



DRAG BLOCK TUBING ANCHOR/CATCHER, RIGHT-HAND 7" X 2-7/8"

Manual No:
DL-325-7000-411

Revision: **B**

Revision Date:
03/30/2017

Authored by: *B.Mathis*

Approved by: *D.Hushbeck*

A) DESCRIPTION

The Drag Block Mechanical Tubing Anchor/Catcher (DB Anchor) is a retrievable positive-action tubing anchor designed to hold the tubing string in tension or compression. It has drag blocks to allow the anchor to be run deeper than conventional drag spring anchors. The anchor prevents movement of the tubing during pumping strokes; and holds it stationary if it should part. The use of a tension tubing anchor increases pump efficiency, reduces rod and tubing wear, and keeps tubing and rods from falling into the well in case of a part.

B) SPECIFICATION GUIDE

CASING			TOOL		THREAD CONNECTION BOX UP / PIN DOWN	PART NUMBER
SIZE (INCHES)	WEIGHT (LBS/FT)	RECOMMENDED HOLE SIZE (INCHES)	GAGE OD (INCHES)	NOMINAL ID (INCHES)		
7	17.0 – 32.0	6.094 – 6.538	5.750	2.50	2-7/8 EUE	32570RH 32570RHH ¹ 32570RHV ²

Elastomer Trim Options: ¹HSN, ²Viton

DIFFERENTIAL PRESSURE (MAX)	TENSILE LOAD THRU TOOL (MAX)	TORQUE THRU TOOL (MAX)
9,000 PSI	145,000 LBS	2,880 FT LBS

C) PRE-INSTALLATION INSPECTION PROCEDURES

CAUTION₁: 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.

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.

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



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C) PRE-INSTALLATION INSPECTION PROCEDURES (cont'd)

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 o-rings, shear screws, etc. Contact D&L sales for redress kit and/or other replacement part information.

D) SETTING PROCEDURES

CAUTION₂: Do not run the tool without properly tightening connections. Running the tool with loose connections may damage the tool and cause malfunction.

At the desired setting depth, rotate work string to the right with hand tongs, five (5) to eight (8) turns depending on casing weight. After slips contact casing, pull full calculated tension. Slack off and, while holding right-hand torque on work string, alternately pull up and set down weight several times to firmly set the slips. Release torque and apply full tension.

E) RELEASING PROCEDURES

The anchor-catcher should be released with the work string in slight compression. Apply slight amount of set-down weight. Rotate to the left five (5) to eight (8) turns and reciprocate the work string two (2) or three (3) times for a distance of several feet while rotating additional turns to the right. Prevent left-hand rotation when retrieving anchor.

E-1) EMERGENCY RELEASE

If the anchor-catcher will not release in a normal manner, emergency shear release can be obtained with an upward pull. Shear value is determined by the quantity of shear screws installed in tool (5,000# each).

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	40° - 250°F
HSN (HNBR)	70° - 300°F
VITON	100° - 350°F



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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
- STRAP WRENCH
- 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) OPTIONAL SPECIAL TOOLS

ITEM	QTY	DESCRIPTION	PART NUMBER
T1	1	DRAG BLOCK ASSEMBLY TOOL	AT070110

I) DISASSEMBLY

- I-1) Clamp coupling (1) in vise.
- I-1.1) Unscrew and remove crossover (4) from inner mandrel (2).
- I-1.2) Unscrew and remove shear screws (14) from shear ring (5).
- I-1.3) Remove shear ring (5) from inner mandrel (2).
- I-1.4) Unscrew and remove set screws (16) from upper cone (9).
- I-1.5) Remove slip body assembly from inner mandrel (2) and disassemble:
- I-1.5.1) Remove slip assemblies and disassemble:
- I-1.5.1.1) Unscrew and remove button head cap screws (17) from slips (10).
- I-1.5.1.2) Separate slips (10) and slip springs (13).
- I-1.5.2) Remove lower cone (8) from slip body (6).
- I-2) Unclamp and remove coupling (1) from vise. Clamp lower end of inner mandrel (2) in vise.
- I-2.1) Unscrew and remove coupling (1) from inner mandrel (2).
- I-2.2) Unscrew and remove set screws (15) from stop ring (7).
- I-2.3) Remove stop ring (7) from inner mandrel (2).
- I-2.4) Compress drag blocks (22) with drag block assembly tool (T1). Unscrew and remove drag block retainer (11) from upper cone (9).
- I-2.5) Release drag blocks (12). Remove drag blocks (12) and drag block springs (3) from upper cone (9).
- I-2.6) Unscrew and remove upper cone (9) from inner mandrel (2) (**NOTE**₅: Left-hand threads).
- I-2.6.1) Remove o-ring (18) from upper cone (9).
- I-3) Unclamp and remove inner mandrel (2) from vise.



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J) ASSEMBLY

NOTE₁: Clean and inspect all parts. Replace all worn and damaged parts. Install parts in proper order & orientation.

J-1) Clamp lower end of inner mandrel (2) in vise.

J-1.1) Install o-ring (18) in o-ring groove in upper cone (9).

J-1.2) Screw upper cone (9) onto inner mandrel (2) (**NOTE₅:** Left-hand threads).

CAUTION₃: Do not rip or tear o-ring during installation.

J-1.3) Install drag blocks (12) and drag block springs (3) in upper cone (9).
Compress drag blocks (22) with drag block assembly tool (T1).

NOTE₂: Uses six (6 ea) springs per drag block (Fig. 2).

J-1.4) Screw drag block retainer (11) onto upper cone (9) capturing ends of drag blocks (12). Release drag blocks (12).

J-1.5) Install stop ring (7) onto inner mandrel (2). Align threaded holes in stop ring (7) with counterbore holes in inner mandrel (2).

J-1.6) Screw set screws (15) into stop ring (7).

J-1.7) Screw coupling (1) onto inner mandrel (2).

J-2) Unclamp and remove inner mandrel (2) from vise. Clamp coupling (1) in vise.

J-2.1) Assemble slip body assembly and install on inner mandrel (2):

J-2.1.1) Install lower cone (8) into slip body (6).

J-2.1.2) Assemble slip assemblies and install in slip body (6):

J-2.1.2.1) Set slip springs (13) in place on slips (10).

NOTE₃: Uses two (2ea) springs per slip (Fig. 3).

J-2.1.2.2) Screw button head cap screws (17) into slips (10).

J-2.1.2.3) Install slip body assembly on inner mandrel (2).

J-2.2) Align slots in slip body (6) with threaded holes in upper cone (9). Screw set screws (16) into upper cone (9).

J-2.3) Install shear ring (5) onto inner mandrel (2). Align threaded holes in shear ring (5) with counterbore holes in inner mandrel (2).

J-2.4) Screw shear screws (14) into shear ring (5). Tighten until shear screws (14) make contact with inner mandrel (2). Back shear screws (14) out 1/4 turn.

J-2.5) Screw crossover (4) onto inner mandrel (2).

J-3) Unclamp coupling (1) from vise and remove assembled tool.

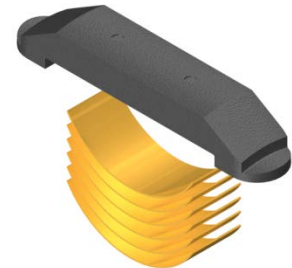


Fig. 2

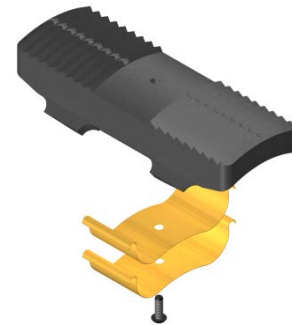


Fig. 3

K) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 32570RH
1	1	COUPLING	DLMS60	CP2875E3500E
2	1	MANDREL	DLMS80	32570210-RHS
3	24	DRAG BLOCK SPRING	-	9101900
4	1	CROSSOVER	L-80	CH3500E2875E
5	1	SHEAR RING	L-80	32570930



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K) PARTS LIST (cont'd)

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 32570RH
6	1	SLIP BODY	L-80	32570320
7	1	STOP RING	L-80	32570910
8	1	LOWER CONE	P-110	32570420
9	1	UPPER CONE	P-110	32570410-RHS
10	3	SLIP	1026	32070110
11	1	DRAG BLOCK RETAINER	L-80	32570920
12	4	DRAG BLOCK	DLMSDB8	9070900
13	6	SLIP SPRING	-	32070950
14	12	SHEAR SCREW (5000#)	DLM360BRS	32045910
15	4	SET SCREW 3/8-16 UNC X 1/2	STEEL	SSS037C050
16	3	SET SCREW 5/8-18 UNF X 3/4	STEEL	SSS062F075
17	3	BUTTON HEAD CAP SCREW #8-32 UNC X 1/2	STEEL	BHSC832C050
18	1	240 O-RING	90 DURO NITRILE	90240

REDRESS KIT (RDK)	32570050
ASSEMBLED WEIGHT	133 LBS

K-1) ELASTOMER TRIM OPTIONS

NOTE₄: For temperature range, refer to Elastomer Trim Temperature Guide.

K-1.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 32570RHH
18	1	240 O-RING	90 DURO HSN	90240H

REDRESS KIT (RDK)	32570050H
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K-1.2) Viton

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 32570RHV
18	1	240 O-RING	90 DURO VITON	90240V

REDRESS KIT (RDK)	32570050V
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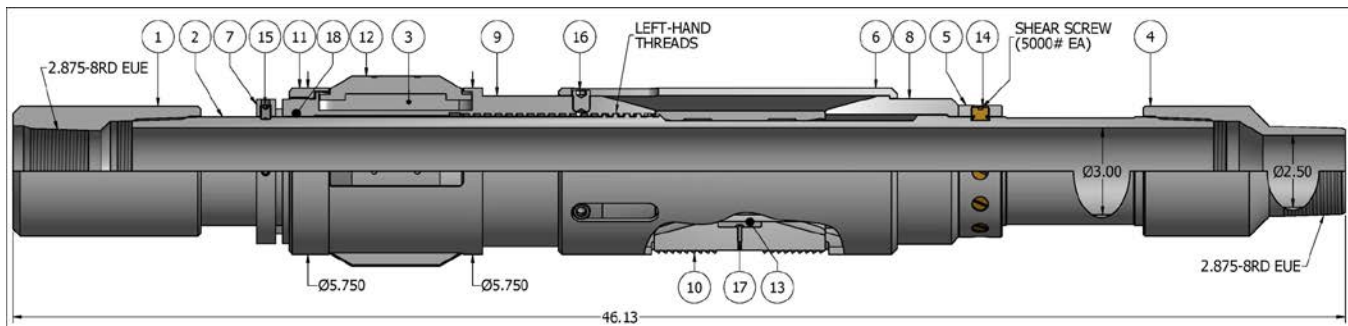
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L) TECHNICAL ILLUSTRATION



M) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
3/30/2017	B	Revised entire manual	J.Anderson	