



## Technical Information Bulletin Reference: TIB 17-05

Date: March 2, 2017

**To:** JLG Service Managers and Service Providers

**Models Affected:** JLG Telehandlers equipped with ZF TSC-model transmissions

**Subject:** Proper method for checking the transmission fluid.

**Description of Issue:**

JLG Telehandler models equipped with the ZF TSC transmission are also equipped with a thermal bypass valve in the cooling circuit to facilitate faster warm-up of the transmission. When the transmission cooling circuit is below operating temperature this valve may be fully or partially closed affecting the amount of fluid in the transmission. It is necessary to check the fluid level with the valve fully open to ensure the proper amount of fluid is present in the system. Improper fluid level can contribute to premature failure of the transmission.

**Resolution:**

### TRANSMISSION FLUID LEVEL CHECK PROCEDURE

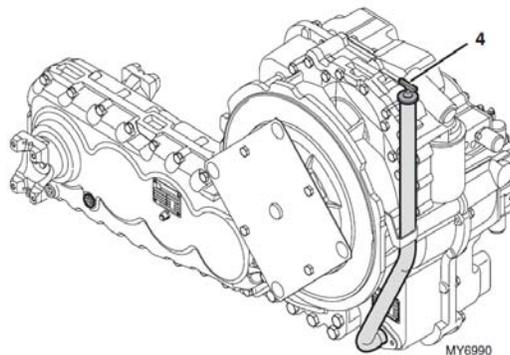


Figure 1

**CAUTION:**            **USE ALL APPLICABLE SAFETY PRECAUTIONS WHILE WORKING ON, UNDER OR AROUND ANY MACHINERY.**

**Note:** *transmission oil level must always be checked with engine at idle and transmission oil at operating temperature (minimum 80°C/176°F).*

1. Start machine on a firm, level surface, level machine, fully retract boom, lower boom, place transmission in (N) NEUTRAL, engage park brake and run engine at idle.
2. Open engine cover.
3. Refer to Fig #1, remove the transmission dipstick (4) and check the oil level. The cold oil level after 2-3 minutes of idle must be above the HOT MIN line on the dipstick.

**Note:** *Depending on the amount of fluid remaining in the transmission oil cooler, the oil level may read substantially above the HOT oil top level mark at this time. The correct oil level can only be obtained after the transmission fluid is at operating temperature.*

4. If the oil is low, add oil as required to obtain a reading above the HOT MIN line.
5. Replace the transmission dipstick.
6. Close and secure the engine cover.
7. Ensure that the front of the machine is clear of persons or obstacles.
8. Apply the service brake and disengage the park brake. Place the transmission in (F) FORWARD at 4th gear.
9. Stall the transmission against service brake at full throttle a maximum of 60 seconds. If transmission temperature warning light illuminates, go to step 12.
10. Allow the engine to run at idle for 30 seconds.
11. Repeat steps 9 and 10 three more times, or until the transmission temperature warning light illuminates.
12. Place the transmission in (N) NEUTRAL and apply the park brake. Allow the engine to run at idle for 30 seconds.
13. Open the engine cover.
14. Refer to Figure #2, verify that the upper tank (5) of transmission oil cooler (6) is warm to determine that the bypass valve (7) has closed and oil is circulating through the cooler. If the top of the transmission oil cooler is not warm, repeat steps 6 thru 10.

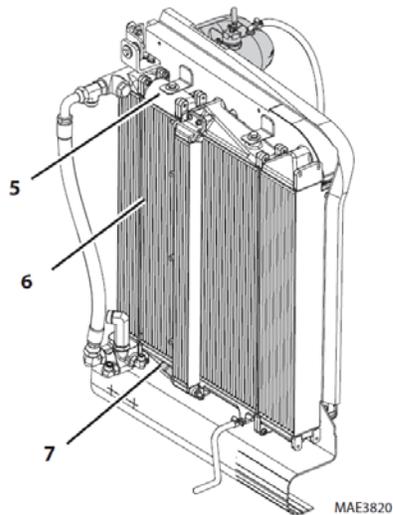


Figure 2

15. Remove the transmission dipstick (4) and check the oil level. The oil level should be in the HOT zone.

16. Add oil as required.

17. Replace the transmission dipstick.

18. Close and secure the engine cover.

19. Shut engine OFF.

***Failure to use ZF approved fluids may void transmission warranty coverage. ZF and JLG recommend Mobilfluid 424 or Mobilfluid LT. Please refer to ZF TE-ML-03 for additional fluids.***

Should you have any questions or require additional information, please contact your Regional Service Manager or the JLG Customer Support Team.

JLG Customer Support  
North America @ 1-877-554-5438.  
Brazil @ +55 19 3295 0407.