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**PRODUCT: TM-80 JEEP ASSY**

**DATE: February 11, 2010**

**SUBJECT: Shearing Belleville Stack Mounting Studs**

**SERIAL NUMBERS: 2 - 101**

**DISCUSSION:** There is a potential for the mounting stud for the Belleville Washer Stack to shear at the thread where it is screwed into the Jeep Carriage Frame.

**RECOMMENDATION:** It has been determined that there is a possibility the Belleville Mounting Studs on the Jeep Assembly will shear. If this happens, the Spinner/Jeep Assembly will lean at an angle towards well center rather than vertical. Clamping onto drill string in this position will cause the Spinner/Jeep Assembly to violently snap into position, causing damage to the Jeep Assembly, Link Arms and Jeep Rear Mounting Plate.

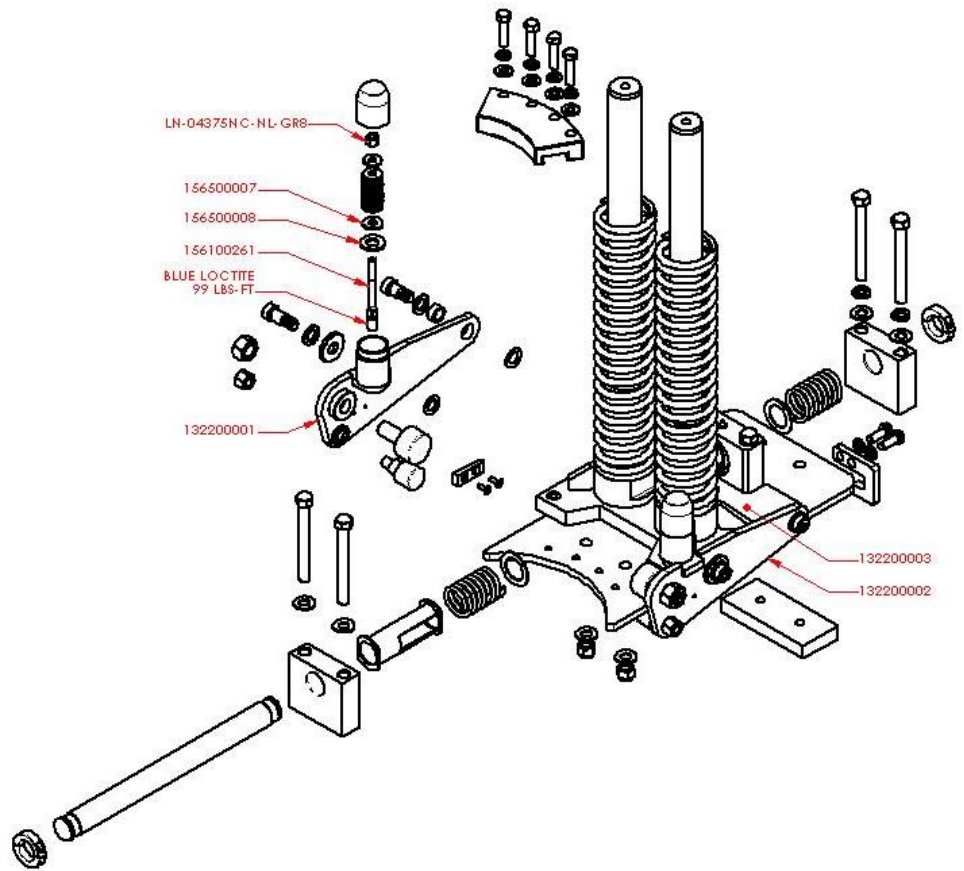
The "Frame, Jeep Carriage, TM-80", left and right "Side Arm, Spinner Track Jeep", "Stud, Mounting, Belleville Washer Stack" are modified designs that need to replace the old parts. Also, there are 2 washers made from UHMW that need to be installed under the Belleville Stack to allow free movement of the assembly.

In order to complete the retrofit, the kit needed is:

1 EA – 112200008 – KIT, RETROFIT, BELLEVILLE MOUNTING STUD

The retrofit kit consists of these parts:

- 1 EA - 132200001 - SIDE ARM, L, SPINNER TRACK JEEP, TM-80
- 1 EA - 132200002 - SIDE ARM, R, SPINNER TRACK JEEP, TM-80
- 1 EA - 132200003 - FRAME, JEEP CARRIAGE, TM-80
- 2 EA - 156100261 - STUD, MOUNTING, BELLEVILLE STACK, TM-80
- 2 EA - 156500007 - WASHER, FLAT, 1.25 OD X .50 ID X .125
- 2 EA - 156500008 - WASHER, FLAT, 1.50 OD X .75 ID X .125
- 2 EA - LN-04375NC-NL-GR8 - LOCKNUT, 7/16-14 UNC, NYLOCK, GR8
- 3 EA - H15-070109-08, PLUG, 1/2 JIC, HEX HEAD
- 3 EA - H15-070112-08, CAP, 1/2 JIC
- 2 EA - H15-070109-12, PLUG, 3/4 JIC, HEX HEAD
- 2 EA - H15-070112-12, CAP, 3/4 JIC



Spinner Track Jeep Removal Procedure:

1. (Refer to 102100002) Remove hoses from Spinner Bulkhead and terminate with the kit supplied hose end caps.
2. Remove Rod End Cap (Item 7) from the Vertical Spinner Rods (Item 3 on 122200021).
3. Lift the Spinner Assembly (Item 3) off the Jeep Assembly (Item 4).
4. Remove the Jeep Retainer (Item 14 on 112200006) and unbolt the Jeep from the Rear Mounting Plate (Item 9).
5. Remove the Spinner Track Jeep Assembly (Item 4) and set on a workbench for rebuilding.

Jeep Disassembly Procedure:

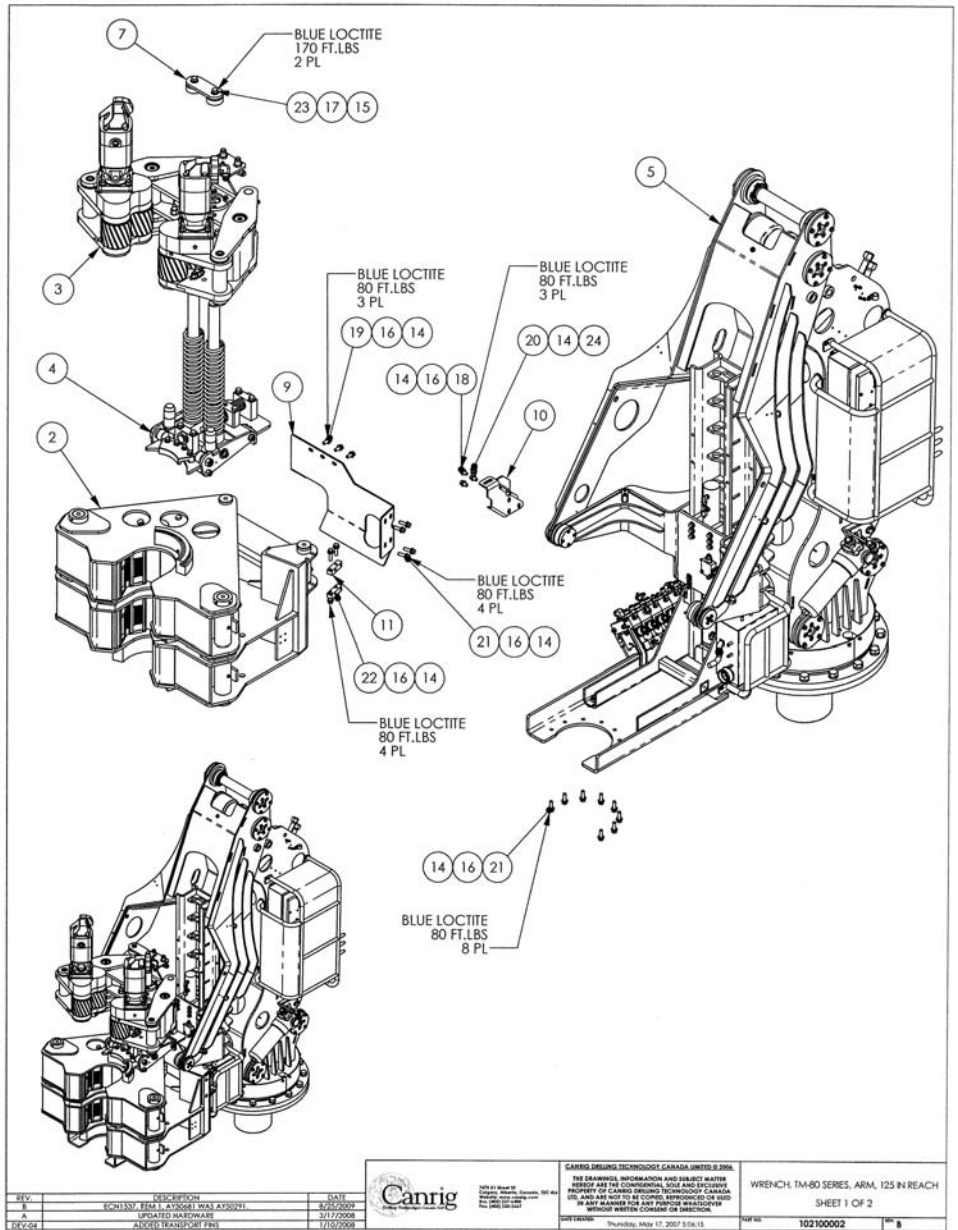
1. (Refer to 112200006) Remove the lower cam follower (Item 17) from the side plates (Items 3 & 4), spread side plates apart and remove the Jeep from the base plate (Item 2).
2. Remove Belleville Spring Stack cap (Item 12), nylock nut (Item 36), flat washer (Item 31), Belleville springs (Item 16) and all components and hardware from the side plates. Remove the Belleville studs (Item 11) and side plates (Items 3 & 4).
3. Discard the left and right side plates, Belleville studs and the nylock nuts for the stud. These parts will not be used again.
4. (Refer to 122200021) Disassemble the Jeep and discard the Jeep Carriage Frame (Item 1).

#### Jeep Reassembly Procedure:

1. (Refer to 122200021) Reassemble the Jeep Carriage.
2. (Refer to 112200006) Screw in new Belleville Stud ((Item 11) 156100261) into the new Jeep Frame (Item 1 on 122200021). Use blue Loctite and tighten to 99 lbs-ft.
3. Install components and hardware onto the new sideplates (132200001 (Item 4) & 132200002 (Item 3)).
4. Install the new sideplates onto the Jeep Carriage (Item 1) and assemble the rest of the components excepting the Belleville washer stack (Item 16), UHMW washers (Items 40 & 41), flat washer (Item 31) and nylock nut (Item 36).
5. Install the large UHMW washer (Item 41), then the small UHMW washer (Item 40) on each of the new shafts (Item 11). Then assemble the Belleville washer stack (Item 16) with the first washer facing "cone up." Then alternately face each Belleville washer to each other. Finally add the flat washer (Item 31) and the new nylock nuts (Item 36). Tighten the nuts until 3-4 threads are showing on each shaft.

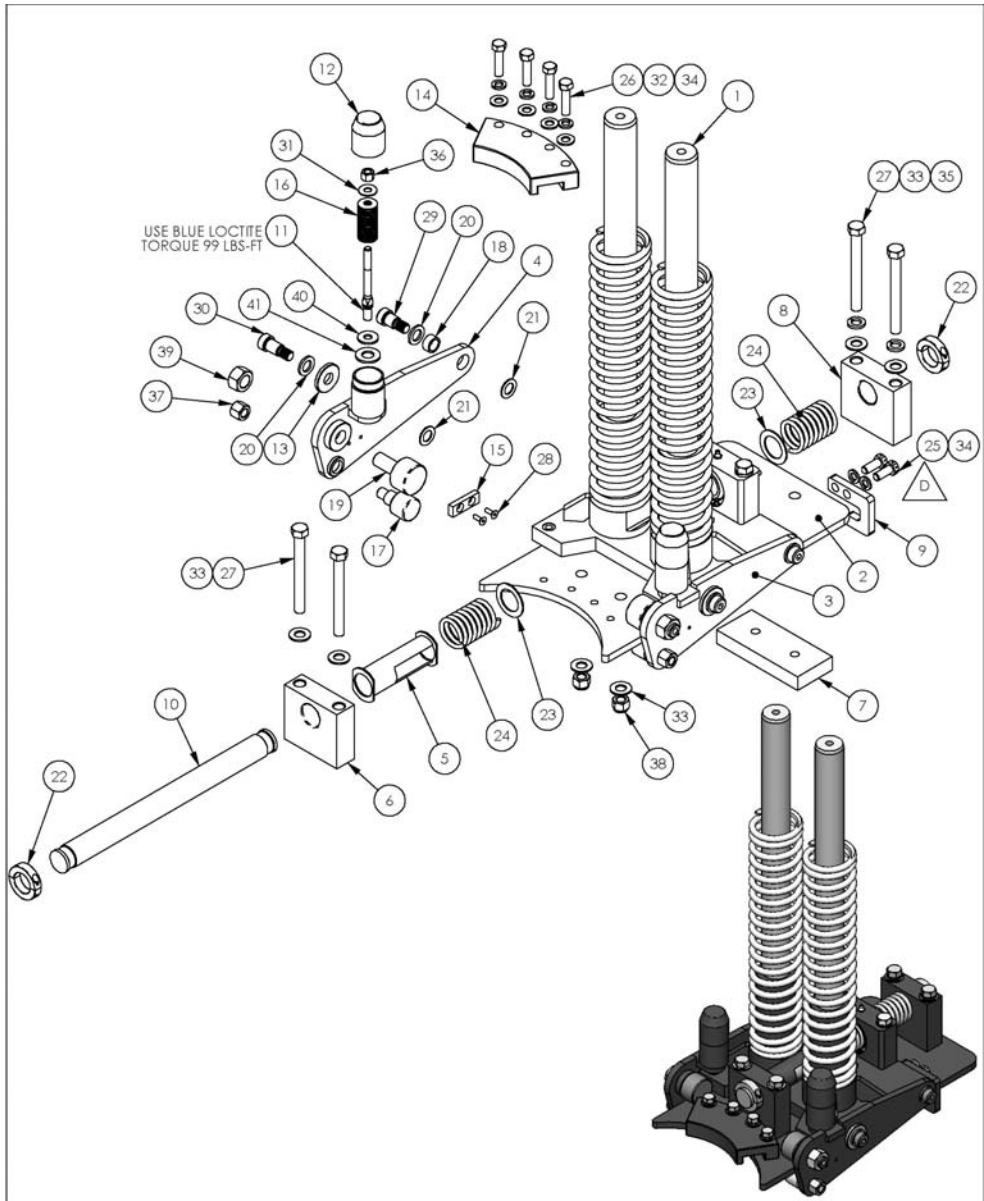
#### Spinner Track Jeep Reassembly Procedure:

1. (Refer to 102100002) Install the Spinner Track Jeep assembly (Item 4) onto the upper tong assembly (Item 2) and secure with the Jeep Retainer (Item 14 on 112200006). Fasten the Spinner Track Jeep to the Rear Mount Plate (Item 9) with blue Loctite and torque to 80 lbs-ft.
2. Install the Spinner Assembly (Item 3) onto the Vertical Spinner Rods (Item 3 on 122200021). Install the Rod End Cap (Item 7) and hardware. Use blue Loctite and torque to 170 lbs-ft.
3. Remove hose end caps and reattach hoses to the Spinner Bulkhead.



REV.	DESCRIPTION	DATE
B	EQN1337, BEAM 1, AT03681 WVAL AT03079	8/25/2009
A	GRABED HARDWARE	10/17/2008
REV:264	ADDED TRANSFER FMS	11/25/2008

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	<p>DATE: Thursday, May 17, 2007 5:04:15          PLS</p>	<p>REF NO: 102100002</p>	<p>REV: B</p>

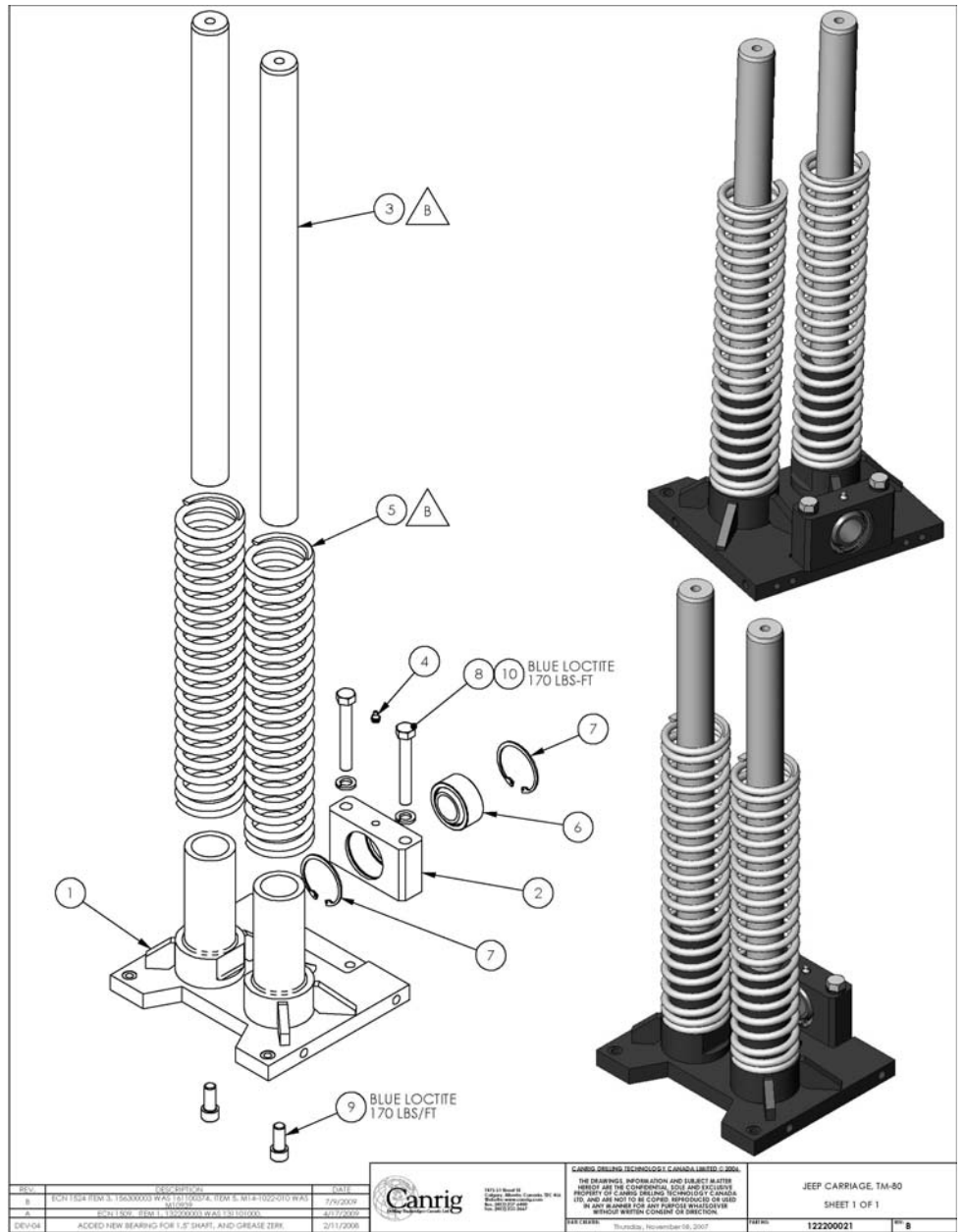


REV	DESCRIPTION	DATE
A	ISSUE FOR THE SPINNER TRACK	11/20/07
B	ISSUE FOR THE SPINNER TRACK	11/20/07
C	ISSUE FOR THE SPINNER TRACK	11/20/07
D	ISSUE FOR THE SPINNER TRACK	11/20/07

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DATE: Thursday, November 08, 2007	DRAWING NO: 112200004	SHEET NO: 1 OF 2
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REV:	DESCRIPTION:	DATE:		<small>100% Quality Control</small> <small>100% Material Control</small> <small>100% Process Control</small> <small>100% Customer Satisfaction</small>	<small>CANRIG DRILLING TECHNOLOGY CANADA LIMITED © 2004.</small> <small>THE DRAWINGS, INFORMATION AND SUBJECT MATTER</small> <small>HEREIN ARE THE CONFIDENTIAL, SOLE AND EXCLUSIVE</small> <small>PROPERTY OF CANRIG DRILLING TECHNOLOGY CANADA</small> <small>AND ARE NOT TO BE COPIED, REPRODUCED OR USED</small> <small>IN ANY MANNER FOR ANY PURPOSE WHATSOEVER</small> <small>WITHOUT WRITTEN CONSENT OR DIRECTION.</small>	<small>JEEP CARRIAGE, TM-80</small> <small>SHEET 1 OF 1</small>
B	BUY 1504 FEW S. 15000000 WAS 121100004, FEW S. M14-1002010 WAS 9010000	7/9/2004				
B	BUY 1504 FEW S. 15000000 WAS 121100000	8/17/2002				
DEV-04	ADDED NEW BEARING FOR 1.8" SHAFT, AND GREASE ZIPP.	2/11/2008			<small>REVISED:</small> Thursday, November 06, 2007 <small>REVISED:</small> 122200021 <small>REVISED:</small> 8	

**INFORMATION:**

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For a complete list of all bulletins go to [www.canrig.com](http://www.canrig.com)

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