TRUCK, SURVEILLANCE RECONNAISSANCE VEHICLE (SRV-SF), LIGHTWEIGHT, FFR, W/WINCH, MC2, LAND ROVER 110, 4X4, ISUZU DIESEL ENGINE

LANDROVER 110 4X4 TRANSFER CASE DIFFERENTIAL ASSEMBLY OUTPUT GEAR RETAINING BOLTS

MISCELLANEOUS INSTRUCTION

This instruction is authorised for use by command of the Chief of Army. It provides direction, mandatory controls and procedures for the operation, maintenance and support of equipment. Personnel are to carry out any action required by this instruction in accordance with EMEI General A 001.

GENERAL

Introduction

1. It has been found on vehicles operating at maximum capability during operations that the output gear retaining bolts securing the transfer case differential assembly to the low ratio output gear have worked loose, causing extensive damage to the speedometer housing. This procedure authorises the method to correctly secure the retaining bolts in place as a Light Grade Repair task.

Application

2. This procedure is to be applied to all Land Rover 110 4X4 SRV-SF deployed on operations at an interval determined by the in theatre TIS or SMM.

Action Required

3. Actions detailed in this instruction are to be performed by technical maintenance organisations authorised to perform Light Grade Repairs. This procedure is to be conducted only by a qualified ECN 229 Vehicle Mechanic, or civilian equivalent.

Estimated Work Hours

4. For initial planning purposes only it is estimated that it will require two work hours to perform this repair.

Stores Required

5. The required stores are shown in Table 2 and should be obtained through normal supply channels.

Associated Publications

6. Reference may be necessary to the latest issue of the following documents:

- **a.** EMEI Vehicle G 104-1 Truck, Utility, Lightweight, MC2 – Land Rover 110 – Heavy Grade Repair;
- **b.** EMEI Vehicle I 001 Inspection of ‘A’ ‘B’ and ‘C’ Vehicles – General Instruction;
- **c.** Technical Regulation of Army Materiel Manual (TRAMM);
- **d.** TRAMM, Volume 3, Section 2, Chapter 2, Fleet Engineering Change Management Process;
- **e.** Defence Supply Chain Manual (DSCM);
- **f.** DSCM, Volume 4, Section 3 – Supply Management Processes, Stores Accounting General; and
- **g.** DSCM, Volume 6 – Manage Repairable Items.

7. The special tool required to perform this task is detailed in Table 1.

Table 1 Special Tool

Serial	Part No	NSN	Item Name	Intended Use
1	18G1205A	5120-66-128-4300	Wrench, Adjustable	Adjustable flange holding wrench

DETAIL

Disassembly

8. Disassemble the differential assembly as follows:

a. Clean the transmission and surrounding underbody area with a recommended cleaning agent and allow it to dry.

WARNING

Do not work on the vehicle without the use of an axle stand beneath the axle. Place the axle stand as close to the raised wheel as possible. This procedure is required for all repairs and maintenance activities involving positioning of body parts in potential crush zones of the vehicle. Failure to comply may result in serious injury or death.

b. Chock the wheels and engage the differential lock.

c. Raise and support the vehicle on axle stands.

d. Remove the split pin and clevis pin securing the park brake cable to the pivot at the transmission end of the cable.

e. Loosen the locknuts.

f. Remove the end-nut from the cable and withdraw the cable from the bracket.

g. Remove the locknut and retaining clip securing the speedometer cable to the transmission.

h. Remove the speedometer cable from the transmission.

i. Remove and discard the eight locknuts securing the rear propeller shaft flanges to the rear differential and the rear output flange.

j. Remove the propeller shaft from the vehicle.

k. Remove the transfer case drain plug and drain the oil into a suitable container.

l. Remove the transmission brake drum retaining screws and remove the brake drum.

m. Using special tool 18G1205A (Table 1) secure the rear output flange and remove the locknut.

n. Remove the flange, washer and felt seal.

o. Disconnect the park brake draw link clevis.

p. Remove the four bolts securing the back plate to the speedometer housing.

q. Remove the back plate.

r. Remove and discard the eight bolts and lock washers retaining the speedometer drive housing to the transfer case.

s. Remove the housing complete with the output shaft to gain access to the rear of the third differential assembly and discard the gasket.

t. Remove the oil shield and oil seal and discard them.

u. Remove each of the eight output gear retaining bolts.

v. Remove and discard each spring washer (Figure 1).

Assembly

9. Assemble the differential assembly as follows (Table 2):

a. Clean the output gear retaining bolts and fit a spring washer (Item 1) to each bolt.

b. Apply a 360° bead of Loctite 262 to the leading threads of each bolt ensuring that the threadlocker is not applied to the first thread.

c. Refit the output gear retaining bolts and torque them to 60 - 64 N.m (44 - 47 lbf.ft).

d. Install the output shaft and speedometer housing with a new gasket (Item 9).

e. Fit eight new bolts (Item 11) with new lock washers (Item 12) and torque them to 30 N.m (22 lbf.ft).

CAUTION

The oil seal must be fully inserted otherwise the chamfer on the output flange will foul the seal and cause oil leakage.

f. Install a new rear oil seal (Item 2), open face first, until the seal plain face just clears the chamfer on the seal housing bore.

g. Install a new oil shield (Item 3) ensuring that a close fit on the output shaft cover is obtained.

h. After applying a smear of sealing compound (Loctite 515) fit the handbrake backing plate assembly and oil catcher to the speedometer housing using the four original mounting bolts.

NOTE

Ensure that the oil drain hole is not blocked by the sealant.

i. Fit the coupling flange felt seal (Item 5), recessed washer (Item 13) and new locknut (item 4).

j. Torque the locknut to 146 - 180 N.m (108 - 132 lbf.ft).

k. Clean and inspect the hand brake linings (replace as necessary).

l. Connect the park brake draw link clevis and secure it with a new split pin (Item 10).

m. Install the brake drum and secure it with the two screws.

n. Insert the speedometer drive spindle, new O ring (Item 6) and housing into the speedometer drive housing and secure it with a new split pin (Item 10).

o. Position the rear propeller shaft between the rear differential and the transmission rear output flange with the propeller shaft sliding member toward the rear of the vehicle.

p. Fit eight new locknuts (Items 7 and 8) and torque them to 41 - 52 N.m (30 - 38 lbf.ft).

q. Fill the transfer case to the correct level with clean SAE Grade 40 (OMD-115) oil.

r. Check for oil leaks and road test the vehicle in accordance with Para 6.a.

Recording Action

10. Record compliance with this instruction in Part 4 of the vehicle log book (GM 120).

Table 2 Stores List

Item	NSN	Manufacturer Part No	Description	Qty Per Equipment
1	5310-99-513-3457	WM110001L	Washer, Lock, Spring, Steel	8
2	5330-99-823-6057	622240	Seal plain rubber	1
3	5330-99-823-8013	R571970	Retainer packing steel	1
4	5310-99-122-5504	NY120041	Nut, Self-Locking, Hexagon	1
5	2520-99-822-1854	R594029	Seal, Oil Felt	1
6	5330-99-810-5080	R571665	O ring	1
7	5310-99-941-9139	NZ606041L	Nut, Self-Locking, Hexagon	4
8	5310-99-943-4299	NY606041L	Nut, Self-Locking, Hexagon	4
9	5330-66-156-6353	BYG3481	Gasket, Speedometer Case	1
10	5315-99-138-2203	PS104127	Pin, Cotter, 2mm dia x 12 mm lg	2

Table 1 Stores List (Continued)

Item	NSN	Part No	Description	Qty Per Equipment
11	5306-27-037-8985	FS108251	Bolt, Machine	8
12	5310-99-138-9227	WM108001L	Washer, Lock, Spring, Steel	8
13	5310-99-138-4883	R571468	Washer, Recessed	1

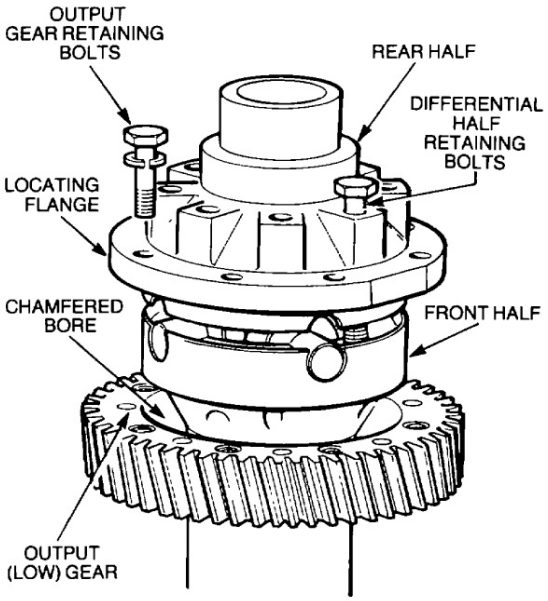

Figure 1 Differential Assembly

END

Distribution List: **VEH G 16.9 – Code 2** (Maint Level)
(Sponsor: LV SPO, Lt B Vehicles)