SB - 230 - 001 V-MAC I To V-MAC II Conversion Kit

Internal Content

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Prior to beginning conversion verify the vehicle meets all of the following criteria:

• Model CH, CL, or R chassis

• Equipped with 1994 through 1998 emission compliant E7 V-MAC I **engines**

• 400 horsepower or less. (E7-427 and E7-454 engines are not included in this conversion.)

• V-MAC I data file 1MS536P present

For more information regarding SB - 230 - 001 V-MAC I To V-MAC II Conversion Kit click here.

Mack TDP | Information | Parts | REMACK Product Technical Brochure

V-MAC ENGINE CONTROL MODULES - 215SB224X V-MAC I to V-MAC II Conversion Kit

NOTE: Conversion Kit Part No. 215SB224X Kit May Not Be Available From PDC

Will Have To Order The Individual Parts That Make-Up The Kit

Contact Service Center (Parts Order Desk) For Availability

Phone: 1-877-447-2787

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E-mail: PartsOrderDeskNA@volvo.com

Refer To CBR-76 V-MAC I TO V-MAC II RetroFit / Conversion Kit (Installation Instructions & Kit Parts List)

Tags k04817372 mack

Categories *

Mack > Legacy (Pre-US04) > RD/RW

Mack > Legacy (Pre-US04) > CH

Mack > Legacy (Pre-US04) > CL

Mack > Legacy (Pre-US04) > RB

Related links and attachments

KC-153 REF KC-76

SB 230-001 V-MAC I To V-MAC II Conversion Kit

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V-MAC I TO V-MAC II RetroFit / Conversion Kit

Internal Content

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1. INTRODUCTION

For an equipment upgrade and as an alternative service solution (in the event of a VMAC I module [V-MAC or FIC] failure), Service Parts and Service Engineering have made available a V-MAC I to V-MAC II conversion kit for a select group of CH, CL, and R Series vehicles. This kit is applicable for CH, CL, and R Series vehicles equipped with engines that are less than or equal to 400 horsepower and 1994 or newer emission compliant. Depending upon the chassis model and configuration, three to five hours is required to install the kit. Also, the kit will reduce the V-MAC serviceable components from two modules to one module. The V-MAC II system includes driver enhancements and more programmable features such as:

• Engine Sleep Mode (a security feature which will inhibit the vehicle from starting)

• Battery Low Voltage Fault Thresholds

• Delay Engine Brake Application In Cruise Control (the vehicle speed can overshoot the cruise set speed by 2 miles per hour to allow a smoother cruise control and engine brake transitions over small hills)

• High Idle Engine Speed Threshold (droop)

• Fast Idle Engine Speed (switched input for Single Speed Control)

• Additional Vehicle Life, Trip, and Maintenance Logs and Thresholds (engine overspeed [severe], engine overspeed [company limit], vehicle overspeed [fueled], vehicle overspeed [all conditions])

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• Smart Fan Ready, Smart Fan Control Parameters (this V-MAC II module

is capable of controlling a smart fan with 3 groups of programmable parameters, overrides, engagement temperatures and times)

• More Service Diagnostic Features (wiggle wire test)

• Engine Data File Upgrades (smoke file, 12MS579 [most current])

• Co-Pilot Ready (driver ID security [CH/CL])

2. V-MAC I to V-MAC II CONVERSION KIT PARTS LIST

VMAC-I to VMAC-II Conversion Kit Parts List, 215SB224		
Quantity	Part Number	Description
1	41MR5418M	VMAC-II Jumper Harness
1	41MR21380M	Coolant Temperature Sensor Jumper Harness
	64MT2103	Coolant Temperature Sensor
1	796AX9R	Wiring Loom (black, or gray) (1/3" I.D., 24" Long),
6	48RU2313P2	Short Tie Wraps
2	48RU2313P3	Long Tie Wraps
3	86AX210	16 Gauge Sealed Butt Splices
1	795AX56F	3 Foot 16 Gauge Black Wire for the Engine Brake Ground Wire
1	86AX228	16 Gauge 3-Way Solderless Connector, for Engine Brake Ground Wire
1	86AX108	16 Gauge Ring Type Solderless Connector, for Engine Brake Ground Wire
2	86AX282	16 Gauge Female Snap-On Solderless Connectors, for Engine Brake Ground Wire
1	12MS59M11 (HW 12MS54M7)	VMAC-II Module (1MS315 Software)
1	258AXF	6 inch piece of Ridge Rubber (R Series Only)
1	TS79098	V-MAC II Operator's Manual
1	41MR5418M	V-MAC II Jumper Harness Drawing Blueprint

NOTE: The installation instructions for the CH/CL models start on page 2 and end on page 10. The installation instructions for the R Series models start on page 10 and end on page 19.

3. INSTRUCTIONS FOR CH/CL

Live UI ›r to performing the V-MAC II retrofit process, record all

Vehicle/Customer data from the V-MAC I system. After completing the V-MAC II conversion process, the Vehicle/Customer data must be manually restored into the system using Customer Data Programming.

3.2 Disconnect the batteries.

3.3 Remove the FIC and V-MAC modules and return them to the Mack Reman Center for core credit. The address is:

Attention, V-MAC MODULE RECYCLING Middletown Remanufacturing Center Commerce Drive Middletown, PA 17057

3.3.1 Remove the six Torx-Head screws from the module panel located on the right side of the cab by the passenger's feet.

3.3.2 Disconnect the module connectors. If equipped, remove the WABCO (ABS) module. Remove the FIC and V-MAC modules.

3.4 Attach the V-MAC II module to the panel (bracket).

3.4.1 Align the V-MAC II module on the panel. The correct position will locate the module connectors at the 12 o'clock position.

3.4.2 Then, using the four original mounting bolts, attach the V-MAC II module to the panel. Tighten the mounting bolts 10 LB-FT (14 N-m).

3.5 Attach the Deutsch connector (V-MAC mating connector) of the V-MAC II jumper harness to the cab harness connector. Then, tighten the fastening screw 7.5 LB-FT (10 N-m).

3.6 Attach the AMP/Bosch connector (FIC mating connector) of the V-MAC II jumper harness to the cab harness connector, then latch them together.

Note: because the tolerances are tight on these connectors, it may be necessary to slide a thin walled putty knife along the sides of the connectors to mate them together.

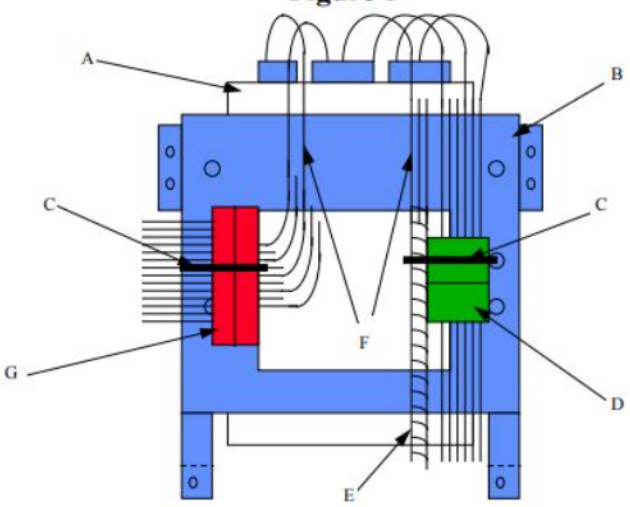
3.7 Attach the three VMAC-II connectors (J1A, J1B, and J2) of the V-MAC II jumper harness to the V-MAC II module. Tighten the connector fastening screws 7.5 LB-FT (10 N-m).

Live UI all the supplied wiring loom (black or gray) over the three loose oming from the V-MAC II jumper harness.

3.9 Secure the wiring and connectors to the module panel bracket.

3.9.1 Using two tie wraps, secure the loomed wires and the two connectors to the module panel bracket. For the location of tie wraps, see Figure 1.

Figure 1



A. V-MAC II Module
B. Bracket
C. Tie Wrap
D. V-MAC Connector
E. Loom
F. V-MAC II Jumper Harness
G. FIC Connector

3.10 If removed, reinstall the WABCO (ABS) module.

3.11 Install the module panel and bracket.

3.11.1 Route the three wires in the loom into the area of the accessory relay (electrical equipment panel).

3.11.2 Position the module panel over the mounting holes. Verify that the harness is not pinched by the module panel or other portions of the dash panel. Verify that the loom (over the three wires) is protecting the wires from the sharp edge of the dash panel. Secure the loom behind the dash panel with a tie wrap.

3.11.3 Attach the module panel with the six original Torx-Head screws. Tighten the Torx-Head screw 7.5 LB-FT (10 N-m).

3.12 Remove the circuit protection panel from the right side of the dash (located in front of the passenger seat). This will expose the electrical equipment panel.

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3.13 From within the electrical equipment panel area, butt splice the

accessory wire marked 2-K-0.8 to the end of the loomed jumper harness wire marked ACNTRL-1.0 .

3.13.1 Remove the white wire (and terminal) marked 2-K-0.8 from the accessory relay (this is the key switched wire).

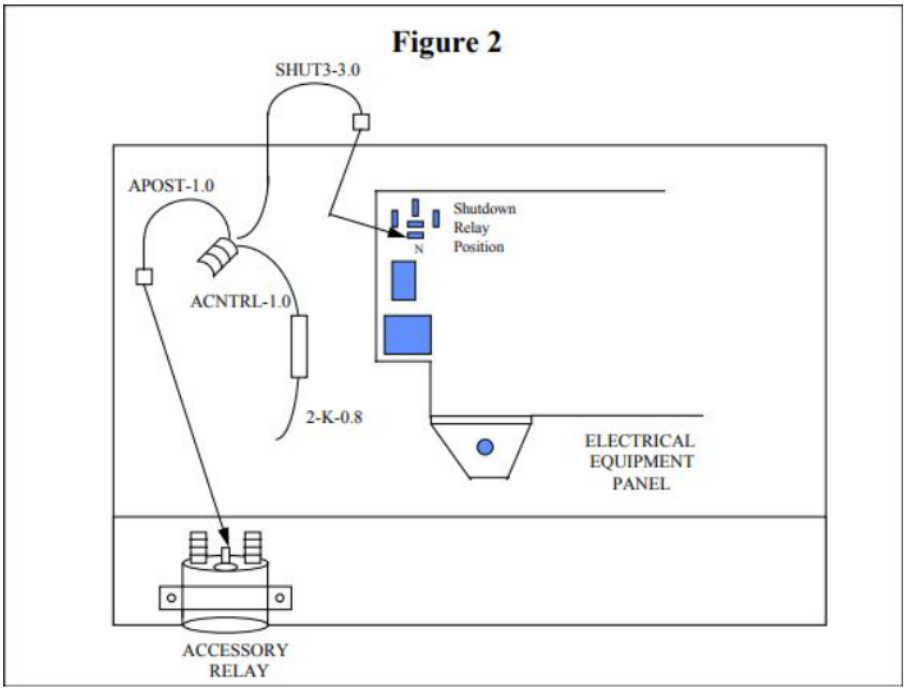
3.13.2 Select the wire in the loom marked ACNTRL-1.0.

3.13.3 If necessary, cut off the terminal end of the wire marked ACNTRL-1.0. Then, cut the terminal end off the wire marked 2-K-0.8.

3.13.4 Mate the wire marked 2-K-0.8 (cab harness side) to the wire marked ACNTRL-1.0 with a sealed butt splice. This wire supplies the key switched signal to the pin M cavity of the VMAC-II module J1B connector.

3.14 Where the terminal and wire marked 2-K-0.8 was removed from the accessory relay, connect the jumper harness loomed wire marked APOST-1.0 to the accessory relay terminal. This terminal will fit tight. Make sure the terminal is fully mated to the accessory relay. This wire supplies the accessory relay with the power relay signal from the V-MAC II module (cavity R3 of the J1B connector). See Figure 2.

Figure 2



3.15 Remove the shutdown relay from the left upper corner of the electrical equipment panel. This component will not be used with the V-MAC II system.

Live UI stall the terminal-and-wire marked SHUT3-3.0 into the base of the shutdown relay socket terminal N (87). This is the lower center cavity

(slot). For relay socket terminal positions, see Figure 2.

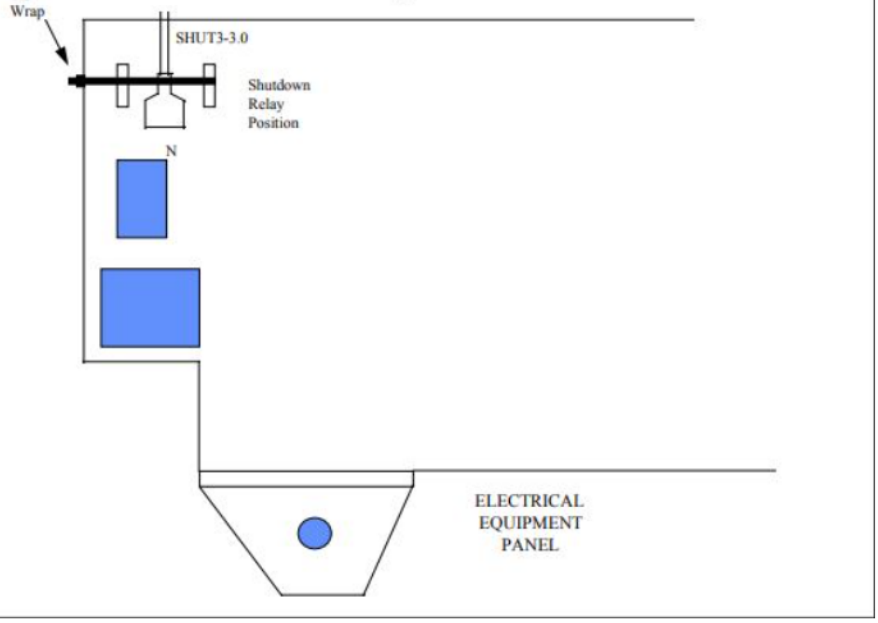
3.17 Secure the terminal-and-wire marked SHUT3-3.0 to the panel.

3.17.1 When mated, the VMAC II rack high/low power signal is supplied to the wire marked SHUT3-3.0 and then to the wire marked 32-N-2.0 at the injection pump terminal G (fuel actuator). For this reason, the mating between the socket cavity (slot) N and the terminal must have drag (friction) when coupled together (a tight connection). If this is okay, push the wire up towards the top of the panel, this will put a 90 degree bend on the wire terminal.

3.17.2 Then, secure this wire with a tie wrap by inserting the tie wrap through the two unused shutdown relay socket terminal slots and around the wire. For the location of tie wrap, see Fig. 3. There is a small groove at the top of the panel. Position the wire in this groove. Install a tie wrap behind the panel and place a piece of tape across the top of the panel.

NOTE: If the mating friction between the socket cavity (slot) N and the terminal (wire marked SHUT3-3.0) is questionable, remove the wire-and-terminal from the relay socket slot N. Remove the two mounting bolts from the electrical equipment panel. Locate the wire marked 32-N-2.0 behind the panel and cut the wire. Then, cut the terminal end off of the SHUT3-3.0 wire. Finally, mate the wire marked 32-N-2.0 (cab harness end) to the wire marked SHUT3-3.0 with a butt splice.

Figure 3



Live UI ing a tie wrap, secure the three loose wires and wiring loom to ... sting wiring behind the electrical equipment panel.

3.19 If the chassis is not equipped with an engine brake, proceed to step 21 (installing the temperature sensor). Otherwise, rewire the engine brake switch.

3.19.1 Remove the center (D) panel. Then, locate the two wires on the engine (Jake) brake switch.

3.19.2 On the V-MAC I system, the wire marked 22-D-0.8 was the ground signal that controlled the engine brake relay (terminal 85) and the engine brake switch enabled the relay (terminal 86) with a 12 volt signal (wire marked 22-B-0.8). On the V-MAC II system, the wire marked J1B-P3-0.8 is the 12 volt power signal that enables the engine brake relay (terminal 85) and the engine brake switch controls the relay (terminal 86) with a ground signal (wire marked BK-EE-0.8). Because the VMAC-II system controls the engine brake relay (terminal 86) through the engine brake switch, the engine brake the engine brake relay (terminal 86) through the engine brake switch, the engine brake switch wire marked 22-H or A-0.8 must be a ground. To do this, if the chassis is not equipped with heated mirrors, you may use the unused heated-mirror-switch ground terminal and wire marked BK-JJ-0.8 as follows:

3.19.2.1 Remove the wire and terminal marked 22-H or A-0.8 from the engine brake switch;

3.19.2.2 Attach the wire and terminal marked BK-JJ-0.8 to the engine brake switch. Also, the terminal and wire marked 22-H or A-0.8 carries a switched 12 volt signal and must be insulated with electrical tape or heat shrink tubing. If the chassis is equipped with heated mirrors, remove the wire marked 22-H or A-0.8 from the engine brake switch; Then, install the ground wire, supplied in the kit, on the engine brake switch. Before attaching the ground wire and ring terminal to the electrical equipment panel, be sure to clean the surface area at the ground post. Also, the terminal and wire marked 22-H or A-0.8 carries a switched 12 volt signal and must be insulated with electrical tape or heat shrink tubing. 3.20 Reinstall the center (D) panel.

3.21 Remove and install the new coolant temperature sensor.

3.21.1 Drain the coolant.

3.21.2 Remove the 64MT291 coolant temperature sensor. This sensor can be discarded.

3.21.3 Install the 64MT2103 coolant temperature sensor, which is upplied in the kit. Tighten the coolant temperature sensor 20 LB-

FT (27 N-m). Cut off the original coolant temperature sensor connector and install the coolant temperature sensor jumper harness (41MR21380M) supplied in the kit. Add coolant to the radiator as necessary.

3.22 Connect the batteries.

3.23 You are now ready to verify the connections and installation. Turn on the key, the engine shutdown light, electronic malfunction light, and alarm should come on for approximately two seconds and then go off. This bulb check should function just as it did for the V-MAC I system.

If the electronic malfunction lamp remains on, check the system for faults using the service tools or the speed control switches. As necessary, check the connections, then troubleshoot and repair the system using the VMAC-II service manual 8-206.

If both the engine shutdown and the electronic malfunction lights switch off after the 2 second bulb check, then the VMAC-II module is ready for programming.

NOTE: The following instructions must be performed at a Mack dealership (mainframe input required).

3.24 Program the V-MAC II module. First, the engine data file must be downloaded from the Mack mainframe (MACKnet or MACKCOMM). Then, using the Mack Data Programming support software, the module must be programmed with the engine data file. Finally, the verification file must be uploaded to the mainframe.

3.24.1 Download the engine data file from the main frame (refer to V-MAC II User Guide 8-303).

NOTE: If using MACKnet 98, the following three steps are accessed through the "Host" button of the MACKnet 98 window.

3.24.1.1 From the electronically controlled vehicles menu (MACKnet or MACKCOMM), go to the engine ECU part number change area by using the F9 key. Type the purchase part number of the new module (12MS59M11), or type the module part number (12MS54M7) and select the software part number (1MS315) in the space provided.

3.24.1.2. Then, follow the screen instructions to convert the V-MAC to a V-MAC II system.

3.24.1.3 Go to update options using the F3 key and update any options added, if any. NOTE: If using MACKnet 98, the following step is accessed through the “Datafile” button of the MACKnet 98 window (refer to V-MAC III Preliminary Software 8-317 Letter #4, page 68).

3.24.1.4 For MACKnet 7.3 (DOS Version), go to reprogramming file transfer by using the F4 key. Follow the screen instructions to download the engine data file to a floppy disk. For MACKnet 98, from the “Datafile window”, enter the VIN, select NO for “Extension Record” and select “Send” to download the engine data file to a floppy disk.

3.24.2 Program the module with the data file.

3.24.2.1 Using MDP, follow the menu instructions to program the module with the engine data file.

3.24.2.2 Then, using CDP, manually enter all the customer data plus any additional features requested by the customer (such as high idle RPM).

3.24.2.3 Upload the verification file to the Mack main frame.

3.25 The installation is now complete. Road test the vehicle to verify that no faults exist.

4. INSTRUCTIONS FOR “R” SERIES

4.1 Prior to performing the V-MAC II retrofit process, record all Vehicle/Customer data from the V-MAC I system. After completing the V-MAC II conversion process, the Vehicle/Customer data must be manually restored into the system using Customer Data Programming.

4.2 Disconnect the batteries.

4.3 Remove the FIC and V-MAC modules and return them to the Mack Reman Center for core credit. The address is: Attention, V-MAC MODULE RECYCLING Middletown Remanufacturing Center Commerce Drive Middletown, PA 17057

4.3.1 On the right side of the cab, remove the two screws attaching the plastic cover panel to the module bracket. Then remove the cover panel, this will expose the FIC, fan housing, and module bracket.

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4.3.2 Disconnect the module connectors.

4.3.3 Remove the FIC and V-MAC modules from the bracket.

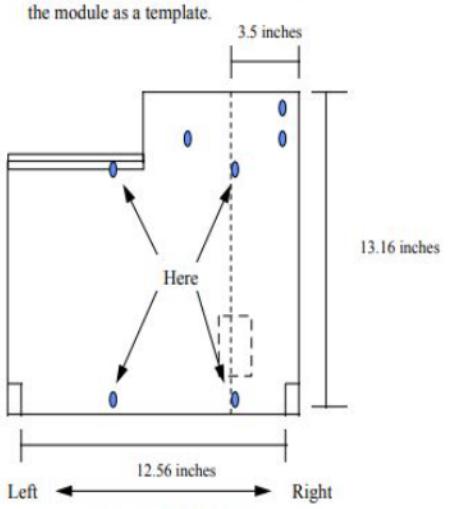
4.4 Remove and modify the V-MAC module bracket.

4.4.1 Remove fasteners attaching the heater fan motor to the fan housing. Then, remove the fasteners (3/8-24 hexhead bolts) attaching the fan housing and module bracket to the lower panel. NOTE: When the bolts are removed from inside the fan housing, the bracket and weldnuts below the electrical equipment panel may move and the cab harness may drop down. If this occurs, it will be necessary to align the bracket and weldnuts when the bracket is installed.

4.4.2 Position the module bracket into a vice with the backside (flat side) facing out. Measure and scribe a mark on the bracket face that is 3-1/2 inches from the right edge (the right side has the cutout for the V-MAC module). This mark will be used to align the V-MAC II module to the bracket, see Figure 1.

Figure 1

With the module positioned over the backside of the bracket, scribe the mounting holes using the module as a template.



Back Side of Module Bracket

4.4.3 Then, position the VMAC II module over the bracket face with the connector side of the module on the right edge of the bracket (3 o'clock position). With the lower mounting bosses of the module on the

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bracket ledge, position the module and the right mounting holes (threaded) over the 3-1/2 inch scribe mark.

4.4.4 Using the module mounting holes as templates, mark the mounting hole positions on the bracket with a scribe. Using a 1/4 or 5/16 inch drill bit, drill the mounting holes into the bracket.

4.5 Attach the V-MAC II module to the panel (bracket).

4.5.1 Using the four original mounting bolts, attach the V-MAC II module to the bracket.

4.5.2 To square the module mounting bosses to the bracket, it may be necessary to shim the upper right mounting hole with a flat washer (1/4" I.D.). Shim as necessary.

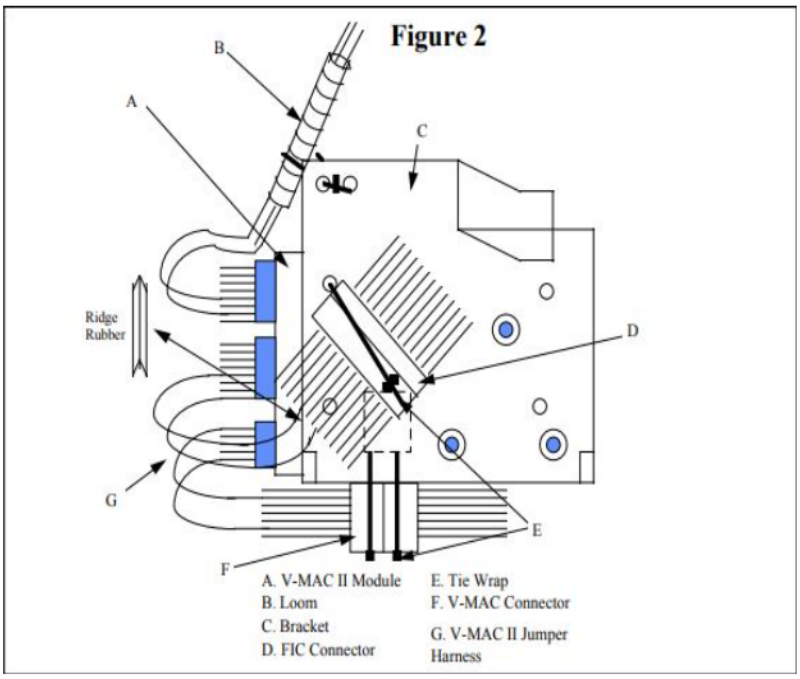
4.5.3 Tighten the mounting bolts 10 LB-FT (14 N-m). Bring the bracket assembly back to the cab.

4.6 Attach the Deutsch connector of the V-MAC II jumper harness to the cab harness connector. Then, tighten the fastening screw 7.5 LB-FT (10 N-m).

4.7 Attach the Amp/Bosch connector of the V-MAC II jumper harness to the cab harness connector, then latch them together. Note: because the tolerances are tight on these connectors, it may be necessary to slide a thin walled putty knife along the sides of the connectors to mate them together.

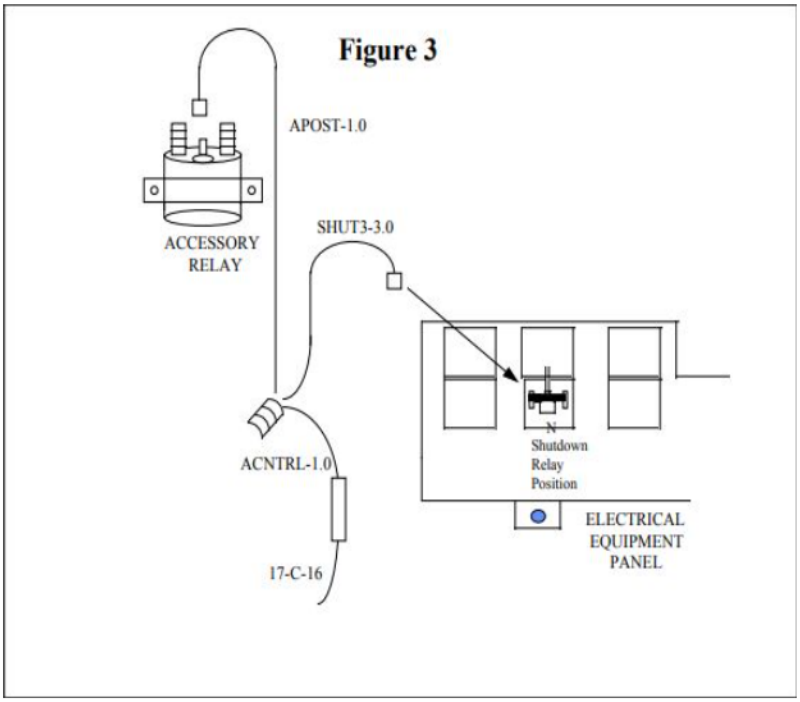
4.8 Attach the three VMAC-II connectors (J1A, J1B, and J2) of the V-MAC II jumper harness to the V-MAC II module. Tighten the connector fastening screws 7.5 LB-FT (10 N-m).

4.9 Install the supplied wiring loom (black, or gray) over the three jumper harness wires marked ACNTRL-1.0, APOST-1.0, SHUT3-3.0. Attach the ridge rubber to the lower left edge of the module bracket (this will protect the jumper harness from being pinched). Using four tie wraps, secure the loomed wires and the two connectors to the module panel (or bracket). For the location of tie wraps, see Fig. 2.



4.10 Remove the circuit protection panel (lower the glove box door) from the glove box area.

4.11 Route the three wires in the loom into the area of the electrical equipment panel. In the 12 o'clock direction, push the loom behind the dash and between the electrical equipment panel and the accessory relay. Verify that the loom (over the three wires) is protecting the wires from the sharp edge of the dash panel. For loom positioning and wiring connections, see Fig. 3.



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4.12 To gain access to the accessory relay, remove the

fasteners attaching the center dash access panel to the dash and remove the access panel. Then, remove the “D” Panel. See the operators manual for panel locations.

4.13 Route the two wires marked ACNTRL-1.0, APOST-1.0, into the area of the accessory relay. Verify that the wires are not pinched by portions of the dash panel.

4.14 The accessory wire marked 17-C-16 must be butt spliced to the end of the jumper harness wire marked ACNTRL-1.0 . To do this, remove the white wire (and terminal) marked 17-C-16 from the accessory relay (this is the key switched wire). Select the wire in the loom marked ACNTRL-1.0. If necessary, cut off the terminal ends of these wires (ACNTRL-1.0, 17-C-16). Then, mate the wire marked 17-C-16 to the wire marked ACNTRL-1.0 with a sealed butt splice. This wire supplies the key switched signal to the pin M cavity of the VMAC-II module J1B connector.

4.15 Where the terminal and wire marked 17-C-16 had been removed, connect the terminal and wire marked APOST-1.0 to the accessory relay terminal. This terminal will fit tight. Make sure the terminal is fully mated to the accessory relay. This wire supplies the VMAC-II module power relay signal (cavity R3 of the J1B connector) to the accessory relay.

4.16 Remove the shutdown relay from the left upper corner of the electrical equipment panel. The shutdown relay will not be used with the V-MAC II system. Install the terminal-and-wire marked SHUT3-3.0 into the base of the shutdown relay socket terminal N (87). This is the lower center cavity (slot). For relay socket terminal positions, see Fig. 4.

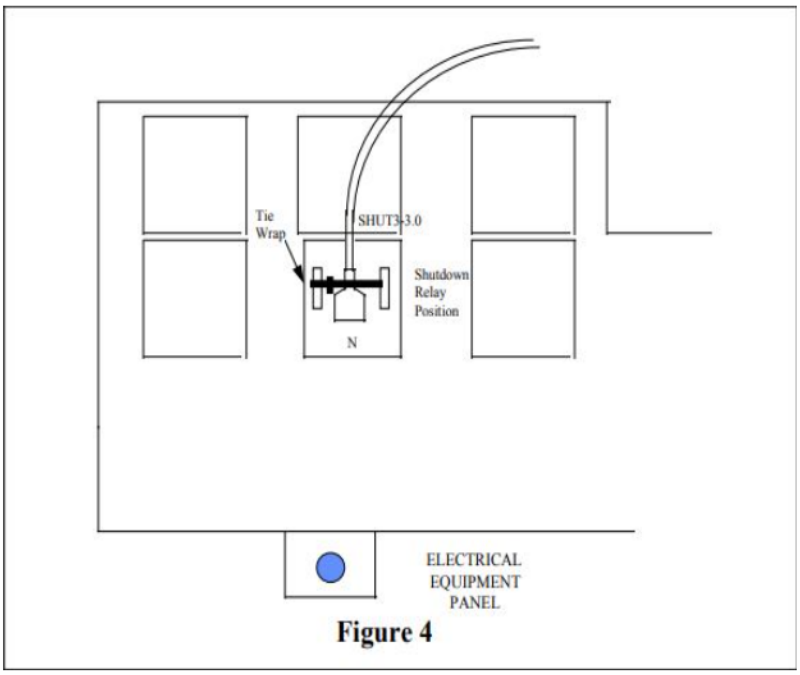


Figure 4

When mated, the wire marked SHUT3-3.0 supplies the VMAC-II rack high/low power signal to the wire marked 12-B-16 at the injection pump terminal G (fuel actuator). For this reason, the mating of the terminal must have a drag when inserted (a tight connection). If this is okay, push the wire up towards the top of the panel, this will put a 90 degree bend on the wire terminal. Then, secure this wire with a tie wrap by inserting the tie wrap through the two unused shutdown relay socket terminal slots and around the wire. For the location of tie wrap, see Fig. 3. Finally, attach the wire marked SHUT3- 3.0 to a loom behind the panel with a tie strap and place a piece of tape across the top edge of the panel.

If mating the shutdown relay socket terminal N (the 12-B-16 wire connection) with the wire-and-terminal marked SHUT3-3.0 (on the relay panel) is questionable, remove the wire-and-terminal from the relay socket terminal N. Then, remove the mounting bolts from the electrical equipment panel. Locate the wire marked 12-B-16 behind the panel, then cut the wire. Next, cut the terminal end off of the SHUT3-3.0 wire. Finally, mate the wire marked 12-B-16 (cab harness end) to the wire marked SHUT3-3.0 with a sealed butt splice.

4.17 Using a tie wrap, secure the jumper harness wires marked ACNTRL-1.0, APOST1.0, and SHUT3-3.0 to existing wiring at the dash panel.

4.18 If the chassis is not equipped with an engine brake, proceed to step 21 (installing the temperature sensor). Otherwise, rewire the engine brake switch.

4.18.1 The engine brake switch is located in the “D” panel. Locate the two wires on the engine (Jake) brake switch.

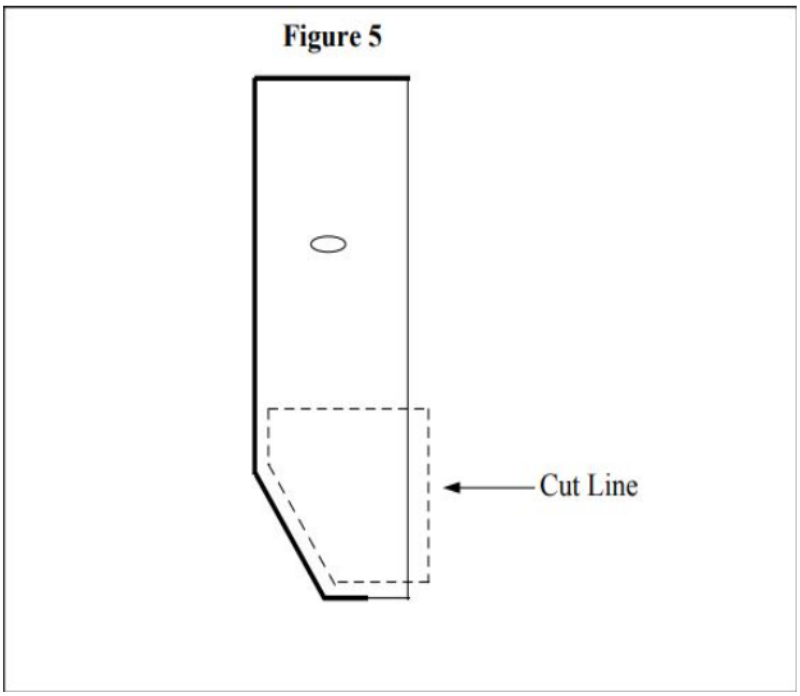
4.18.2 On the V-MAC I system, the wire marked 9-D-16 was the ground signal that controlled both the engine brake relays (terminal 85) and the engine brake switch enabled both the relays (terminal 86) with a 12 volt signal (wires marked 9-B-16 and 9- C-16). On the V-MAC II system, the wire marked J1B-P3-0.8 is the 12 volt power signal that enables both the engine brake relays (terminal 85) and the engine brake switch controls both the relays (terminal 86) with a ground signal (wire marked BK-C-0.8). Because the VMAC-II system controls the engine brake relay (terminal 86) through the engine brake switch, the two engine brake switch wire terminals marked 9-A-14 (currently the 12 volt supply) must be wired to a ground.

To do this, remove the wires marked 9-A-14 from the engine brake switch. To avoid electrical short circuiting, these terminals must be insulted (wrapped) with electrical tape or heat shrink tubing and tie wrapped to an existing dash wiring. Then, install the ground wires and terminals, supplied in the kit, on the engine brake switch and the electrical equipment panel. Before attaching the ground wire and ring terminal to the electrical equipment panel, be sure to clean the surface area at the ground post.

4.19 Reinstall the center dash access and “D” panels. Then, align the electrical equipment panel bracket (w/ weldnuts), the module bracket, the fan housing and secure the assembly with the 3/8-24 hexhead fasteners. Tighten the hexhead fasteners 28 LBFT (38 N-m). Finally, install the fan. Tighten the fan fasteners 10 LB-FT (14 N-m).

4.20 To prevent the plastic cover panel from rubbing on the V-MAC II jumper harness wires, using diagonal cutters, trim the lower corner of the panel as necessary (see Fig.

5). Then, with the two Phillips head screws, attach the cover panel to the module bracket. Tighten the screws 7.5 LB-FT (10 N-m).



NOTE: The following step is only required if the engine is equipped with a 64MT291 coolant temperature sensor.

4.21 Remove and install the new coolant temperature sensor.

4.21.1 Drain the coolant.

4.21.2 Remove the 64MT291 coolant temperature sensor. This sensor can be discarded.

4.21.3 Install the 64MT2103 coolant temperature sensor, which is supplied in the kit. Tighten the coolant temperature sensor 20 LB- FT (27 N-m). Cut off the original coolant temperature sensor connector and install the coolant temperature sensor jumper harness (41MR21380M) supplied in the kit. Add coolant to the radiator as necessary.

4.22 Connect the batteries.

4.23 You are now ready to verify the connections and installation. Turn on the key, the engine shutdown light, electronic malfunction light, and alarm should come on for approximately two seconds and then go off. This bulb check should function just as it did for the V-MAC I system. If the electronic malfunction lamp remains on, check the system for faults using the service tools or the speed control switches. As necessary, check the connections, then troubleshoot and repair the system using the VMAC-II

service manual 8-206. If both the engine shutdown and the electronic malfunction lights switch off after the 2 second bulb check, then the VMAC-II module is ready for programming. NOTE: The following instructions must be performed at a Mack dealership (mainframe input required).

4.24 Program the V-MAC II module. First, the engine data file must be downloaded from the Mack mainframe (MACKnet or MACKCOMM). Then, using the Mack Data Programming support software, the module must be programmed with the engine data file. Finally, the verification file must be uploaded to the mainframe.

4.24.1 Download the engine data file from the main frame. NOTE: If using MACKnet 98, the following three steps are accessed through the “Host” button of the MACKnet 98 window.

4.24.1.1 From the electronically controlled vehicles menu (MACKnet or MACKCOMM), go to the engine ECU part number change area by using the F9 key. Type the purchase part number of the module (12MS59M11), or type the module part number (12MS54M7) and select the software part number (1MS315) in the space provided.

4.24.1.2 Then, follow the screen instructions to convert the V-MAC I to a V-MAC II system.

4.24.1.3 Go to update options using the F3 key and update any options added, if any. NOTE: If using MACKnet 98, the following step is accessed through the “Datafile” button of the MACKnet 98 window (refer to V-MAC III Preliminary Software 8-317 Letter #4, page 68).

4.24.1.4 For MACKnet 7.3 (DOS Version), go to reprogramming file transfer by using the F4 key. Follow the screen instructions to download the engine data file to a floppy disk. For MACKnet 98, from the “Datafile window”, enter the VIN, select NO for “Extension Record” and select “Send” to download the engine data file to a floppy disk.

4.24.2 Program the module with the data file.

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4.24.2.1 Using MDP, follow the menu instructions to

program the module with the engine data file.

4.24.2.2 Then, using CDP, manually enter all the customer data plus any additional features requested by the customer (such as high idle RPM).

4.24.2.3 Upload the verification file to the Mack mainframe.

4.25 The installation is now complete. Road test the vehicle to verify that no faults exist.

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SERVICE BULLETIN

GROUP: 200
NUMBER: SB-230-001
DATE: 7/2/99
MODEL: CH, CL, R

V-MAC® I TO V-MAC® II CONVERSION KIT

A V-MAC I to V-MAC II conversion kit (part No. 215SB224) is available through the MACK Parts System as a cost-effective service alternative for replacing a V-MAC I or FIC module. This conversion kit is applicable to CH, CL and R model chassis equipped with 1994 through 1998 emission compliant E7 V-MAC I engines, 400 horsepower and less. (E7-427 and E7-454 engines are not included in this conversion.) Installation of this conversion kit is strongly recommended when V-MAC I or FIC module failures are encountered.

Depending upon vehicle model and configuration, approximately three to five hours are required for installation. All necessary parts, along with complete instructions for dealer installation, are included. The V-MAC II conversion includes the following driver enhancements and programmable features:

- Engine Sleep Mode (a security feature)
- Battery Low Voltage Thresholds
- Delay Engine Brake Control while in Cruise Control
- High Idle Engine Speed Threshold
- Fast Idle Engine Speed Control
- Additional Parameter Monitoring (more available than with V-MAC I), Trip and Maintenance Logs
- Smart Fan Ready
- Wiggle Wire Test
- Enhanced Data Files
- Co-Pilot Ready (for installation of the Co-Pilot Display Unit)

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