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SERVICE BULLETIN MAINTENANCE OF WAY EQUIPMENT

DATE: 7-2018

BULLETIN NO: 18-003

TITLE: Shift Permissive Kit for Durst Gearboxes

RATING:

DIRECTIVE (Action Is Required)

INFORMATION (Action Is Optional)

ALERT	
(Potential Problem)	

PRODUCT IMPROVEMENT (Enhance Product)

PRODUCT SERIES / MODEL: 6700SJ1 and 6700SJ2 Production / Switch Tampers

- SERIAL NO: 6700SJ1 and 6700 SJ2 Tampers Up to and Including S/N 153819
- **SUMMARY:** Using sensors and software, the Shift Permissive Kit #5067850 monitors the rotation of the bull gear in the Durst Gearbox and the output shaft on the Hydraulic Drive Motor for rotation. If rotation is sensed, transmission shifting is not permitted until both sensors determine that there is no movement. In addition to the movement sensors, the kit includes a software update which provides a Jog feature. The Jog feature is used for lining up the gears for shifting in to or out of gear.

Note: Kits for BNSF Railroad will not Include the Spline Sensor Pickup Install Tool # 5067838.

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- **OPERATIONAL IMPACT:** The installation of this kit will improve gearbox shifting functions which will help to reduce possible gearbox and / or drive motor damage caused by attempting to shift the gearbox while the machine is moving.
- **ACTION:** Follow the instructions in this Service Bulletin and the attached Shift Permissive Kit #5067850 Drawing to install the kit and understand the software functions.
- **CONTACT:** Harsco Rail Service Department Ludington, MI Facility (231) 843-3431

Safety Information



FOLLOW APPLICABLE RAILROAD LOCKOUT - TAGOUT PROCEDURES AND MACHINE ENERGY CONTROL PROCEDURE TO DISABLE ENERGY SOURCES WHEN PERFORMING MAINTENANCE, MAKING ADJUSTMENTS OR REPAIRS TO THE RAIL GRINDER. FAILURE TO HEED THIS WARNING COULD RESULT IN SEVERE BODILY INJURY.

Shift Permissive Kit

- 1. Follow the instruction provided on Shift Permissive Kit #5067850 Drawing to install the kit. When installing the kit, make sure the latest Jupiter software is also installed. The latest Jupiter software is provided with the kit on a USB Flash Drive.
- 2. After the kit is installed, prepare the machine for operation and start the engine.
- 3. The only time it is permissible to shift the gearbox is if the machine is at a complete stop. On the Jupiter Main Screen, observe the Shift Enable Icon. This Icon indicates when it is permissible to shift the gearbox. The icon flashes red any time the machine is moving.
- 4. When the machine is at a complete stop and the gears are aligned for shifting, the Shift Enable Icon will display green arrows in a circular pattern. If the gears are not in alignment for shifting, the Shift Enable Icon will display the No Symbol.



Gear Jog Panel - See Figure 1

- 1. The Gear Jog Panel is displayed when the gear proximity switches do not match the expected state. When not matched, propel is not permitted to start. An error, or bad channel, will also prevent propulsion.
- 2. The three boxes at the top of the panel display the gear state:
 - (1) The Selected Gear By the Operator
 - (2) The Output By the Transmission Solenoids
 - (3) The Inputs Of the Gear Proximity Switches
- 3. Under the Output box are the values (4) for the transmission solenoids. The OUT column indicates the output is ON. The Err column indicates a bad channel.
- 4. Under the Input box are the values (5) for the three proximity switches, the engine tachometer, the transmission tachometer input and output. The IN column indicates that the switch is made or the tachometer is running. The Err column indicates a bad channel.
- 5. The Direction Arrows (6) will highlight when the machine starts moving. Various Status Flags (7) are displayed below the Direction Arrows.

Gear Jog Panel - See Figure 1

6. Pressing the Jog Button (8) will begin a jog procedure to get the gears in the selected state. The Jog Button will turn red. The Shift Enable Icon will also display the Jog Icon. The Jog Icon will flash yellow and red while jogging. It will remain a steady red if a problem remains. This is the same jog function as what automatically takes place when normal shifting fails to match the proximity switches state with the transmission solenoids state.



 The Jog Override Button (9) will override any out of gear sensor or error and allow propelling. The Jog Override Green Arrows will also be displayed on the Shift Enable Icon Box.

Caution: When Overriding With Gears Not Set, Damage To The Transmission May Occur.



8. Press the Escape Button (10) to close this panel.



FIGURE 1 GEAR JOG PANEL

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Printed In USA

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Γ		I	M PART NO	QTY	DESCRIPTION	٦
			2014365	0	DRIVE AXLE SUB-ASSEMBLY	-
н	REFERENCE DRAWINGS / SPECIAL INSTRUCTIONS	2	5067835	1	KIT, SPEED SENSOR - DURST GEAR BOX	Н
		3	5066160	3	PROXIMITY SWITCH ASSY	
	DRAWING # DESCRIPTION	4	150973-8	2	WASHER, FLAT, 5/8", HARDENED	1
	5067850 CONVERSION SPEED SENSOR	5	A0036173	1	5/8-11 X 3/4 HHCS	-
		6	5067929	1	ADAPTER, VENT	
	SPECIAL INSTRUCTIONS	C 7	F012318	1	DC-STR 4X4NPT *	-
G	TAKE ITEM I7, USB DRIVE, TO ENGINEERING FOR SOFTWARE INSTALLATION	8	F015219	1	DC-TEE 8X8FSX8	G
	MARK ALL SHIPPING CONTAINERS WITH MACHINE S/N AND CUSTOMER MACHINE NUMBER	9	F024758	1	ADAPTER STR, 08JIC-SWX04JIC	
		10) 4413	20	TY-RAP	-
			2000991	+	HOSE ASSEMBLY	
		12	2 172057-1		SHIFT SEAL	-
		13	3 3401326		CABLEMI2-M/F 3M SH 5-COND	-
		14	2011783		CABLEMI2-M/SPLTR 0.6M SH 5-C	-
F		15	5 2011696		BALL PLUNGER RAIL AXLE DRIVE	F
		16	<u>3401337</u>	+	CABLENIZ-M/E 6M SH 5-COND	-
		17	7 H6I97Y01	<u> </u>		-
		18	5071158			+
			5071163			-
		20	5067838	+ -		-
Е		2		6 2	I OCKTITE 242	E
			F015085			-
		Q_22	1013003			-
D C	 NOTES: I. REMOVE, DISASSEMBLE AND THROUGHLY CLEAN SHIFT HEX. 2. INSTALL ITEM 12, SHIFT SEAL AND RE INSTALL ONTO GEAR BOX. 3. INSTALL ITEM 15, DETENT INTO NEUTRAL SENSE LOCATION. 4. INSTALL ITEM 3, 4, 5, 6, & 7 INTO LOCATIONS NOTED. RECONNECT EXISTING 5. INSTALL ITEM 2, KIT, SPEED SENSOR, PER INCLUED INSTRUCTIONS. MUST USE INSTALLING TOOL 5067838 ITEM 20 6. ROUTE ITEM 13 JUPITER 21 OR ITEM 16 JUPITER 11, CABLE AS SHOWN AND TY-RAP USING ITEM 10 WHERE REQUIRED. 	CABLES	i.			C
в	 CONFIRM SPEEDOMETER SPEED SENSOR IS INSTALLED CORRECTLY AND I THE AIR GAP BETWEEN THE GEAR AND THE PICKUP MUST BE SET FOR .04 THIS CAN BE SET BY TURNING IN THE PICKUP UNTIL IT TOUCHES THE GEA AND THEN SCREW OUT THE PICKUP 3/4 TO I TURN TO OBTAIN .048 TO .0 SEE SHEET 5 FOR JUPITER I SPECIFIC CABLING INSTRUCTIONS. SEE SHEET 3 & 4 FOR JUPITER 2 SPECIFIC CABLING INSTRUCTIONS. 	5 OPERA 3 TO .06 R O.D. 62.	TIONAL PER INSTRUI 2.	CTIONS	BELOW: Inct	н
A	CONFIDENTIAL Proprietry of HARSCO CORPORTION ALL INGRESS RESERVED. THE DRAINING OR DOCUMENT ST. THE BORGINAL TO CHARGE ST. INC. THE ADDRESS IN ST. CONFERENCE. THE DRAINING OR DOCUMENT ST. THE BORGENT OF HARSCO. BY ACCEPTING THE INFORMATION TRADE SECTOR TO PROVIDE OR OTHER ST. INFORMATION TRADE SECTOR TO PROVIDE OR OTHER	DR CTF BAD DBB	DATE Description 0.8/18/16 CONVERS 0.1/05/17 Material : 3 03/21/17 Weight 11.6 lbm SOLID EDGE 3 3	ON, SF	PEED SENSOR Machine Type VARIOUS Date Diame Date Diame Di Diame Diame Diame Diame Diame Diame Diame D	A







