

TRUCK, SURVEILLANCE, LIGHTWEIGHT, WINCH, MC2 – LANDROVER 110 4X4
FITTING INSTRUCTIONS FOR NEW WIRING LOOM TO ARB CKMA12 AIR COMPRESSOR

MODIFICATION 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.

INTRODUCTION

1. This instruction details the installation of an upgraded higher current capacity wiring loom for the 12 V air compressor (ARB CKMA12). The upgraded wiring loom is constructed from 3 mm and 5 mm core diameter wire replacing an incorrectly produced wiring of 3 mm and 3 mm core diameter wire. This modification is only required for vehicles modified to fit the new ARB CKMA12 compressor carried out under EMEI Vehicle G 137-4 with only number 35 defaced on the modification plate. Vehicles modified under EMEI Vehicle G 137-4 with both numbers 35 and 33 defaced on the modification plate already have this upgraded wiring loom installed.
2. **Associated Publications.** Reference may be necessary to the latest issue of the following documents:
 - a. Technical Regulation of Army Materiel Manual – Land (TRAMM-L) (available from DTR-A website <http://intranet.defence.gov.au/armyweb/Sites/DTRA>);
 - b. TRAMM, Volume 3, Section 2, Chapter 2 – Fleet Engineering Change Management Process;
 - c. Defence Supply Chain Manual (DSCM), Volume 4, Section 3 – Supply Management Processes, Stores Accounting General (DSCM website <http://dknln009.car.defence.gov.au/dscm/index.htm>);
 - d. DSCM, Volume 6 – Manage Repairable Items;
 - e. EMEI Vehicle G 13 Decade – Truck, Surveillance, Lightweight, Winch, MC2 – Landrover 110 4X4; and
 - f. [Repair Parts Scale 02207](#) – Truck, Surveillance, Lightweight, Winch, MC2 – Landrover 110 4X4.
3. **Authority.** ECO CGSVSPO 15/11 is the authority to carry out this modification.

GENERAL

4. **Items Affected.** This modification will alter the air compressor electrical wiring loom including fuses and switches.
5. **Priority – Group 1.** All applicable equipment is to be modified with minimum delay.
6. **Action Required.** Actions detailed in this instruction are to be performed by technical maintenance organisations authorised to carry out Light, Medium or Heavy Grade Repairs by the following:
 - a. Vehicle Mechanic ECN 229,
 - b. Technician Electrical ECN 418, or
 - c. civilian equivalent.

NOTE

On receipt of this instruction, enter all relevant information other than date completed in the modifications section of the GM 120 – Record Book for Service Equipment.

7. **Task Recording.** The conduct of this modification is to be recorded in an MILIS work order using MMM standard job number 000795.
8. **Estimated Work Hours.** For initial planning purposes only, it is estimated that this modification will take 1 work hour to perform.

- 9. **Stores Required.** The stores required are wiring loom NSN 6150-66-156-8123.
- 10. **Items to be Removed.** The existing fitted wiring loom to ARB CKMA12 air compressor (part number DE253230001) is to be removed and disposed of in accordance with paragraph 2.c.

Table 1 Kit Contents

- 11. **Drawings Required.** A CKMA12 air compressor wiring diagram is shown in Figure 1.

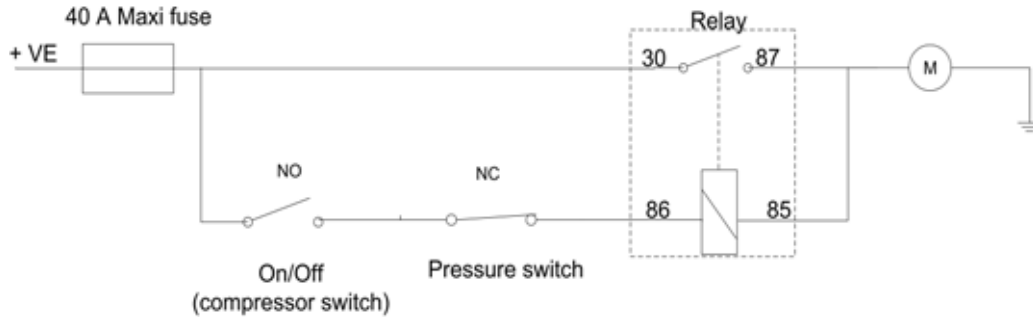


Figure 1 CKMA12 Air Compressor Wiring Diagram.

- 12. **Before Commencing.** Disconnect vehicle battery.

Wiring Loom Removal

- 13. Gain access to the dash instrument panel as follows:
 - a. Disconnect the speedometer cable at the transponder as shown in Figure 2.

Speedometer
Cable



Figure 2 Speedometer Cable

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- b.** Partially remove the dash instrument panel by removing the four dash screws, two either side of the dash as shown in Figure 3.



Figure 3 Partially Removed Dash

- c.** Partially remove the right-hand side switch panel as shown in Figure 4.

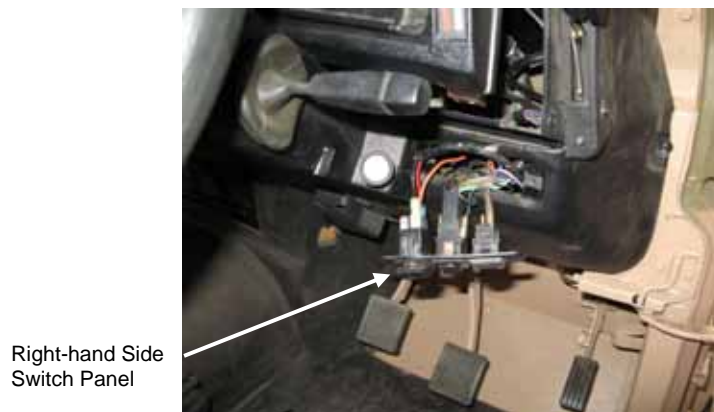


Figure 4 Right-hand Side Switch Panel

- 14.** Remove the old wiring loom as follows:

- a.** The compressor wiring loom is routed the engine bay as shown in Figure 5.



Figure 5 Engine Bay Wiring Loom

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- b. Remove the red power terminal to the starter motor as shown in Figure 6.



Figure 6 Starter Motor Terminal

- c. **Fuse Holder.** Remove the 40-Amp Maxi fuse holder from the passenger side wheel well shown in Figure 7.

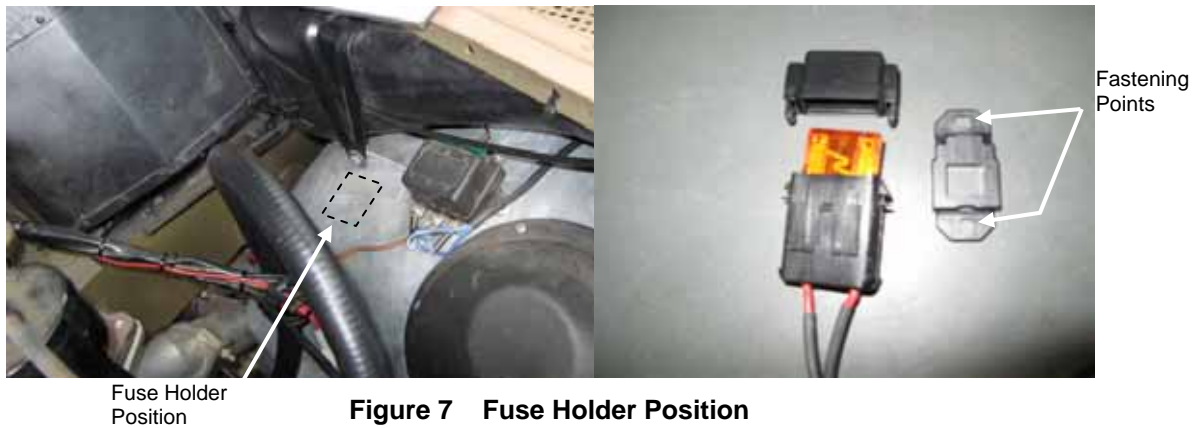


Figure 7 Fuse Holder Position

- d. **Earth Connector.** Trace the loom back to the earth connector and remove the earth wire at the position on the fire wall shown in Figure 8.



Figure 8 Earth Termination

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- e. **Relay.** Remove the relay from the driver's side wheel well as shown in Figure 9.

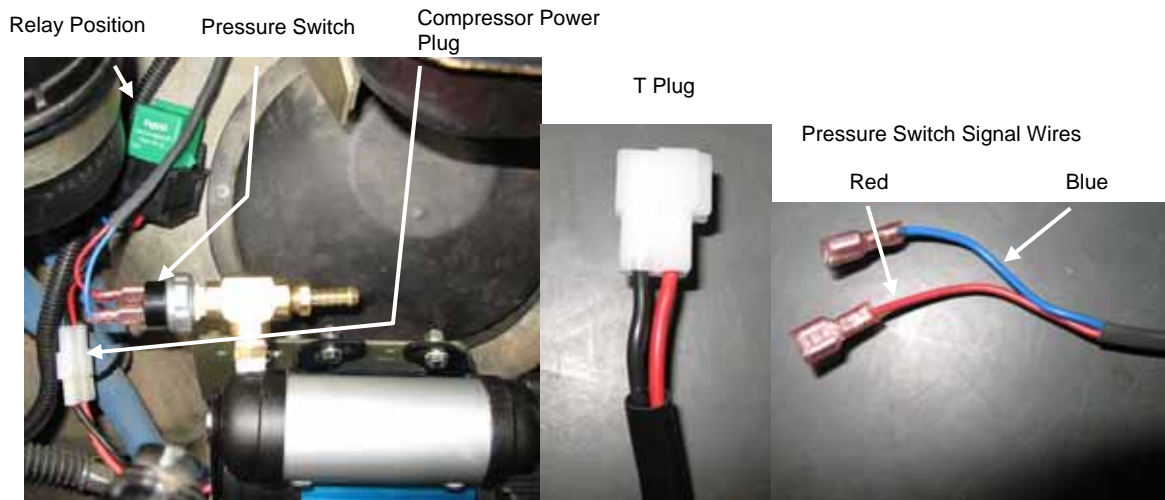


Figure 9 Compressor Electrical Connections

- f. **T Plug.** Detach the T plug (male) from the compressor and the red & blue signal wires with quick connects from the pressure switch as shown in Figure 9.
- g. **Compressor Dash Switch.** Disconnect the On/Off signal wires (red and purple/white) with quick connects (Figure 10) from the dash switch and remove from the firewall driver's side grommet (Figure 8). The On/Off signal wires are routed underneath the cross bar as shown in Figure 11.

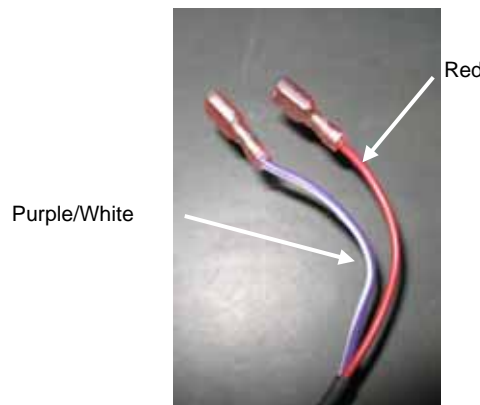


Figure 10 On/Off Signal Wires



Figure 11 Dash Wiring

- 15. Remove the old wiring loom from the vehicle.

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Wiring Loom Installation

16. Install the new wiring loom as follows:
- a. Route the compressor wiring loom in the engine bay as shown in Figure 12.



Figure 12 Engine Bay Wiring Loom

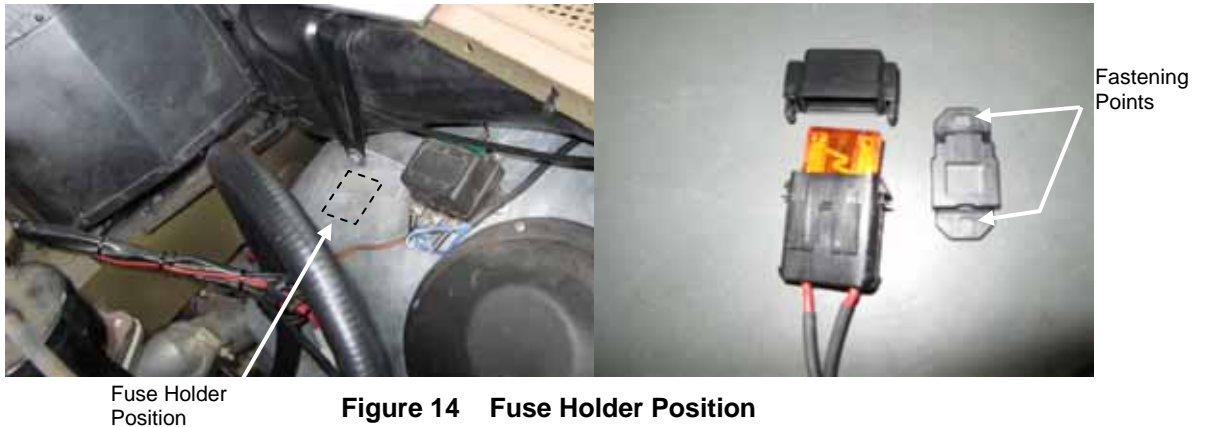
- b. Attach the red power terminal to the starter motor as shown in Figure 13.



Figure 13 Starter Motor Terminal

- c. **Fuse Holder.** Install the fuse holder as follows:
 - (1) Attach the fuse holder with M6 x 15 mm bolts with a flat washer either side of the wheel well and spring washer on the nut side (the nut will be on the outside of the vehicle).
 - (2) Secure the 40-Amp Maxi fuse holder to the passenger side wheel well.

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Fuse Holder
Position

Figure 14 Fuse Holder Position

- d. **Earth Connector.** Trace the loom back to the earth connector and terminate the earth wire at the position on the fire wall shown in Figure 15.



Earth
Terminal

Figure 15 Earth Termination

- e. **Relay.** Install the relay as follows:

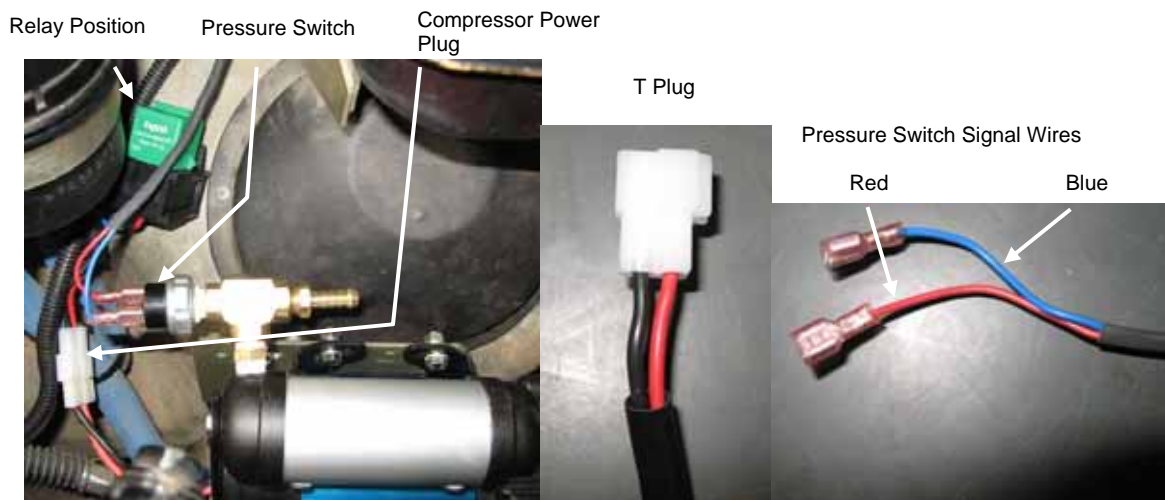


Figure 16 Compressor Electrical Connections

- (1) Attach and secure the relay with an M6 x 15 mm bolt with a flat washer either side of the wheel well and a spring washer on the nut side (the nut will be on the outside of the vehicle) as shown in Figure 16.

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- (2) Attach the T plug (male) to the compressor and the red & blue signal wires with quick connects to the pressure switch as shown in Figure 16 (the red and blue signal wires can go on either connection on the pressure switch).
- f. **Compressor Dash Switch.** Route the On/Off signal wires (red and purple/white) with quick connects (Figure 17), through the firewall using the driver's side grommet (Figure 15). Ensure that the On/Off signal wires are routed underneath the cross bar as shown in Figure 18.

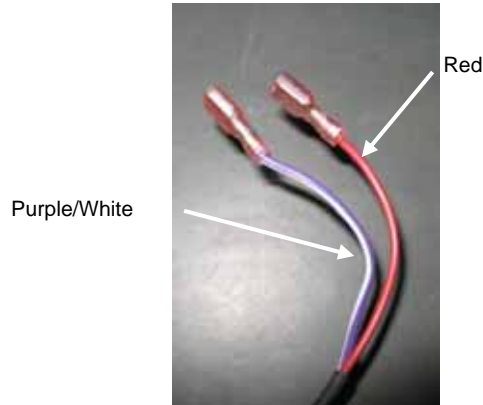


Figure 17 On/Off Signal Wires

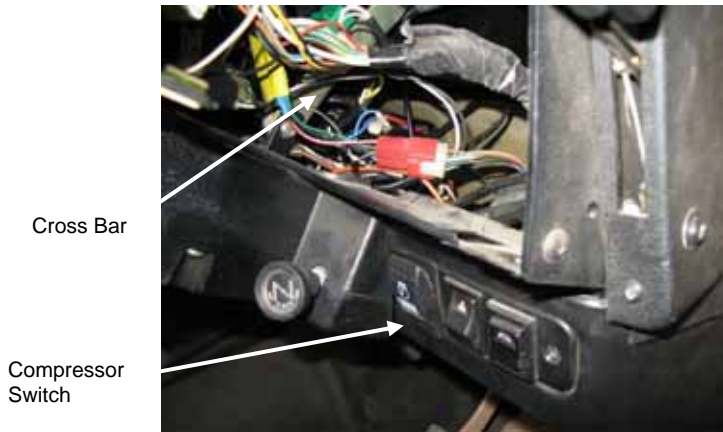


Figure 18 Dash Wiring

- g. Connect the On/Off signal wires to the compressor switch as shown in Figure 19.

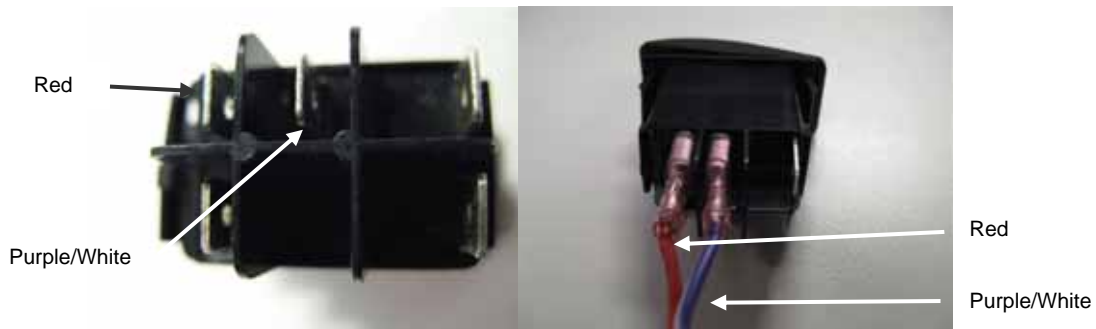


Figure 19 Compressor On/Off Switch on Dash

- h. Reconnect the right-hand side switch panel.
- i. Reconnect the dash instrument panel.
- j. Reconnect the speedometer cable to the transponder.
- k. Secure the wiring loom, hoses and electrical connections into position using cable ties or suitable fasteners.

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17. Reconnect the vehicle batteries on the passenger side of the vehicle.

System Test

18. Test the compressor system by turning on the compressor switch. The compressor should turn off within 10 seconds when it reaches the pressure switch limits.
19. Turn off the compressor switch.

Recording Action

20. On completion of the modification, the following action is to be taken in accordance with the TRAMM-L, Volume 3, Section 2, Chapter 2, Annex D:

- a. Deface the number 33 on the equipment modification record plate.
- b. Complete the modification details in the GM 120 – Record Book for Service Equipment.
- c. Record the modification in an MILIS Work Order using MMM Standard Job Number 000795.
- d. Forward the modification completion details using form GM 119 – Advice of Change in Build State (TRAMM-L, Volume 3, Section 2, Chapter 3, Annex C) to:

Fleet Manager Light B Vehicles
CGSV SPO, DMO
DPM-7
Defence Plaza Melbourne
661 Bourke Street
MELBOURNE VIC 3000

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END

Distribution List: **VEH G 16.7 – Code 2** (Maint Level)
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