ring (2) onto drive piston (6) and slide into lower piston housing (7).
8. Screw lower cap (8) into lower piston housing (7). Screw key sleeve (14) into lower cap (8).
9. Slide key retainer (10) up to lower cap (8).
10. Slide lower sleeve (13) over key sleeve (14) and line up slots in the lower sleeve (13), key sleeve (14) and drive piston (6) and install key (11). Slide key retainer (10) down and install set screw (12).
11. Push the lower sleeve (13) up until the holes line up with the groove on the key sleeve (14) and install shear screw (9).

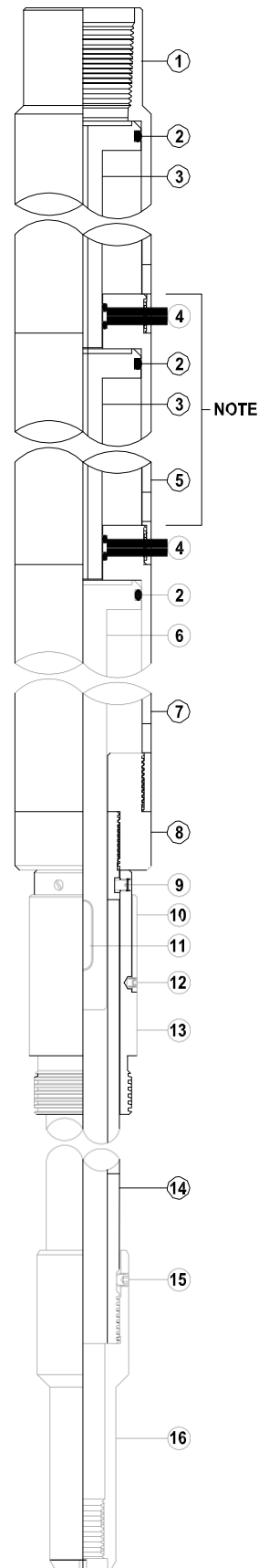


**ASSEMBLY: 10-271-0425-00-00**

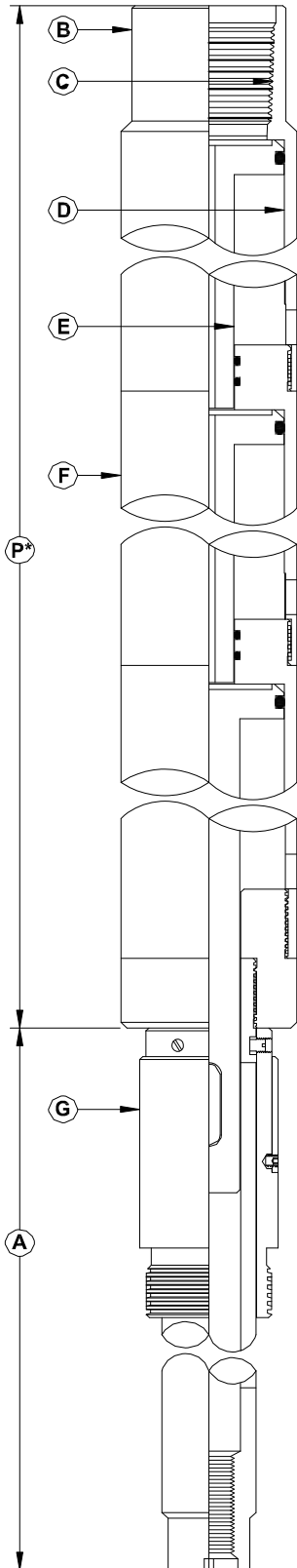
1. Lubricate all seal surfaces and threads before assembly
2. Install o-ring (2) onto intensifier piston (3) and slide into upper piston housing (1).
3. Install o-ring (4) into middle piston housing (5) and screw into upper piston housing (1).
4. Install o-ring (2) onto intensifier piston (3) and slide into middle piston housing (5).
5. Repeat steps 3 & 4

NOTE: these parts can be added or deleted as a group to increase or decrease the number of stages in the setting tool (see dwg note)

6. Install o-ring (4) into lower piston housing (7) and screw into middle piston housing (7).
7. Install o-ring (2) onto drive piston (6) and slide into lower piston housing (7).
8. Screw lower cap (8) into lower piston housing (7). Screw key sleeve (14) into lower cap (8).
9. Slide key retainer (10) up to lower cap (8)
10. Slide lower sleeve (13) over key sleeve (14) and line up slots in the lower sleeve (13), key sleeve (14) and drive piston (6) and install key (11). Slide key retainer (10) down and install set screw (12).
11. Push the lower sleeve (13) up until the holes line up with the groove on the key sleeve (14) and install shear screw (9).
12. Screw setting nut (16) onto key sleeve (14) and install set screw (15) into setting nut (16)



TCI B HYDRAULIC SETTING TOOL



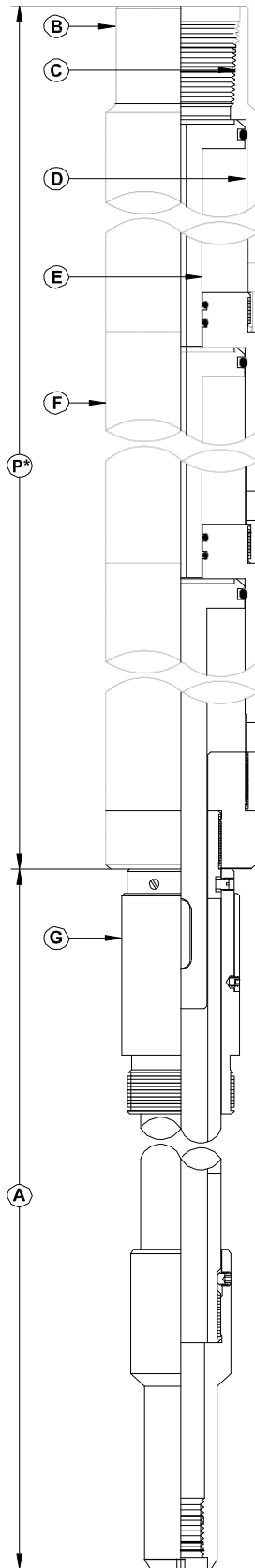
DIMENSIONAL DATA				
ITEM	10-271-0181-00-00		10-271-0300-00-00	
	IN	MM	IN	MM
P2	37.38	949.5	23.06	585.7
P3	42.42	1077	32.34	821.4
P4	47.45	1205	41.62	1057
P5	52.49	1333	50.90	1293
A	7.860	199.6	13.69	347.7
B	1.810	45.97	3.060	77.72
C	1.000 LPT		2 3/8 EUE	
D	1.500	38.10	2.500	63.50
E	0.625	15.88	1.000	25.40
F	1.810	45.97	3.060	77.72
G	1.810	45.97	2.750	69.85

DIMENSIONAL DATA				
ITEM	10-271-0312-00-00		10-271-0350-00-00	
	IN	MM	IN	MM
P2	49.59	1259.6	23.06	585.7
P3	64.62	1641.3	32.34	821.4
P4	79.65	2023	41.62	1057
P5	94.68	2405	50.90	1293
A	19.44	493.8	13.69	347.7
B	3.060	77.72	3.060	77.72
C	2 3/8 EUE		2 3/8 EUE	
D	3.000	76.20	3.000	76.20
E	1.000	25.40	1.000	25.40
F	3.500	88.90	3.500	88.90
G	2.750	69.85	2.750	69.85

P*: Number of Pistons

10-271-0300-00-00 & 10-271-0312-00-00		
NUMBER OF PISTONS	EFFECTIVE PISTON AREA	PRESSURE REQUIRED TO GENERATE 30,000 #
1	4.90	6120 PSI
2	9.07	3330 PSI
3	13.12	2285 PSI
4	17.23	1740 PSI
5	21.34	1405 PSI
10-271-0300-00-00 Stroke		6.25
10-271-0312-00-00 Stroke		12.00

10-271-0350-00-00		
NUMBER OF PISTONS	EFFECTIVE PISTON AREA	PRESSURE REQUIRED TO GENERATE 35,000 #
1	7.07	4950 PSI
2	13.35	2620 PSI
3	19.63	1780 PSI
4	25.92	1350 PSI
5	32.20	1085 PSI
Stroke		6.25

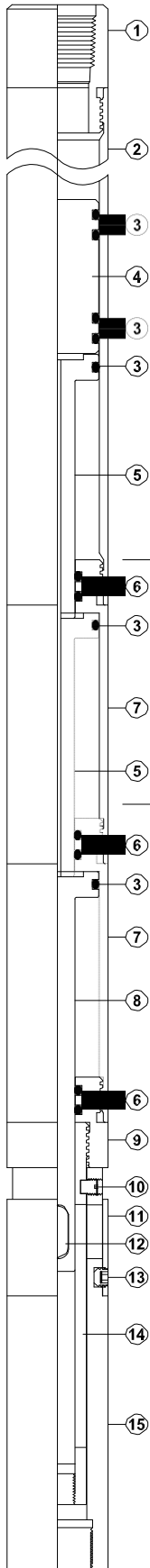


DIMENSIONAL DATA		
ITEM	10-271-0425-00-00	
	IN	MM
P2	23.06	585.7
P3	32.34	821.4
P4	41.62	1057
P5	50.90	1293
A	19.25	489.0
B	3.060	77.72
C	2 3/8 EUE	
D	3.000	76.20
E	1.000	25.40
F	3.500	88.90
G	3.800	96.52

P*: Number of Pistons

10-271-0425-00-00		
NUMBER OF PISTONS	EFFECTIVE PISTON AREA	PRESSURE REQUIRED TO GENERATE 50,000 #
1	7.07	7075 PSI
2	13.35	3750 PSI
3	19.63	2550 PSI
4	25.92	1930 PSI
5	32.20	1550 PSI
Stroke	6.25	

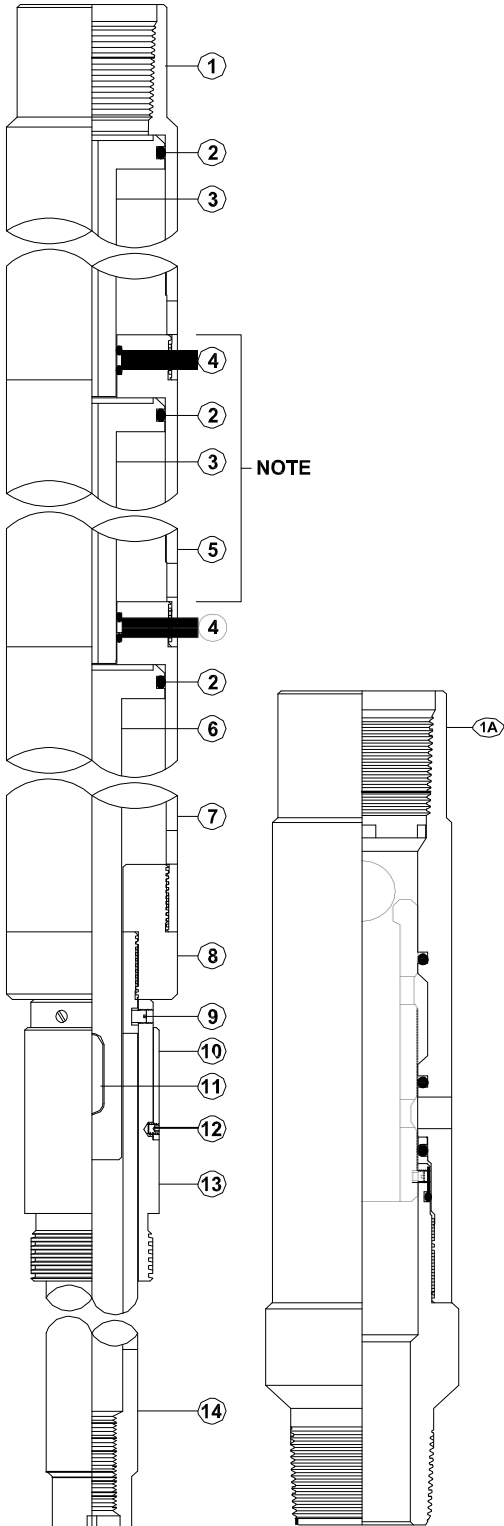
1.81 B110 HYDRAULIC SETTING TOOL



PARTS LIST			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	Top Sub	1	10-271-0181-21-00
2	Oil Cylinder	1	10-271-0181-01-00
3	O-Ring, 70 Duro, Nitrile, Size 218	7	80-002-0218-70-00
4	Activating Piston	1	10-271-0181-10-00
5	Intensifier Piston	2	10-271-0181-04-00
6	O-Ring, 70 Duro, Nitrile, Size 208	6	80-002-0208-70-00
7	Piston Housing	2	10-271-0181-02-00
8	Drive Piston	1	10-271-0181-05-00
9	Lower Cap	1	10-271-0181-03-00
10	B. Shear Screw, 5/16-24 UNF x .31, 2000#	4	20-047-0450-04-00
11	Key Retainer	1	10-271-0181-09-00
12	Key	1	10-271-0181-06-00
13	Set Screw, 3/8-16 UNC x 1/4	2	SSHSC-0375-02-50
14	Key Sleeve	1	10-271-0181-07-00
15	Lower Sleeve	1	10-271-0181-08-00

NOTE These parts can be added or deleted as a group to increase or decrease the number of stages in the setting tool

2 3/8 x 3.00 B110 HYDRAULIC SETTING TOOL 3.06 OD



PARTS LIST			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	Upper Piston Housing, .75 Ports, 2-3/8 EUE	1	10-271-0300-01-00
2	O-Ring 90 Duro Nitrile, Size 330	3	80-002-0330-90-00
3	Intensifier Piston	2	10-271-0300-02-00
4	O-Ring 90 Duro Nitrile, Size 214	4	80-002-0214-90-00
5	Middle Piston Housing, .75 Ports	1	10-271-0300-03-00
6	Drive Piston	1	10-271-0300-05-00
7	Lower Piston Housing, .75 Ports	1	10-271-0300-04-00
8	Lower Cap	1	10-270-0300-07-00
9	Brass Shear Screw, 5 1/2-24 UNF x .31, 2000#	10	20-047-0450-04-00
10	Key Retainer	1	10-270-0350-10-00
11	Key	1	10-270-0350-11-00
12	Hex Socket Set Screw, 1/4-20 UNC x 1/4	2	CSHHC-0250-02-50
13	Lower Sleeve, 20K# Shear	1	10-271-0350-14-00
14	Key Sleeve	1	10-271-0350-07-00

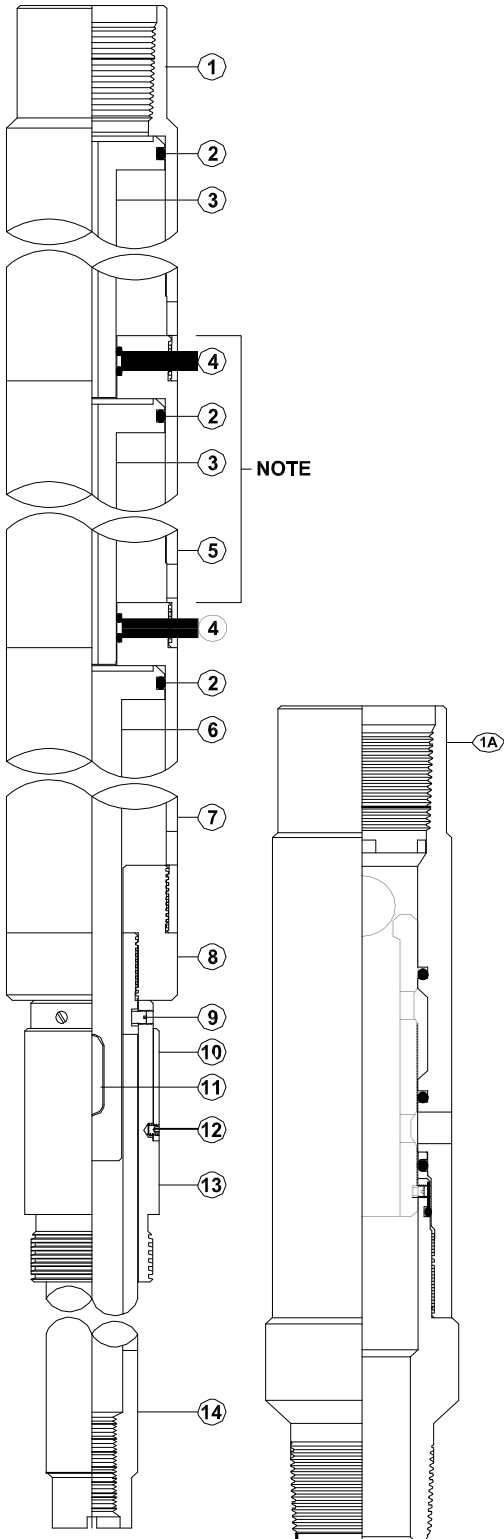
NOTE These parts can be added or deleted as a group to increase or decrease the number of stages in the setting tool

OPTIONAL PARTS			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	Upper Piston Housing, 2 Circular, 2-7/8 EUE	1	10-271-0300-22-00
13	Lower Sleeve, 12K# Shear	1	10-271-0350-06-02
NS	B10 Test Fixture	1	10-271-0350-12-00
1	Upper Piston Housing, 2 x .25 Ports	1	10-271-0300-15-00
5	Middle Piston Housing, 2 x .25 Ports	1	10-271-0300-16-00
7	Lower Piston Housing, 2 x .25 Ports	1	10-271-0300-17-00

PARTS REQUIRED FOR ADDITIONAL PISTONS			
ITEM	DESCRIPTION	QTY	PART NUMBER
2	O-Ring 90 Duro Nitrile, Size 330	1	80-002-0330-90-00
3	Intensifier Piston	1	10-271-0300-02-00
4	O-Ring 90 Duro Nitrile, Size 214	2	80-002-0214-90-00
5	Middle Piston Housing, .75 Ports	1	10-271-0300-03-00

OPTIONAL ACCESSORIES			
ITEM	DESCRIPTION	QTY	PART NUMBER
1A	Auto Flow Sub, 2 3/8, 3.06 OD	1	10-274-2330-00-00

2 3/8 x 3.00 B110 HYDRAULIC SETTING TOOL
3.06 OD, 12" Stroke
Product: 10-271-0312-00-00



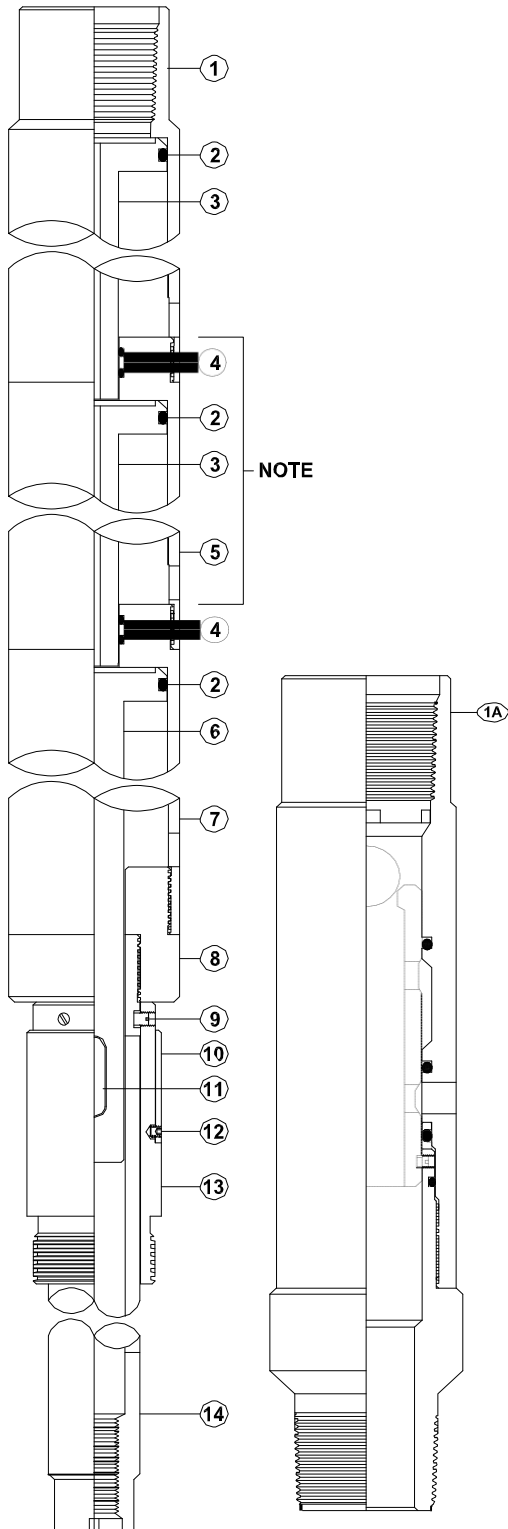
PARTS LIST			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	Upper Piston Housing, .25 Ports, 2-3/8 EUE	1	10-271-0312-01-00
2	O-Ring 90 Duro Nitrile, Size 330	3	80-002-0330-90-00
3	Intensifier Piston	2	10-271-0312-02-00
4	O-Ring 90 Duro Nitrile, Size 214	4	80-002-0214-90-00
5	Middle Piston Housing, .25 Ports	1	10-271-0312-03-00
6	Drive Piston	1	10-271-0312-05-00
7	Lower Piston Housing, .25 Ports	1	10-271-0312-04-00
8	Lower Cap	1	10-270-0300-07-00
9	Brass Shear Screw, 5 1/2-24 UNF x .31, 2000#	10	20-047-0450-04-00
10	Key Retainer	1	10-270-0350-10-00
11	Key	1	10-270-0350-11-00
12	Hex Socket Set Screw, 1/4-20 UNC x 1/4	2	CSHHC-0250-02-50
13	Lower Sleeve, 20K# Shear	1	10-271-0312-14-00
14	Key Sleeve	1	10-271-0312-07-00

NOTE These parts can be added or deleted as a group to increase or decrease the number of stages in the setting tool

PARTS REQUIRED FOR ADDITIONAL PISTONS			
ITEM	DESCRIPTION	QTY	PART NUMBER
2	O-Ring 90 Duro Nitrile, Size 330	1	80-002-0330-90-00
3	Intensifier Piston	1	10-271-0312-02-00
4	O-Ring 90 Duro Nitrile, Size 214	2	80-002-0214-90-00
5	Middle Piston Housing, .25 Ports	1	10-271-0312-03-00

OPTIONAL ACCESSORIES			
ITEM	DESCRIPTION	QTY	PART NUMBER
1A	Auto Flow Sub, 2 3/8, 3.06 OD	1	10-274-2330-00-00

B110 HYDRAULIC SETTING TOOL



PARTS LIST			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	Upper Piston Housing, .75 Ports, 2-3/8 EUE	1	10-271-0350-01-00
2	O Ring 90 Duro Nitrile, Size 334	3	80-002-0334-90-00
3	Intensifier Piston	2	10-271-0350-02-00
4	O Ring 90 Duro Nitrile, Size 214	4	80-002-0214-90-00
5	Middle Piston Housing, .75 Ports	1	10-271-0350-03-00
6	Drive Piston	1	10-271-0350-05-00
7	Lower Piston Housing, .75 Ports	1	10-271-0350-04-00
8	Lower Cap	1	10-270-0350-07-00
9	Brass Shear Screw, 5 1/2-24 UNF x .31, 2000#	6	20-047-0450-04-01
10	Key Retainer	1	10-270-0350-10-00
11	Key	1	10-270-0350-11-00
12	Hex Socket Set Screw, 1/4-20 UNC x 1/4	2	CSHHC-0250-02-50
13	Lower Sleeve, 12K# Shear	1	10-271-0350-06-02
14	Key Sleeve	1	10-271-0350-07-00

NOTE These parts can be added or deleted as a group to increase or decrease the number of stages in the setting tool

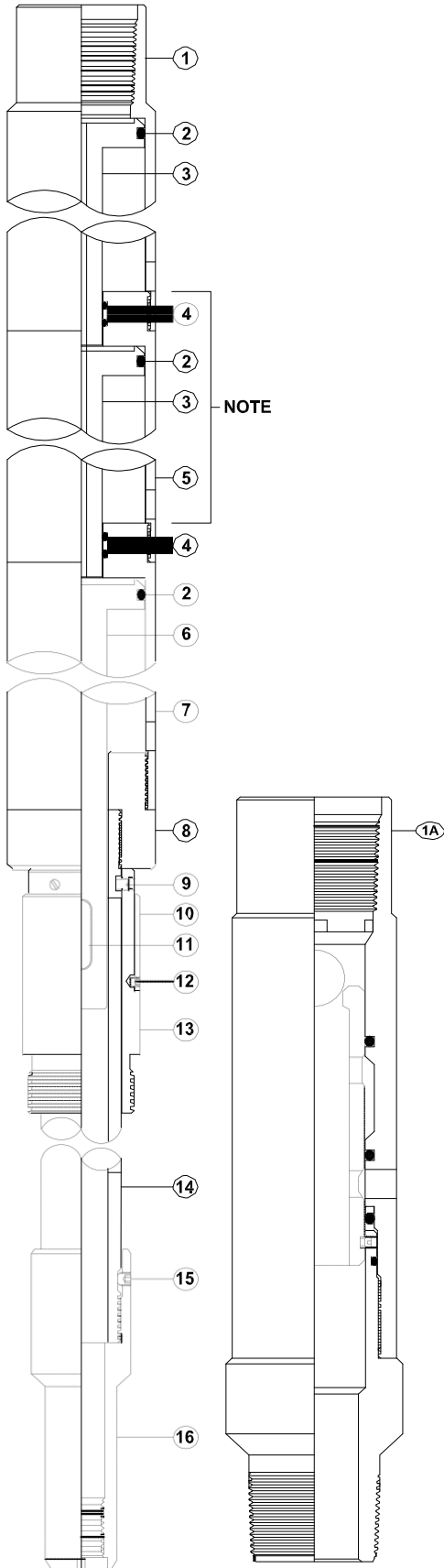
OPTIONAL PARTS			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	Upper Piston Housing, .75 Ports, 2-7/8 EUE	1	10-271-0350-22-00
13	Lower Sleeve, 20K# Shear	1	10-271-0350-14-00
NS	B10 Test Fixture	1	10-271-0350-12-00
1	Upper Piston Housing, 2 x .25 Ports	1	10-271-0350-15-00
5	Middle Piston Housing, 2 x .25 Ports	2	10-271-0350-16-00
7	Lower Piston Housing, 2 x .25 Ports	1	10-271-0350-17-00
1	Upper Piston Housing, Slot Ports	1	10-271-0350-18-00
5	Middle Piston Housing, Slot Ports	2	10-271-0350-19-00
7	Lower Piston Housing, Slot Ports	1	10-271-0350-20-00

NS = Not Shown

PARTS REQUIRED FOR ADDITIONAL PISTONS			
ITEM	DESCRIPTION	QTY	PART NUMBER
2	O Ring 90 Duro Nitrile, Size 334	1	80-002-0334-90-00
3	Intensifier Piston	1	10-271-0350-02-00
4	O Ring 90 Duro Nitrile, Size 214	2	80-002-0214-90-00
5	Middle Piston Housing	1	10-271-0350-03-00

OPTIONAL ACCESSORIES			
ITEM	DESCRIPTION	QTY	PART NUMBER
1A	Auto Flow Sub, 2 3/8 x 3 1/2	1	10-274-2335-00-00
1A	Auto Flow Sub, 2 7/8 x 3 1/2	1	10-274-2735-00-00

B120 HYDRAULIC SETTING TOOL



PARTS LIST			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	Upper Piston Housing, .75 Ports, 2-3/8 EUE	1	10-271-0350-01-00
2	O Ring 90 Duro Nitrile, Size 334	3	80-002-0334-90-00
3	Intensifier Piston	2	10-271-0350-02-00
4	O Ring 90 Duro Nitrile, Size 214	4	80-002-0214-90-00
5	Middle Piston Housing, .75 Ports	1	10-271-0350-03-00
6	Drive Piston	1	10-271-0350-05-00
7	Lower Piston Housing, .75 Ports	1	10-271-0350-04-00
8	Lower Cap	1	10-271-0425-07-00
9	Brass Shear Screw, 5 1/2-24 UNF x .31, 2000#	6	20-047-0450-04-01
10	Key Retainer	1	10-270-0425-10-00
11	Key	1	10-270-0425-11-00
12	Hex Socket Set Screw, 1/4-20 UNC x 1/4	2	CSHHC-0250-02-50
13	Lower Sleeve, 20K# Shear	1	10-271-0425-14-00
14	Key Sleeve	1	10-271-0425-08-00
15	Set Screw, 3/8-16 UNC x 3/8	2	SSHSC-0375-03-75
16	Setting Nut	1	10-211-0550-02-00

NOTE These parts can be added or deleted as a group to increase or decrease the number of stages in the setting tool

OPTIONAL PARTS			
ITEM	DESCRIPTION	QTY	PART NUMBER
1	Upper Piston Housing, .75 Ports, 2-7/8 EUE	1	10-271-0350-22-00
13	Lower Sleeve, 12K# Shear	1	10-271-0425-09-00
NS	B120 Test Fixture	1	10-271-0425-13-00
1	Upper Piston Housing, 2 x .25 Ports	1	10-271-0350-15-00
5	Middle Piston Housing, 2 x .25 Ports	2	10-271-0350-16-00
7	Lower Piston Housing, 2 x .25 Ports	1	10-271-0350-17-00
1	Upper Piston Housing, Slot Ports	1	10-271-0350-18-00
5	Middle Piston Housing, Slot Ports	2	10-271-0350-19-00
7	Lower Piston Housing, Slot Ports	1	10-271-0350-20-00

NS = Not Shown

PARTS REQUIRED FOR ADDITIONAL PISTONS			
ITEM	DESCRIPTION	QTY	PART NUMBER
2	O Ring 90 Duro Nitrile, Size 334	1	80-002-0334-90-00
3	Intensifier Piston	1	10-271-0350-02-00
4	O Ring 90 Duro Nitrile, Size 214	2	80-002-0214-90-00
5	Middle Piston Housing	1	10-271-0350-03-00

OPTIONAL ACCESSORIES			
ITEM	DESCRIPTION	QTY	PART NUMBER
1A	Auto Flow Sub, 2 3/8 x 3 1/2	1	10-274-2335-00-00
1A	Auto Flow Sub, 2 7/8 x 3 1/2	1	10-274-2735-00-00



TCI SR-1 Packer
TCI SR-2 Packer

TECHNICAL DATA

CASING					TCI SR-1 PACKER	TCI SR-2 PACKER	GAUGE RING O.D.	MIN. BORE	EUE THREAD
O.D.	WEIGHT		I. D.						
in/mm	lb/ft	kg/m	in	mm			in/mm	in/mm	in/mm
4 1/2 114.3	13.50	20.1	3.920	99.6	TC.10.W.37.23	TD.10.W.37.23	3.800 96.5		
	11.60	17.3	4.000	101.6					
	10.50	15.6	4.052	102.9					
	9.50	14.1	4.090	103.9					
5 127.0	18.00	26.8	4.276	108.6	TC.10.W.40.23		4.062 103.2	1.93 49.0	2 3/8 60.3
	15.00	22.3	4.408	112.0					
	13.00	19.3	4.494	114.1	TC.10.W.43.23	TD.10.W.43.23	4.300 109.2		
	11.50	17.1	4.560	115.8					
5 1/2 139.7	26.00	38.7	4.548	115.5	TC.10.W.43.23	TD.10.W.43.23	4.300 109.2		
	23.00	34.2	4.670	118.6					
	20.00	29.8	4.778	121.4	TC.10.W.45.23	TD.10.W.45.23	4.500 114.3		
	20.00	29.8	4.778	121.4	TC.10.W.45.27	TD.10.W.45.27			
	17.00	25.3	4.892	124.3				2.408 61.2	2 7/8 73.0
	17.00	25.3	4.892	124.3	TC.10.W.46.23	TD.10.W.46.23	4.641 117.9	1.933 49.1	2 3/8 60.3
	15.50	23.1	4.950	125.7	TC.10.W.46.27	TD.10.W.46.27		2.408 61.2	2 7/8 73.0
	15.50	23.1	4.950	125.7	TC.10.W.47.23	TD.10.W.47.23	4.728 120.1	1.933 49.1	2 3/8 60.3
	14.00	20.8	5.012	127.3					
	13.00	19.3	5.044	128.1	TC.10.W.47.27	TD.10.W.47.27		2.408 61.2	



CASING					TCI SR-1 PACKER	TCI SR-2 PACKER	GAUGE RING O.D.	MIN BORE	EUE THREAD
O.D.	WEIGHT		I. D.						
in/mm	lb/ft	kg/m	in	mm			in/mm	in/mm	in/mm
6 5/8 168.3	32.00	47.6	5.675	144.1	TC.10.W.55.27	TD.10.W.55.27	5.560 141.2		
	28.00	41.7	5.791	147.1					
	24.00	35.7	5.921	150.4					
	20.00	29.8	6.049	153.6					
7 177.8	38.00	56.6	5.920	150.4	TC.10.W.56.27	TD.10.W.56.27	5.658 143.7	2.474 62.8	2 7/8 73.0
	35.00	52.1	6.004	152.5					
	32.00	47.6	6.094	154.8	TC.10.W.58.27	TD.10.W.58.27	5.875 149.2		
	29.00	43.2	6.184	157.1					
	26.00	38.7	6.276	159.4	TC.10.W.60.27	TD.10.W.60.27	6.023 153.0		
	23.00	34.2	6.366	161.7					
	20.00	29.8	6.456	164.0	TC.10.W.62.27	TD.10.W.62.27	6.230 158.2		
	17.00	25.3	6.538	166.1					
7 5/8 193.7	39.00	58.0	6.625	168.3	TC.10.W.63.27	TD.10.W.63.27	6.375 161.9		
	33.70	50.2	6.765	171.9					
	29.70	44.2	6.875	174.6	TC.10.W.66.27	TD.10.W.66.27	6.625 168.3		
	26.40	39.3	6.969	177.0					
	24.00	35.7	7.025	178.4					



CASING					TCI SR-1 PACKER	TCI SR-2 PACKER	GAUGE RING O.D.	MIN BORE	EUE THREAD
O.D.	WEIGHT		I. D.						
in/mm	lb/ft	kg/m	in	mm			in/mm	in/mm	in/mm
8 5/8 219.1	49.00	72.9	7.511	190.8	TC.10.W.72.35	TD.10.W.72.35	7.260 184.4	3.00 76.2	3 1/2 88.9
	44.00	65.5	7.625	193.7					
	40.00	59.5	7.725	196.2					
	36.00	53.6	7.825	198.2	TC.10.W.76.35	TD.10.W.76.35	7.600 193.0		
	32.00	47.6	7.921	201.2					
	28.00	41.7	8.017	203.6					
	24.00	35.7	8.097	205.7					
9 5/8 244.5	53.50	79.6	8.535	216.8	TC.10.W.82.35	TD.10.W.82.35	8.285 210.4		
	47.00	69.9	8.681	220.5					
	43.50	64.7	8.755	222.4	TC.10.W.85.35	TD.10.W.85.35	8.500 215.9		
	40.00	59.5	8.835	224.4					
	36.00	53.6	8.921	226.6					
	32.30	48.1	9.001	228.6					

TECHNICAL DATA

TCI Drag Assembly

TCI Collar Locator

CASING			DRAG ASSEMBLY	COLLAR LOCATOR	I.D.	EUE THREAD
O.D.	WEIGHT					
in/ mm	lb/ ft	kg /m			in/ mm	in/mm
4-1/2 114.3	9.5 - 11.6	14.1 -17.3	TU.10.W.37.23	CE.10.W.37.23	1.933 49.0	2-3/8 60.3
5 127.0	11.5-18	17.1- 26.8	TU.10.W.40.23	CE.10.W.40.23		
	5-5 139.7	17 - 20	25.3 -34.2	TU.10.W.45.23	CE.10.W.45.23	2.408 61.2
17 -20		25.3- 34.2	TU.10.W.46.27	CE.10.W.45.27		
1.3-15.5		19.3 - 23.1	TU.10.W.47.23	CE.10.W.47.23	1.933 49.0	2- 3/8 60.3
6-5/8 168.3	1.3- 15.5	19.3- 23.1	TU.10.W.47.27	CE.10.W.47.27	2.408 61.2	2-7/8 73.0
	24-32	35.7- 47.6	TU.10.W.58.27	CE.10.W.58.27		
7 177.8	22 -28	32.7- 41.7	TU.10.W.58.27	N/A	2.99 76.0	3-1/2 88.9
	24- 35	35.7- 52.1	N/A	CE.10.W.59.27		
	22- 28	32.7- 41.7	TU.10.W.59.35	N/A	2.408 61.2	2-7/8 73.0
	17- 23	25.3-34.2	N/A	CE.10.W.61.27		
	17- 20	25.3- 29.8	TU.10.W.63.27	N/A	2.99 76.0	3-1/2 88.9
	17- 20	25.3- 29.8	TU.10.W.62.35	N/A		