



STRADASNAP, RIGHT-HAND MANUAL 4-1/2" X 2-3/8"

Manual No:
DL-645-4500-1676

Revision: **A**

Revision Date:
05/23/2023

Authored by: J.Anderson

Approved by: E.Visaez

A) DESCRIPTION

The Stradasnap Packer consists of a modified Snapset II Packer combined with an AS-III Packer. A Stradasnap Packer is used for selectively treating short intervals of casing perforations to evenly break down the entire formation. The span covered is determined by the spacing between the two sets of packing elements and is adjustable to any distance down to eighteen (18) inches.

The bottom of the Stradasnap Packer is plugged by using an Equalizing Standing Valve (or similar device). A Spot Control Valve or Acid Valve can be run above the Stradasnap Packer to control the tubing hydrostatic pressure across the perforations and contain the acid in the tubing when moving the packer to another perforation.

After locating the Stradasnap Packer across the lower most perforation, the Stradasnap Packer is set and the perforation is treated. Straight pick-up of the tubing releases the Stradasnap Packer to be moved up to the next perforation. Repeat the setting procedure to reset. When retrieving the Stradasnap Packer, retrieve the Spot Control Valve or Acid Valve so that tubing fluid can be dumped through the ports between the packing elements to prevent pulling a wet string.

B) 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)		
4-1/2	9.5 – 13.5	3.920 – 4.090	3.750	1.94	2-3/8 EUE	64545RM 64545RMH ¹ 64545RMV ² 64545RMC ³ 64545RMHC ⁴ 64545RMVC ⁵

Tool Options: ¹HSN, ²Viton, ³Nitrile, Carbide, ⁴HSN, Carbide, ⁵Viton, Carbide

NOTE₁: Tool listed is right-hand set / pick-up release. Other configurations are available.

DIFFERENTIAL PRESSURE (MAX)	TENSILE LOAD THRU TOOL (MAX)
7,000 PSI	50,000 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.

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



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C) 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.

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.

D&L recommends running the packer in a non-perforated casing to ensure the packer sets and releases as designed and tested. When running the packer in perforated or damaged casing, the operator assumes the risk of the packer setting and releasing improperly due to the imperfections in the casing wall. When running the packer in perforated or damaged casing, D&L recommends circulating and reciprocating the packer before relocating. Another option is to use an upper packer without slips or with a hold-down button assembly to avoid possible slip interference with perforations.

Run the Stradasnap Packer to setting depth. Set the lower portion of the Stradasnap Packer by picking up and rotating right 1/4 turn while slacking off. Set down weight (12,000 lbs) to close the bypass valve, set the slips, and pack off the elements. Apply sufficient set down weight (12,000 lbs) to release the collet and allow the packing elements to compress and the slips to set on the upper portion of the Stradasnap Packer.

E) RELEASING PROCEDURES

Pick up on the workstring to unset the packer. Rotate 1/4 turn to the left at the packer to return the J-pin in the lower portion of the packer to the run-in position. The collet in the upper portion automatically re-sets, allowing the tool to be run further down the hole if required.

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.



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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
T-1	1	DRAG BLOCK ASSEMBLY TOOL	AT045110

I) DISASSEMBLY

I-1) Clamp lower top sub (6) in vise.

I-1.1) Unscrew and remove J-pin bottom sub (23) from inner mandrel (21).

NOTE₂: Drag block body assembly must be free to rotate.

I-1.2) Compress drag blocks (22) with drag block assembly tool (T1). Unscrew and remove set screws (38) from drag block body (18).

I-1.3) Unscrew and remove J-body (20) from drag block body (18) (**NOTE₃:** Left-hand threads).

I-1.4) Release drag blocks (22) from assembly tool and remove drag blocks (22) and drag block springs (3) from drag block body (18).

I-1.5) Unscrew and remove rubber mandrel cap (19) from rubber mandrel (43).

NOTE₄: For added leverage, insert a rod through rubber retainer (42) and rubber mandrel (43) as needed.

I-1.6) Wedge lower slips (17) outward (if needed). Remove drag block body assembly and disassemble:

I-1.6.1) Remove wedges (if needed). Remove lower slips (17) and lower slip springs (25) from drag block body (18).

I-1.7) Unscrew and remove lower cone (16) from rubber retainer (42).

I-1.8) Remove rubber mandrel assembly and disassemble:

I-1.8.1) Unscrew and remove valve body (37) from rubber mandrel (43).

I-1.8.1.1) Remove o-ring (44) from valve body (37).



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I) DISASSEMBLY (cont'd)

- I-1.8.2) Remove elements (13, 14), rubber spacers (12), and rubber retainer (42) from rubber mandrel (43).
- I-1.9) Unscrew and remove inner mandrel (21) from top sub (6).
- I-1.10) Unscrew and remove seal (24) from valve plunger (40).
- I-1.11) Unscrew and remove valve plunger (40) from top sub (6).
 - I-1.11.1) Remove o-ring (45) from valve plunger (40).
- I-2) Unclamp and remove lower top sub (6) from vise. Clamp upper top sub (1) in vise.
 - I-2.1) Unscrew and remove lower top sub (6) from bottom sub (28).
 - I-2.2) Unscrew and remove set screws (33) from torque sleeve (36).
 - I-2.3) Unscrew and remove bottom sub (28) from torque sleeve (36).
 - I-2.4) Unscrew and remove torque pins (34) from torque ring (35).
 - I-2.5) Unscrew and remove torque sleeve (36) from rubber retainer (15).
 - I-2.6) Remove torque ring (35) from lower mandrel (32).
 - I-2.7) Remove collet (31) from lower mandrel (32).
 - I-2.8) Unscrew and remove lower mandrel (32) from mandrel (2).
 - I-2.9) Unscrew rubber mandrel (11) from valve body (29).

NOTE₆: For leverage, insert a rod through rubber retainer (15) and rubber mandrel (11) as needed.
 - I-2.10) Remove rubber mandrel assembly and disassemble:
 - I-2.10.1) Remove elements (13, 14), rubber spacers (12), and rubber retainer (15) from rubber mandrel (11).
 - I-2.11) Unscrew and remove valve body (29) from central body (10).
 - I-2.11.1) Remove o-ring (44) from valve body (29).
 - I-2.12) Unscrew and remove central body (10) from upper cone (9).
 - I-2.13) Unscrew and remove seal (24) from valve piston (41).
 - I-2.14) Unscrew and remove valve piston (41) from valve piston cap (39).
 - I-2.14.1) Remove o-ring (47) from valve piston (41).
- I-3) Unclamp and remove top sub (1) from vise. Clamp lower part of mandrel (2) in vise.

NOTE₇: Do NOT wrench or clamp on seal surface.

 - I-3.1) Unscrew and remove spring cage cap (27) from spring cage (4).

CAUTION₃: Compression spring (4) is compressed with spring tension against spring cage assembly.
 - I-3.2) Unscrew and remove top sub (1) from mandrel (2).
 - I-3.3) Remove compression spring (4) from mandrel (2).
 - I-3.4) Wedge releasing slip (7) and upper slips (8) outwards (if needed). Remove spring cage assembly and disassemble:
 - I-3.4.1) Remove wedges (if needed). Remove upper slips (8), releasing slip (7), and upper slip springs (26) from spring cage (5).
 - I-3.5) Remove upper cone (9) from mandrel (2).
 - I-3.5.1) Remove o-ring (46) from upper cone (9).
 - I-3.6) Remove compensating piston (30) from mandrel (2).
 - I-3.6.1) Remove o-rings (46, 47) from compensating piston (30).
 - I-3.7) Remove valve piston cap (39) from mandrel (2).
- I-4) Unclamp and remove mandrel (2) from vise.



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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 (Fig. 2).

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

NOTE7: Do **NOT** wrench or clamp on seal surface.

J-1.1) Install valve piston cap (39) onto mandrel (2).

J-1.2) Install o-rings (46, 47) in grooves in compensating piston (30).

J-1.3) Install compensating piston (30) onto mandrel (2).

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

J-1.4) Install o-ring (46) in groove in upper cone (9).

J-1.5) Install upper cone (9) onto mandrel (2).

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

J-1.6) Assemble spring cage assembly and install:

J-1.6.1) Install upper slips (8), releasing slip (7), and upper slip springs (26) into spring cage (5).

NOTE8: Install one (1ea) spring per slip (Fig. 3).

J-1.6.2) Wedge releasing slip (7) and upper slips (8) outwards. Install spring cage assembly onto mandrel (2). Remove wedges.

J-1.7) Install compression spring (4) into spring cage (5).

J-1.8) Screw upper top sub (1) onto mandrel (2).

J-1.9) Screw spring cage cap (27) onto spring cage (5).

CAUTION3: Compression spring (4) will be compressed with spring tension against spring cage assembly.

J-2) Unclamp and remove mandrel (2) from vise. Clamp upper top sub (1) in vise.

J-2.1) Install o-ring (47) in groove in valve piston (41).

J-2.2) Install valve piston (41) onto mandrel (2) and screw into valve piston cap (39).

J-2.3) Screw seal (24) onto valve piston (41).

J-2.4) Screw central body (10) onto upper cone (9).

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

J-2.5) Install o-ring (44) in groove in valve body (29).

J-2.6) Screw valve body (29) into central body (10).

J-2.7) Assemble rubber mandrel assembly and install:

J-2.7.1) Install rubber retainer (15), elements (13, 14), and rubber spacers (12) onto rubber mandrel (11).

J-2.7.2) Screw rubber mandrel (11) into valve body (29).

NOTE6: For leverage, insert a rod through rubber retainer (15) and rubber mandrel (11) as needed.

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

J-2.8) Screw lower mandrel (32) onto mandrel (2).

J-2.9) Install collet (31) and torque ring (35) onto lower mandrel (32).

J-2.10) Screw torque sleeve (36) onto rubber retainer (15).

J-2.11) Align slots in torque sleeve (36) with holes in torque ring (35) and pocket holes in lower mandrel (32). Screw torque pins (34) into torque ring (35).

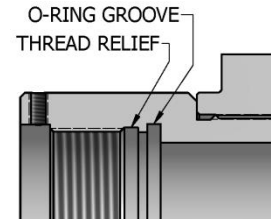


Fig. 2

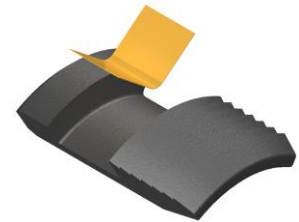


Fig. 3



STRADASNAP, RIGHT-HAND MANUAL 4-1/2" X 2-3/8"

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J) ASSEMBLY (cont'd)

J-2.12) Screw bottom sub (28) into torque sleeve (36).

J-2.13) Screw set screws (33) into torque sleeve (36).

J-2.14) Screw lower top sub (6) onto bottom sub (28).

J-3) Remove upper top sub (1) from vise. Clamp lower top sub (6) in vise.

J-3.1) Install o-ring (45) in groove in valve plunger (40).

J-3.2) Screw valve plunger (40) onto top sub (6).

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

J-3.3) Screw seal (24) onto valve plunger (40).

J-3.4) Screw inner mandrel (21) into top sub (6).

J-3.5) Assemble rubber mandrel assembly and install:

J-3.5.1) Install rubber retainer (42), elements (13, 14), and rubber spacers (12) onto rubber mandrel (43).

J-3.5.2) Install o-ring (44) in groove in valve body (37).

J-3.5.3) Screw valve body (37) onto rubber mandrel (43).

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

J-3.5.4) Install rubber mandrel (43) onto inner mandrel (21).

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

J-3.6) Screw lower cone (16) into rubber retainer (42).

J-3.7) Assemble drag block body assembly and install:

J-3.7.1) Install lower slips (17) and lower slip springs (25) in drag block body (18).

NOTE₉: Install one (1ea) spring per slip (Fig. 4).

J-3.7.2) Wedge lower slips (17) outward. Install drag block body assembly onto rubber mandrel (43). Remove wedges.

J-3.8) Screw rubber mandrel cap (19) onto rubber mandrel (43).

J-3.9) Install drag blocks (22) and drag block springs (3) in drag block body (18). Compress drag blocks (22) with drag block assembly tool (T1).

NOTE₁₀: Install four (4ea) springs per block (Fig. 5).

J-3.10) Screw J-body (20) into drag block body (18) (**NOTE₃:** Left-hand threads).

J-3.11) Screw set screws (38) into drag block body (18). Release drag blocks (22) from assembly tool.

J-3.12) Screw J-pin bottom sub (23) onto inner mandrel (21).

NOTE₂: Drag block body assembly must be free to rotate.

J-4) Unclamp lower top sub (6) from vise and remove assembled tool.

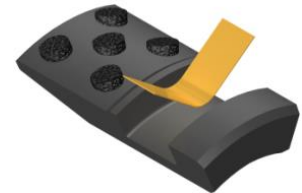


Fig. 4



Fig. 5



STRADASNAP, RIGHT-HAND MANUAL 4-1/2" X 2-3/8"

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K) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 64545RM
1	1	TOP SUB	DLMS80	60145610
2	1	INNER MANDREL	DLMS80	63645210
3	16	DRAG BLOCK SPRING	-	9100900
4	1	COMPRESSION SPRING	DLMCRSP	61045920
5	1	SPRING CAGE	DLMS80	61045325
6	1	TOP SUB	DLMS80	63155610
7	1	RELEASING SLIP	DLMS110	60045125
8	2	UPPER SLIP	DLMS35	60045115
9	1	UPPER CONE	DLMS110	61045411
10	1	CENTRAL BODY	DLMS80	63645381
11	1	RUBBER MANDREL	DLMS60	63545220
12	4	RUBBER SPACER	DLMS60	60245840
13	2	ELEMENT	70 DURO NITRILE	60245511
14	4	ELEMENT	90 DURO NITRILE	60245513
15	1	RUBBER RETAINER	DLMS60	63545850
16	1	LOWER CONE	DLMS60	60045420
17	4	LOWER SLIP	DLMS35	60045135
18	1	DRAG BLOCK BODY	DLMS60	60045335
19	1	RUBBER MANDREL CAP	DLMS110	61345230
20	1	J-BODY	DLMS60	61045342
21	1	INNER MANDREL	DLMS110	63145211
22	4	DRAG BLOCK	DLMSDB8	9045900
23	1	BOTTOM SUB	DLMS110	61045630
24	2	SEAL	90 DURO NITRILE	61145520
25	4	LOWER SLIP SPRING		7145901
26	3	UPPER SLIP SPRING		7145902
27	1	SPRING CAGE CAP	DLMS60	60045810
28	1	BOTTOM SUB	DLMS80	63545630
29	1	VALVE BODY	DLMS60	61145350
30	1	COMPENSATING PISTON	DLMS60	61045710
31	1	COLLET	DLMS110	63545660
32	1	LOWER MANDREL	DLMS80	64545230
33	3	1/4-20 UNC X 1/4 SOCKET SET SCREW	STEEL	SSS025C025
34	3	TORQUE PIN	STEEL	63545377
35	1	TORQUE RING	DLMS60	63545725



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K) PARTS LIST (cont'd)

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 64545RM
36	1	TORQUE SLEEVE	DLMS60	63545370
37	1	VALVE BODY	DLMS60	63145350
38	4	1/4-20 UNC X 3/8 SOCKET SET SCREW	STEEL	SSS025C037
39	1	VALVE PISTON CAP	DLMS60	61145720
40	1	VALVE PLUNGER	DLMS80	63145611
41	1	VALVE PISTON	DLMS110	61145730
42	1	RUBBER RETAINER	DLMS60	60245850
43	1	RUBBER MANDREL	DLMS80	61045220
44	2	231 O-RING	90 DURO NITRILE	90231
45	1	233 O-RING	90 DURO NITRILE	90233
46	2	332 O-RING	90 DURO NITRILE	90332
47	2	336 O-RING	90 DURO NITRILE	90336

REDRESS KIT (RDK)		64545050
ASSEMBLED WEIGHT		154 LBS

K-1) ELASTOMER TRIM OPTIONS

NOTE11: For temperature range, refer to Elastomer Trim Temperature Guide.

K-1.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 64545RMH
13	2	ELEMENT	70 DURO HSN	60245511H
14	4	ELEMENT	90 DURO HSN	60245513H
24	2	SEAL	90 DURO HSN	61145520H
44	2	231 O-RING	90 DURO HSN	90231H
45	1	233 O-RING	90 DURO HSN	90233H
46	2	332 O-RING	90 DURO HSN	90332H
47	2	336 O-RING	90 DURO HSN	90336H

REDRESS KIT (RDK)		64545050H
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K) PARTS LIST (cont'd)

K-1.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 64545RMV
13	2	ELEMENT	70 DURO VITON	60245511V
14	4	ELEMENT	90 DURO VITON	60245513V
24	2	SEAL	90 DURO VITON	61145520V
44	2	231 O-RING	90 DURO VITON	90231V
45	1	233 O-RING	90 DURO VITON	90233V
46	2	332 O-RING	90 DURO VITON	90332V
47	2	336 O-RING	90 DURO VITON	90336V

REDRESS KIT (RDK)	64545050V
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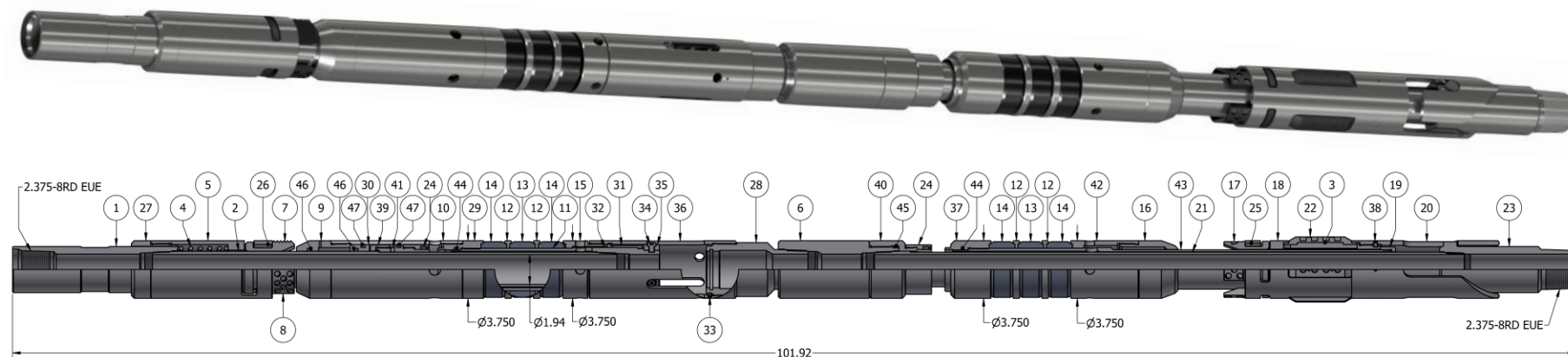
K-2) CARBIDE OPTIONS

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 64545RMC
8	2	CARBIDE UPPER SLIP	DLMS110	60045115C
17	4	CARBIDE LOWER SLIP	DLMS110	60045135C
22	4	CARBIDE DRAG BLOCK	DLMSDB4	9045900C

L) OPTIONAL ACID VALVE (sold separately)

DESCRIPTION	PART NUMBER
4-1/2" X 2-3/8" ACID VALVE	64745

M) TECHNICAL ILLUSTRATION



N) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
05/23/2023	A	Created new manual	-	-