



An Oshkosh Truck Corporation Company

# SERVICE LETTER

Reference: CAT0892

October 3, 2008

## **AFTER FAILURE**

### **PRODUCT SUPPORT PROGRAM FOR REPAIR OF LEAKING TRANSFER BOXES ON CERTAIN MODEL TL642, TL943, TL1055 AND TL1255 TELEHANDLERS**

**ATTENTION:** *This program can be administered only after this problem occurs. The decision to apply this program must be made by the Dealer prior to the referenced termination date. Do not perform the work outlined in this Service Letter after the termination date without first contacting your product support representative.*

#### **PROGRAM TERMINATION DATE:**

October 1, 2009

#### **PROBLEM:**

Certain Model TL642, TL943, TL1055 and TL1255 Telehandlers could develop leaks in the transfer box housing. These leaks may lead to transfer box failure resulting from insufficient lubrication of the internal components. Analysis indicates that the potential for leaks may be higher for certain transfer boxes that contain incorrectly produced bolts which do not allow the housing torque (and clamp load) to be maintained. After a leaking transfer box is detected, the leak can be repaired in accordance with the enclosed instructions.

#### **AFFECTED PRODUCTS:**

This issue affects certain CAT Telehandlers manufactured by JLG Industries, Inc. The affected serial number range is as follows:

<b>Model</b>	<b>Affected Serial Number Range</b>
TL642	TBK00100 to TBK01021
TL943	TBL00100 to TBL01400
TL1055	TBM00100 to TBM00968
TL1255	TBN00100 to TBN00492

## **PARTS NEEDED:**

After a leak is detected at the transfer box, the following parts must be ordered:

**IMPORTANT – This kit is not available for Dealer stock. A kit shall only be ordered after a leaking transfer box is discovered.**

Models	Qty	Description	Part Number
TL642, TL943, TL1055, TL1255	1	Transfer Box Repair Kit	337-9293

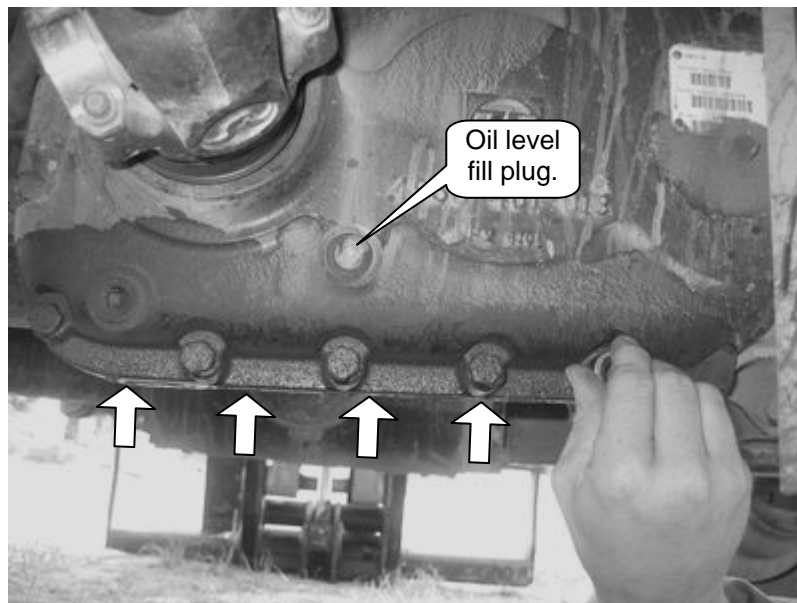
## **ACTION REQUIRED:**

At the next service interval, perform the following:

**IMPORTANT: Use all applicable safety precautions while working on machine.**

1. Prepare the machine for servicing. Park the machine on a firm, level surface with the boom lowered and fully retracted. Place the travel select lever in the (N) NEUTRAL position and engage parking brake. Shut the engine OFF. Chock a front or rear wheel.
2. Inspect bottom portion of the transfer box for presence of oil leakage as shown below. In addition, check the accessible bolts of transfer box with your fingers for looseness.

**IMPORTANT – Use only your fingers to check for looseness of the bolts. Do not use a wrench or any tools for this bolt check.**



3. If an oil leak or a loose bolt is discovered during this inspection, repair the transfer box in accordance with the enclosed Transfer Box Update Instructions.
4. If there is no oil leakage or loose bolts, check the oil level in the transfer box. The oil supply of the transfer box is independent of the transmission. Ensure the machine is on a level surface and remove the oil level fill plug (reference picture above). The oil level should be level with the bottom of the plug opening. Add proper oil as specified in the Operation and Maintenance Manual. Install the plug and torque to 25 ft-lb.

**SERVICE CLAIM ALLOWANCES:**

To receive reimbursement, file a service claim through the normal CAT service claims process. When filing this claim through the CAT system, please enter the transmission serial number and the transfer box serial number in the “Story” section of the warranty claim form. Use the following codes in the appropriate input fields:

<b>Input Field</b>	<b>After Failure Codes</b>
Part Causing Failure	CAT0892
Group Number	3159
Warranty Claim Description	96
SIMS Description Code	Z

***IMPORTANT – Both the transmission serial number and the transfer box serial number will be required on each claim prior to approval. Put these serial numbers in the “Story” section of the warranty claim form.***

The reimbursement terms of this program are as follows:

<b>JLG</b>		<b>Dealer Suggested</b>		<b>Customer Suggested</b>	
Parts %	Labor Hrs %	Parts %	Labor Hrs %	Parts %	Labor Hrs %
100%	100%	0%	0%	0%	0%
Labor Time - up to 6.0 hours for transfer box removal, sealing, and installation.					

**PARTS DISPOSITION:**

Handle the parts in accordance with Warranty Bulletin No. 7.11.

Enclosures:

Transfer Box Update Instructions

The following instructions and illustrations apply to the four models listed above unless otherwise noted.

## CAUTION

Use all applicable Safety precautions while working on, around or under any machinery.

### Parts Required

1. Transfer Case Update Kit - 337-9293

### Transfer Case Removal

1. Park the machine on a firm, level surface with the boom lowered and fully retracted. Place the travel select lever in the (N) NEUTRAL position and engage the parking brake. Shut the engine OFF.
2. Open the engine cover. Allow the engine and all system fluids to cool.
3. Disconnect the battery negative (-) cable from the battery negative (-) terminal.
4. Chock all wheels.

## WARNING

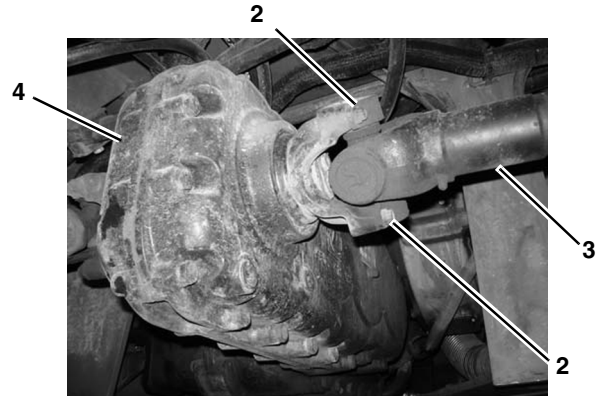
Chock wheels to prevent accidental movement of machine.

5. Remove the skid plate from under the engine compartment.



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6. Remove the corner of the casting rib on the engine bell housing to allow for the removal of the transfer case. Grind approximately 5/16" at a 45° angle of the casting rib (1) for clearance.

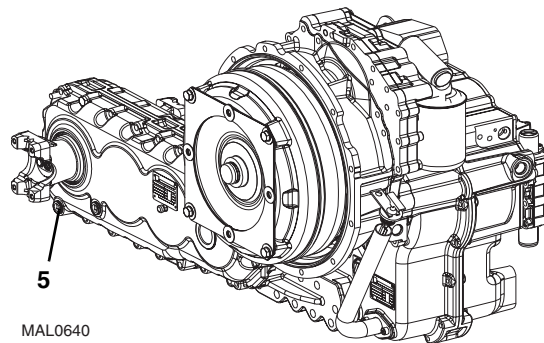


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7. Remove the four capscrews and two straps (2) securing the bearing cross of the rear drive shaft (3) to the transfer case (4).

**Note:** The eight capscrews removed from the drive shafts CANNOT be reused and must be replaced.

8. Secure the drive shaft (3) away from the transfer case.
9. Repeat steps 6 & 7 for the front drive shaft.



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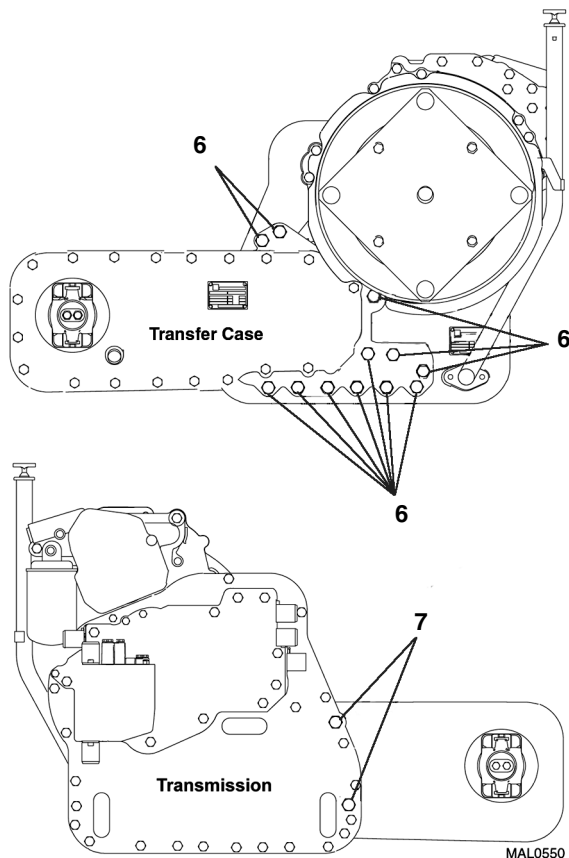
10. Place a suitable container under the transfer case.
11. Remove the drain plug (5) from the transfer case and allow transfer case to drain.
12. Install the transfer case drain plug and torque to 22 lb-ft (30 Nm).

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**JLG**

**Note:** A combination of an impact gun, breaker bar, extension and swivel adaptor may be needed to access the transfer case capscrews.



13. Remove twelve of the fourteen capscrews (6) securing the transfer case to the transmission.

## **CAUTION**

Leave two easily accessible capscrews attached. Support the transfer case with an appropriate hydraulic jack BEFORE removing the remaining two capscrews.

14. Support the transfer case with an appropriate hydraulic jack and remove the remaining two capscrews (7) holding the transfer case to the transmission.
15. Place a suitable container under the transmission/transfer case.

## **WARNING**

Ensure the transfer case is properly secured and balanced on the appropriate hydraulic jack prior to removing from the transmission.

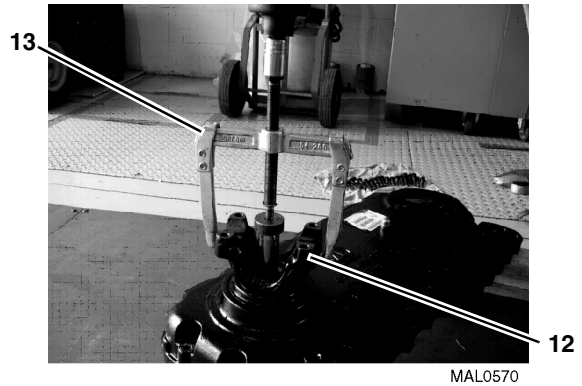
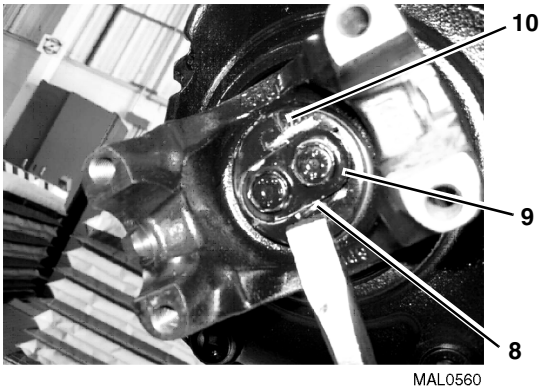
16. Using a pry bar, separate the transfer case from the transmission allowing the transmission hydraulic oil to drain from between them (approximately 2-3 quarts).

## **NOTICE**

The transfer case is held in alignment with the transmission by two locator pins mounted in the transfer case. There is also a splined drive shaft connecting the transfer case to the transmission. Ensure that the locator pins and splined shaft are clear of the transfer case before lowering.

17. With the help of an assistant, carefully pry the transfer case away from the transmission. Lower the transfer case and place on suitable stand or bench.
18. Transfer any transmission hydraulic oil into a suitable, covered container, and label the container as "Used Oil". Dispose of used oil at an approved recycling facility.
19. Wipe up any transmission oil in, on, near and around the machine.

**Transfer Case Leak Repair**

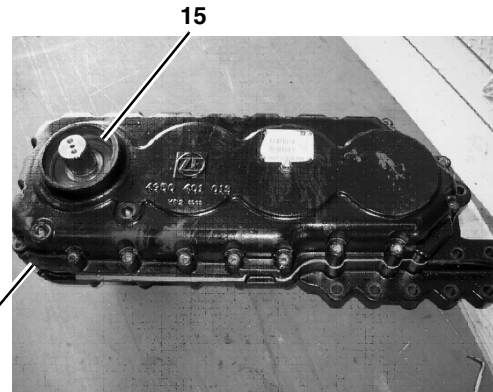
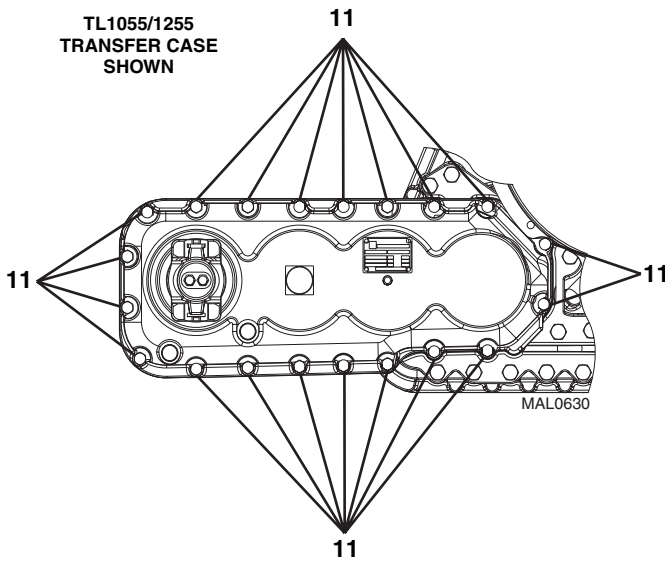


1. With the transfer case on a suitable stand or bench, remove the tab washer (8), two cap screws (9) and the washer (10) from the yoke (above the drain plug).

3. Remove the yoke (12) from the splined shaft with a two leg puller (13).

**Note:** Only the yoke from the same side as the previously removed cap screws will need to be removed for this procedure.

TL1055/1255  
TRANSFER CASE  
SHOWN



2. **TL642 & TL943** - Loosen and remove the sixteen cap screws (11) around the transfer case halves.  
**TL 1055 & TL1255** - Loosen and remove the twenty cap screws (11) around the transfer case halves.

**Note:** Use a brass drift or punch to begin separating the case halves at the splined shaft end of the transfer case (14).

**Note:** Pay close attention not to damage the shaft seal (15) while separating the case halves.

**Note:** The tab washer (8) and cap screws (11) removed from the transfer case CANNOT be reused and must be replaced.



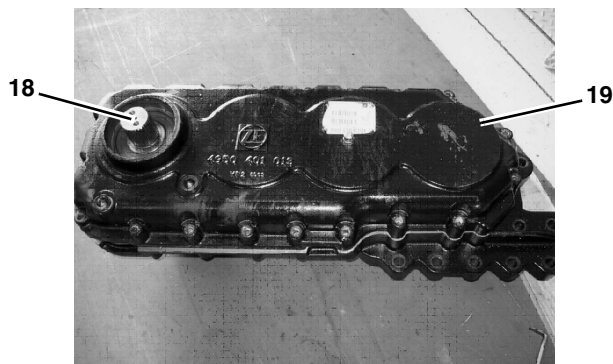
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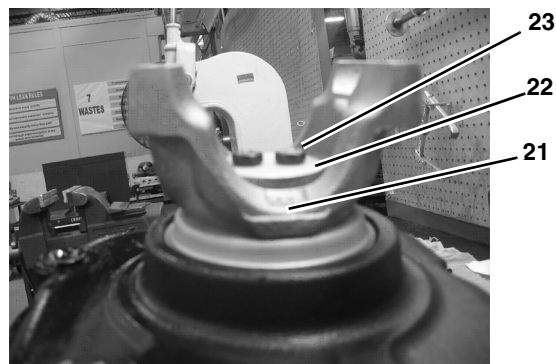
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4. Using a pry bar, carefully separate the two transfer case halves (16). A second pry bar may be necessary to help separate the two halves.
5. Use a scraper or razor blade to remove any gasket compound from the sealing surfaces of each transfer case half (16). Clean the sealing surfaces with mineral spirits or alcohol. Clean the bolt holes to remove any original Loctite® 242.
6. Apply Loctite® 574 to the sealing surface on the gear side of the transfer case (17).

8. **TL642 & TL943** - Apply Loctite® 242 to the sixteen new capscrews and install. Note the location of the one shorter capscrew (20). Torque all cap screws to 34 lb-ft (46Nm).  
**TL1055 & TL1255** - Apply Loctite® 242 to the twenty new capscrews and install. Note the location of the one shorter capscrew (20). Torque all cap screws to 34 lb-ft (46Nm).



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7. Lubricate the base of the splined shaft (18) with hydraulic oil and install the front transfer case cover (19) being careful not to damage the shaft seal.

9. Install the yoke (21) on to the splined shaft. It may be necessary to use a heat gun or oven to heat the splined portion of the yoke to allow for easier installation over the splined shaft. After the yoke is installed, install the washer (22) and the two cap screws (23). Torque the cap screws to 25 lb-ft (34Nm).



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10. Place the new tab washer (24) over the yoke mounting bolts. Using the installation tool provided, secure the tab washer over the mounting bolts with a steel or brass hammer.

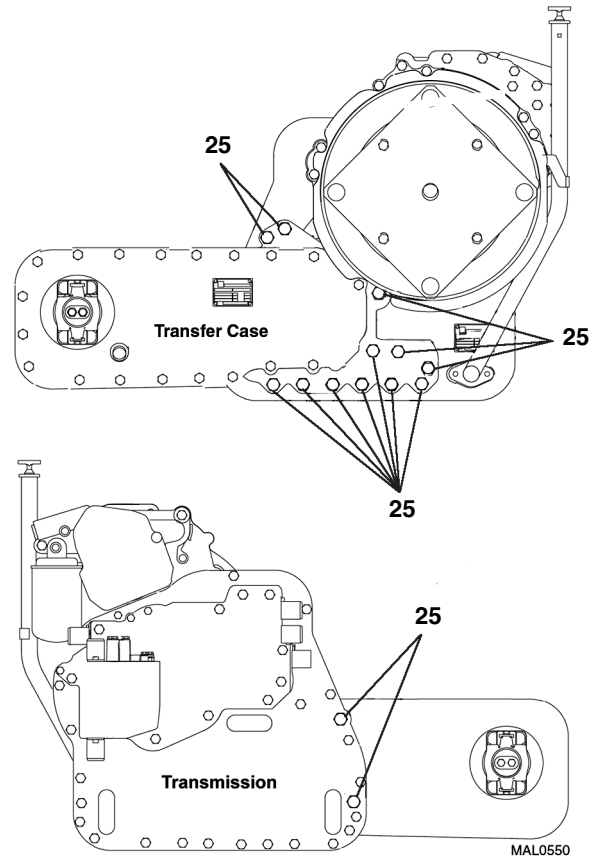
### Transfer Case Installation

1. Secure the transfer case on the hydraulic jack.

## CAUTION

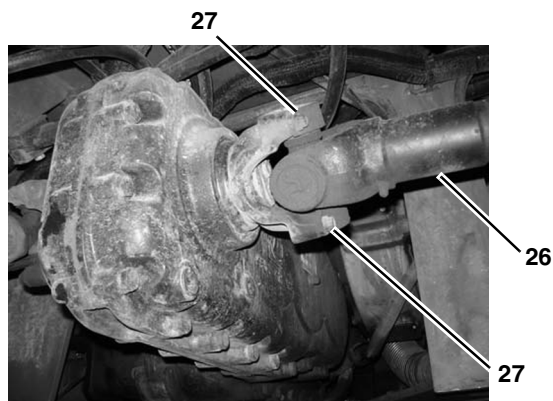
Verify that the splined shaft and the locator pins are aligned as the transfer case is being installed.

2. Install the transfer case to the transmission aligning the splined shaft and locator pins.

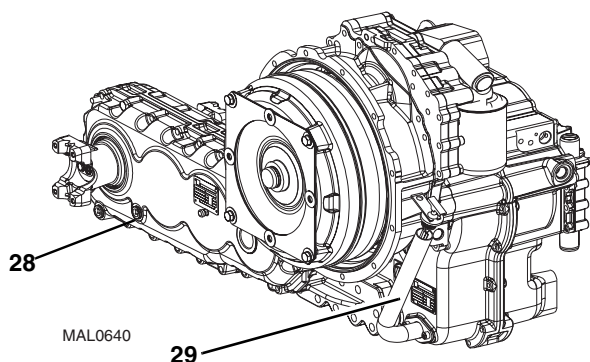


3. Apply Loctite® 242 to the fourteen capscrews.
4. Install and tighten the capscrews (25) in random order until the transfer case is tight against the transmission.
5. Lower and remove the hydraulic jack.
6. Torque each capscrew to 135 lb-ft (183 Nm).





7. Install the previously removed drive shaft (26).
8. Install the four new capscrews and two straps (27) securing the bearing crosses to the transfer case. Torque each capscrew to 55-60 lb-ft (75-81 Nm).
9. Repeat steps 7 & 8 on the second drive shaft.
10. Install the skid plate under the engine compartment.
11. Connect the battery negative (-) cable to the battery negative (-) terminal.



12. Remove fill plug (28) and fill transfer case with 1.5 Qts. (1,4 liters) of CAT TDTO, CAT TDTO-TMS or CAT Artic TDTO SYN Commercial TO-4.
13. Fill transmission to "COLD MIN" mark on dipstick (29) with CAT TDTO, CAT TDTO-TMS or CAT Artic TDTO SYN Commercial TO-4. **DO NOT** overfill.
14. Wipe up any hydraulic oil in, on, near and around the machine.
15. Place the travel select lever in the (N) NEUTRAL position and engage the parking brake. Start the machine. With the engine running at low idle, add oil to the "COLD MIN" mark on the dipstick.
16. With the machine in a secure position, warm the transmission oil to the proper operating temperature, 180-200° F (82-93° C) by shifting the transmission through all gears with the service brake applied at mid-idle.

17. Place the travel select lever in the (N) NEUTRAL position and check the oil level again, verifying that the oil level is within the "HOT" level on the dipstick.
18. Add oil if needed. Insert the dipstick and tighten by turning it clockwise.
19. Shut the engine OFF.
20. Inspect the transmission/transfer case for any signs of leakage.
21. Unchock all wheels.
22. Return machine to service.