



# TYPE T SQUEEZE PACKER, RIGHT-HAND MANUAL 6" X 2-3/8"

Manual No:  
**DL-621-6000-1719**

Revision: **A**

Revision Date:  
**11/07/2023**

Authored by: J.Anderson

Approved by: E.Visaez

## A) DESCRIPTION

The T Squeeze Packer is a versatile, easy to use tension set tool which holds differential pressure from above or below. The T Squeeze Packer is designed to run, set, reset and retrieve easily, even under adverse conditions. The T Squeeze Packer can be set at any depth and is used when insufficient weight is available to set a compression packer. The T Squeeze Packer is ideal for squeeze cementing, casing testing, stimulation treatments and straddle operations using a retrievable bridge plug. The D&L SC Tension Unloader is generally run above the packer allowing pressure equalization before release. The SC Tension Unloader also provides a by-pass when running and retrieving to minimize swabbing of the elements.

The T Squeeze Packer features a full bore that minimizes the potential for screening out during fracturing, does not restrict the flow rates and allows the use of through-tubing tools without pulling the packer. The T Squeeze Packer features emergency release system uses a high-ratio left-hand thread. Right-hand rotation of the tubing relaxes the packing elements and moves the lower cone well away from the slips to allow the slips to fully retract.

## B) RELATED TOOLS (sold separately)

B-1) 2-3/8" SC Tension Unloader (PN 52520)—refer to technical manual *DL-525-2375-787*.

## C) SPECIFICATION GUIDE

CASING			TOOL		THREAD CONNECTION BOX UP / PIN DOWN	PART NUMBER
SIZE (INCHES)	WEIGHT (LBS/FT)	RECOMMENDED HOLE SIZE (INCHES)	OD (INCHES)	NOMINAL ID (INCHES)		
6	14.0 – 20.0	5.352 – 5.552	5.188	2.00	2-3/8 EUE	62160RM 62160RMH <sup>1</sup> 62160RMV <sup>2</sup>

Elastomer Trim Options: <sup>1</sup>HSN, <sup>2</sup>Viton

**NOTE<sub>1</sub>:** Tools listed are right-hand auto set. Other configurations are available. Contact D&L Sales for more information.

DIFFERENTIAL PRESSURE (MAX)	TENSILE LOAD THRU TOOL (MAX)
10,000 PSI	85,000 LBS

## D) PRE-INSTALLATION INSPECTION PROCEDURES

**CAUTION<sub>1</sub>:** D&L ships tool connections made-up **HAND TIGHT**—labeled with hand-tight tape on the tool (Fig. 1)—unless stated otherwise. Tighten/torque all connections properly before operating tool.



Fig. 1

GENERAL THREAD CONNECTION TORQUE RECOMMENDATIONS			
STUB ACME / ACME THREADS	INTERNAL TAPERED TUBING THREADS		PREMIUM THREADS
	UP TO 2-3/8"	GREATER THAN 2-3/8"	
600 – 800 FT-LBS	600 – 800 FT-LBS	800 – 1,200 FT-LBS	Consult thread manufacturer's recommendations.

D & L OIL TOOLS  
P.O. BOX 52220 TULSA, OK 74152  
PHONE: (800) 441-3504 [www.dloiltools.com](http://www.dloiltools.com)



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## D) PRE-INSTALLATION INSPECTION PROCEDURES (cont'd)

GENERAL SCREW TORQUE RECOMMENDATIONS									
SCREW SIZE (INCHES)	#6	#8	#10	1/4	5/16	3/8	7/16	1/2	5/8 and larger
TORQUE RANGE (INCH-POUNDS)	5 – 8	10 – 15	18 – 25	25 – 40	50 – 80	90 – 135	160 – 210	250 – 330	450 – 650

Before first use, D&L recommends disassembly and inspection of the tool unless stated otherwise. Ensure parts have not been damaged during shipping. Replace damaged parts with D&L replacement parts. Contact D&L sales for replacement part information.

Re-assemble the tool after inspection. Install parts in the correct order and orientation. Properly tighten connections.

Before re-using the tool, D&L recommends disassembly and inspection of the tool. Clean parts and ensure parts are in good working condition. Replace worn or damaged parts with D&L replacement parts.

When redressing the tool, D&L recommends replacement of all seals, elements, o-rings, shear screws, etc. Contact D&L sales for redress kit and/or other replacement part information.

## E) OPERATION

**NOTE<sub>2</sub>:** Always run a D&L SC Unloader above the T-Squeeze Packer if pressure equalization is required.

**NOTE<sub>3</sub>:** When using a tubing tester, it must be run **above** the SC Unloader.

**CAUTION<sub>2</sub>:** Do not run the tool without properly tightening connections. Running the tool with loose connections may damage the tool and cause malfunction.

### E-1) SETTING PROCEDURES

The SC Unloader is usually run above the Type T Squeeze Packer. When the packer is run in, the unloader is open allowing the circulation of well fluids through and around the tool. To set the packer, pick up and rotate 1/3 turn to the right (or left if left-hand set) at the packer. Hold torque and slack off work string. The packing elements are not yet compressed, so circulation around the tool can be maintained. Tension is then pulled to compress the elements and close the unloader (12,000 lbs). Factors such as pressure and temperature (which can shorten or elongate the tubing) should be carefully considered when determining the amount of tension to be applied.

**CAUTION<sub>3</sub>:** When running the T-Squeeze Packer with a Retrievable Bridge Plug, make sure the retrieving tool J-slots are compatible with the packer.

### E-2) RELEASING PROCEDURES

Slack off work string weight to open the unloader and equalize pressure. Rotate the tubing 1/3 turn to the left (or right if left-hand set) at the packer and pick up while holding torque. The packer is free to be moved and re-set or pulled from the hole.

### E-3) SAFETY RELEASE PROCEDURE

In the event the packer cannot be released in the normal manner, rotation of the tubing to the right will force the slips to release and the packing elements to relax. This is accomplished through the left-hand jacking thread connection between the upper mandrel and central coupling. Right-hand rotation at the tool jacks the mandrel up, equalizing the pressure across the tubing, until it hits the drag block body. Continued rotation will jack the lower mandrel down forcing the lower cone away from the slips and the rubber retainer away from the packed off elements. At this point the packer may be pulled out of the well or by re-jaying and then rotating to the left until the jacking thread returns to its original position. The packer may then be re-set.

**NOTE<sub>4</sub>:** The quantity of turns it takes to release the packer is variable, depending on the casing weight and the tension originally pulled to set the packer. Contact D&L Sales for the correct quantity of turns.



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## F) STORAGE RECOMMENDATIONS

When preparing the tool for storage, follow the Pre-Installation Inspection Procedures. Re-assemble the tool with connections hand-tight only and in running position if applicable. Elements should be in a relaxed state—free from tension, compression, and other stresses that could cause deformation.

Store the tool, if possible, in an enclosed, temperature and humidity controlled environment. Avoid excessively high temperatures over long periods of time. Shield elastomeric parts from ultraviolet light sources. Keep tool dry and protected from condensation. Do not store in contact with or near volatile or corrosive chemicals. Do not store near ozone generating equipment or operations such as welding.

## G) ELASTOMER TRIM TEMPERATURE GUIDE

NITRILE (STD)			
TEMPERATURE RANGE (F°)	DUROMETER		
	END	MIDDLE	END
40° - 125°	80	70	80
125° - 250°	90	70	90
150° - 250°	90	80	90
250° +	Contact D&L Sales		

RUBBER TYPE	TEMPERATURE RANGE
NITRILE	40° - 250°F
HSN (HNBR)	70° - 300°F
VITON	100° - 350°F

## H) RECOMMENDED TOOLS

### H-1) HAND TOOLS

- VISE
- GLOVES
- ALLEN WRENCHES
- TAPE MEASURE
- O-RING PICK
- BAR
  - 1/2-INCH
  - 3/4-INCH
- PAINT BRUSH, 2-INCH
- PIPE WRENCH, 3-FT (2 EA)
- “CHEATER” PIPE, 4-FT LONG
- ADJUSTABLE WRENCH, 12-INCH
- CORDLESS DRILL, 18V
- SNAP RING SPREADER PLIERS
- ALIGNING PUNCH
- SCREWDRIVER SET, FLAT-TIPPED
- SOCKET SETS
  - 3/8-INCH DRIVE
  - 1/2-INCH DRIVE
- HAMMERS
  - SLEDGE
  - BALL PEEN
  - DEAD BLOW

### H-2) SPECIAL TOOLS

ITEM	QTY	DESCRIPTION	PART NUMBER
T1	1	DRAG BLOCK ASSEMBLY TOOL	AT055110



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## I) DISASSEMBLY

I-1) Clamp J-body (20) in vise.

I-1.1) Unscrew and remove bottom sub (19) from lower mandrel (6). Remove bottom sub assembly and disassemble:

I-1.1.1) Unscrew and separate bottom sub (19) from rubber retainer (15).

I-1.1.2) Remove o-ring (24) from bottom sub (19).

I-1.1.3) Remove o-ring (26) from rubber retainer (15).

I-1.2) Remove rubber mandrel assembly and disassemble:

I-1.2.1) Remove elements (13, 14) and rubber spacers (12) from rubber mandrel (11).

I-1.2.2) Unscrew and remove lower cone (16) from rubber mandrel (11).

I-1.2.2.1) Remove o-rings (25) from lower cone (16).

I-1.3) Rotate and slide inner tool components into set position (Fig. 2).

I-1.4) Moving to upper end of tool, unscrew and remove coupling (1) from upper mandrel (2).

I-1.5) Unscrew and remove set screws (27) from J-body (20).

I-1.6) Unscrew drag block body from J-body (20). Remove drag block body assembly and disassemble:

I-1.6.1) Unscrew and remove jack nut (4) from drag block body (18).

I-1.6.2) Compress drag blocks (22) with drag block body assembly tool (T1).

I-1.6.3) Remove drag block retainer (21) from drag block body (18). Release drag blocks (22).

I-1.6.4) Remove drag blocks (22) and drag block springs (3) from drag block body (18).

I-1.7) Unscrew and remove upper mandrel (2) from center coupling (10) (**NOTE<sub>11</sub>**: Left-hand threads).

I-1.8) Unscrew and remove center coupling (10) from lower mandrel (6). Move central coupling (10) and lower mandrel (6) as necessary to access center coupling (10).

I-1.8.1) Remove o-rings (23) from center coupling (10).

I-1.9) Slide J-pin retainer (5) out of J-body (20).

I-1.10) Remove J-pins (7) from lower mandrel (6) through J-slots in J-body (20).

I-1.11) Wedge slips (17) outwards (if necessary). Remove lower mandrel (6) from lower end of J-body (20).

I-1.11.1) Remove upper cone (8) from upper end of J-body (20).

I-1.12) Remove wedges (if necessary). Remove slips (17) and slip springs (9) from J-body (20).

I-2) Unclamp and remove J-body (20) from vise.

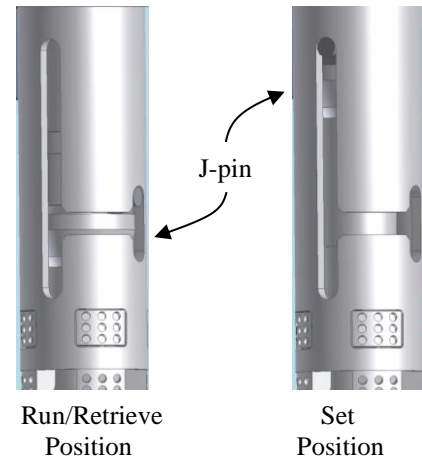


Fig. 2



# TYPE T SQUEEZE PACKER, RIGHT-HAND MANUAL 6" X 2-3/8"

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## J) ASSEMBLY

**NOTE5:** Clean and inspect all parts. Replace all worn and damaged parts. Install parts in proper order, and orientation and tighten/torque all connections properly.

**CAUTION4:** To ensure tool operates properly, install o-rings in o-ring grooves **NOT** thread reliefs unless stated otherwise (Fig. 3).

J-1) Clamp J-body (20) in vise.

J-1.1) Install slips (17) and slip springs (9) into J-body (20). Wedge slips outwards.

**NOTE6:** Install two (2ea) springs per slip (Fig. 4).

J-1.2) Install upper cone (8) into J-body (20) from upper end.

J-1.3) Install lower mandrel (6) into lower end of J-body (20) and through the upper cone (8).

**NOTE7:** Additional force may be required while sliding lower mandrel (6) into upper cone (8).

J-1.4) Align recessed areas in lower mandrel (6) with slots in J-body (20) and install J-pins (7) through J-slots and seat in lower mandrel recesses.

J-1.5) Slide lower mandrel (6) with removable J-pins (7) toward upper end of J-body (20).

J-1.6) Install J-pin retainer (5) into J-body (20) and align so removable J-pins (7) slip into notches in J-pin retainer (5).

J-1.7) Install o-rings (23) into grooves in center coupling (10).

J-1.8) Screw center coupling (10) onto lower mandrel (6).

**CAUTION5:** Do NOT rip or tear o-ring during installation.

J-1.9) Screw upper mandrel (2) into center coupling (10) (**NOTE11:** Left-hand thread).

**CAUTION5:** Do NOT rip or tear o-ring during installation.

J-1.10) Assemble drag block body assembly and install:

J-1.10.1) Install drag blocks (22) and drag block springs (3) into drag block body (18).

**NOTE8:** Install six (6 ea) springs per block (Fig. 5).

J-1.10.2) Compress drag blocks (22) with drag block assembly tool (T1).

J-1.10.3) Install drag block retainer (21) onto drag block body (18) capturing ends of drag blocks (22).

J-1.10.4) Screw jack nut (4) into drag block body (18).

J-1.10.5) Install drag block body assembly onto upper mandrel (2).

J-1.10.6) Screw drag block body (18) onto J-body (20). Release drag blocks (22) from drag block assembly tool (T1).

J-1.11) Screw set screws (27) into J-body (20).

J-1.12) Screw coupling (1) onto upper mandrel (2).

J-1.13) Rotate and slide inner tool components to move J-pins into run/retrieve position (Fig. 2).

J-1.14) Moving to lower end of tool, install o-rings (25) into grooves in lower cone (16).

J-1.15) Install lower cone (16) onto lower mandrel (5).

**CAUTION5:** Do NOT rip or tear o-rings during installation.

**NOTE9:** Additional force may be required to install cone onto mandrel.

J-1.16) Assemble rubber mandrel assembly and install:

J-1.16.1) Install elements (13, 14) and rubber spacers (12) onto rubber mandrel (11).

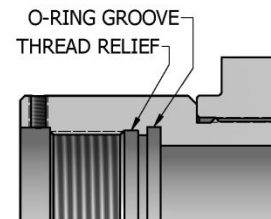


Fig. 3



Fig. 4



Fig. 5



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## J) ASSEMBLY (cont'd)

J-1.16.2) Install rubber mandrel (11) onto lower mandrel (6) and screw into lower cone (16).

J-1.17) Assemble the bottom sub assembly and install:

J-1.17.1) Install o-ring (24) into groove in bottom sub (19).

J-1.17.2) Install o-ring (26) into groove in rubber retainer (15).

J-1.17.3) Screw rubber retainer (15) onto bottom sub (19).

J-1.17.4) Screw bottom sub assembly onto lower mandrel (6).

**CAUTIONs:** Do NOT rip or tear o-rings during installation.

J-2) Unclamp J-body (20) from vise and remove assembled tool.

## K) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 62160RM
1	1	COUPLING	DLMS60	CP2375E2375E
2	1	UPPER MANDREL	DLMS110	62055210
3	36	DRAG BLOCK SPRING	-	9100900
4	1	JACK NUT	DLMS110	62060950
5	1	J-PIN RETAINER	DLMS125	62055920
6	1	LOWER MANDREL	DLMS110	62055230
7	2	REMOVABLE J-PIN	DLMSFB4	62055120
8	1	UPPER CONE	DLMS125	62055410
9	8	SLIP SPRING	-	7145901
10	1	CENTER COUPLING	DLMS110	62055620
11	1	RUBBER MANDREL	DLMS110	62055220
12	2	RUBBER SPACER	DLMS80	62060840
13	1	ELEMENT	70 DURO NITRILE	62060511
14	2	ELEMENT	90 DURO NITRILE	62060513
15	1	RUBBER RETAINER	DLMS110	62060850
16	1	LOWER CONE	DLMS110	62060420
17	4	CARBIDE SLIP	DLMS110	62060112C
18	1	DRAG BLOCK BODY	DLMS110	62060335
19	1	BOTTOM SUB	DLMS110	62055630
20	1	J-BODY	DLMS110	62060340
21	1	DRAG BLOCK RETAINER	DLMS60	62060910
22	6	550 CARBIDE DRAG BLOCK	DLMSDB4	9055900C
23	2	229 O-RING	90 DURO NITRILE	90229
24	1	333 O-RING	90 DURO NITRILE	90333
25	2	334 O-RING	90 DURO NITRILE	90334



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## K) PARTS LIST (cont'd)

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 62160RM
26	1	337 O-RING	90 DURO NITRILE	90337
27	3	5/16-18 UNC X 5/16 SOCKET SET SCREW	STEEL	SSS031C031

REDRESS KIT (RDK)		62160050
ASSEMBLED WEIGHT		163 LBS

### K-1) ELASTOMER TRIM OPTIONS

**NOTE<sub>10</sub>:** For temperature range, refer to Elastomer Trim Temperature Guide.

#### K-1.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 62160RMH
13	1	ELEMENT	70 DURO HSN	62060511H
14	2	ELEMENT	90 DURO HSN	62060513H
23	2	229 O-RING	90 DURO HSN	90229H
24	1	333 O-RING	90 DURO HSN	90333H
25	2	334 O-RING	90 DURO HSN	90334H
26	1	337 O-RING	90 DURO HSN	90337H

REDRESS KIT (RDK)		62160050H
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#### K-1.2) VITON

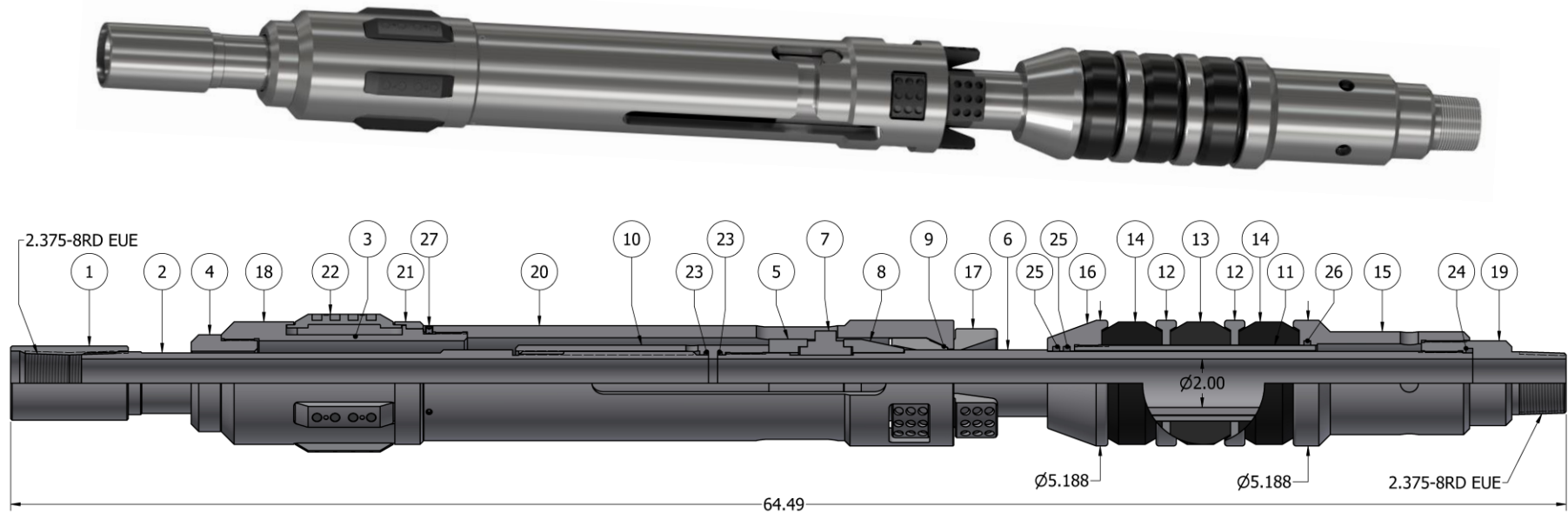
ITEM	QTY	DESCRIPTION	MATERIAL	P/N 62160RMV
13	1	ELEMENT	70 DURO VITON	62060511V
14	2	ELEMENT	90 DURO VITON	62060513V
23	2	229 O-RING	90 DURO VITON	90229V
24	1	333 O-RING	90 DURO VITON	90333V
25	2	334 O-RING	90 DURO VITON	90334V
26	1	337 O-RING	90 DURO VITON	90337V

REDRESS KIT (RDK)		62160050V
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## L) TECHNICAL ILLUSTRATION



## M) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
11/07/2023	A	Created manual	-	-