



CASING SCRAPER

Manual No:
DL-200-0000-1157

Revision: **A**

Revision Date:
08/06/2018

Authored by: *J.Anderson*

Approved by: *<name>*

A) DESCRIPTION

The Casing Scraper is used to remove scale and debris from the casing ID. The use of the scraper helps to ensure that tools can properly run and set in casing.

B) SPECIFICATION GUIDE

CASING			DIFFERENTIAL PRESSURE (MAX)	TENSILE LOAD THRU TOOL (MAX)	TORQUE THRU TOOL (MAX)	PART NUMBER
SIZE (INCHES)	WEIGHT (LBS/FT)	RECOMMENDED HOLE SIZE (INCHES)				
4-1/2	9.5 – 15.10	3.826 – 4.090	10,000 PSI	100,000 LBS	4,000 FT-LBS	20045
5-1/2	14.0 – 23.0	4.670 – 5.012	10,000 PSI	135,000 LBS	5,000 FT-LBS	20055
7	17.0 – 32.0	6.094 – 6.538	10,000 PSI	190,000 LBS	10,000 FT-LBS	20070
7-5/8	24.0 – 42.8	6.501 – 7.025	10,000 PSI	190,000 LBS	10,000 FT-LBS	20075
8-5/8	28.0 – 44.0	7.625 – 8.017	10,000 PSI	250,000 LBS	15,000 FT-LBS	20085
9-5/8	29.30 – 53.50	8.535 – 9.063	10,000 PSI	250,000 LBS	15,000 FT-LBS	20095

C) PRE-INSTALLATION INSPECTION PROCEDURES

CAUTION: 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.

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.

D & L OIL TOOLS
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D) RUNNING PROCEDURES

When scraping constantly circulate to flush trash out of the wellbore. After scraping, circulate at least two wellbore volumes to eliminate as much debris from the wellbore as possible.

D&L does not recommend running the scraper below the packer or completion tool. Run the packer or completion tool only after scraping and flushing the wellbore adequately to prevent trash from interfering with operation of the tool.

E) 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.

Store the tool, if possible, in an enclosed, temperature and humidity controlled environment. Avoid excessively high temperatures over long periods of time. 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.

F) RECOMMENDED TOOLS

F-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

F-2) OPTIONAL SPECIAL TOOLS

ITEM	QTY	DESCRIPTION	PART NUMBER
T1	1	DRAG BLOCK ASSEMBLY TOOL	AT045110 (4-1/2") AT055110 (5-1/2") AT070110 (7", 7-5/8") AT095110 (8-5/8", 9-5/8")

G) DISASSEMBLY

G-1) Clamp upper end of scraper body (1) in vise.

G-1.1) From lower end of tool, compress lower set of scrapers (2) with drag block assembly tool (T1).

G-1.2) Unscrew lower set screws (4) from lower scraper keeper (3).

G-1.3) Unscrew and remove scraper keeper (3) from scraper body (1).

G-1.4) Release scrapers (2). Remove scrapers (2) and springs (5) from scraper body (1).

G-1.5) Moving to upper end of tool, compress upper set of scrapers (2) with drag block assembly tool (T1).

G-1.6) Unscrew and remove set screws (4) from upper scraper keeper (3).

G-1.7) Unscrew upper scraper keeper (3) from scraper body (1) and move upwards.

G-1.8) Release scrapers (2). Remove scrapers (2) and springs (5) from scraper body (1).

G-2) Unclamp scraper body (1) and remove from in vise.

G-2.1) Remove scraper keeper (3) from scraper body (1).



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H) ASSEMBLY

NOTE1: Clean and inspect all parts. Replace all worn and damaged parts. Install parts in proper order, and orientation and tighten/torque all connections properly.

H-1) Install scraper keeper (3) onto upper end of scraper body (1).

H-2) Clamp upper end of scraper body (1) in vise.

H-2.1) Install springs (5) and upper set of scrapers (2) into scraper body (1). Compress scrapers (2) with drag block assembly tool (T1).

H-2.2) Move scraper keeper (3) downwards and screw onto scraper body (1) to capture upper end of scrapers (2). Remove drag block assembly tool (T1).

NOTE2: Install five (5 ea) springs per scraper (Fig. 2).

H-2.3) Install springs (5) and lower set of scrapers (2) into scraper body (1). Compress scrapers (2) with drag block assembly tool (T1).

H-2.4) Screw lower scraper keeper (3) onto scraper body (1) to capture lower end of scrapers (2). Remove drag block assembly tool (T1).

NOTE2: For 4-1/2" – 7-5/8", install five (5 ea) springs per scraper (Fig. 2).
For 8-5/8 and 9-5/8", install four (4 ea) springs per scraper.

H-2.5) Screw set screws (4) into scraper keeper (3).

H-3) Unclamp scraper body (1) from vise and remove assembled tool.



Fig. 2

I) PARTS LIST

I-1) 4-1/2"

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 20045
1	1	SCRAPER BODY	DLMS110	20045335
2	14	SCRAPER	DLMSDB8	20060900
3	2	SCRAPER KEEPER	DLMS110	20045400
4	8	SET SCREW 1/4-20 UNC X 3/16	STEEL	SSS025C018
5	70	DRAG BLOCK SPRING	DLMINC625	9101900

ASSEMBLED WEIGHT	67 LBS
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I-2) 5-1/2"

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 20055
1	1	SCRAPER BODY	DLMS110	20055335
2	16	SCRAPER	DLMSDB8	20070900
3	2	SCRAPER KEEPER	DLMS110	20055400
4	8	SET SCREW 1/4-20 UNC X 1/4	STEEL	SSS025C025
5	80	DRAG BLOCK SPRING	DLMINC625	9101900

ASSEMBLED WEIGHT	98 LBS
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I-3) 7"

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 20070
1	1	SCRAPER BODY	DLMS110	20070335
2	20	SCRAPER	DLMSDB8	20090900
3	2	SCRAPER KEEPER	DLMS110	20070400
4	8	SET SCREW 1/4-20 UNC X 1/4	STEEL	SSS025C025
5	100	DRAG BLOCK SPRING	DLMINC625	9101900

ASSEMBLED WEIGHT	144 LBS
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I-4) 7-5/8"

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 20075
1	1	SCRAPER BODY	DLMS110	20075335
2	22	SCRAPER	DLMSDB8	20090900
3	2	SCRAPER KEEPER	DLMS110	20075400
4	8	SET SCREW 1/4-20 UNC X 1/4	STEEL	SSS025C025
5	110	DRAG BLOCK SPRING	DLMINC625	9101900

ASSEMBLED WEIGHT	156 LBS
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I-5) 8-5/8"

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 20085
1	1	SCRAPER BODY	DLMS110	20085335
2	26	SCRAPER	DLMSDB8	20090900
3	2	SCRAPER KEEPER	DLMS110	20085400
4	8	SET SCREW 1/4-20 UNC X 1/4	STEEL	SSS025C025
5	104	DRAG BLOCK SPRING	DLMINC625	9101900

ASSEMBLED WEIGHT	222 LBS
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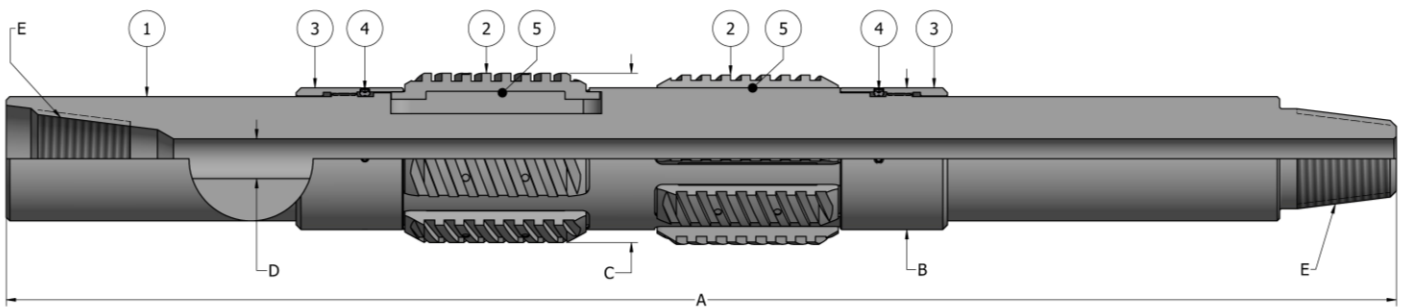
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I-6) 9-5/8"

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 20095
1	1	SCRAPER BODY	DLMS110	20095335
2	28	SCRAPER	DLMSDB8	20090900
3	2	SCRAPER KEEPER	DLMS110	20095400
4	8	SET SCREW 1/4-20 UNC X 1/4	STEEL	SSS025C025
5	112	DRAG BLOCK SPRING	DLMINC625	9101900

ASSEMBLED WEIGHT	278 LBS
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J) TECHNICAL ILLUSTRATION



J-1) Dimensional Data

PART NUMBER	A	B	C	D	E
	TOOL LENGTH (INCHES)	TOOL GAGE OD (INCHES)	SCRAPER EXPANSION (INCHES)	MIN. TOOL ID (INCHES)	THREAD CONNECTION (API REGULAR TOOL JOINT)
20045	35.00	3.563	3.615 – 4.211	1.00	2-3/8
20055	35.00	4.380	4.544 – 5.340	1.25	2-7/8
20070	35.00	5.375	5.917 – 6.881	1.50	3-1/2
20075	35.00	5.605	6.100 – 7.200	1.50	3-1/2
20085	35.00	6.730	7.220 – 8.320	2.25	4-1/2
20095	35.00	7.630	8.130 – 9.230	2.25	4-1/2



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K) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
08/06/2018	A	Created new manual.	-	-