

Installation Manual for VMAC System V900046

GMC/Chevrolet 1999 – 2002 6.0L

Sierra and Silverado CK2500 and CK3500HD

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VMAC – Truck Mounted Air Compressors

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Fax: 1-250-740-3201

Installation Manual - Document #1930006

Installation Manual for VMAC System V900046

GMC/Chevrolet 1999-2002, 6.0L SIERRA and SILVERADO

CK2500 and CK3500HD

Changes and Revisions

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00	Original manual	IB 18 Feb 2004		
01	Format/graphic changes	IB 23 Aug 2004		
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b	application revision	IB 4 July 2006	SM 5 July 2006	6 July 2006

Important Information

The information in this manual is intended for certified VMAC installers who have been trained in installation procedures and for people with mechanical trade certification who have the tools and equipment to properly and safely perform the installation. Do not attempt this installation if you do not have the appropriate mechanical training, knowledge and experience.

Follow all safety precautions for underhood mechanical work. Any grinding, bending or restructuring operations for correct fit in modified trucks must follow standard shop practices.

These instructions are a general guide for installing this system on standard production trucks and do not contain information for installation on non-standard trucks. This system may not fit special order models or those which have had other changes without additional modifications. If you have difficulty with the installation, contact VMAC.

The VMAC warranty form is located at the back of this manual. This warranty form must be completed and mailed or faxed to VMAC at the time of installation for any subsequent warranty claim to be considered valid.

To order parts, contact your VMAC dealer. Your dealer will ask for the VMAC serial number, part number, description and quantity. To locate your nearest dealer, call 1-800-738-8622.

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General Information

Before You Start

Read this manual before attempting installation so that you can familiarize yourself with the components and how they fit on the truck. Identify variations for different model years and different situations that are listed in the manual. Open the package, unpack the components and identify them.

All fasteners must be torqued to specifications. Use manufacturers torque values for OEM fasteners. Apply Loctite 242 or equivalent on all engine-mounted fasteners. Torque values are with Loctite applied unless otherwise specified.

STANDARD GRADE 8 NATIONAL COARSE THREAD								
Size	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4
Foot-pounds (ft-lb)	9	18	35	55	80	110	170	280
Newton meter (N•m)	12	24	47	74	108	149	230	379

STANDARD GRADE 8 NATIONAL FINE THREAD							
Size	3/8		7/16		1/2	5/8	3/4
Foot-pounds (ft-lb)	40		60		90	180	320
Newton meter (N•m)	54		81		122	244	434

METRIC CLASS 10.9					
Size	M8	M10	M12	M14	M16
Foot-pounds (ft-lb)	19	41	69	104	174
Newton meter (N•m)	25	55	93	141	236

Hose Coding

Different frame designations will affect the tank mounting position. You may have to move the tank rearward from the standard position on your application. If you must move the tank, the lines may be too short. If this is the case, measure the hose shortfall and order a *Hose Extender Kit*. The following table shows the color code used by VMAC to define the different hose diameters.

Hose Diameter	Colour-Coded Label
1/4 inch	Yellow
5/16 inch	Orange
1/2 inch	Blue
5/8 inch	Blue
3/4 inch	Green
1 inch	Green

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Additional Requirements

Accessory Packs

Trucks with a 5.3L engine will require accessory pack # A700042. This accessory pack contains the correct radiator hose and instructions for the lower radiator-to-cooler connection.

All trucks will require accessory pack #A700064, which contains parts and instructions for the installation of a pneumatic throttle control.

Special Tools

OEM flywheel locking tool part number J42386.

Part 1: Preparing for Installation

1.1 Preparing for Installation

Preparation for installation is very important. Missing an item can cause problems in the installation or even damage to components. Check off each item as it is completed so that you do not miss any preparation steps.

- Locate the wiring harness that runs up from the transmission and over the center of the engine intake manifold, through the trough on the driver's side of the intake (Figure 1.1).
- Remove the harness from the protective loom, cut the tape open and locate the light green wire in the bundle.



There are two light green wires in the bundle. Only one of the wires will have 12 Volts with the key on and the transmission in PARK.

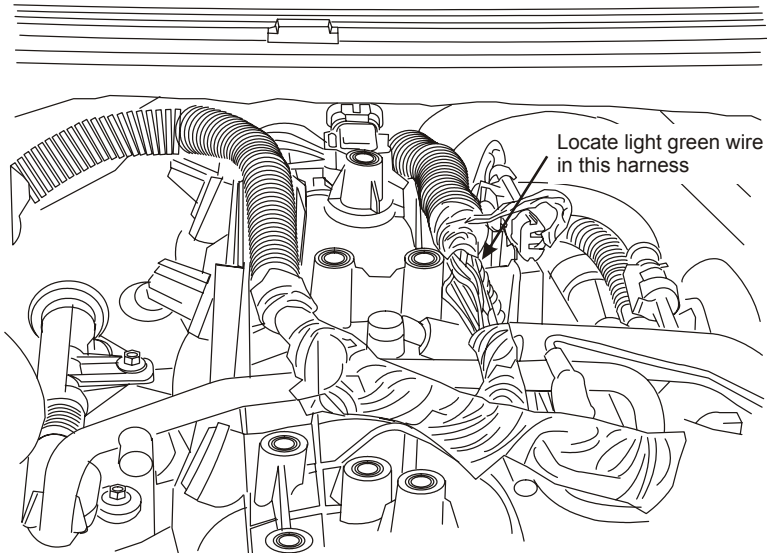


Figure 1.1

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- Connect a multi-meter (with a pin probe) between the light green wire and ground. Turn on the ignition switch. If the multi-meter shows 12 Volts, verify by shifting the transmission out of PARK. The meter should drop to zero.
- If the meter does not show 12 Volts, locate and test the second light green wire.
- Turn the ignition switch off. Mark the wire for electrical connections later in the installation process.
- Disconnect the battery terminals and remove the battery.
- Remove the battery mounting plate.
- Remove the plastic cover from the top center of the engine.
- Remove the air intake tube and resonator box.
- Drain the coolant.
- Remove the radiator end of the top OEM radiator hose, unclip it from the fan shroud and move it out of the way.
- Remove the upper radiator fan shroud.
- Remove the fan assembly.
- Remove the lower radiator fan shroud.
- Remove the lower radiator hose.
- Remove the OEM belt
- Mark the position of the power steering pump pulley in relation to the pump shaft and remove the pulley with a recommended puller.
- Remove the power steering pump.

- Remove the support bracket from the back of the power steering pump.
- Remove the OEM lower hex head stud fastener from the power steering pump and replace it with the supplied M10 × 12 mm hex head bolt. Use Loctite on the threads.
- Remove the bracket holding the large, red battery cable splitter box from the alternator and power steering pump bracket. Keep the two M6 OEM cap screws.
- Unclip the large wiring harness from the driver side valve cover and the small wiring harness attached to the red battery cable splitter box bracket.
- Disconnect the wiring and remove the alternator.
- Remove the OEM aluminum alternator and power steering pump mounting bracket.
- Remove the OEM back idler from the bracket.
- Clean the inside of the OEM crankshaft pulley and remove the OEM crankshaft pulley center bolt.
- Clean the driver side of the engine. Check all threaded holes to make sure that they are clean and free from damage.
- Remove the driver side fender liner.
- Remove the Power Train Control Module (PCM) from the driver side fender (do not disconnect the wiring) and place the module out of the way.
- Bend the PCM locating tab on the fender down so that it is flush with the surface (Figure 1.2).

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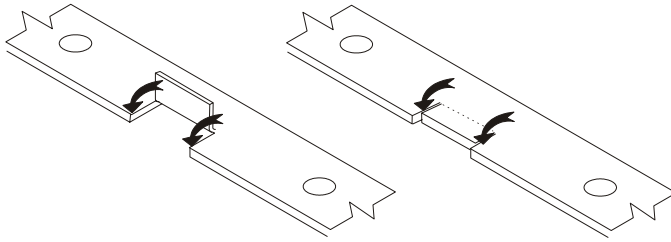


Figure 1.2

- Remove both OEM fasteners from the fender support bracket on the passenger side of the truck (Figure 1.3). On four-wheel drive trucks, remove the hex head bolt on the bottom of the frame that holds the tow hook in place. Some trucks may have a hole in the frame where the tow hook would be attached.
- Replace the inner fastener with the supplied low profile M10 x 30 mm hex head bolt without a flat washer, as the high profile head on the OEM bolt will interfere with the cooler bracket.

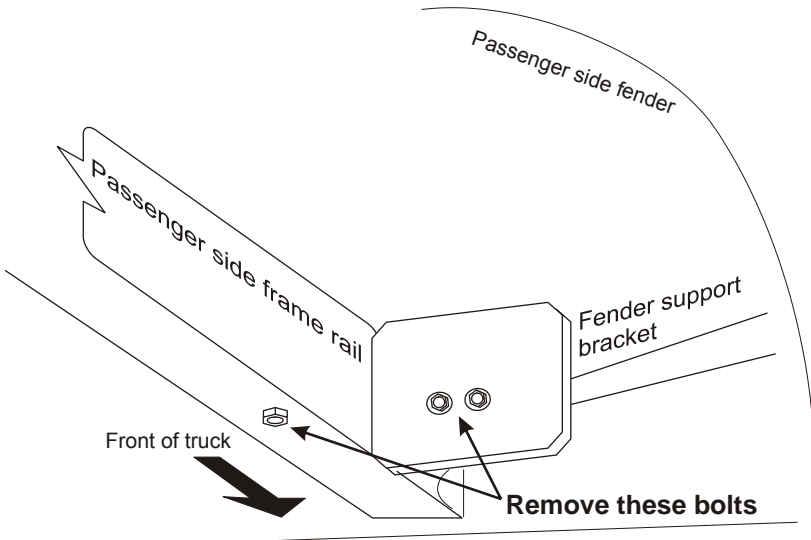


Figure 1.3

- Clean the frame on the passenger side of the truck between the two body mounts. If equipped, remove the fuel line from the plastic clips so that it can be moved out of the way when mounting the tank.

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- If equipped, remove the OEM wire harness securing bracket from the top of the frame so that it can be moved out of the way when mounting the tank.
- Place the degree marking gauge (Figure 1.4) on the VR pulley and mark the pulley (using a marker pen) at both points to indicate an angle of 140 degrees.

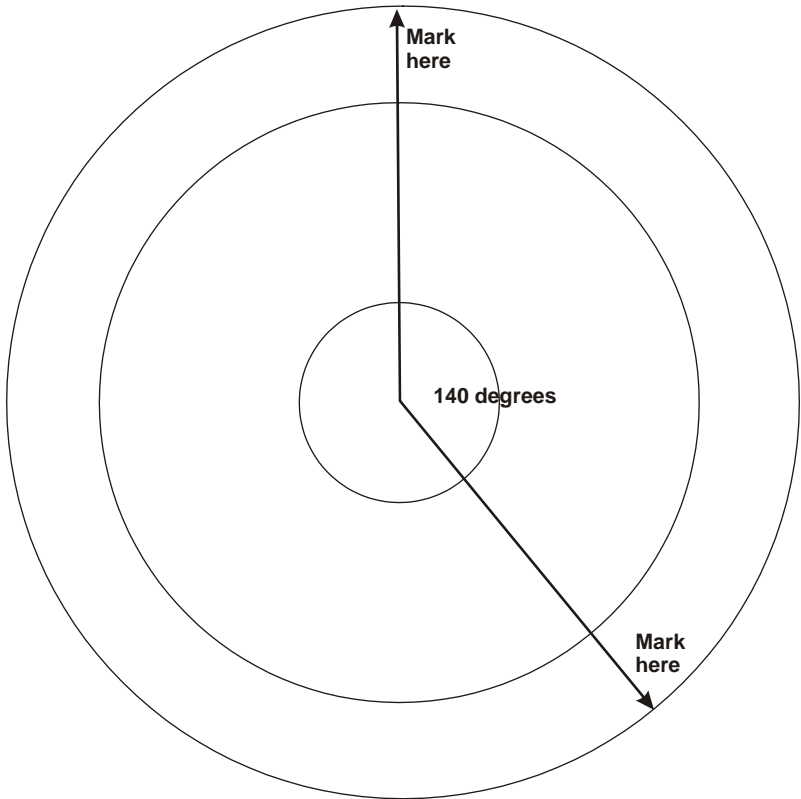


Figure 1.4

Part 2: Installing the Tank and Hoses

2.1 Installing the Tank and Brackets



The tank will mount to the passenger side frame rail between the two body mounts (Figure 2.1).

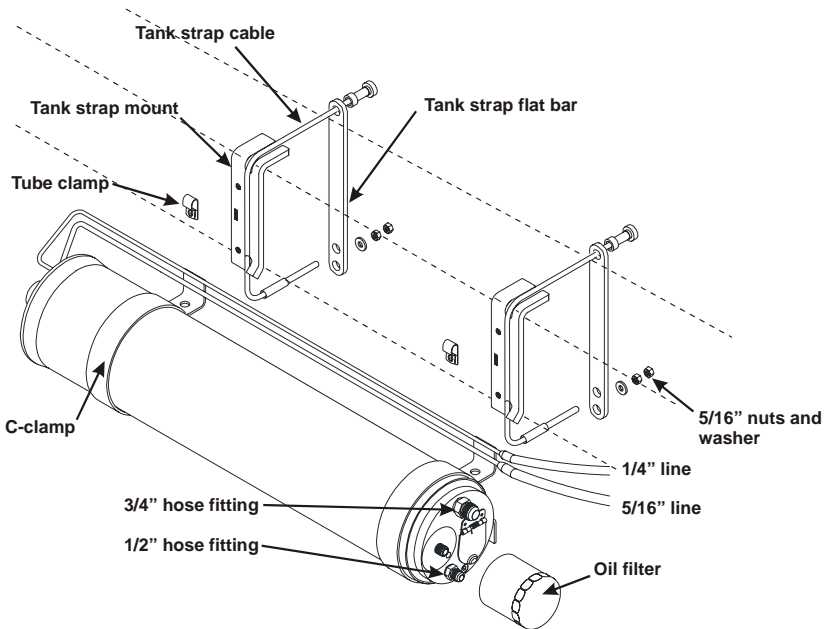


Figure 2.1

- Place the tank on a work bench with the front (oil filter end) of the tank to your left. Remove the oil filter from the front of the tank.
- Remove the two 1/4 inch pinch bolts from the C-clamps. Expand the clamps slightly and slide them over the front of the tank.
- Position the C-clamps about 6 inches from each end of the tank.

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- Place the two L-shaped tank strap mounts under the C-clamps with the right-angle ends facing you and hanging over the edge of the work bench.
- Align the holes, apply Loctite and thread 5/16 x 1/2 inch bolts with flat washers into the bottom hole on each bracket, but do not tighten.
- Install the 1/4 inch pinch bolts into the C-clamps so that the heads of the bolts face toward you and install the nuts.
- Rotate the tank so that the directional arrow on the end of the tank is parallel to the work bench and faces toward you (Figure 2.2).
- Check the distance of each C-clamp from the ends of the tank and tighten the pinch bolts so that the clamps grip the tank securely.

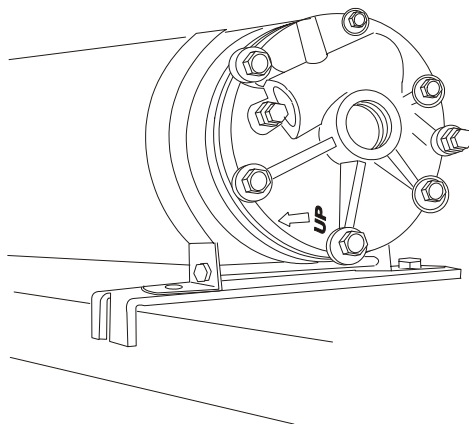


Figure 2.2

- Thread the 1/4 and 5/16 inch fittings on the steel lines to the matching fittings on the back end of the tank, but do not tighten the fittings. Route the lines along the top of the tank across the two C-clamps.
- Place the two insulated tube clips over the steel lines with the mounting holes upward and align them with the top C-clamp mounting holes (Figure 2.3).

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- Apply Loctite and insert 5/16 x 1/2 inch bolts through the clips and the C-clamp and thread them into the mount brackets.
- Center the bolts in the C-clamp slots and tighten them.
- Install the 45 degree 1/2 inch fitting onto the matching fitting on the front of the tank, but do not tighten.

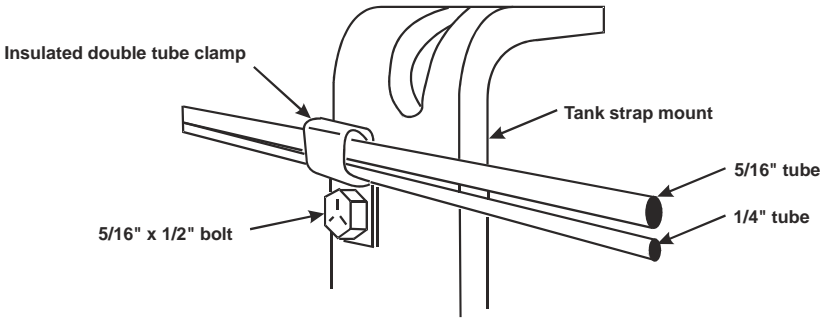


Figure 2.3

- Apply Loctite pipe thread sealant and install a fitting to the outlet on the tank. A 90 degree fitting is recommended. Tighten it to about the four o'clock position for testing, then reposition as required for final connections (Figure 2.4).

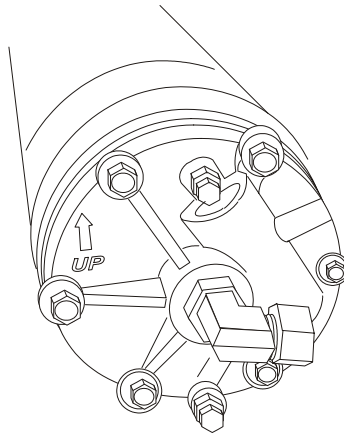


Figure 2.4

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2.2 Installing the Tank Assembly

- Insert the threaded end of the cable straps through the single hole end of the bar straps.
- Place the bar straps in position on the inside of the frame, one in front of the transmission cross-member and one behind, with the cable straps over the top of the frame (Figure 2.5).

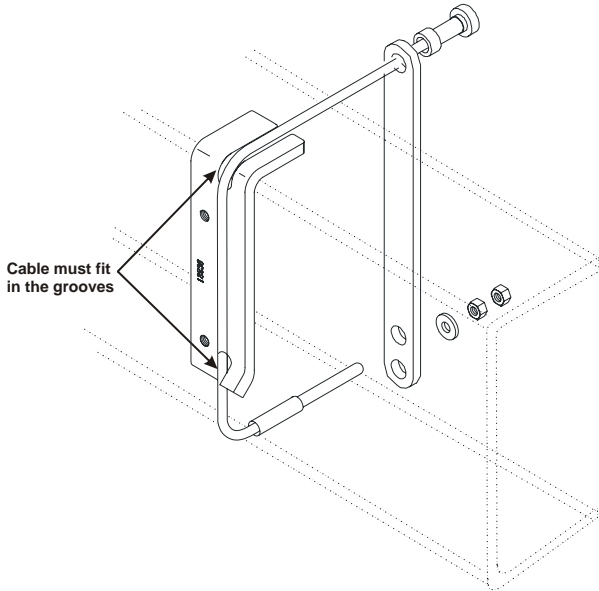


Figure 2.5

- Lift the tank assembly and support it in position so the tops of the two tank strap mounts fit over the top of the frame rail.



Make sure that the OEM wire harness is outside the mounts and is not pinched between the mounts and the frame.

- Wrap the two tank cable straps around the tank strap mounts. Make sure that they fit in the upper and lower cut-outs of the tank strap mounts (Figure 2.4).



Make sure that the cable straps are behind the two steel lines and the OEM wire harness and that there are no lines or wires pinched between the cable and the mount.

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- Insert the threaded end of the cable through the one of the lower holes on the tank strap flat bars. Select the appropriate holes that best match the frame of the truck.
- Place a thick 5/16 flat washer and nut on each tank cable strap and tighten just enough to hold the tank in place but loose enough to allow the tank to be positioned along the frame.
- Slide the tank rearward on the frame to provide clearance for attaching the hoses.
- Route the 45 degree end of the 3/4 inch hose and the straight end of the shortest 1/2 inch hose from the engine compartment over the body mount to the tank.
- Connect the 3/4 inch hose to the matching fitting on the tank. Angle the fitting upwards to allow the hose to easily pass over the body mount and to allow the level sight-glass cover sufficient room to lift; then tighten the fitting.
- Connect the 1/2 inch hose to the 45 degree fitting on the front of the tank. Adjust the position of the fitting so that the hose clears the filter and allows access to the sight glass cover; then tighten the fitting and the hose connections.
- Slide the tank forward, providing sufficient space for connections to the fitting on the rear of the tank and enough room to easily change the oil filter.
- Tighten the nuts on the cable straps until the tank and the bar straps are tight against the frame and the tank is secure.
- Thread a second nut on each cable clamp and lock the two nuts together using two wrenches.

Part 3: Installing the Cooler, Bracket and Compressor

3.1 Installing the Crank Pulley

- Place the VR crankshaft pulley in position over the OEM pulley. Make sure that it fits flat against the OEM pulley.
- Install the M16 x 180mm replacement crankshaft bolt with the large spacer.
- Rotate the VR crankshaft pulley counterclockwise until the spokes on the back of the pulley are tight against the spokes of the OEM pulley.
- Tighten the crankshaft pulley bolt sufficiently to hold the pulley in position



Do not use an impact tool to tighten the pulley bolt.

- Remove the starter motor and install the OEM flywheel locking tool.
- Pre-torque the crankshaft bolt to 37 ft-lbs (50 N.m).
- Final-torque the bolt 140 degrees using the reference marks that you made on the pulley during preparation.
- Remove the OEM flywheel locking tool and install the starter motor.

3.2 Installing the Oil Cooler



The oil cooler (Figure 3.1) is installed on the passenger side of the truck, just below the corner of the radiator, with the oil fittings facing to the passenger side.

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- If you did not remove a bolt from the bottom of the frame, insert the supplied M12 x 30 mm hex head bolt through the hole in the frame from the inside of the frame so that the threads point downward through the hole.
- Remove the clip holding the wire harness to the radiator frame as it will interfere with the cooler positioning. Move the harness out of the way.
- Place the cooler in position on the frame.

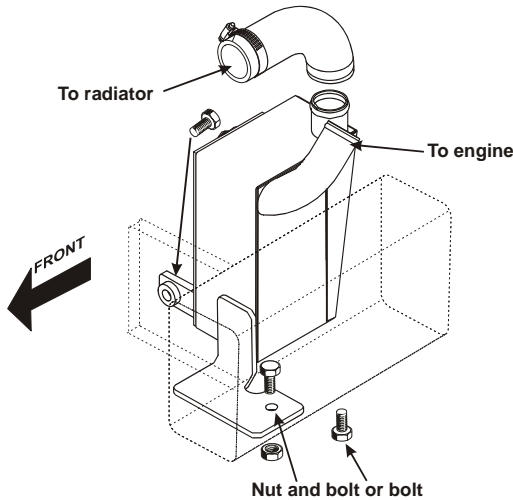


Figure 3.1

- Install the M12 x 30 mm hex head bolt through the bottom mount hole and thread it into the frame or, fit the bottom mount hole over the bolt that was inserted into the frame and thread on a nut.
- Install the M10 x 40 mm hex head bolt with flat washer into the outer bumper support bracket mounting hole.
- Tighten the bolts. If you use the bolt and nut combination, use an impact to tighten the nut as you cannot reach the head of the bolt with a wrench.

- Route the OEM wire harness so that it does not touch the cooler and fasten it securely out of the way.
- Remove the plug and install the hose from the cooler onto the lower radiator fitting. Loosen the clamp on the cooler end, position both clamps properly and tighten them securely.



This hose may have to be shortened on the radiator end to provide a proper fit.

- On 2001 – 2002 models install the OEM lower radiator hose without any modifications using the OEM spring clamps.
- On 1999 -2000 models cut 1-3/4 inches off of the radiator end of the OEM lower radiator hose and 1 inch off of the engine end. Install the hose and secure it with hose clamps.
- Connect the 90 degree end of the 1/2 inch hose from the tank to the top fitting on the cooler.
- Connect the 90 degree end of the remaining 1/2 hose to the bottom fitting on the cooler.
- Route the 1/2 inch hose from the bottom of the cooler over the frame and under the front of the engine to the driver's side of the engine compartment.
- Fasten both 1/2 inch hoses using tie straps so that they do not contact any hot or moving parts. The hose running under the engine can be tied to the brackets holding the OEM wiring harness.

3.3 Installing the Main Bracket and Compressor

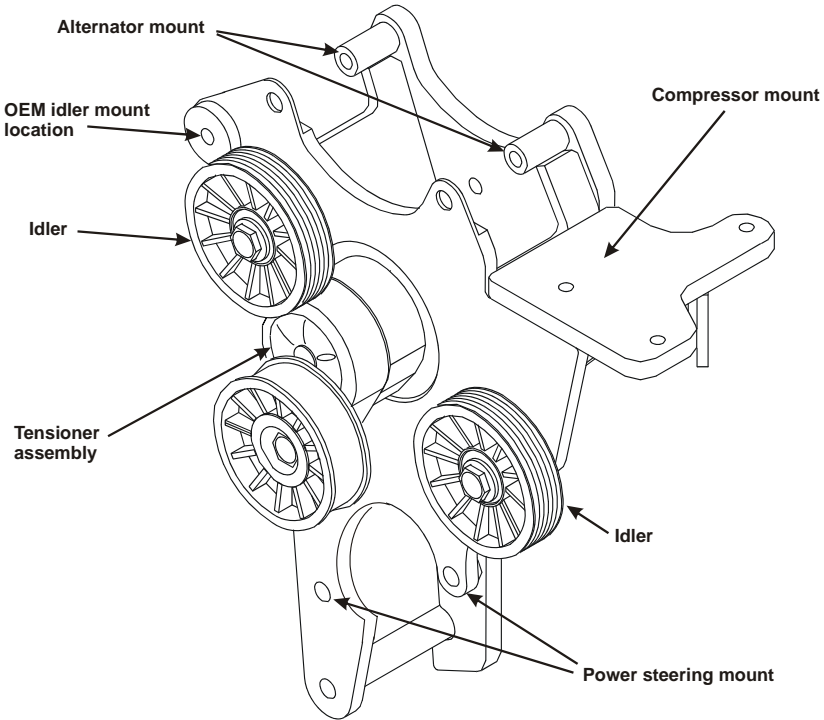


Figure 3.2

- Remove the idlers and the complete tensioner assembly from the main bracket (Figure 3.2).
- Place the main bracket on the front of the engine. Keep the bracket in place by threading the M10 x 130 mm hex head bolt a few turns into the lower mounting hole. Use Loctite on the threads.
- Push the bracket back against the cylinder head, apply Loctite and thread in the five M10 x 30 mm hex head bolts
- Make sure that the bracket sits flat against the engine. If the bracket does not sit flat, remove it and correct the problem.
- Torque all bolts to specifications.

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- Install the power steering pump on the main bracket using the OEM bolts. Apply Loctite and torque the bolts to specifications.
- Align the marks and Install the power steering pump pulley.
- Apply Loctite, install the OEM idler and the two grooved idlers on the bracket and torque the bolts to specifications.
- Install the tensioner assembly and torque the Nylok nut to specifications.
- Install the alternator on the main bracket using the OEM bolts. The spacers will pull into position as you torque the retaining bolts to specifications.
- Place the VR compressor onto the mounting bracket and insert the studs into the three holes on the top left of the bracket. Install the 8 mm flange head nuts and torque to specifications.
- Install the OEM belt, then the VR belt (Figure 3.3).
- Visually check belt alignment to make sure that it is correct.

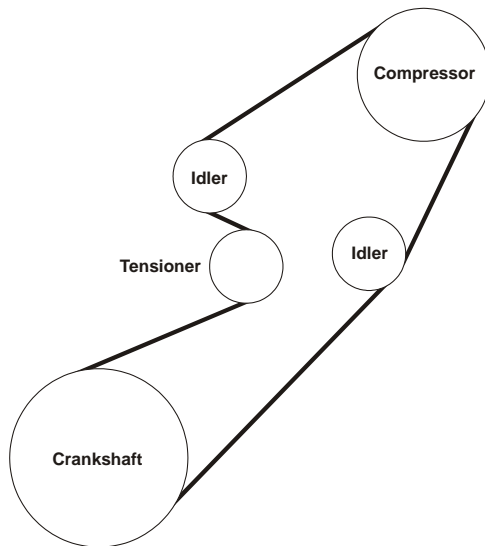


Figure 3.3

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3.4 Connecting the Hoses



Route all hoses so that they are clear of the exhaust, hot engine components or moving parts and secure them with nylon ties. Protect the hoses with plastic loom in areas where they might rub.

- Route the 3/4, 5/16 and 1/4 inch hoses up from the cab mount, across the firewall and over to the compressor.
- Connect the 5/16 and 1/4 inch hoses to the matching fittings on the inlet control valve.
- Connect the 1/2 inch hose from the cooler to the matching fitting on the compressor. Route the hose behind the power steering pump.
- Connect the 3/4 inch hose to the matching fitting on the back of the compressor.
- Tighten all fittings.
- Remove the cardboard protector from the filter mount base on the tank.
- Apply a thin coating of compressor oil to the oil filter gasket and install the filter on the tank. Tighten the filter an additional 1/2 turn after the gasket contacts the base.

3.5 Completing the Installation

- Install the PCM using the lower bolt in the front driver side fender well.
- Slide the VMAC PCM locating bracket between the battery platform mounting location and the edge of the OEM PCM bracket. When installed, the bracket should angle the PCM unit backwards to clear the compressor and the drive belt.
- The rear hole in the VMAC PCM locating bracket should line up with the rear hole in the OEM PCM bracket and rear mounting hole in the battery platform mount.

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- Install the battery mounting platform (Figure 3.4). One of the battery mounting screws should go through the rear hole in the OEM PCM bracket and the VMAC PCM locating bracket. The forward hole in the PCM is not used.
- Install the battery and retainer.

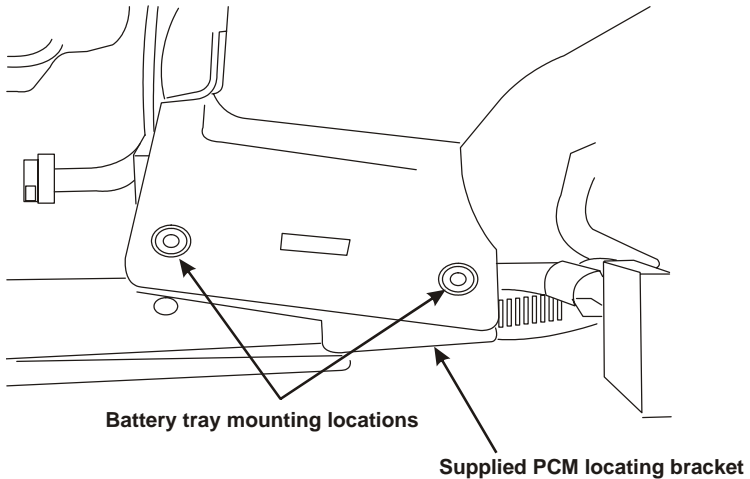


Figure 3.4

- Install the bracket holding the large, red battery cable splitter box to the VR compressor bracket using the OEM fasteners.
- Install the fender liner using the original plastic fasteners to secure it in place.
- Install the lower fan shroud, install the fan and tighten the fitting, then install the upper fan shroud.
- Connect the upper radiator hose to the radiator and clip it onto the fan shroud.
- Check all fasteners, clamps, fittings and retainers to make sure that they are tight and secure all OEM wire harnesses.
- Fill the cooling system with the recommended coolant.

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3.6 Adding Oil to the System



You must use the VMAC supplied and approved compressor oil in this system. Failure to use this special oil will result in damage to the compressor and will void your warranty.

- Remove the fill plug from the air inlet control valve and pour about 3 US quarts (3 litres) of the supplied oil into the oil fill hole on the inlet control valve using a funnel.
- Turn the compressor clutch clockwise with a ratchet and a 1/2 inch socket using the hex head bolt at the centre of the compressor clutch during the fill process.
- Allow at least 5 minutes for the oil to drain into the tank, then check the level at the sight glass at the front of the tank. Continue adding oil until the level is correct.
- Install the fill plug in the inlet control valve and tighten it securely.



Do not overfill the system.

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Part 4: Installing the Control Components

4.1 Installing the Control Box

- Locate a suitable location for the control box where it will be accessible but will not be subject to damage. Recommended locations include the side panel just behind the door opening or under the dash (Figure 4.1).

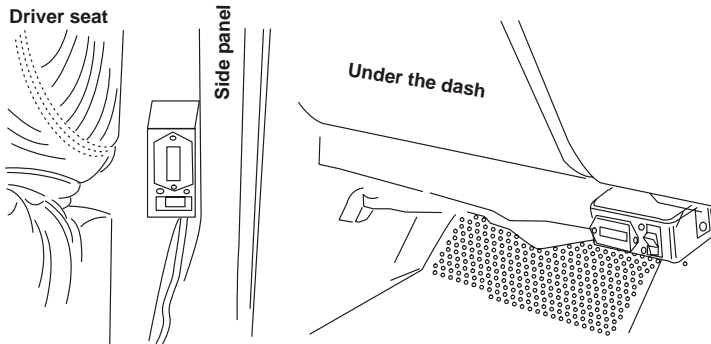


Figure 4.1

- Tighten the two side brackets on the control box and position it in the selected mounting location. Mark the position of the mounting holes and drill two 7/64 inch holes for the brackets.
- Mount the control box with the wire harness coming out the bottom or the back of the unit. If the control box is mounted to the body panel, remove the plastic door trim and route the wiring along the body panel under the trim and up under the dash.
- Remove the center panel from under the steering wheel and mount the switching box under the dash using plastic ties. Make sure that it does not interfere with other parts.

4.2 Installing the Pneumatic Throttle

- Remove the two front and right rear socket head cap screws from the inlet control valve. These are the longest of the four cap screws.
- Place the pneumatic throttle controller complete with mounting bracket on the top of the compressor (Figure 4.2). Install the three supplied M8 X 1.25 X 60 socket head cap screws and torque to specifications.

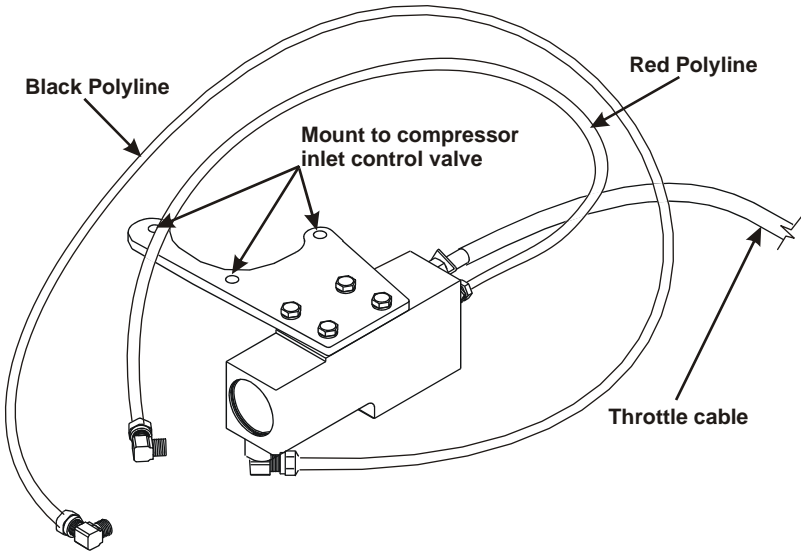


Figure 4.2

- Remove the protective plastic plugs from the passenger side and the front of the inlet control valve (Figure 4.3). Apply pipe sealant to the threaded end of the 90 degree quick connectors and thread them into the holes. Tighten the fittings.



Do not over-tighten the quick connectors. Do not exceed more than 1/2 to 3/4 turn past the hand tight position or damage may result to the inlet control valve.

- Route the red poly line from the throttle control around the back of the compressor and connect it to the 90 degree quick connect fitting on the right (passenger) side of the inlet control valve.

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- Route the black poly line from the throttle control around the back of the compressor and connect it to the 90 degree quick connect fitting at the front of the inlet valve.

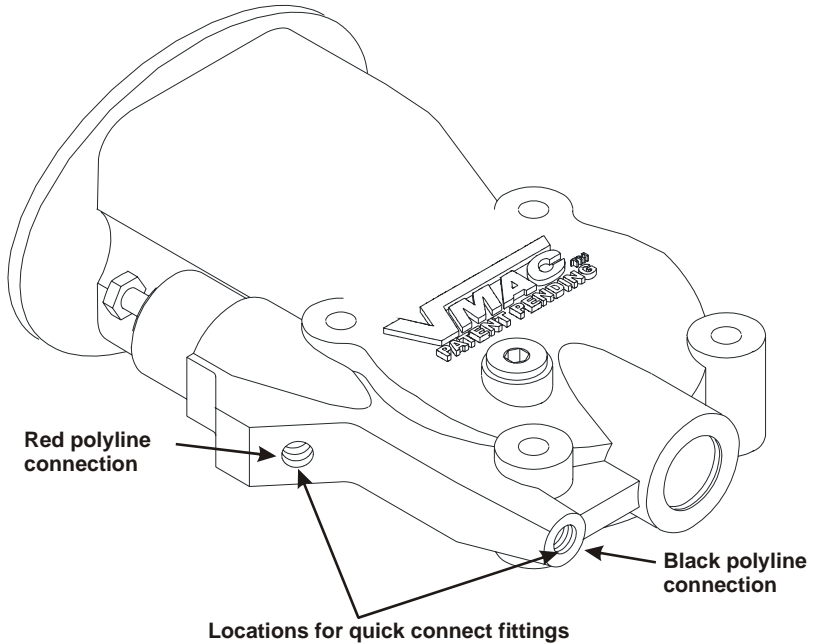


Figure 4.3

- Remove the two OEM bolts securing the throttle/cruise control cable bracket to the inlet manifold.
- Place the supplied throttle cable securing bracket over the OEM bracket and fasten them both in place using the OEM bolts (Figure 4.4).
- Remove the outer nut and one washer from the end of the throttle controller cable, insert it through the drilled hole at the bottom of the bracket, install the washer and nut and tighten them.
- Remove the two (2) button head cap screws from the supplied throttle pull assembly and separate the throttle pull clamp from the throttle pull bracket.

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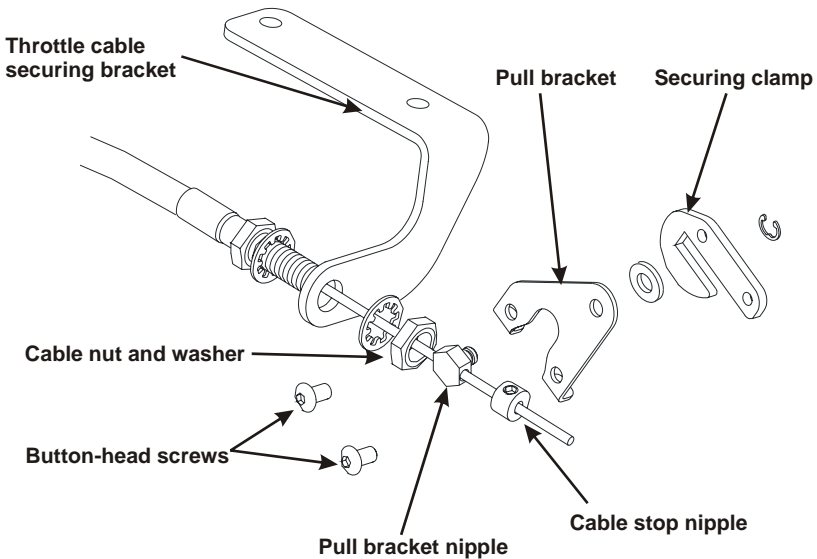


Figure 4.4

- Slide the VR70 throttle pull bracket over the OEM cruise control arm on the throttle body quadrant. Ensure the two bent tabs are in towards the OEM throttle body quadrant (Figure 4.5).
- Slide the VR70 throttle pull securing clamp over the feet of the VR70 throttle pull bracket and under the OEM throttle cruise control arm. This will enable these items to be clamped securely together.
- Install the two button head cap screws and tighten. Test the installation to ensure that there is no fouling with any OEM components.
- Cut out a small section on the plastic engine cover to allow for free movement of the throttle assembly.
- Insert the inner throttle controller cable through the throttle pull bracket nipple and install the cable stop nipple.
- Pull the inner cable tight and adjust the nipple so that there is approximately 3/16 inches of clearance between the nipple and the pull bracket.

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This distance may need to be adjusted if engine speed exceeds 2200 RPM when the system is operated at full flow.

- Trim the end of the inner cable so that it extends about 1 inch past the stop nipple. If you do not trim the cable, it will hit the air inlet duct and interfere with throttle return.

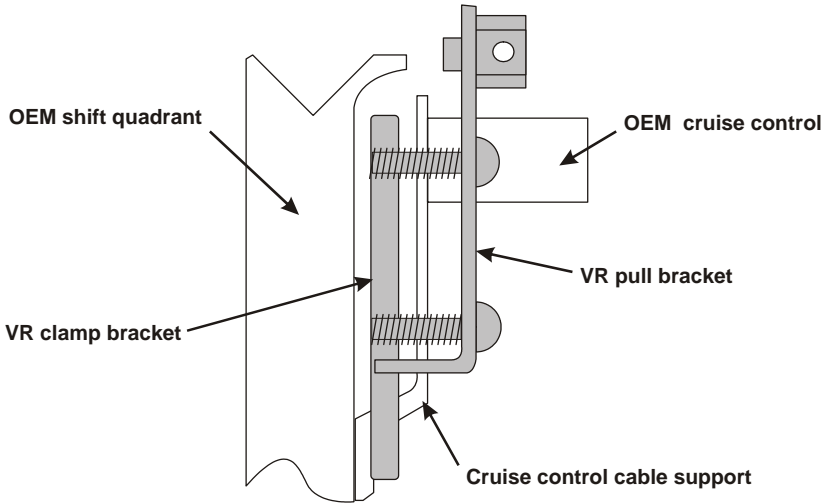
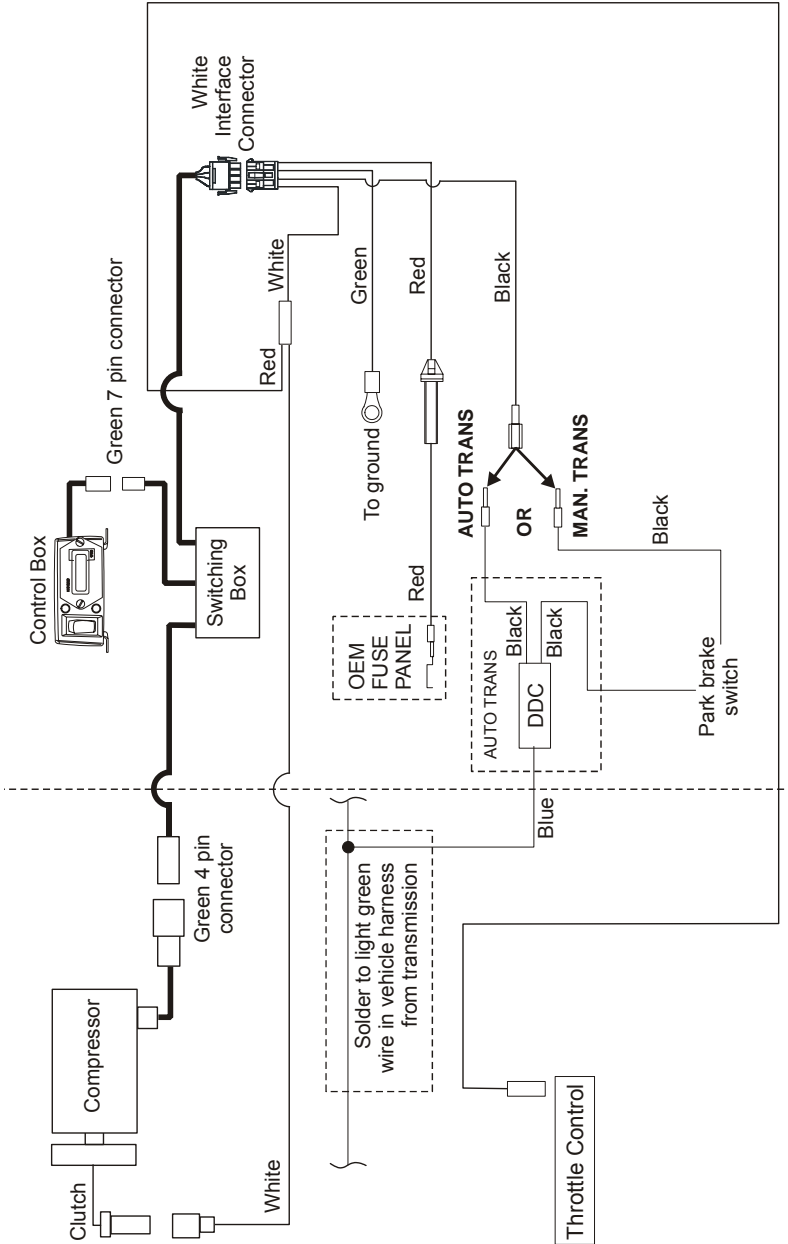


Figure 4.5

4.2.1 Connecting the Wiring in the Cab



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- Connect the green 7 pin connector between the control box and the switching box.
- Connect the interface cable to the matching connector from the switching box.
- Route the wire with the green 4 pin connector, the red wire without the fuse holder and the white wire with the bullet connector through a suitable opening in the firewall. If necessary, cut a small slit in an OEM rubber boot.
- Connect the green wire with the ring connector to a good ground under the dash.

4.2.2 Manual Transmission Trucks

- Unplug the connector from the park brake switch. You may have to remove the cover from the large OEM electrical connector located on the firewall of the truck next to the park brake to gain access to the connection.
- Connect the female spade connector with the piggyback connector from the interface cable to the connector on the park brake switch.
- Connect the OEM park brake connector to the piggyback connector.

4.2.3 Automatic Transmission Trucks

- Install the Drive Disable Circuit (DDC) under the dash using nylon ties.
- Connect the black wire from the DDC to the black wire from the interface connector.
- Unplug the connector from the park brake switch. You may have to remove the cover from the OEM electrical connector to gain access to the connection.

- Connect the female spade connector with the piggyback connector from the interface cable to the connector on the park brake switch.
- Connect the OEM park brake connector to the piggyback connector.
- Route the blue wire into the engine compartment through the same opening that you used for the other wires.

4.2.4 Connecting the Wiring Under the Hood

- Connect the wire with the green 4 pin connector to the matching connector from the compressor.
- Connect the white wire with the bullet connector to the matching connector from the compressor clutch.
- Connect the red wire to the matching connector on the pneumatic throttle control.

4.2.5 Completing the Automatic Transmission Wiring Connections

- Cut the light green wire (marked during preparation) and remove about 1/2 inch of insulation from each end. Slide a shrink sleeve over one end of the wire.
- Remove about 1 inch of insulation from the DDC blue wire.
- Join the wire and solder the joint using the supplied solder. Slide the shrink sleeve over the joint and heat to seal the connection. The preferred method is shown in Figure 4.6.

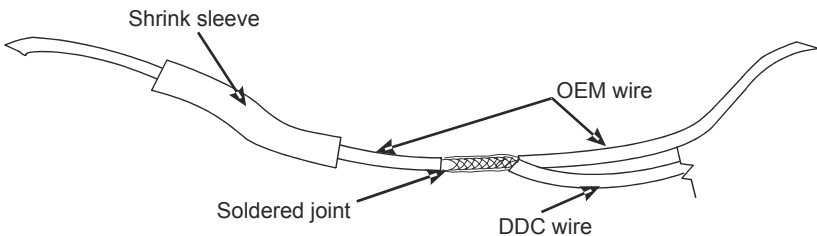


Figure 4.6

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- Replace the tape on the bundle. Fit the loom back over the harness and tape it in place.
- Install the plastic cover on the engine.

4.2.6 Connecting to Switched Power

- Route the red wire from the interface connector (with the inline fuse) to the fuse panel.
- Connect the truck batteries.
- Locate a fuse in the fuse panel dash that provides power when the ignition switch is in the "ON" position. Remove the selected fuse from the panel and connect the fuse tap to one side. Plug the fuse back into the empty socket using needle-nose pliers to make sure that it seats properly.



Make sure that the fuse is inserted with the tap on the battery power side (hot), not the fused side.

4.2.7 Completing the Installation

- Under the hood, group all the wires and harnesses from the compressor and secure them together with electrical tape, then protect them from damage with plastic loom.
- Cover all wires with loom and make sure that they are secured.
- Pull all excess wire and harnesses into the cab of the truck so that there are no loose loops under the hood.
- Neatly bundle all the wiring in the cab, secure the bundles with nylon ties or electrical tape and fasten them up under the dash, away from the steering column, brake pedal, accelerator pedal and park brake mechanism. Secure them with nylon ties.
- Replace the dash panel and the fuse panel cover.

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4.3 Safety Test

- Place the automatic transmission in Park or manual transmission in neutral and apply the park brake.
- Turn the ignition key “ON” but do not start the engine.
- Check the control box to see if there is a number showing in the hour-meter. If there is no display, there is no power to the control box.
- Turn the control box switch to the “ON” position. The green light should come on and you should hear the compressor clutch engage.
- Release the park brake. The green light should go out and the compressor clutch should disengage. Apply the park brake again and the light should come on and the clutch should engage.
- Shift the automatic transmission out of Park. The light should go out and the compressor clutch should disengage. Check all gear selector positions to make sure that the light does not come on unless the selector is in Park or Neutral.
- Turn the ignition key “OFF”.



If the truck fails the test, check the wiring to make sure that all the connections are correct and secure. If you require additional assistance, contact your local VMAC dealer. Call 1-800-738-8622 or 250-740-3200.

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Part 5: Finishing the Installation

5.1 Before Starting the Engine Checklist

Make sure that the following have been completed:

- Check the truck coolant.
- Check the compressor oil level.
- Do a final inspection to make sure that everything has been completed and tightened.
- Perform a final belt alignment check.
- Check all wiring for security and protection.

5.2 After Starting the Engine Checklist



Place the truck in a safe operating position and block the wheels. Ensure that there are no people around the truck before beginning the test.

Make sure that the following have been completed:

- Operate the system with an air tool for at least 1/2 hour (1 hour preferred).
- Road test the truck for approximately 14 miles (20 km)
- Watch the underhood operation to make sure that belts rotate properly around the pulleys and nothing is rubbing or contacting hot parts.
- Check all components once the engine is turned off and the system has cooled
- Check the truck coolant after the truck reaches operating temperature.
- Check the compressor oil level after the truck has been shut down and the oil level has had time to stabilize.

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5.3 Setup, Performance Testing and Adjustments

This system has been adjusted at the factory for general operation. If your tests indicate that adjustment is necessary, refer to the owner's manual for specific instructions on how to adjust the system.

You can test the system operation using the tools that will be operated by the system or you can test operations using an orifice in the outlet to simulate tool use (Figure 5.1).

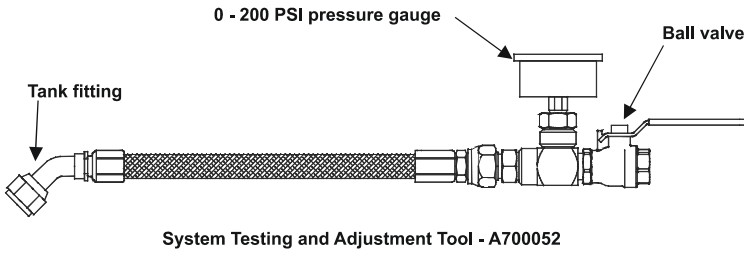


Figure 5.1

1. Install the test tool in the tank outlet fitting.
2. Make sure that the ball valve is closed.
3. Place the manual transmission in neutral or the automatic transmission in park and fully apply the park brake.
4. Allow the truck to run until the engine is at operating temperature.
5. Operate the air compressor system until the oil is warm.
6. Observe the pressure gauge. Pressure should be approximately 150 psi.
7. Open the ball valve on the test tool and observe the engine tachometer. Engine speed should increase to about 1,800 - 2,200 RPM.
8. Close the air valve slowly to allow the system pressure to rise.
9. Once the system pressure is at maximum, slowly open the ball valve on the test tool until the pressure on the gauge begins to drop. Engine speed should start to ramp-up when air pressure drops to approximately 140 PSI.

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5.4 System Identification and Warnings

The System Identification Number Plate must be attached to the truck at the time of installation (Figure 5.2). This plate provides information which allows VMAC to assist in customer inquiries and the ordering of parts. Mark and drill two 7/64 inch holes, then secure the plate with self-tapping screws.

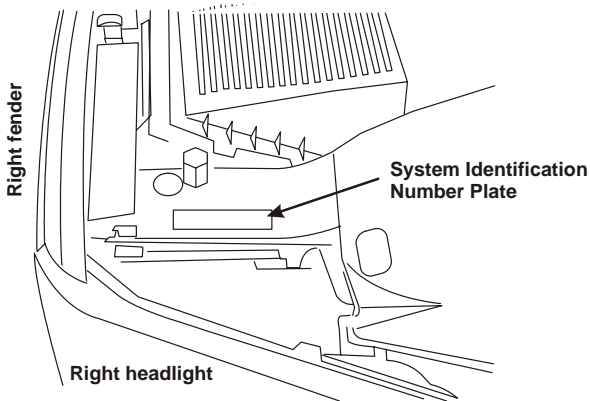



Figure 5.2

As part of the installation process, ensure that the safety and operational instruction decal is affixed in an obvious location so that it can be seen by truck operators (Figure 5.3).



This Vehicle is Equipped with a VMAC Air Compressor System

OPERATING INSTRUCTIONS

<p>Daily Pre-Start Check</p> <ol style="list-style-type: none">1. Check Oil Level in Tank2. Check Drive Belt3. Check for Leaks	<p>Start Up Procedure</p> <ol style="list-style-type: none">1. Ensure Compressor is OFF2. Ensure discharge valve is CLOSED3. Ensure air system is discharged4. Place vehicle in Neutral or Park and engage vehicle safety features - park brake5. Start engine and bring up to operating temperature6. Turn ON compressor	<p>Shutdown Procedure</p> <ol style="list-style-type: none">1. Allow engine to idle for 1 minute2. Turn OFF compressor3. Wait for system to discharge for 1 minute before restarting
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For Technical Support/Parts contact your VMAC Dealer
To locate your nearest dealer call 1-800-738-8622 (250-740-3200)

⚠ WARNING

Always allow system pressure to discharge before restarting

Figure 5.3

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5.5 Auxiliary Air Receiver



If you intend to use an auxiliary air receiver with this system you must observe the following installation procedure to prevent damage to the system.

The line from the VMAC tank to the auxiliary air receiver must have a one-way check valve installed (part #3600078) to prevent blow back from the auxiliary tank to stop moisture from entering the VMAC tank (Figure 5.4).

The line to the auxiliary tank must not be installed in the bottom of the tank, but must be installed as high as possible to prevent water from entering the line.

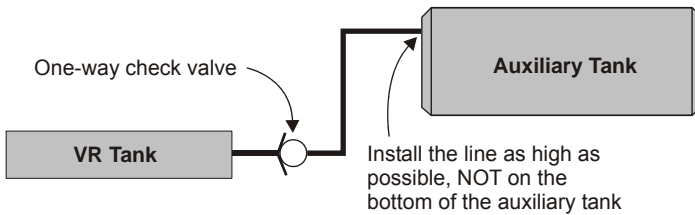
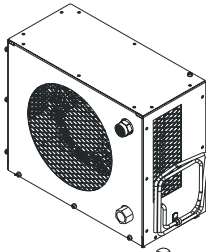


Figure 5.4

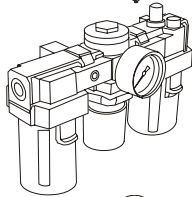
Accessory Products from VMAC

The following accessory products for your VR compressor system are available from VMAC. For more information or to order these products, call 1-800-738-8622.



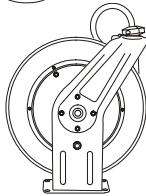
Eliminator Aftercooler

Removes up to 80% of moisture from compressed air. Quick installation, automatic drain and compact design



Filter Regulator Lubricator

Removes lubricants, water and dirt from the air stream. Adds atomized tool oil to lubricate tools. Reduces pressure for longer tool life.



Hose Reel

Secure, compact, retractable hose storage in a sturdy reel.



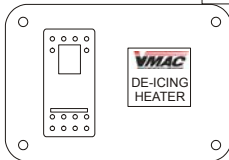
Air Receiver Tank

Thirty-five gallon capacity in a compact tank, complete with fittings and a gauge.



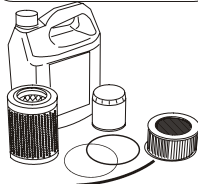
De-icer Kit

Insulated rope heater prevents freezing of lines and regulator.



Service Kits

Using OEM service products will extend the life of your system. Includes oil, filters, seals and O-rings. 200 hour and 400 hour service interval kits are available



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