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RAIL

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## SERVICE BULLETIN MAINTENANCE OF WAY EQUIPMENT

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**DATE:** 2-16-2015 **BULLETIN NO:** 15-005

**TITLE:** HYDRAULIC OIL LEVEL SENSORS

**RATING:**  **DIRECTIVE** (Action Is Required)  **ALERT** (Potential Problem)  
 **INFORMATION** (Action Is Optional)  **PRODUCT IMPROVEMENT** (Enhance Product)

**PRODUCT SERIES / MODEL:** Mark IV Tampers - Mark VI Tampers - TS 30 Track Stabilizers with Jupiter Control System Prior To 2012

**SERIAL NO:** See List of Machines and Serial Numbers on Page 2.

**SUMMARY:** The incorrect hydraulic reservoir oil level sensors were installed on new Mark IV Tampers, Mark VI Tampers and TS30 Track Stabilizers with Jupiter Control Systems Prior to 2012 with the Oil Level Sensor Kit (#C8945YAB) installed at the factory.

**OPERATIONAL IMPACT:** The incorrect oil level sensors will not give the machine operator the "Hydraulic Tank Level Low - Add Oil" warning when the hydraulic reservoir oil level is low and/or the "Hydraulic Tank Critical Low - Stop Engine" warning when the hydraulic reservoir oil level is extremely low.

**ACTION:** Order new replacement hydraulic oil level sensors (#0-3106003-0-01) from Harsco Rail. The new sensors will be supplied at no charge only for the machines listed on Page 2. Then replace the existing hydraulic oil level sensors on the machine with the new hydraulic oil level sensors.

**CONTACT:** If you have any questions or if we can be of any service, please contact:  
Harsco Rail Service Department  
Columbia, SC Facility  
(803) 822-4866  
(803) 822-7546

**MACHINE SERIAL NUMBER LIST**

MACHINE S/N	CUSTOMER	RR #
7102273	MK 4 CN Rail / Jupiter	656-69
7102283	MK 4 CN Rail / Jupiter	656-70
7102293	MK 4 CN Rail / Jupiter	656-71
7102303	MK 4 CN Rail / Jupiter	656-72
7102313	MK 4 CN Rail / Jupiter	656-73
7120354	MK 4 CN Rail / Jupiter	656-76
7102364	MK 4 CN Rail / Jupiter	656-75
7102374	MK 4 CN Rail / Jupiter	656-77
7102415	MK 4 CN Rail / Jupiter	656-78
7102425	MK 4 CN Rail / Jupiter	656-80
7102435	MK 4 CN Rail / Jupiter	656-79
7102445	MK 4 CN Rail / Jupiter	656-81
7102455	MK 4 CN Rail / Jupiter	656-82
7102485	MK 4 CN Rail / Jupiter	656-96
7102475	MK 4 CN Rail / Jupiter	656-90
7102515	MK 4 CN Rail / Jupiter	656-98
7102536	MK 4 CN Rail / Jupiter	656-92
7102546	MK 4 CN Rail / Jupiter	656-93
7102556	MK 4 CN Rail / Jupiter	565-94
7102566	MK 4 CN Rail / Jupiter	656-95
7102606	MK 4 CN Rail / Jupiter	656-99
7102616	MK 4 CN Rail / Jupiter	656-28
7102686	MK 4 CN Rail / Jupiter	656-62
7102696	MK 4 CN Rail / Jupiter	656-63
7102828	MK 4 CN Rail / Jupiter	657-04
7102838	MK 4 CN Rail / Jupiter	657-00
7102848	MK 4 CN Rail / Jupiter	657-01
7102858	MK 4 CN Rail / Jupiter	657-02
7102858	MK 4 CN Rail / Jupiter	657-03
7102928	MK 4 CN Rail / Jupiter	657-05
7102938	MK 4 CN Rail / Jupiter	657-06
6101045	TS-30 CN Rail / Jupiter	619-61
7102405	MK 4 Boke Trading (CBG) / Jupiter	_____
7200277	MK 6 NS Rail / Jupiter	ET07020J6
7200287	MK 6 NS Rail / Jupiter	ET07021J6
7200338	MK 6 NS Rail / Jupiter	ET08001J6
7200348	MK 6 NS Rail / Jupiter	ET08002J6
7200358	MK 6 NS Rail / Jupiter	ET08003J6
7200399	MK 6 NS Rail / Jupiter	_____
7200409	MK 6 NS Rail / Jupiter	ET09009J6J

**ORDERING HYDRAULIC OIL LEVEL SENSORS - See Figure 1**

1. Contact the Service Department at Harsco Rail to order the replacement hydraulic oil level sensors (#0-3106003-0-01).

Harsco Rail Service Department  
 Columbia, SC Facility  
 (803) 822-4866  
 (803) 822-7546

2. **Important:** You MUST provide the Model Number and Serial Number of the machine that the hydraulic oil level sensors are being installed on in order to obtain the replacement sensors at no charge only for the machines listed on Page 2.

ITEM	PART NO	DESCRIPTION	QTY
1	0-3106003-0-01	Fluid Level Sensor . . . . .	2

**SAFETY INFORMATION**



- FOLLOW APPLICABLE RAILROAD LOCKOUT - TAGOUT PROCEDURE TO REMOVE MACHINE FROM ALL ENERGY SOURCES.
- WHEN REMOVING HYDRAULIC LINES, FITTINGS OR COMPONENTS:
  - ALWAYS WEAR APPROPRIATE PERSONAL SAFETY EQUIPMENT.
  - DEPRESSURIZE HYDRAULIC RESERVOIR AND HYDRAULIC SYSTEM. ESCAPING FLUID CAN WHIP HOSES AND EXPEL FITTINGS OR COMPONENTS AT HIGH VELOCITY.
  - NEVER REMOVE LINES, FITTINGS OR COMPONENTS WHEN HYDRAULIC FLUID IS HOT. HOT HYDRAULIC FLUID CAN CAUSE SERIOUS BODILY BURNS.
  - REMOVE HYDRAULIC LINES, FITTINGS OR COMPONENTS SLOWLY TO RELEASE ANY TRAPPED PRESSURE.
  - IF INJURY RESULTS FROM ESCAPING FLUID, SEE A DOCTOR AT ONCE; SERIOUS REACTION OR INFECTION MAY RESULT IF PROPER MEDICAL ATTENTION IS NOT OBTAINED IMMEDIATELY.

**FAILURE TO HEED THESE WARNINGS COULD RESULT IN SEVERE BODILY INJURY.**

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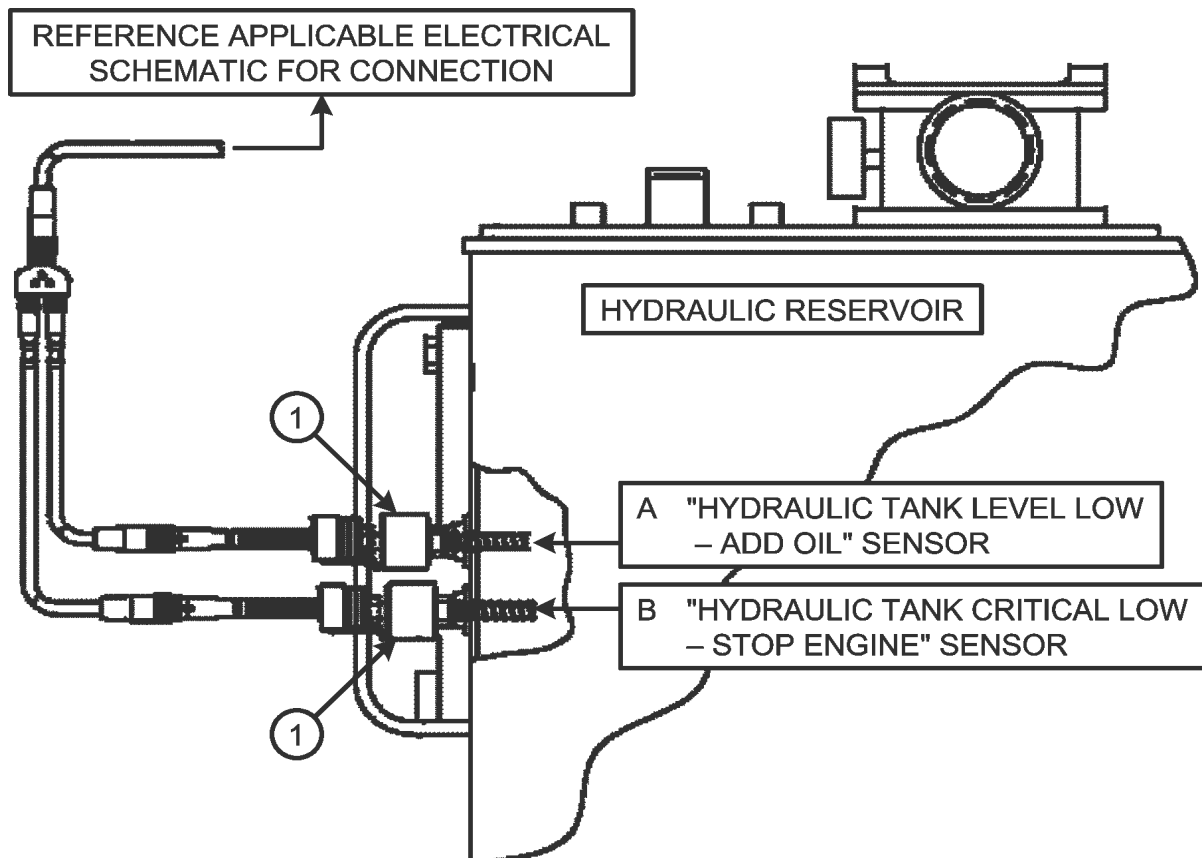
**INSTALLING HYDRAULIC OIL LEVEL SENSORS** - See Figure 1

1. Follow applicable Railroad Lockout - Tagout Procedure to remove the machine from all energy sources when performing maintenance, or making adjustments or repairs to the machine.
2. Allow the hydraulic oil to cool. Hot hydraulic oil can cause serious bodily burns. Then depressurize the hydraulic reservoir.
3. **Important:** BE SURE the Jupiter Control System and the master disconnect switch are shut OFF on the machine before installing the new hydraulic oil level sensors.
4. Locate the upper "Hydraulic Tank Level Low - Add Oil" sensor (A) and the lower "Hydraulic Tank Critical Low - Stop Engine" sensor (B) on the side of the hydraulic reservoir.
5. If desired, the new hydraulic oil level sensors can be tested before installation to verify the sensor operation. See Testing Hydraulic Oil Level Sensors before proceeding with the installation of the new sensors.
6. Drain enough hydraulic oil out of the reservoir so the oil level is below the lower "Hydraulic Tank Critical Low - Stop Engine" sensor (B). BE SURE to catch all hydraulic fluid in a leak-proof container.
7. Disconnect the electrical connector on the upper "Hydraulic Tank Level Low - Add Oil" sensor (A). Then remove the existing sensor (A) from the hydraulic reservoir. Install thread sealant on the threads of the new sensor (1) and install in the hydraulic reservoir. Tighten the new sensor securely. Re-connect the electrical connector to the new sensor (1).
8. Disconnect the electrical connector on the lower "Hydraulic Tank Critical Low - Stop Engine" sensor (B). Then remove the existing sensor (B) from the hydraulic reservoir. Install thread sealant on the threads of the new sensor (1) and install in the hydraulic reservoir. Tighten the new sensor securely. Re-connect the electrical connector to the new sensor (1).
9. Turn on the Master Switch and then boot-up the Jupiter Control System on the machine.
  - a. Verify the "Hydraulic Tank Level Low - Add Oil" warning is displayed on the Jupiter monitor. The alarm will beep every for 3/4 second and repeat every hour.
  - b. Verify the "Hydraulic Tank Critical Low - Stop Engine" warning is displayed on the Jupiter monitor. The alarm will beep for 2 seconds and repeat every two minutes.

**INSTALLING HYDRAULIC OIL LEVEL SENSORS** - See Figure 1

10. Shut off the Jupiter Control System. Fill the hydraulic reservoir with clean hydraulic oil so only the lower "Hydraulic Tank Critical Low - Stop Engine" sensor (B) is submerged in oil. Then boot-up the Jupiter Control System.
  - a. Verify the "Hydraulic Tank Critical Low - Stop Engine" warning is not displayed on the Jupiter monitor.
  - b. Verify the "Hydraulic Tank Level Low - Add Oil" warning is displayed on the Jupiter monitor.
11. Shut off the Jupiter Control System. Fill the hydraulic reservoir with clean hydraulic oil so the upper "Hydraulic Tank Level Low - Add Oil" sensor (A) is submerged in oil. Then boot-up the Jupiter Control System.
  - a. Verify the "Hydraulic Tank Level Low - Add Oil" warning is not displayed on the Jupiter monitor.
12. After testing both sensors for proper operation, fill the hydraulic reservoir with clean hydraulic oil to the proper operating level.

FIGURE 1  
HYDRAULIC OIL LEVEL SENSORS



**TESTING HYDRAULIC OIL LEVEL SENSORS - See Figure 1**

1. The sensor can be tested using the following procedure provided the sensor is loose and not installed in the hydraulic reservoir.
2. The sensors (A - B) used on the machines are normally closed and when submerged in hydraulic oil, the sensor changes its state to normally open. This breaks the electrical signal and displays a Warning on the Jupiter monitor.
3. Fill a leak-proof container with enough hydraulic oil so the probe of the sensor can be completely submersed in the hydraulic oil.
4. Disconnect the electrical connector (A - B) from the existing sensor in the hydraulic reservoir. Then connect the electrical connector to the sensor that is to be tested.
5. Submerge the probe of the sensor that is to be tested into the hydraulic oil.
6. Turn on the Master Switch and then boot-up the Jupiter Control System on the machine.
7. Remove the probe from the hydraulic oil and within a short period of time an error message should be displayed on the Jupiter monitor.
  - a. If the upper electrical connector (A) was used for testing, then the "Hydraulic Tank Level Low - Add Oil" warning should be displayed.
  - b. If the lower electrical connector (B) was used for testing, then the "Hydraulic Tank Critical Low - Stop Engine" warning should be displayed.
8. After the test is completed, shut down the Jupiter Control System and then shut off the Master Switch on the machine.
9. Re-connect the electrical connector to the existing sensor in the hydraulic reservoir that it was disconnected from.
10. Repeat procedure to test a different sensor.

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415 North Main Street  
Fairmont, MN  
56031-1837  
Tel: (507) 235-3361  
Fax: (507) 235-7370

2401 Edmund Road, Box 20  
Cayce-West Columbia, SC  
29171-0020  
Tel: (803) 822-9160  
Fax: (803) 822-7471

200 South Jackson Road  
Ludington, MI  
49431  
Tel: (231) 843-3431  
Fax: (231) 843-1644

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