

Change Bulletin

No: CB018

Rev: 0

Date: 04 October 2007

Description: CDS Mud Saver Valve Spring Pin Replacement and Field Repair



Tesco Corporation
6204 – 6A Street SE
Calgary, AB. T2H 2B7
Phone: (403) 692 5700
www.tescocorp.com

BACKGROUND INFORMATION:

On the Casing Drive System Mud Saver Valve (MSV), the spring pin broke while in service. This allowed a plunger to be driven up into the gooseneck of the swivel, and eventually it was pumped down-hole inside the drill pipe. The issue is that the slotted spring pin can work its way out and/or break, which in turn releases the valve spring retainer (item #4 in Figure 1). This allows the plunger to go up into the upper top drive load path while releasing trapped pressure in the casing. If the plunger gets stuck there, when the CDS is removed, the plunger can be pumped down inside the drill pipe.

To correct this issue the mud saver valve spring retainer (#820034) has been replaced with a slotted hex nut (#860148). Also the slotted spring pin (item 7 on drawings below) has been changed from a $\text{Ø}3/16 \times 5/8$ pin to a $\text{Ø}1/8 \times 5/8$ pin, see figures 1 and 1A below.

Figure 1: Old Valve (item 4 on dwg 820030 Rev B)

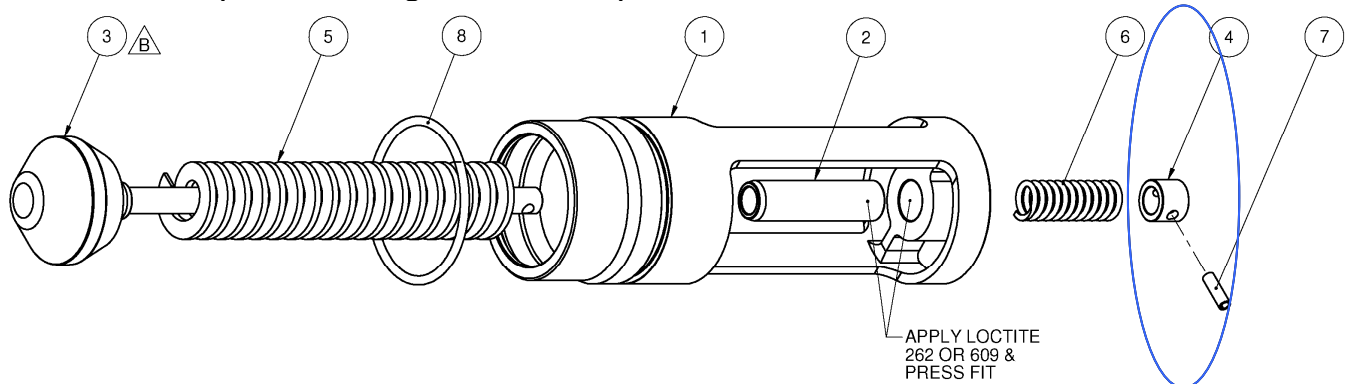
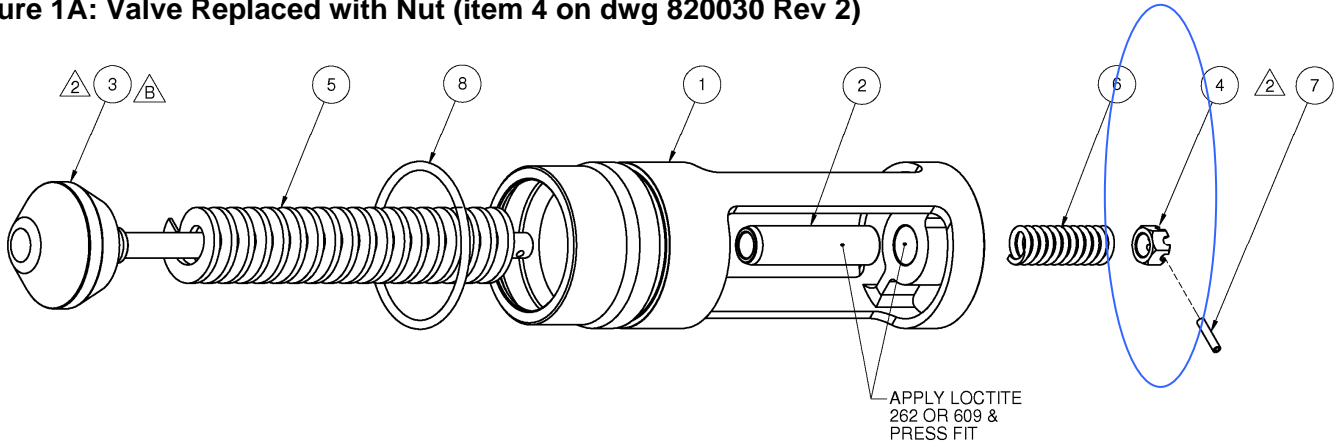


Figure 1A: Valve Replaced with Nut (item 4 on dwg 820030 Rev 2)



AFFECTED PRODUCT:

This change is applicable to all Casing Drive System MSVs manufactured prior to June 2007.

Component

Description	Part/Dwg No.
CDS MSV Assy	820030
Plunger, MSV, CDS (superseded by 860149)	820033
Retainer, MSV, CDS (discontinued, replaced with 860148)	820034
Valve, MSV, 13-20" casing	820009

ACTION REQUIRED:

Replacing the mud saver valve spring retainer with a hex nut is an essential change that has been done on all Casing Drive System MSVs in production since June 2007. No rework is required on these.

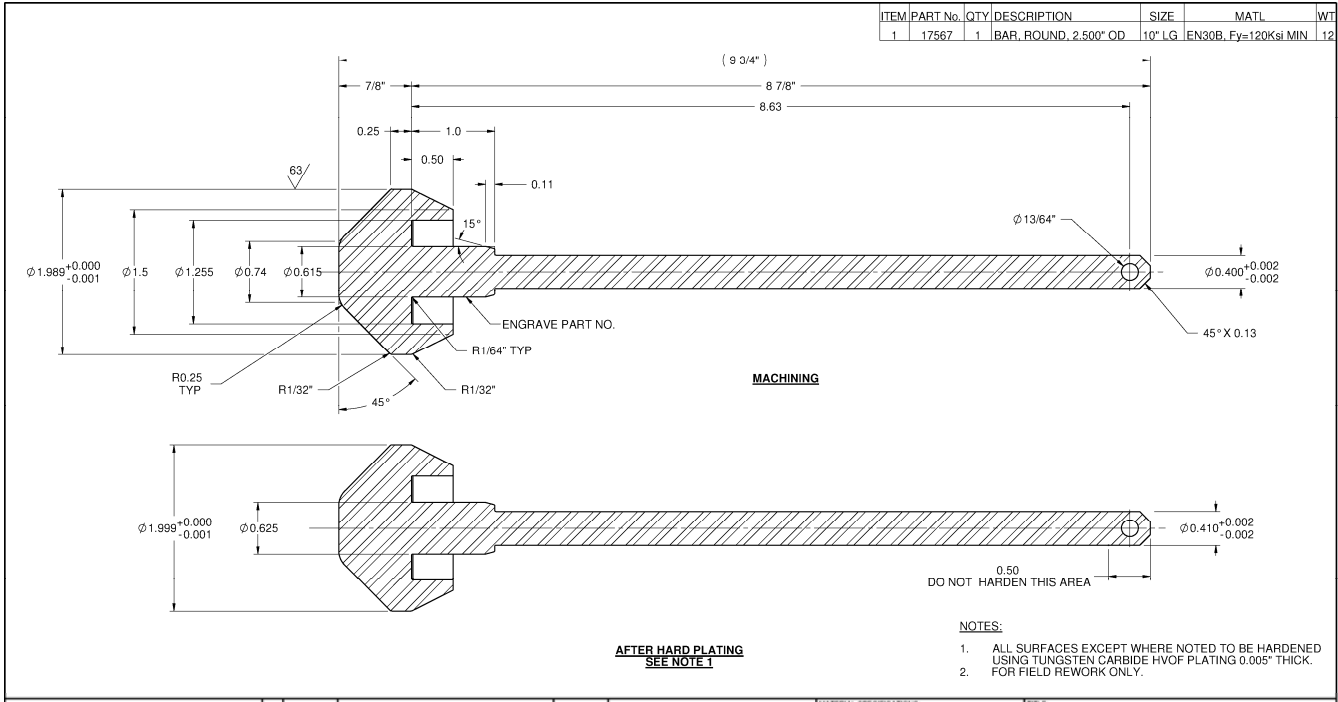
Casing Drive System MSVs being used in the field or in stock require rework as per the following procedure:

1. Disassemble the MSV by removing the spring pin
2. Rework the plunger as per drawing FRW 820033
3. Rework the retainer as per drawing FRW 820034
4. Reassemble the MSV as per drawing FRW 820030
5. Weld the retainer to the plunger as shown on drawing FRW 820030

ITEM	PART No.	QTY	DESCRIPTION	SIZE	MATL	WT
1	820031	1	BODY, VALVE, MUD SAVER, 4-1/2" TO 9-5/8" CASING, CDS			2
2	820032	1	GUIDE, PLUNGER, VALVE, MUD SAVER, CDS			0.1
3	820033	1	PLUNGER, VALVE, MUD SAVER, CDS			1.0
4	820034	1	RETAINER, SPRING, VALVE, MUD SAVER, CDS			0.0
5	820027	1	SPRING, DIE, 1.25 OD x 6.0 LG, LIGHT DUTY		BLUE	0.5
6	820028	1	SPRING, COMP, .625 OD x 1.84 x .091 WIRE		C&G SPR	0.0
7	820029	1	PIN, SLOTTED SPRING, Ø3/16 x 5/8 LG SS			0.0
8	340106	1	O-RING N70-229			0.0

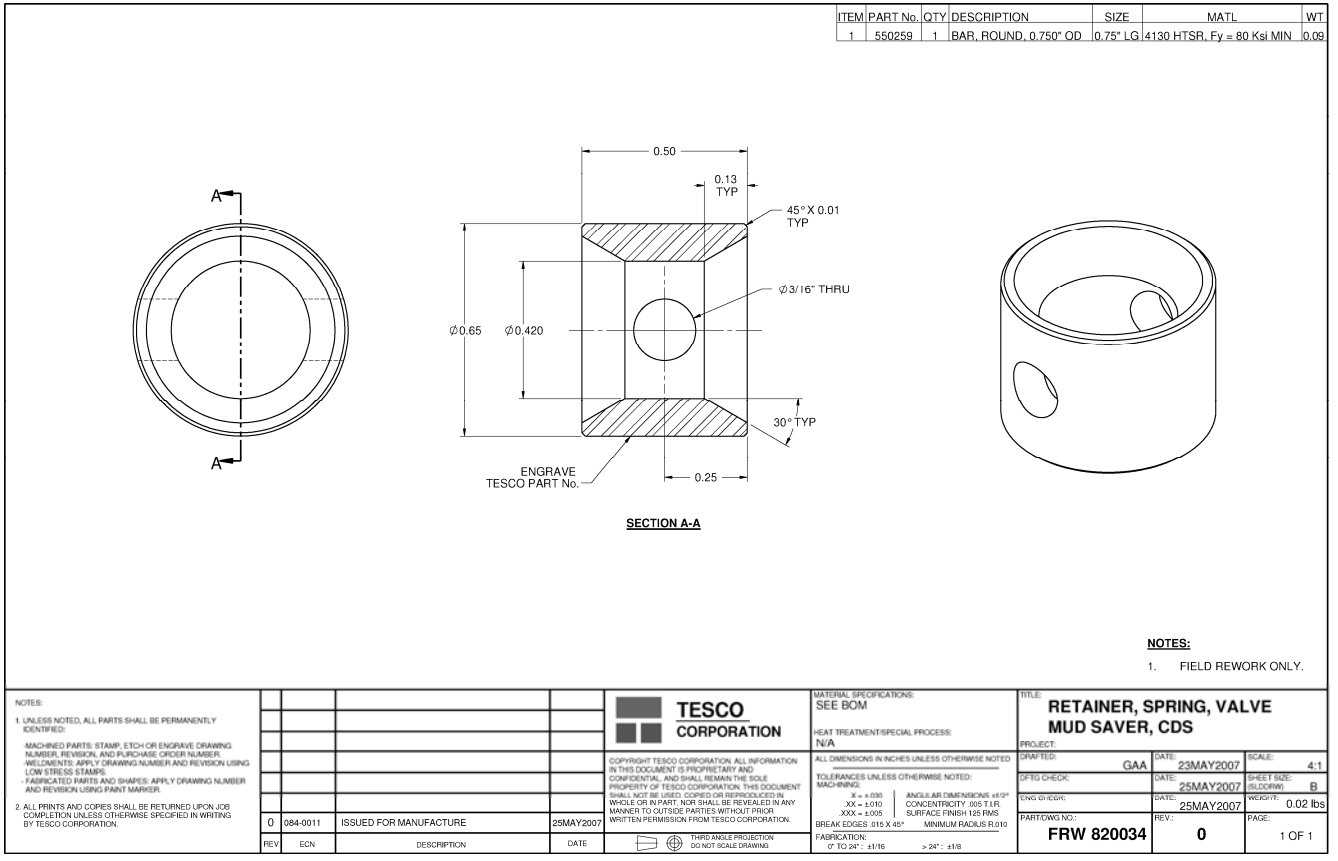
NOTE:
FOR FIELD REWORK ONLY.

NOTES: 1. UNLESS NOTED, ALL PARTS SHALL BE PERMANENTLY IDENTIFIED. -MACHINED PARTS: STAMP, ETCH OR ENGRAVE DRAWING NUMBER, REVISION, AND PURCHASE ORDER NUMBER. -WELDED PARTS: APPLY DRAWING NUMBER AND REVISION USING LOW STRESS STAMPS. -FABRICATED PARTS AND SHAPES: APPLY DRAWING NUMBER AND REVISION USING PAINT MARKER. 2. ALL PRINTS AND COPIES SHALL BE RETURNED UPON JOB COMPLETION UNLESS OTHERWISE SPECIFIED IN WRITING BY TESCO CORPORATION.		TESCO CORPORATION COPYRIGHT TESCO CORPORATION. ALL INFORMATION IN THIS DOCUMENT IS PROPRIETARY AND CONFIDENTIAL AND SHALL REMAIN THE SOLE PROPERTY OF TESCO CORPORATION. THIS DOCUMENT SHALL NOT BE USED, COPIED OR REPRODUCED IN WHOLE OR IN PART, NOR SHALL BE REVEALED IN ANY MANNER TO OUTSIDE PARTIES WITHOUT PRIOR WRITTEN PERMISSION FROM TESCO CORPORATION.		MATERIAL SPECIFICATIONS: SEE BOM HEAT TREATMENT/SPECIAL PROCESS: N/A ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED. TOLERANCES UNLESS OTHERWISE NOTED: MACHINING: .XX = ±.002 .XXX = ±.005 BREAK EDGES .015 X 45° FABRICATION: 0° TO 24°: ±.116 > 24°: ±.18		TITLE: VALVE, MUD SAVER, 4 1/2" - 11 7/8" CASING, CDS PROJECT: DRAFTED: J.ZHANG DATE: 29MAY2008 SCALE: 1:2 DFTG CHECK: DATE: 01JUN2008 SHEET SIZE: B (BLD/FRW) ENG OR REV: DATE: 01JUN2008 WEIGHT: 4 lbs PART/DWG NO.: FRW820030 REV: 0 PAGE: 1 OF 1	
REV	ECN	DESCRIPTION	DATE				
0	084-0011	ISSUED FOR MANUFACTURE	01JUN2009				



ITEM	PART No.	QTY	DESCRIPTION	SIZE	MATL	WT
1	17567	1	BAR, ROUND, 2.500" OD	10' LG	EN30B, Fy=120Ksi MIN	12

NOTES: 1. UNLESS NOTED, ALL PARTS SHALL BE PERMANENTLY IDENTIFIED. MACHINED PARTS: STAMP, ETCH OR ENGRAVE DRAWING NUMBER, REVISION AND PURCHASE ORDER NUMBER. WELDED PARTS: APPLY DRAWING NUMBER AND REVISION USING LOW STRESS STAMPS. FABRICATED PARTS AND SHAPES: APPLY DRAWING NUMBER AND REVISION USING PAINT MARKER. 2. ALL PRINTS AND COPIES SHALL BE RETURNED UPON JOB COMPLETION UNLESS OTHERWISE SPECIFIED IN WRITING BY TESCO CORPORATION.		<table border="1"> <tr><td>6</td><td></td><td></td><td></td></tr> <tr><td>5</td><td></td><td></td><td></td></tr> <tr><td>4</td><td></td><td></td><td></td></tr> <tr><td>3</td><td></td><td></td><td></td></tr> <tr><td>2</td><td></td><td></td><td></td></tr> <tr><td>1</td><td></td><td></td><td></td></tr> <tr><td>0</td><td>084-0011</td><td>ISSUED FOR MANUFACTURE</td><td>25MAY2007</td></tr> <tr><td>REV</td><td>ECN</td><td>DESCRIPTION</td><td>DATE</td></tr> </table>	6				5				4				3				2				1				0	084-0011	ISSUED FOR MANUFACTURE	25MAY2007	REV	ECN	DESCRIPTION	DATE	<p>TESCO CORPORATION</p> <p>ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED</p> <p>TOLERANCES UNLESS OTHERWISE NOTED: MACHINING: XX = ±0.030 ANGLE ALL DIMENSIONS ±15° XXX = ±0.010 CONCENTRICITY 0.05 T.I.R. XXXX = ±0.005 SURFACE FINISH 125 RMS BREAK EDGES 0.15 X 45° MINIMUM RADIUS R0.10 FABRICATION: ◊ TO 24° ±0.16 > 24° ±0.18</p>	<p>MATERIAL SPECIFICATIONS: SEE BOM</p> <p>HEAT TREATMENT/SPECIAL PROCESS: SEE NOTES</p> <p>TITLE: PLUNGER, VALVE, MUD SAVER, CDS</p> <table border="1"> <tr><td>PROJECT:</td><td>GAA</td><td>DATE:</td><td>25MAY2007</td><td>SCALE:</td><td>1:1</td></tr> <tr><td>DFTG CHECK:</td><td></td><td>DATE:</td><td>28MAY2007</td><td>SHEET SIZE:</td><td>B</td></tr> <tr><td>ENG CH CKR:</td><td></td><td>DATE:</td><td>28MAY2007</td><td>WEIGHT:</td><td>1 lbs</td></tr> <tr><td>PART DWG NO.:</td><td>FRW 820033</td><td>REV.:</td><td>0</td><td>PAGE:</td><td>1 OF 1</td></tr> </table>	PROJECT:	GAA	DATE:	25MAY2007	SCALE:	1:1	DFTG CHECK:		DATE:	28MAY2007	SHEET SIZE:	B	ENG CH CKR:		DATE:	28MAY2007	WEIGHT:	1 lbs	PART DWG NO.:	FRW 820033	REV.:	0	PAGE:	1 OF 1
6																																																												
5																																																												
4																																																												
3																																																												
2																																																												
1																																																												
0	084-0011	ISSUED FOR MANUFACTURE	25MAY2007																																																									
REV	ECN	DESCRIPTION	DATE																																																									
PROJECT:	GAA	DATE:	25MAY2007	SCALE:	1:1																																																							
DFTG CHECK:		DATE:	28MAY2007	SHEET SIZE:	B																																																							
ENG CH CKR:		DATE:	28MAY2007	WEIGHT:	1 lbs																																																							
PART DWG NO.:	FRW 820033	REV.:	0	PAGE:	1 OF 1																																																							



ITEM	PART No.	QTY	DESCRIPTION	SIZE	MATL	WT
1	550258	1	BAR, ROUND, 0.750" OD	0.75" LG	4130 HTSR, Fy = 80 Ksi MIN	0.09

NOTES: 1. UNLESS NOTED, ALL PARTS SHALL BE PERMANENTLY IDENTIFIED. MACHINED PARTS: STAMP, ETCH OR ENGRAVE DRAWING NUMBER, REVISION AND PURCHASE ORDER NUMBER. WELDED PARTS: APPLY DRAWING NUMBER AND REVISION USING LOW STRESS STAMPS. FABRICATED PARTS AND SHAPES: APPLY DRAWING NUMBER AND REVISION USING PAINT MARKER. 2. ALL PRINTS AND COPIES SHALL BE RETURNED UPON JOB COMPLETION UNLESS OTHERWISE SPECIFIED IN WRITING BY TESCO CORPORATION.		<table border="1"> <tr><td>6</td><td></td><td></td><td></td></tr> <tr><td>5</td><td></td><td></td><td></td></tr> <tr><td>4</td><td></td><td></td><td></td></tr> <tr><td>3</td><td></td><td></td><td></td></tr> <tr><td>2</td><td></td><td></td><td></td></tr> <tr><td>1</td><td></td><td></td><td></td></tr> <tr><td>0</td><td>084-0011</td><td>ISSUED FOR MANUFACTURE</td><td>25MAY2007</td></tr> <tr><td>REV</td><td>ECN</td><td>DESCRIPTION</td><td>DATE</td></tr> </table>	6				5				4				3				2				1				0	084-0011	ISSUED FOR MANUFACTURE	25MAY2007	REV	ECN	DESCRIPTION	DATE	<p>TESCO CORPORATION</p> <p>ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED</p> <p>TOLERANCES UNLESS OTHERWISE NOTED: MACHINING: XX = ±0.030 ANGLE ALL DIMENSIONS ±15° XXX = ±0.010 CONCENTRICITY 0.05 T.I.R. XXXX = ±0.005 SURFACE FINISH 125 RMS BREAK EDGES 0.15 X 45° MINIMUM RADIUS R0.10 FABRICATION: ◊ TO 24° ±0.16 > 24° ±0.18</p>	<p>MATERIAL SPECIFICATIONS: SEE BOM</p> <p>HEAT TREATMENT/SPECIAL PROCESS: N/A</p> <p>TITLE: RETAINER, SPRING, VALVE MUD SAVER, CDS</p> <table border="1"> <tr><td>PROJECT:</td><td>GAA</td><td>DATE:</td><td>23MAY2007</td><td>SCALE:</td><td>4:1</td></tr> <tr><td>DFTG CHECK:</td><td></td><td>DATE:</td><td>25MAY2007</td><td>SHEET SIZE:</td><td>B</td></tr> <tr><td>ENG CH CKR:</td><td></td><td>DATE:</td><td>25MAY2007</td><td>WEIGHT:</td><td>0.02 lbs</td></tr> <tr><td>PART DWG NO.:</td><td>FRW 820034</td><td>REV.:</td><td>0</td><td>PAGE:</td><td>1 OF 1</td></tr> </table>	PROJECT:	GAA	DATE:	23MAY2007	SCALE:	4:1	DFTG CHECK:		DATE:	25MAY2007	SHEET SIZE:	B	ENG CH CKR:		DATE:	25MAY2007	WEIGHT:	0.02 lbs	PART DWG NO.:	FRW 820034	REV.:	0	PAGE:	1 OF 1
6																																																												
5																																																												
4																																																												
3																																																												
2																																																												
1																																																												
0	084-0011	ISSUED FOR MANUFACTURE	25MAY2007																																																									
REV	ECN	DESCRIPTION	DATE																																																									
PROJECT:	GAA	DATE:	23MAY2007	SCALE:	4:1																																																							
DFTG CHECK:		DATE:	25MAY2007	SHEET SIZE:	B																																																							
ENG CH CKR:		DATE:	25MAY2007	WEIGHT:	0.02 lbs																																																							
PART DWG NO.:	FRW 820034	REV.:	0	PAGE:	1 OF 1																																																							

Contact your local TESCO Parts and Service Center for further information regarding this bulletin and or supply of affected components noted above.