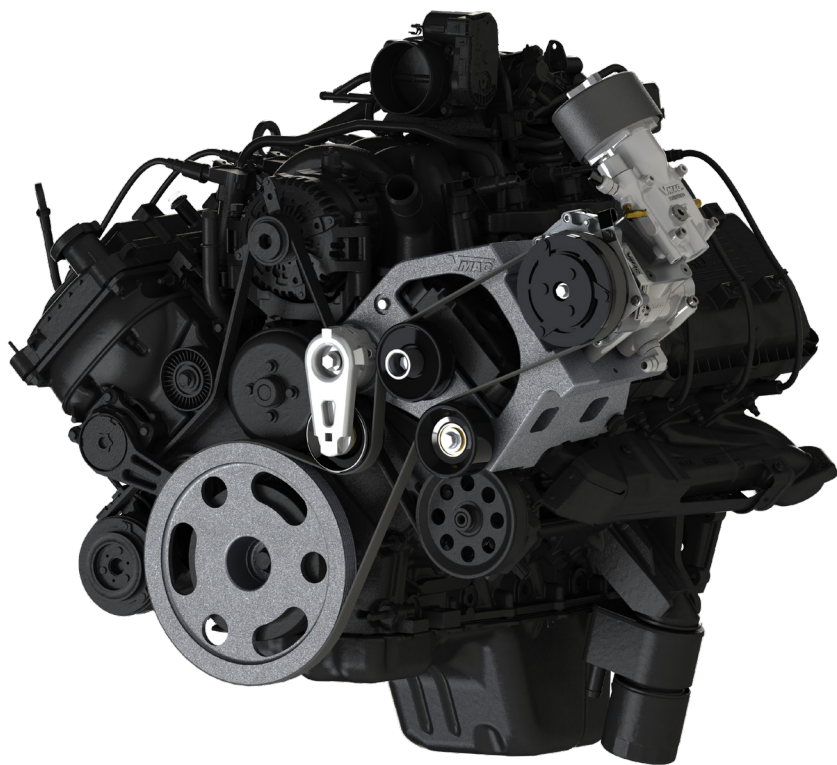


UNDERHOODTM **70**

AIR COMPRESSORS



Installation Manual for VMAC System

V900128

2019+ Ram 2500 – 3500 Pickup
2019+ Ram 3500 – 5500 Chassis & Cab
6.4 L HEMI Gas

www.vmacair.com

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Revision	Revision Details	Revised by	Checked by				Implemented
			Eng.		Tech.	Qual.	
A	Initial Release	MSP	Mech.	Elec.	MSP	LPH	3 Dec 2019
B	ECN: 20-160 Key switched power update	MSP	CAM	ASE	MSP	N/A	6 Aug. 2020

Additional Application Information

- 2019+ Ram 2500 – 3500 Pickup with 6.4 L HEMI Gas.
- 2019+ Ram 3500 – 5500 Chassis Cab with 6.4 L HEMI Gas.
- Vehicles equipped with dual alternators will need to be converted to single alternator. See VMAC Knowledge Base article EXT-VR-001.

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Important Information

The information in this manual is intended for certified VMAC installers who have been trained in installation and service procedures and/or for anyone with mechanical trade certification who has the tools and equipment to properly and safely perform the installation or service. Do not attempt installation or service without the appropriate mechanical training, knowledge and experience. Follow all safety precautions. Any fabrication for correct fit in modified vehicles must follow industry standard "best practices".

Notice

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Safety

Important Safety Notice

The information contained in this manual is based on sound engineering principles, research, extensive field experience and technical information. Information is constantly changing with the addition of new models, assemblies, service techniques and running OEM changes. If a discrepancy is found in this manual, contact VMAC Technical Support prior to initiating or proceeding with installation, service or repair. Current information may clarify the issue. Anyone with knowledge of such discrepancies, who proceeds to perform service and repair, assumes all risks.

Only proven service procedures are recommended. Anyone who departs from the specific instructions provided in this manual must first ensure that their safety and that of others is not being compromised, and that there will be no adverse effects on the operational safety or performance of the equipment.

VMAC will not be held responsible for any liability, consequential damages, injuries, loss or damage to individuals or to equipment as a result of the failure of anyone to properly adhere to the procedures set out in this manual or standard safety practices.

Safety should be the first consideration when performing any service operations. If there are any questions concerning the procedures in this manual, or more information is required, please contact VMAC Technical Support prior to beginning work.

Safety Messages

This manual contains various warnings, cautions and notices that must be observed to reduce the risk of personal injury during installation, service or repair and the possibility that improper installation, service or repair may damage the equipment or render it unsafe.



This symbol is used to call attention to instructions concerning personal safety. Watch for this symbol; it points out important safety precautions, it means, "Attention, become alert! Your personal safety is involved". Read the message that follows and be aware of the possibility of personal injury or death. As it is impossible to warn of every conceivable hazard, common sense and industry standard safety practices must be observed.



This symbol is used to call attention to instructions on a specific procedure that if not followed may damage or reduce the useful life of the compressor or other equipment.



This symbol is used to call attention to additional instructions or special emphasis on a specific procedure.

Warranty

VMAC Standard Warranty (Limited)

For complete warranty information, including both VMAC Standard Warranty (Limited) and VMAC Lifetime Warranty (Limited) requirements, please refer to our current published warranty located at: www.vmacair.com/warranty



If you do not have access to a computer, please contact us and we will be happy to send you our warranty.

VMAC's warranty is subject to change without notice.

VMAC Lifetime Warranty (Limited)

A VMAC Lifetime Limited Warranty is offered on the base air compressor only and only on UNDERHOOD™, Hydraulic Driven, Transmission Mounted, Gas and Diesel Engine Driven Air Compressors, Multifunction Power Systems, and other products as defined by VMAC, provided that (i) the purchaser fully completes and submits a warranty registration form within 3 months of purchase, or 200 hours of operation, whichever occurs first; (ii) services are completed in accordance with the Owner's Manual; (iii) proof of purchase of applicable service kits are made available to VMAC upon request.



The VMAC Lifetime Warranty is applicable to new products shipped on or after 1 October, 2015.

Warranty Registration

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

There are 4 ways the warranty can be registered with VMAC:



www.vmacair.com/warranty



warranty@vmacair.com



(877) 740-3202



VMAC - Vehicle Mounted Air Compressors
1333 Kipp Road, Nanaimo, BC, Canada V9X 1R3

VMAC Warranty Claim Process



VMAC warranty work must be pre-authorized by VMAC. Claims are processed via our dealer network. If you are not a VMAC dealer, please select one to work with via our Dealer Locator: <https://www.vmacair.com/dealer-locator/>



1. Communicate with VMAC Technical Support at 1-888-241-2289 or tech@vmacair.com to help diagnose/troubleshoot the problem prior to repair. VMAC technical support will require the VMAC System ID, hours on the compressor and mileage on the vehicle.
2. VMAC will provide direction for repair or replacement of the failed components.
3. If requested, failed parts must be returned to VMAC for evaluation.
4. Dealers may login to the VMAC website to view the "VMAC Labour Time Guide" (under "Agreements") to see the allowable warranty labour times.
5. Warranty invoices must include the Service Ticket number, VMAC System ID#, hours on the compressor, and a detailed description of the work performed.
6. VMAC Warranty does not cover consequential damages, overtime charges, mileage, travel time, towing/recovery, cleaning or shop supplies.
7. Dealers submit warranty claims on behalf of the Vehicle Owner/End User affected by the defective part(s). The dealer ensures that all warranty credits are refunded back to the Vehicle Owner/End User who made the initial warranty claim.



In order to qualify for Lifetime Warranty (Limited), the completed warranty registration form must be received by VMAC within 3 months of the buyer receiving the Product(s), or 200 hours of operation, whichever occurs first.

If the completed warranty registration form has not been received by VMAC within 3 months of the buyer receiving the Product(s), or 200 hours of operation, the warranty period will be deemed to commence 30 days from the date of shipment from VMAC.

Failure to follow the warranty claim process may result in denial of the warranty claim.

VMAC Product Warranty Policies & Warranty Registration can be found on the VMAC website (see previous page for URL).

General Information

Optional Equipment Compatibility

While VMAC strives to design systems compatible with optional OEM equipment (such as running boards), it is impractical to develop systems that accommodate every OEM and aftermarket option or add-on. Whenever possible, VMAC endeavors to advise of compatibility issues in the "Additional Application Information" section of the manual. Even when specific optional equipment is determined by VMAC to be incompatible, it does not preclude the vehicle upfitter or end user from modifying the optional equipment to make it compatible with the installed VMAC system. VMAC does not warranty or accept responsibility or liability for the fitment, function or safety of any products modified in any way not expressly outlined in the installation manual.

Before Starting

Read this manual prior to beginning the installation to ensure familiarity with the components and how they will fit on the vehicle. Identify any variations from the application list such as vehicle model, engines, or optional equipment (e.g., dual alternator, active steering assist, etc.).

Open the package, unpack the components and identify them using the IPL included in the Fastener Pack.

Hose Information

Depending on other installed equipment, it might be necessary to move the air/oil separation tank from its intended location. The hoses used in VMAC compressor systems have a specific inner liner that is compatible with VMAC compressor oil. Use of hoses other than those supplied or recommended by VMAC may cause compressor damage and may void your warranty. Please contact VMAC for replacement hoses and further information.

Ordering Parts

To order parts, contact a VMAC dealer. The dealer will ask for the VMAC serial number, part number, description and quantity. Locate the nearest dealer online at www.vmacair.com/dealer-locator or call 1-877-912-6605.



Special Tools Required

- Pneumatic fan wrench (Lisle 43300 or equivalent)

Torque Specifications

All fasteners must be torqued to specifications. Use manufacturers' torque values for OEM fasteners.

The torque values supplied in Table 1 are intended for VMAC supplied components, or for use as a guide in the absence of a torque value provided by an OEM.

Apply Loctite 242 (blue) or equivalent on all engine mounted fasteners. Torque values are with Loctite applied unless otherwise specified.

Standard Grade 8 National Coarse Thread								
Size (in)	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 (in)	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 (mm)	M6	M8	M10	M12	M14	M16
Foot pounds (ft•lb)	4.5	19	41	69	104	174
Newton meter (N•m)	6	25	55	93	141	236

Table 1 — Torque Table

Preparing for Installation



Preparation for installation is very important. Missing a step or an item can cause problems in the installation or damage to components.

☒ ***Check off each item as it is completed so that no steps are missed.***

- ☐ Review the contents of the system using the illustrated parts list to ensure all components are present and in the correct quantity. If any components are missing, have the system ID ready and call VMAC Technical Support at (888) 241-2289.



The VMAC warranty form must be completed and returned to VMAC at the time of installation for any subsequent warranty claim to be considered valid.

- ☐ Complete the warranty form. The VMAC warranty form is located at the back of this manual, as well as online at: www.vmacair.com/warranty



The System Identification Plate must be attached to the vehicle at the time of installation. This plate provides information that allows VMAC to assist with parts and repairs.

- ☐ Locate a conspicuous area in the engine bay (where the tag will be easily noticed) to install the System ID tag.
- ☐ Mark and drill (x2) 7/64 in holes and secure the plate with the supplied self-tapping screws (Figure 1).



Figure 1 — System Identification Plate

- ☐ 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 vehicle operators. A good spot for this is usually on the inside of the door or on the panel underneath the steering wheel (Figure 2).



**This vehicle is equipped with a
VMAC Air Compressor System.**

OPERATING INSTRUCTIONS

Daily Pre Start Check:

1. Check oil level in tank.
2. Check drive belt system.
3. Check for leaks.

Start Up Procedure:

1. Ensure air system is depressurized.
2. Ensure all air outlets are CLOSED.
3. Place vehicle in Neutral or Park and engage park brake.
4. Start engine and bring to operating temperature.
5. Turn ON compressor.

Shutdown Procedure:

1. Ensure discharge valve is CLOSED.
2. Allow engine to idle for 1 minute.
3. Turn OFF compressor.
4. Wait for system to depressurize before restarting.

For Technical Support/Parts contact your VMAC Dealer
To locate your nearest dealer call 1-800-738-8622 (250-740-3200)

4400644-A



WARNING

**Always allow system to
depressurize before restarting**

Figure 2 — Operating Instruction label

- ☐ To alert any technicians that may service the vehicle, affix the servicing caution/contact decal in a conspicuous area in the engine bay (where the decal will be easily noticed) (Figure 3).



Figure 3 — Advisory label



Apply Loctite 242 (blue) to all fasteners.

- ☐ Disconnect the negative terminal from the batteries.
- ☐ Drain the coolant into a clean container and set it aside for use later.
- ☐ Remove the radiator cover and intake ducting (Figure 4).

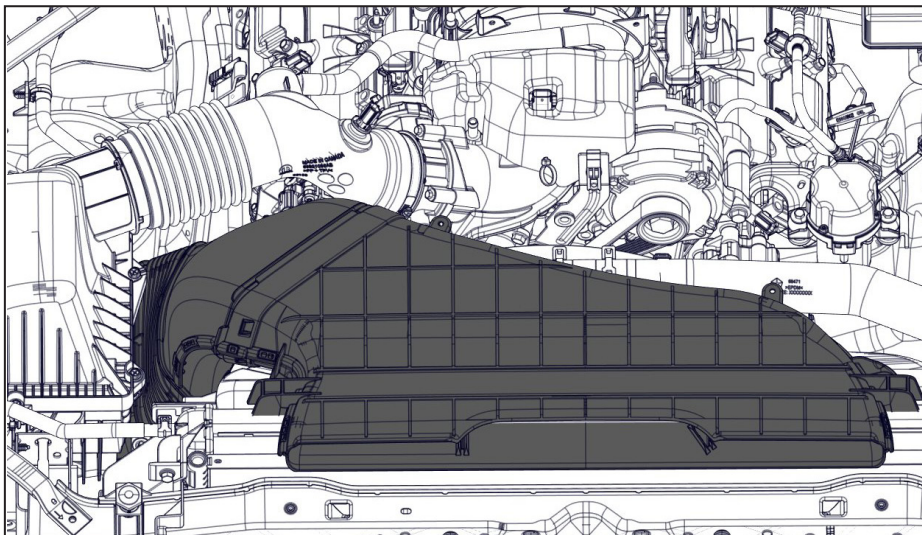


Figure 4 — Remove intake ducting

- ☐ Disconnect the harnesses and remove the air box assembly (Figure 5).

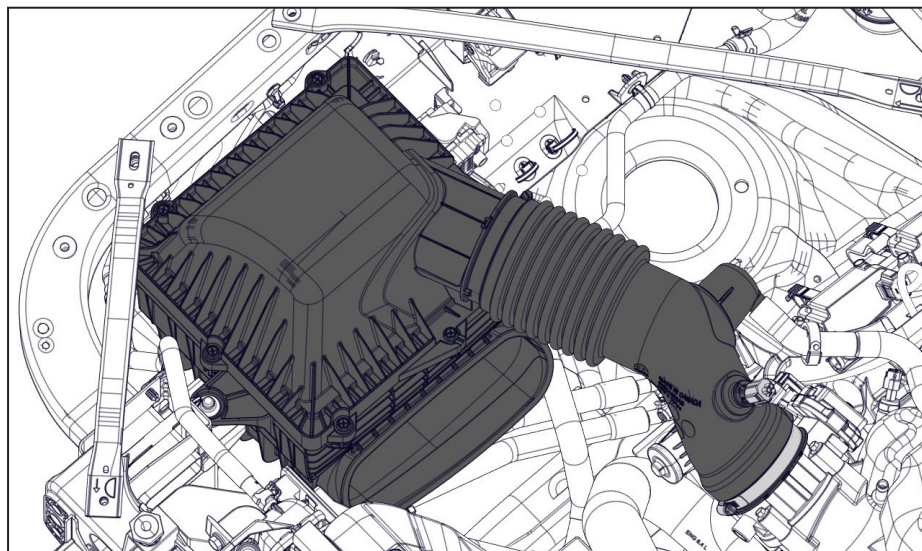


Figure 5 — Remove air box

- ☐ Remove any aesthetic engine covers.
- ☐ Disconnect the top radiator hose at the radiator spigot (Figure 6).

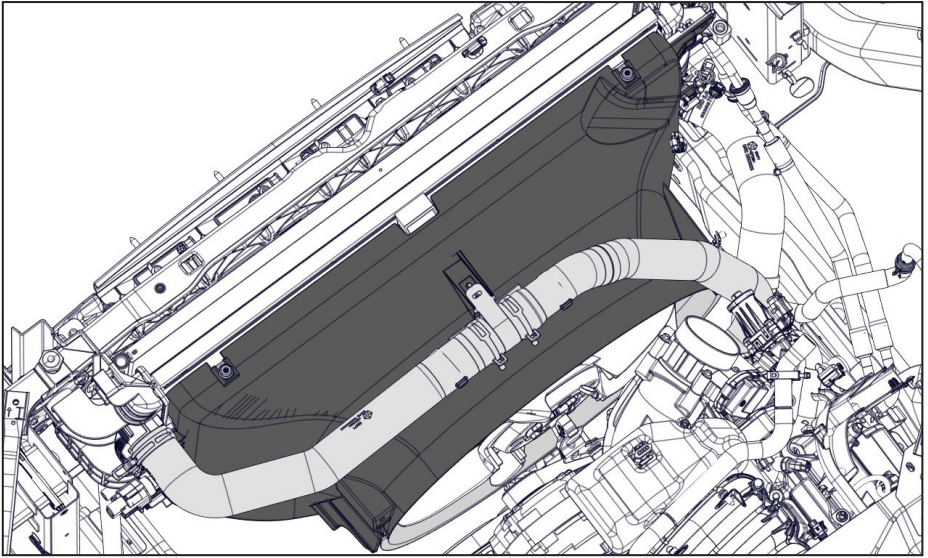
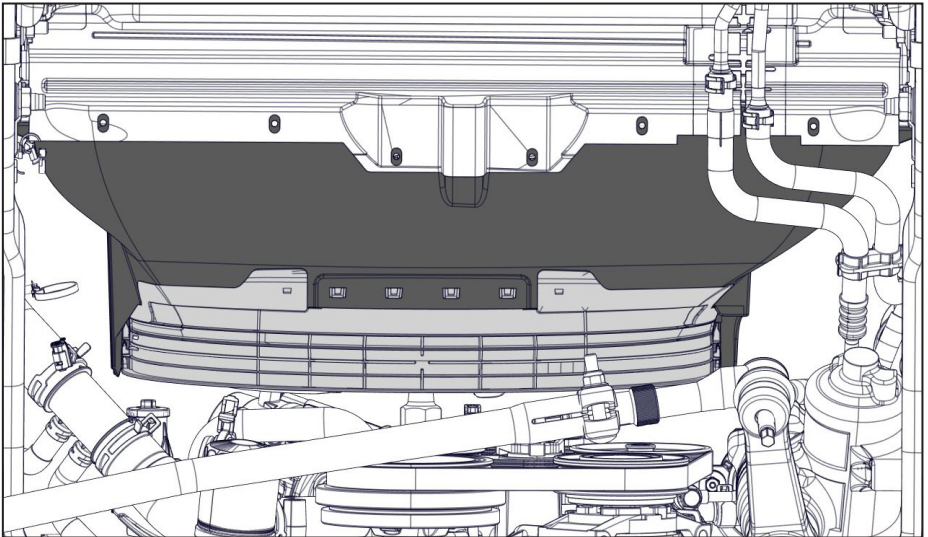


Figure 6 — Preparing the fan shroud for removal

- ☐ Remove any push-clips securing hoses or electrical harnesses to the shroud.
- ☐ Remove the push connectors securing the shroud to the front air dam (Figure 7).



**Figure 7 — Preparing the fan shroud for removal
(viewed from below vehicle)**

- ☐ Separate the lower and upper fan shroud assembly.

- ☐ Remove the fan and upper shroud together. Use care to ensure the radiator is not damaged during removal or installation (Figure 8).

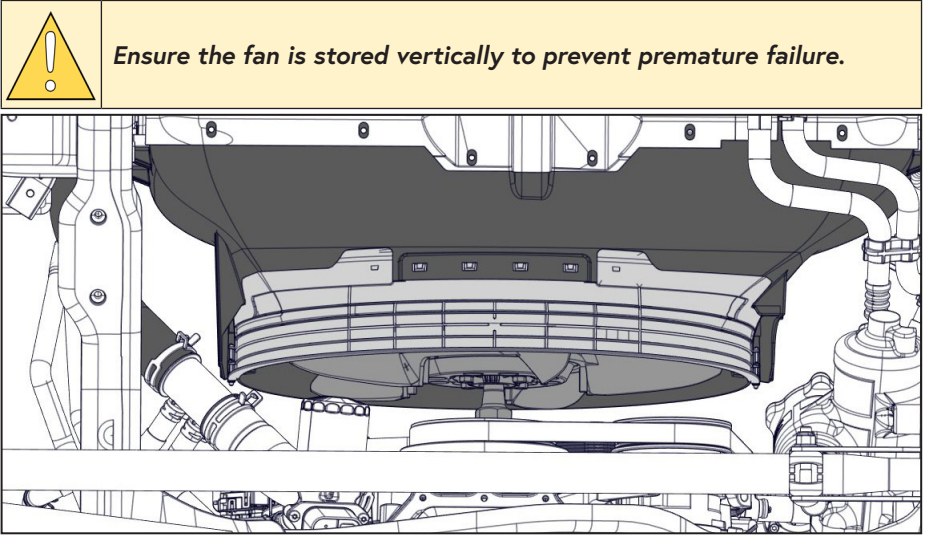


Figure 8 — Remove fan

- ☐ Remove and discard the OEM Front End Accessory Drive (FEAD) belt.
- ☐ Remove the radiator side of the lower radiator hose and set it aside for later (Figure 8).
- ☐ Remove the driver and passenger side fender liners.

Installing the Crank Pulley, Main Bracket, and Compressor

- ☐ Remove the OEM harmonic balancer bolt and discard it.
- ☐ Position the VMAC crank pulley on the OEM harmonic balancer and install the supplied crank bolt and washer finger tight (Figure 9).

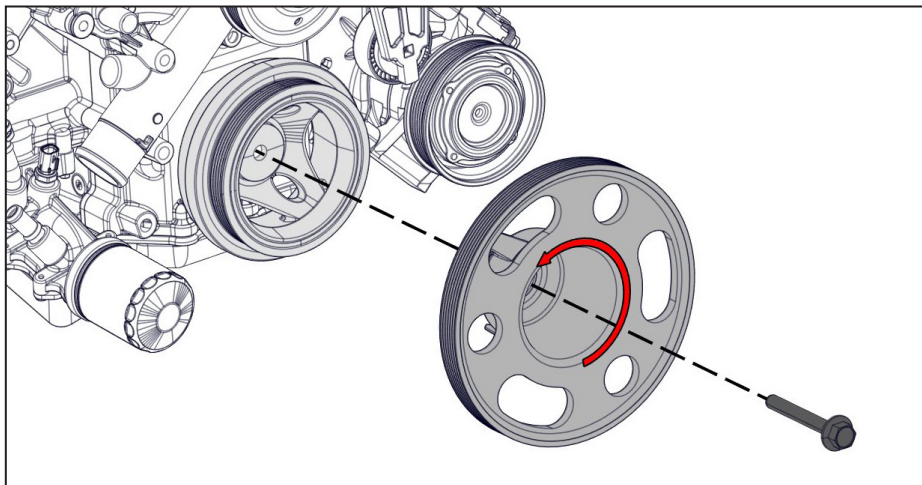


Figure 9 — Mount VMAC crank pulley

- ☐ Rotate the VMAC crank pulley counterclockwise until the lugs on the back of the pulley are tight against the spokes on the OEM harmonic balancer; torque the crank pulley bolt to 133 ft•lb (Figure 9).
- ☐ **Vehicles equipped with vacuum pump only:** Disconnect and remove the vacuum pump. Set the pump, fasteners and rubber mounts aside. (Figure 10).

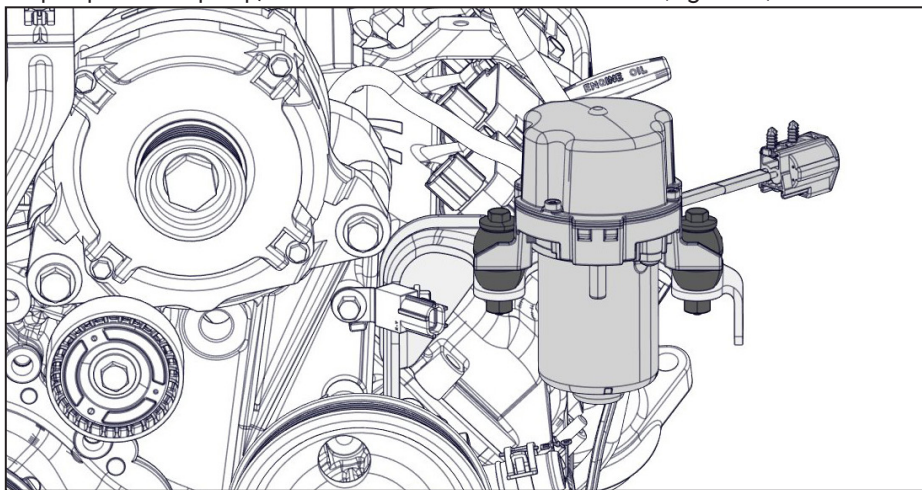


Figure 10 — Remove vacuum pump

- ☐ **Vehicles equipped with vacuum pump only:** Remove and discard the vacuum pump bracket and fasteners (Figure 11).

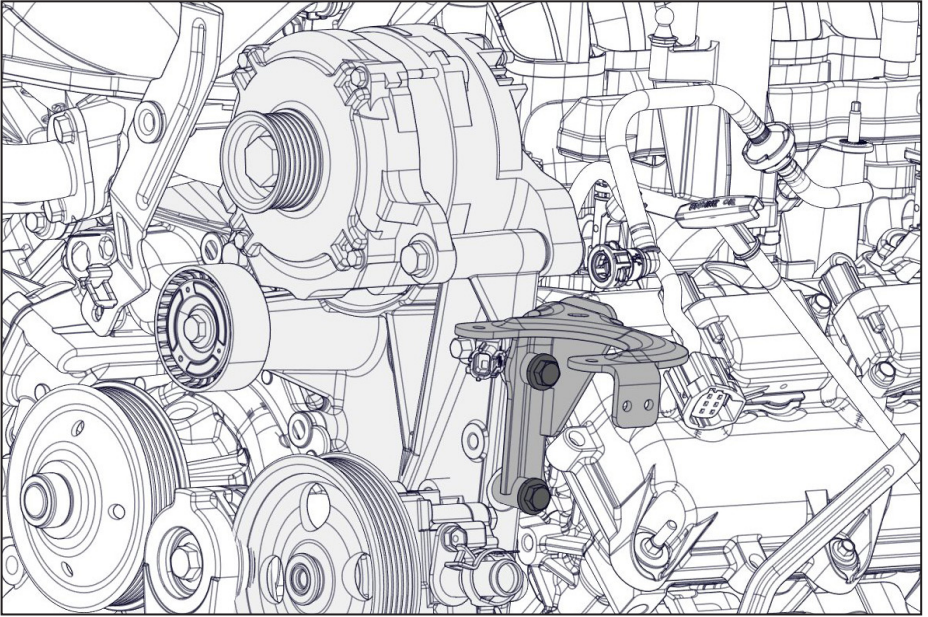


Figure 11 — Remove vacuum pump bracket

- ☐ Disconnect and remove the alternator. Set the alternator and fasteners aside (Figure 12).

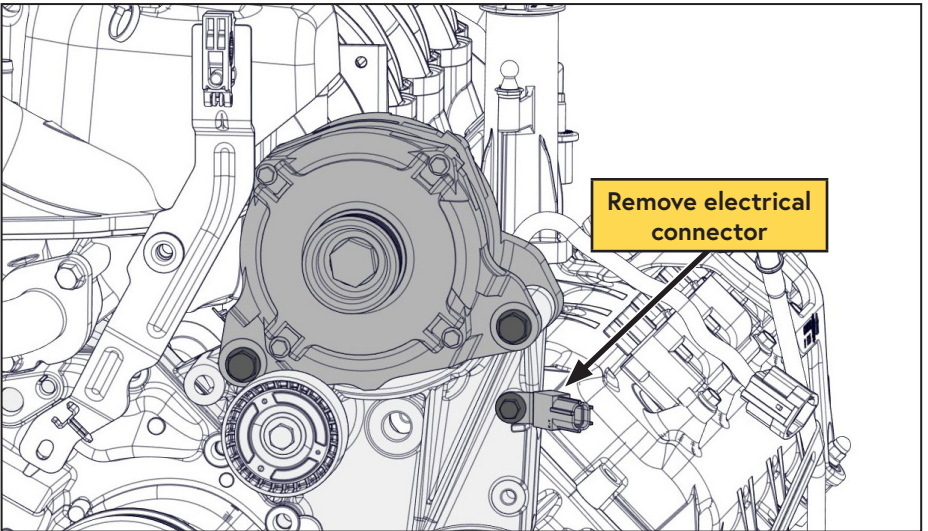


Figure 12 — Remove alternator

- ☐ Remove the electrical connector secured to the bracket, shift the connector away and set the fastener aside (Figure 12).

- ☐ In order to provide clearance to install the main bracket the power steering pump and reservoir must be shifted out of the way. Leaving the hoses attached, remove the power steering pump and reservoir and secure this assembly out of the way. The bolts can be accessed via the holes in the pulley (Figure 13).

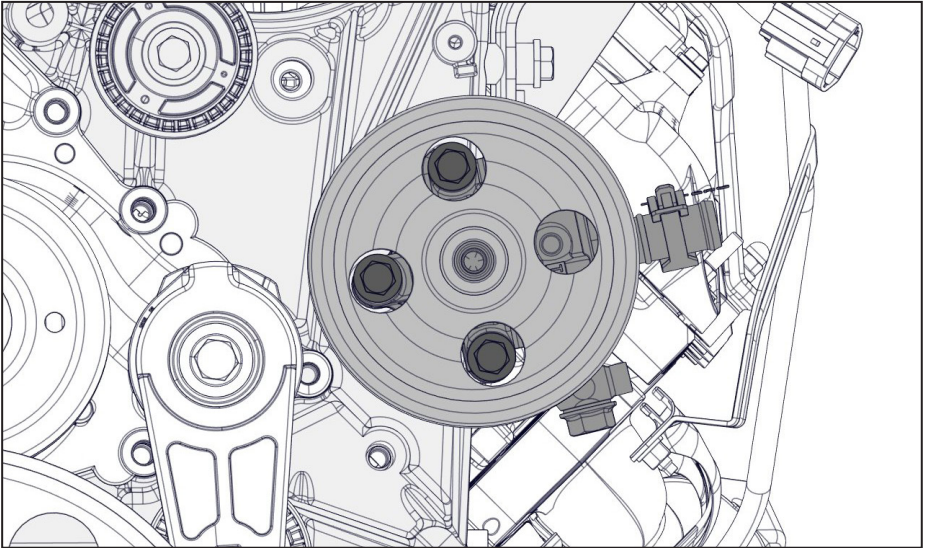


Figure 13 — Shift power steering pump out of the way

- ☐ Remove and discard the engine brace and fasteners (Figure 14).

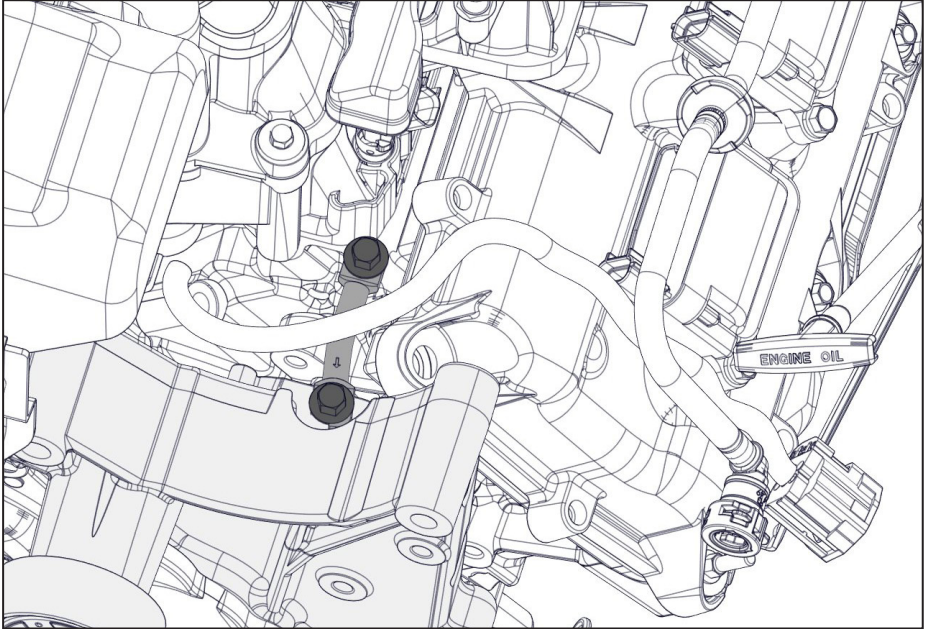


Figure 14 — Remove engine brace

- ☐ Remove and discard the indicated OEM M8 fastener (Figure 15).

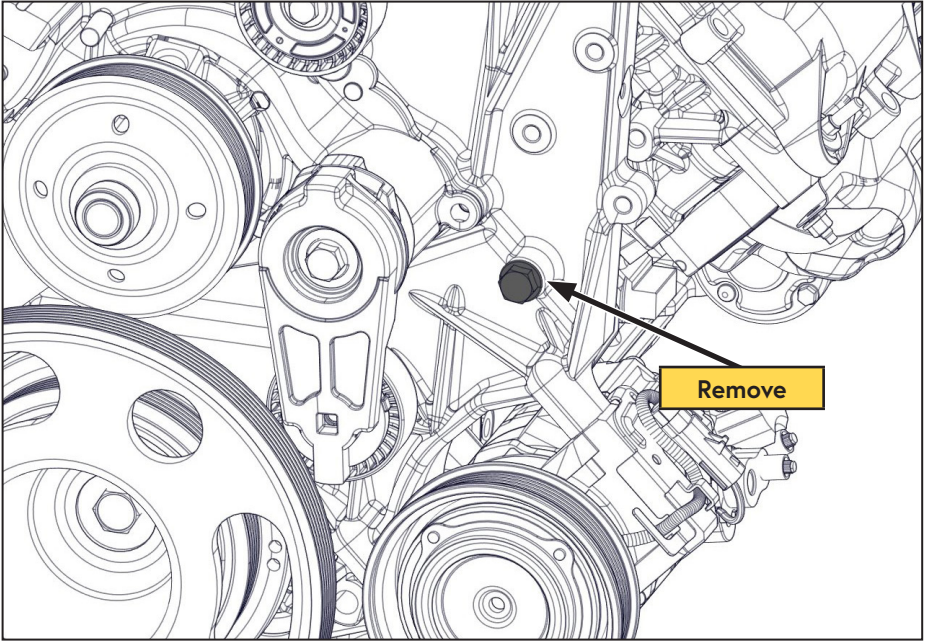


Figure 15 — Remove fastener

- ☐ Remove the tensioner and idlers from the VMAC main bracket and set them aside.
- ☐ **Vehicles equipped with vacuum pump only:** Using the supplied flathead M8 × 25 fasteners, install the vacuum pump relocation bracket (Figure 16).

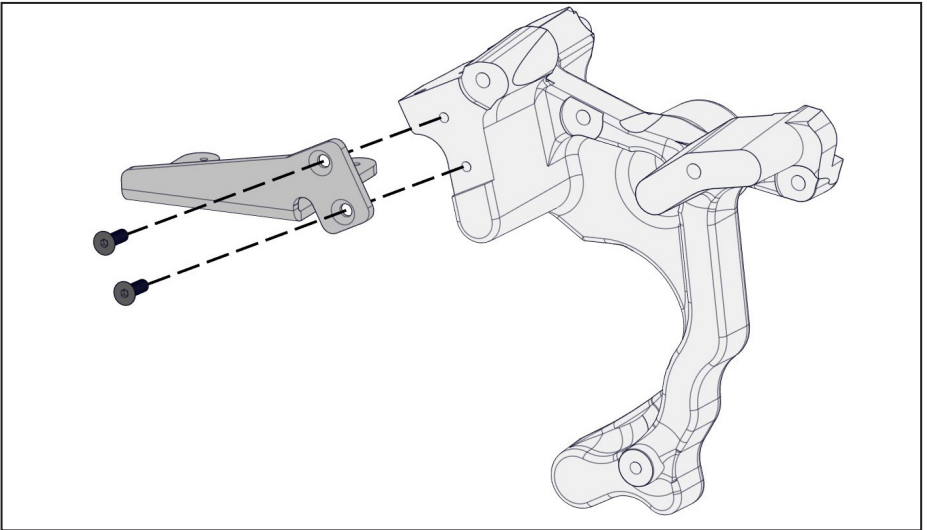


Figure 16 — Install vacuum pump relocation bracket

- ☐ Using the (x2) M10x1.5x120 mm fasteners with (x2) M10x1.5 flange nuts, and the M8x1.25x120 mm fastener, mount the VMAC main bracket to the engine (Figure 17).

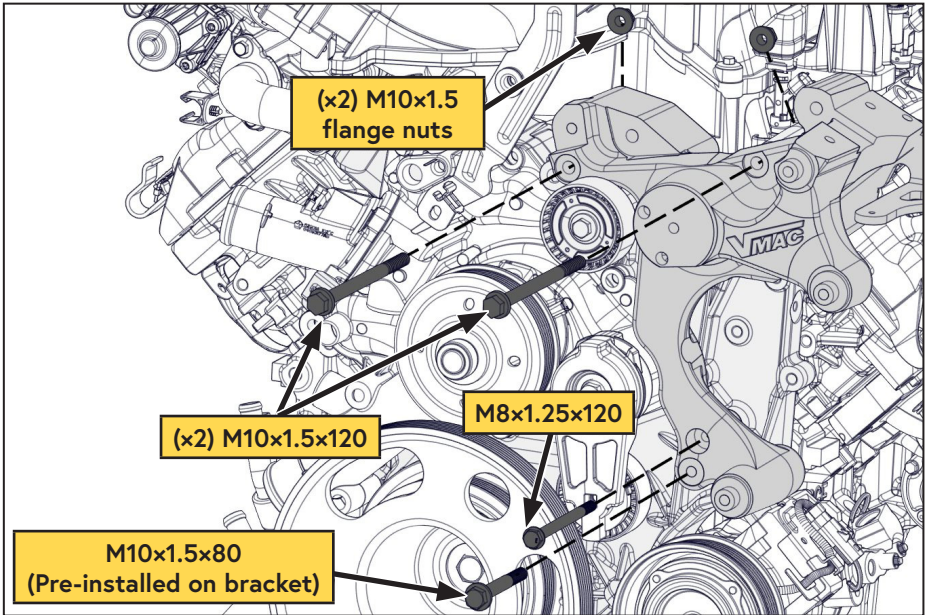


Figure 17 — Install VMAC main bracket

- ☐ Install the M10x1.5x80 mm tensioner pry bolt (Figure 17).
- ☐ Reinstall the power steering pump (Figure 18).

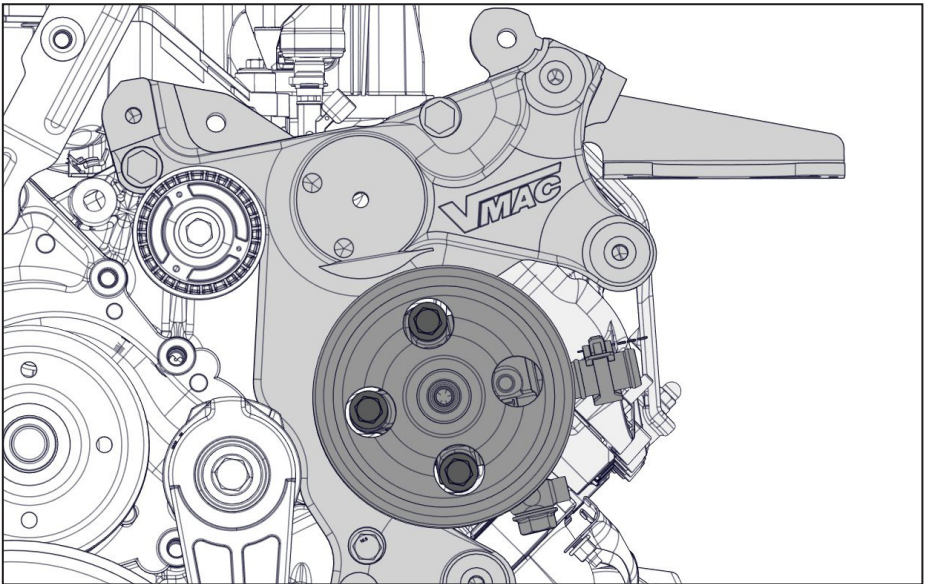


Figure 18 — Install power steering pump

- ☐ Using the (x2) M8x1.25x35 mm fasteners, install the engine brace "back" (Figure 19).

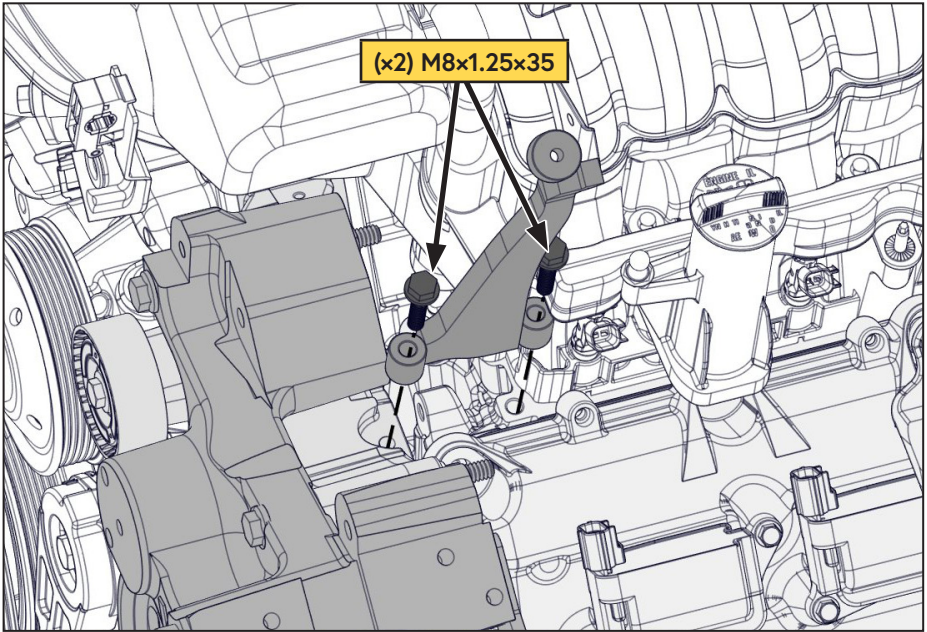


Figure 19 — Install engine back brace

- ☐ Install the alternator. Orient the power wire on the alternator to the 7 o'clock position (as viewed from the rear) (Figure 20).

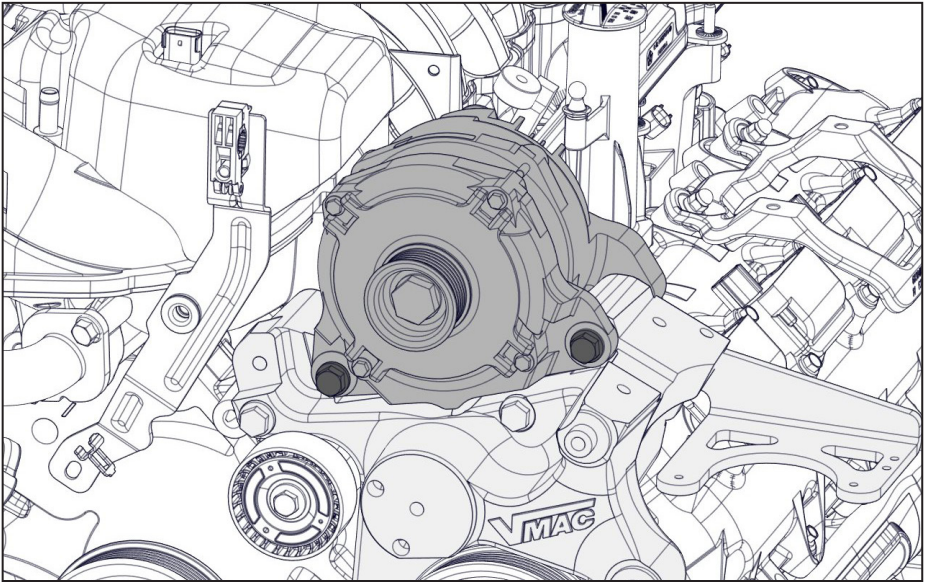


Figure 20 — Install alternator



Use care when working around pressurized air conditioning systems to prevent injury or damage to the system. Do not remove or damage the AC lines.

- ☐ Gently deflect the AC (and vacuum pump lines up), and install the compressor bracket onto the VMAC main bracket. Use care when deflecting the AC and vacuum pump lines to prevent them from bending or kinking (Figure 21).

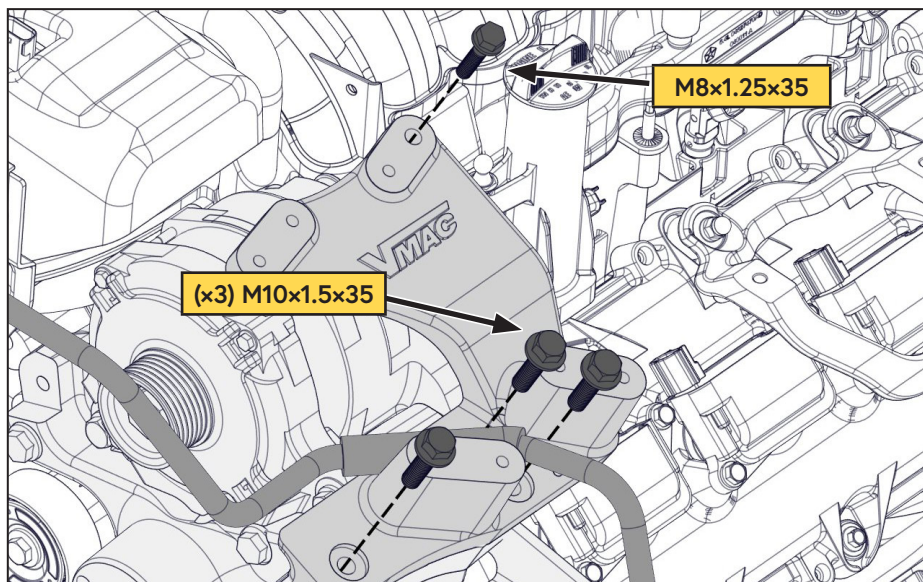


Figure 21 — Install compressor bracket

- ☐ Gently increase the radius of the bend in the AC line to allow it to clear the alternator (Figure 22).

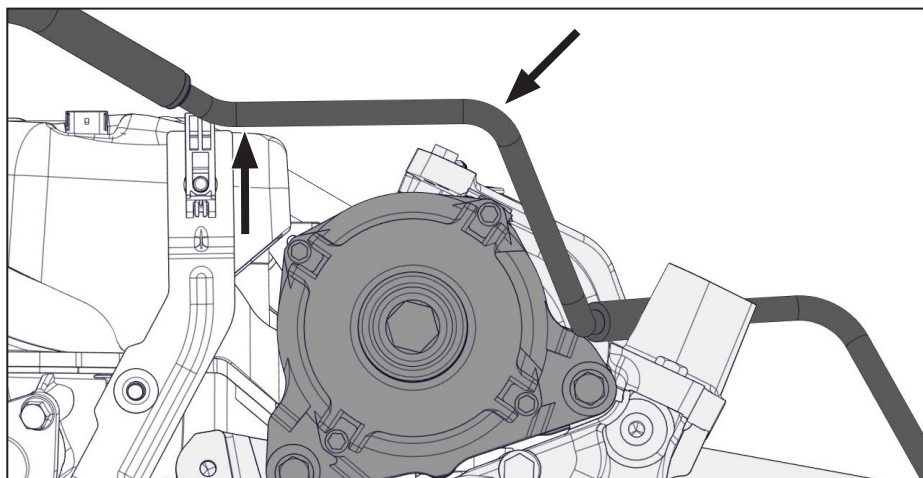


Figure 22 — Adjust AC line

- ☐ **Vehicles equipped with vacuum pump only:** Apply the supplied spiral loom to the vacuum line where it routes over the compressor bracket (Figure 23).

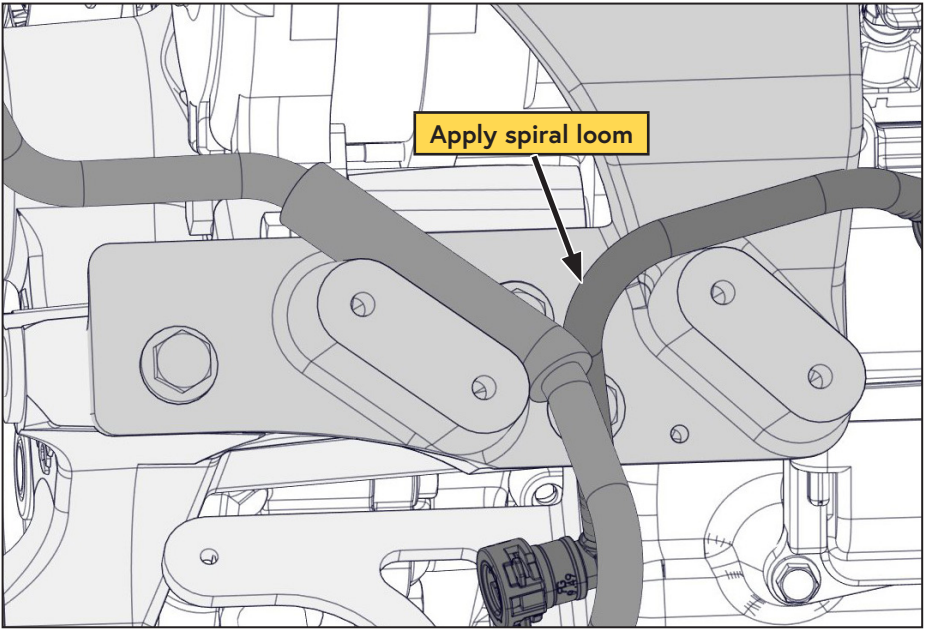


Figure 23 — Apply spiral loom

- ☐ **Vehicles equipped with vacuum pump only:** Using the OEM fasteners, install the vacuum pump onto the relocated bracket (figure 24).

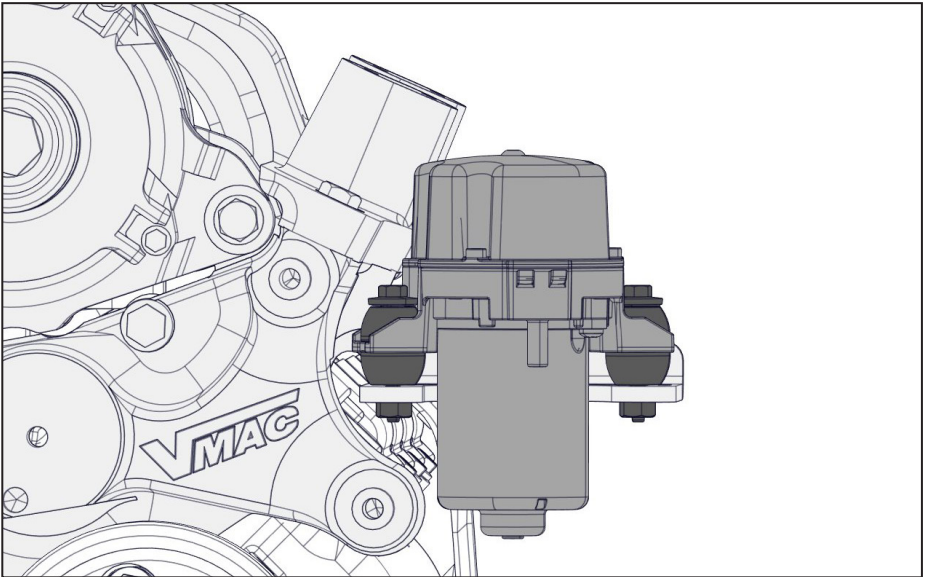


Figure 24 — Apply spiral loom

- ☐ Using the supplied P-clip and M8×1.25×12 fastener, secure the AC line to the VMAC bracket (Figure 25).

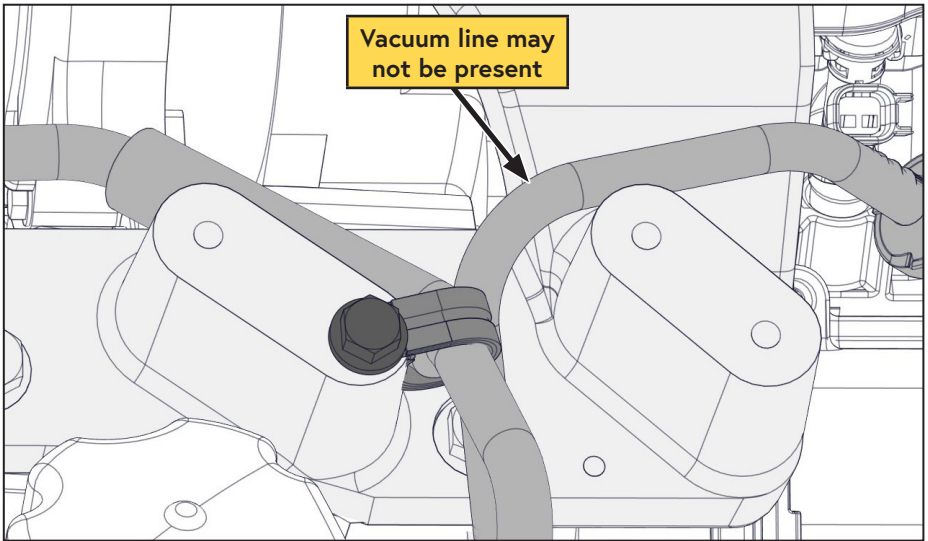


Figure 25 — Secure AC line

- ☐ Using the M8×1.25×35, and M10×1.5×30 fasteners, install the engine brace "front" (Figure 26).

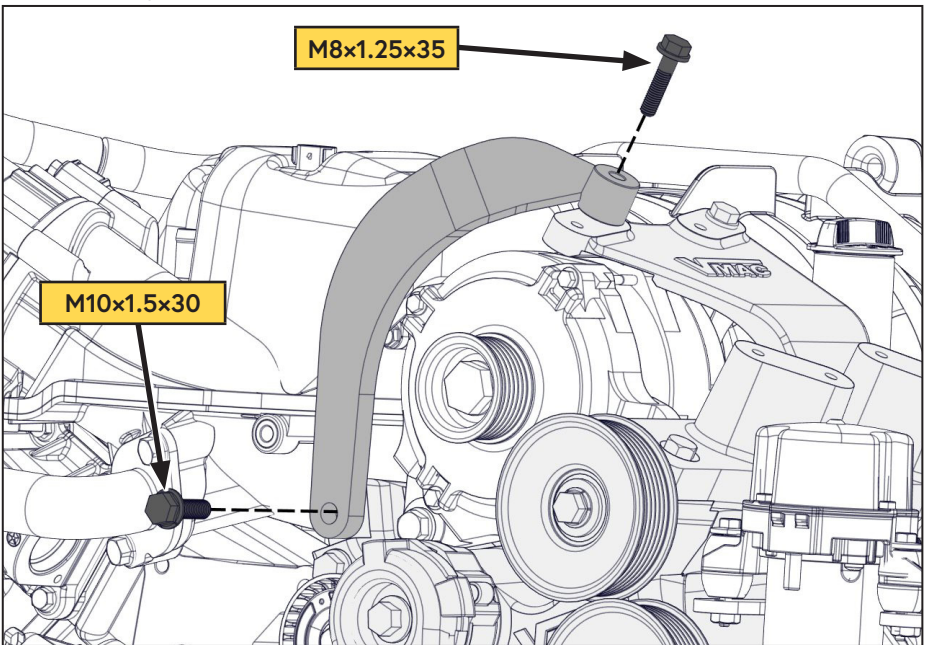
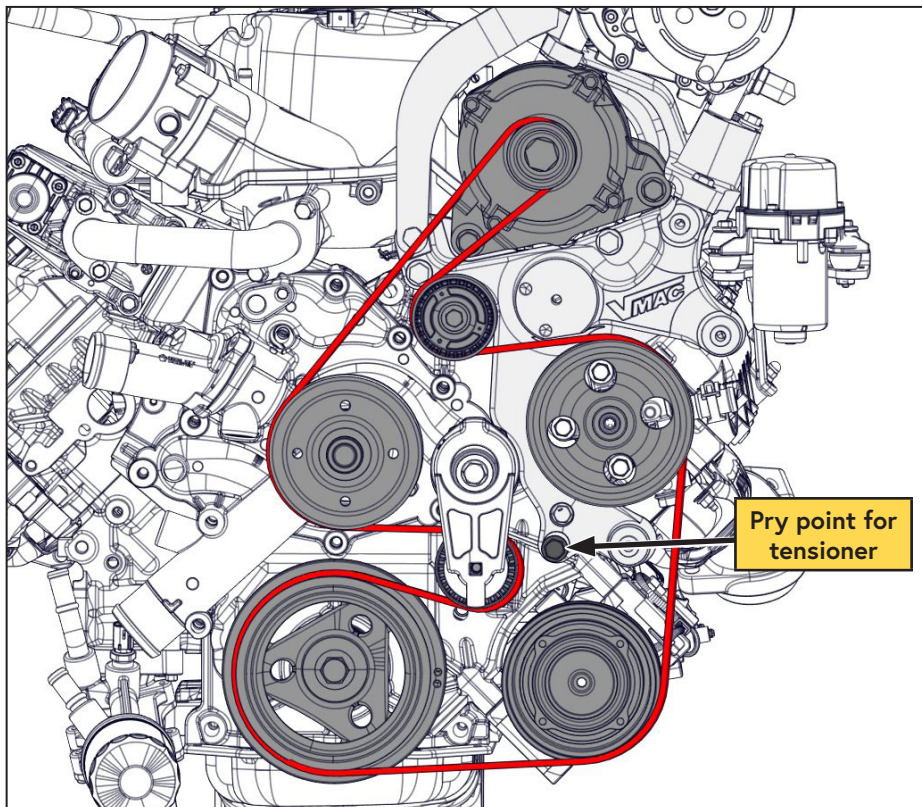


Figure 26 — Mount compressor



Use the M10x1.5x80 fastener as a fulcrum pry point (fulcrum), for tensioning the FEAD belt.

- ☐ Route the supplied belt (the supplied belts are the same length) in the OEM belt line (Figure 27).



**Figure 27 — Install FEAD belt for OEM belt line
(VMAC crank pulley hidden for clarity)**



The M10x1.5x80 fastener used for tensioning the belt can be left in place as it will be used any time the OEM belt is changed.

- ☐ Remove the fasteners securing the AC line to the firewall and set them aside (Figure 28 Figure 29).

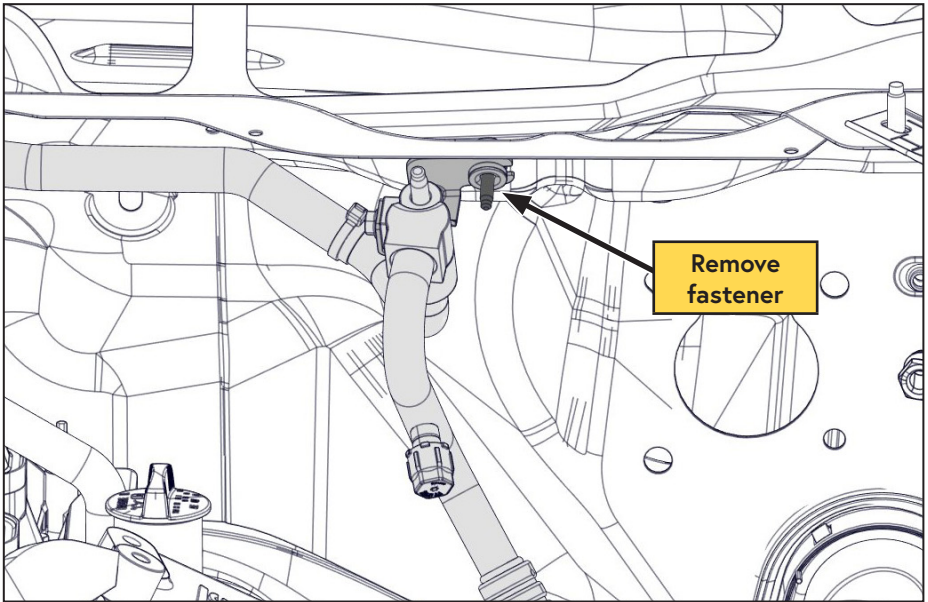


Figure 28 — Driver side

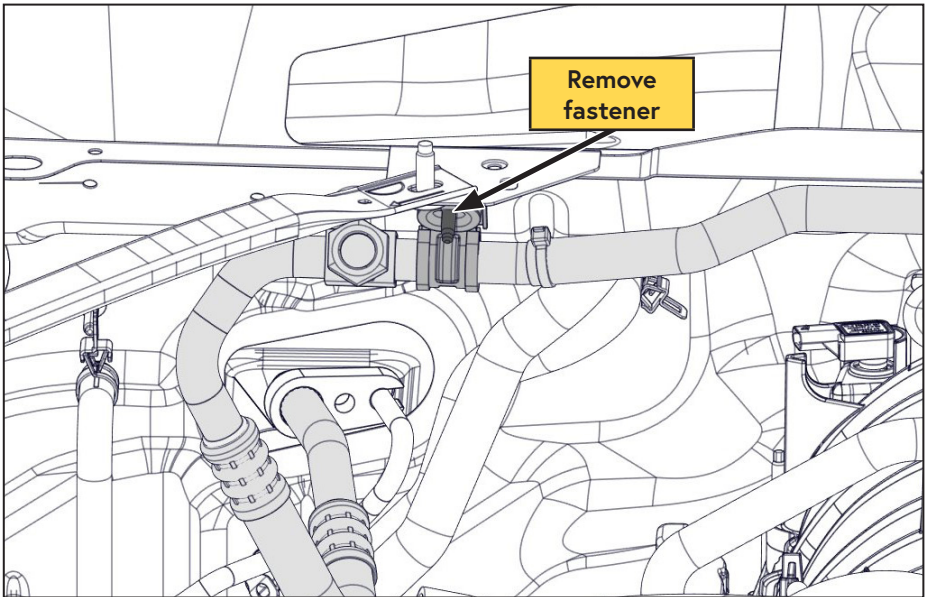


Figure 29 — Passenger side

- ☐ The AC line should be floating free and can be pulled toward the front of the vehicle.

- ☐ Using the OEM fasteners, install the supplied brackets, leaving them finger tight.
- ☐ Orient the driver side bracket to the 4 o'clock position (Figure 30).

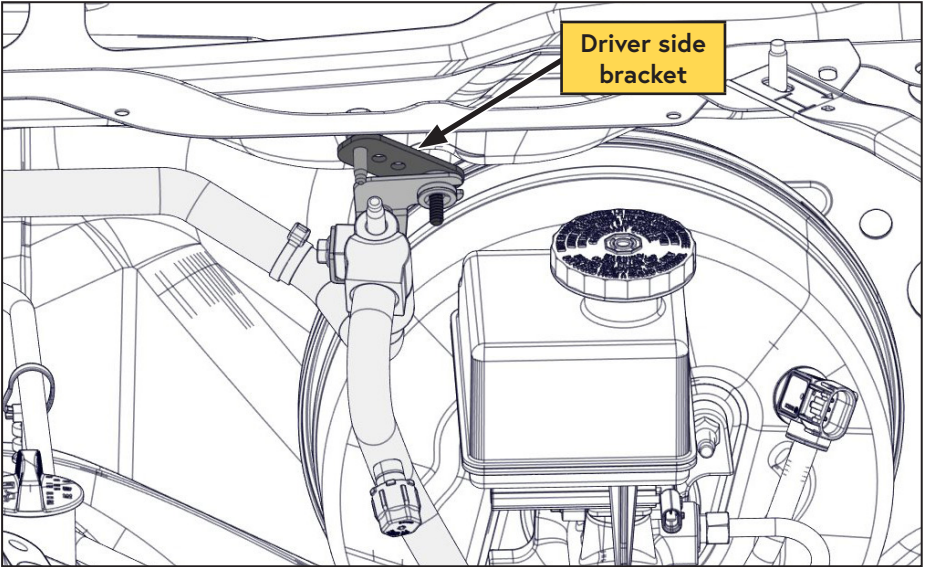


Figure 30 — Driver side

- ☐ Rotate the passenger side bracket to the 3 o'clock position (Figure 31).

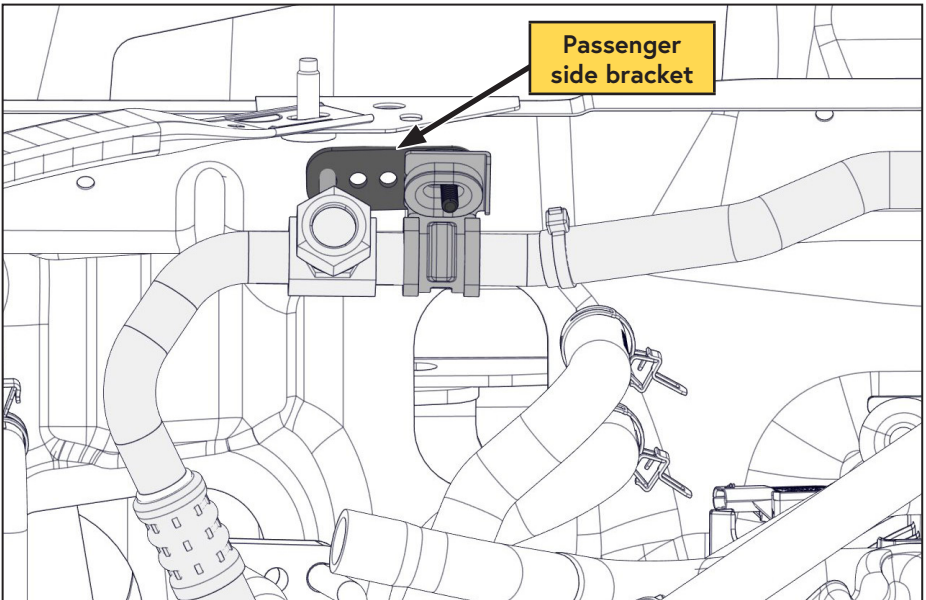


Figure 31 — Passenger side

- ☐ Torque fasteners to specification.

- ☐ Remove the inlet valve from the compressor; cover the compressor opening to prevent contaminants from entering the system.
- ☐ Using the (x3) M8x1.25x110, and (x1) M8x1.25x70 fasteners, mount the compressor to the main bracket (Figure 32).

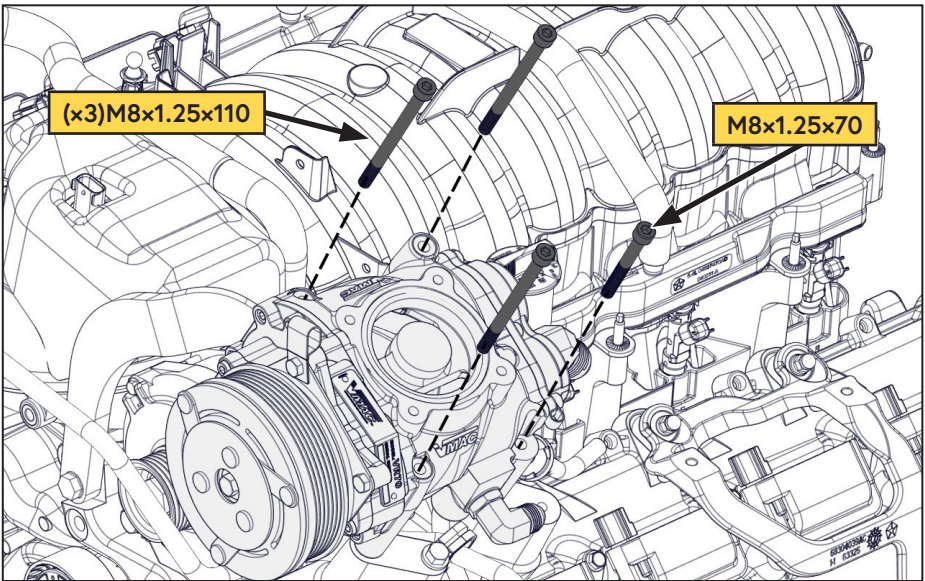


Figure 32 — Mount compressor

- ☐ Install the inlet valve, note the location of the different fasteners (Loctite is not necessary for these fasteners) (Figure 33).

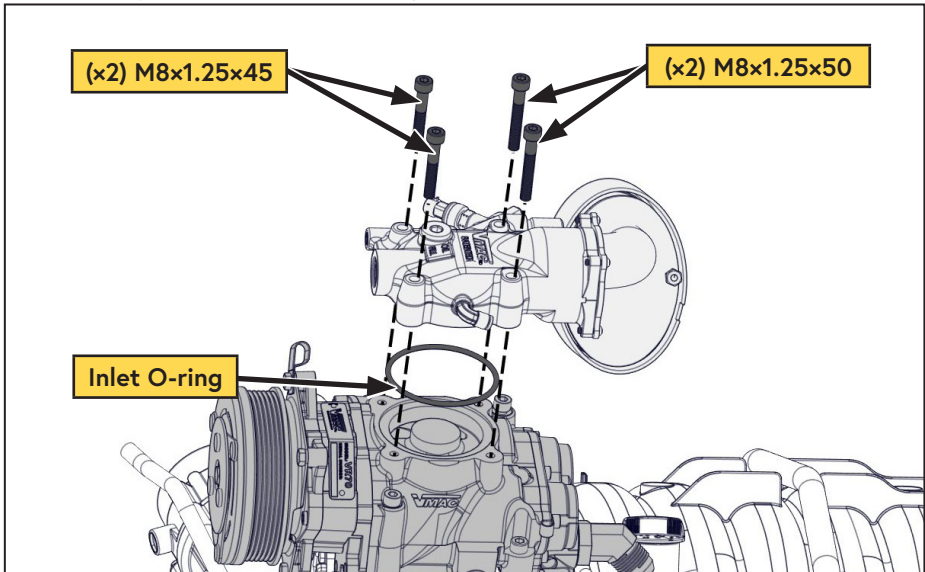


Figure 33 — Install inlet

☐ Install the tensioner and idlers onto the VMAC main bracket (Figure 34).

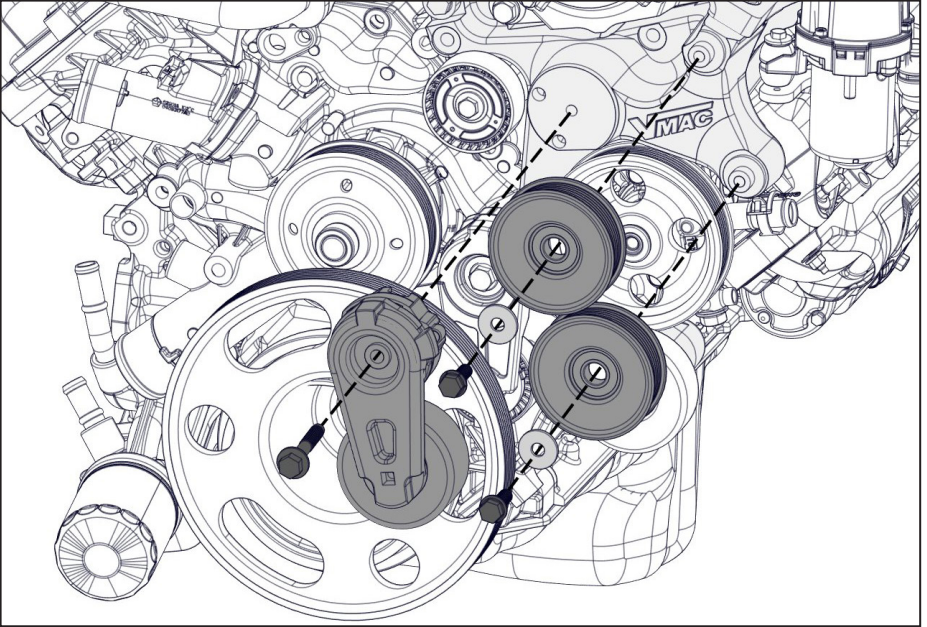


Figure 34 — Install tensioner and idlers

☐ Install the second supplied belt in the VMAC drive line (Figure 35).

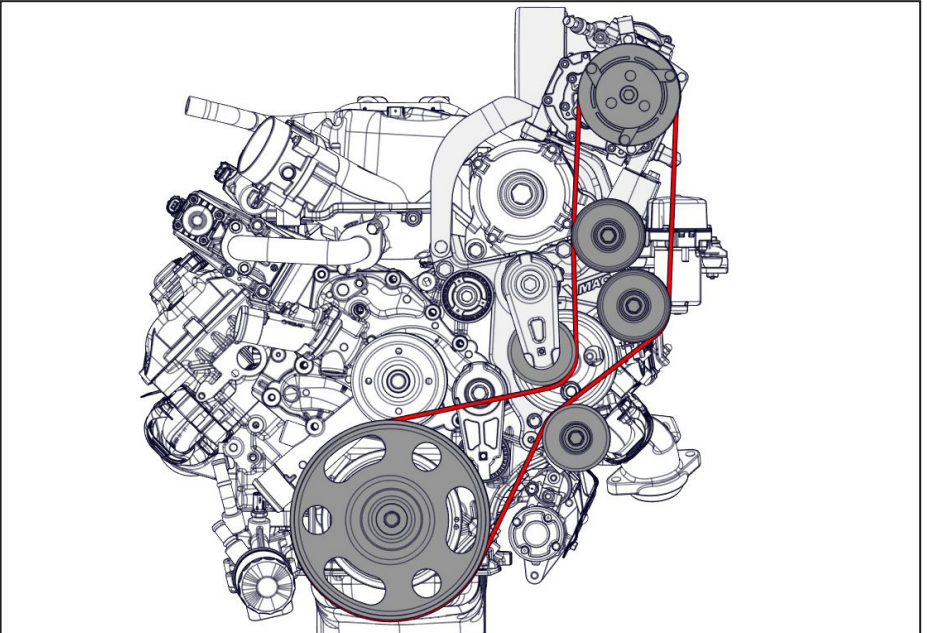


Figure 35 — Install VMAC belt

- ☐ Gently deflect the power steering lines toward the driver side fender to provide 2 in clearance for the VMAC idlers.
- ☐ Install the VMAC fan spacer.
- ☐ Install the upper fan shroud.
- ☐ Install the lower fan shroud but do not lock it into place.
- ☐ Install the fan from the bottom of the vehicle.
- ☐ Lock the lower fan shroud into place.

Installing the Oil Cooler



Apply Loctite 242 (blue) to all fasteners.

- ☐ Lay the lower radiator hose flat on a bench; measure along the outside
- ☐ From the radiator side of the hose, measure 7 1/2 in towards the center of the hose and mark it with a grease pen (Figure 36).

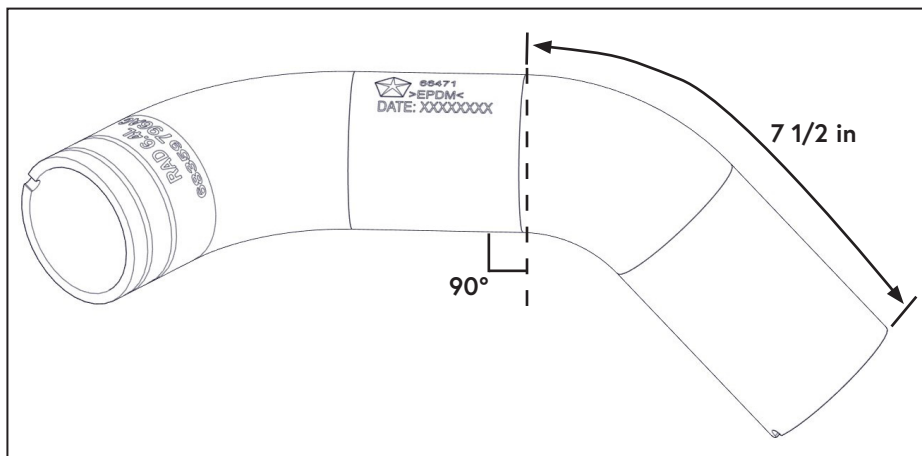


Figure 36 — Modify hose

- ☐ Cut the radiator hose in the marked location, ensuring that the cut is square to the hose section; discard the radiator side of the hose (Figure 36)
- ☐ Install the supplied 4 in hose onto the short oil cooler spigot using one of the supplied hose camps. Leave the hose clamp loose to allow adjustment (Figure 37).

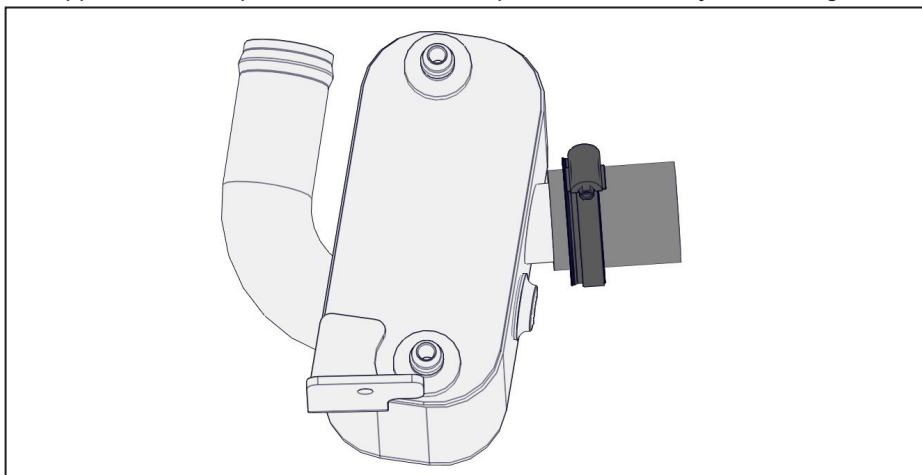


Figure 37 — Install modified hose

- ☐ Fit the other hose clamp onto the hose, leaving it loose.
- ☐ Remove the OEM fastener securing the radiator brace and set it aside (Figure 38).

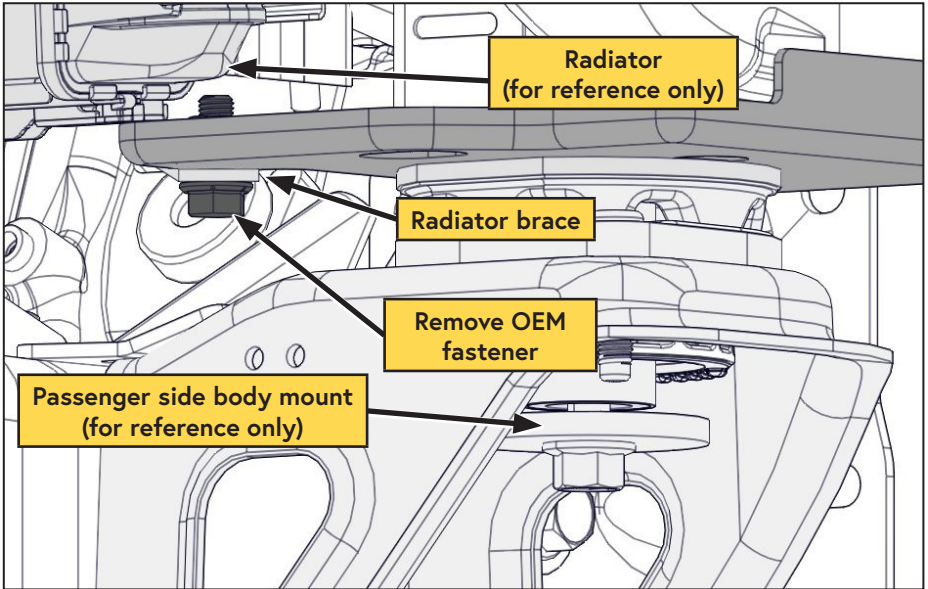


Figure 38 — Remove OEM fastener

- ☐ Install the radiator brace and oil cooler bracket using the OEM fastener retained from the previous step; leave the fastener finger tight (Figure 39).

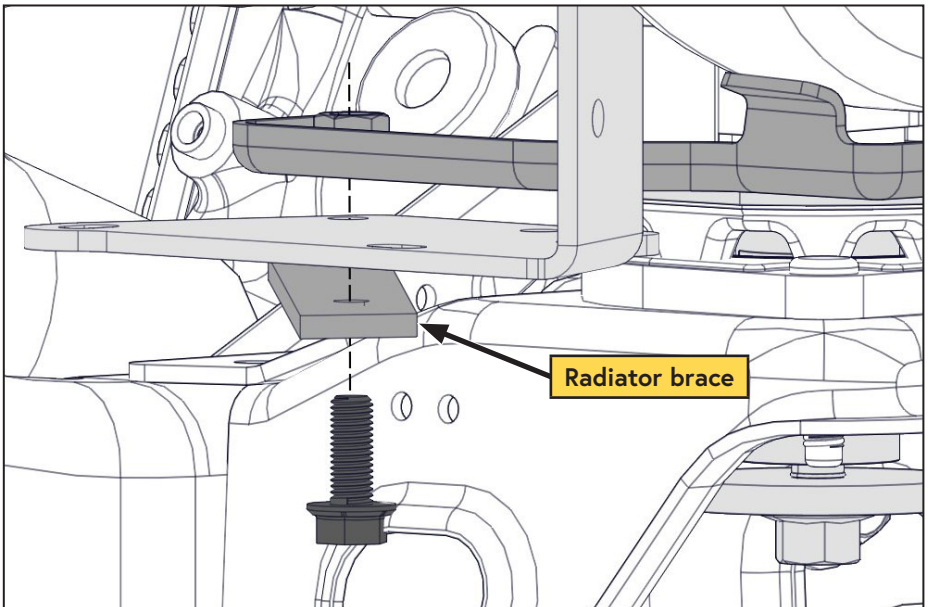


Figure 39 — Install cooler bracket

- ☐ Install the bottom fastener onto the backing strap, leaving the nut finger tight (Figure 40).

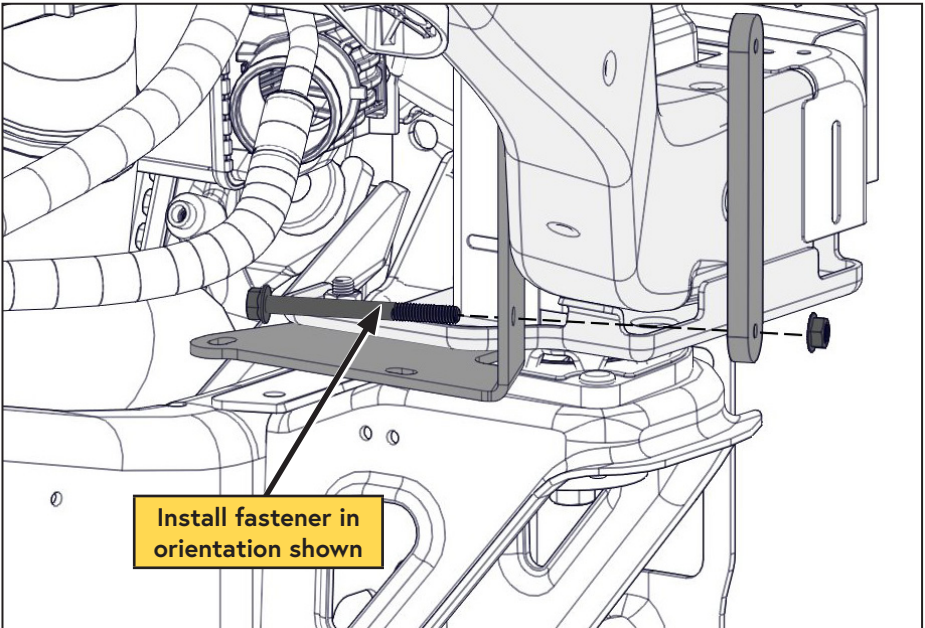


Figure 40 — Install backing strap



Use extreme care while deflecting the transmission cooler hoses to prevent damaging them, or the radiator.

- ☐ While stabilizing the transmission cooler hoses at the radiator, gently deflect the hoses upward to provide room for the oil cooler (figure 41).

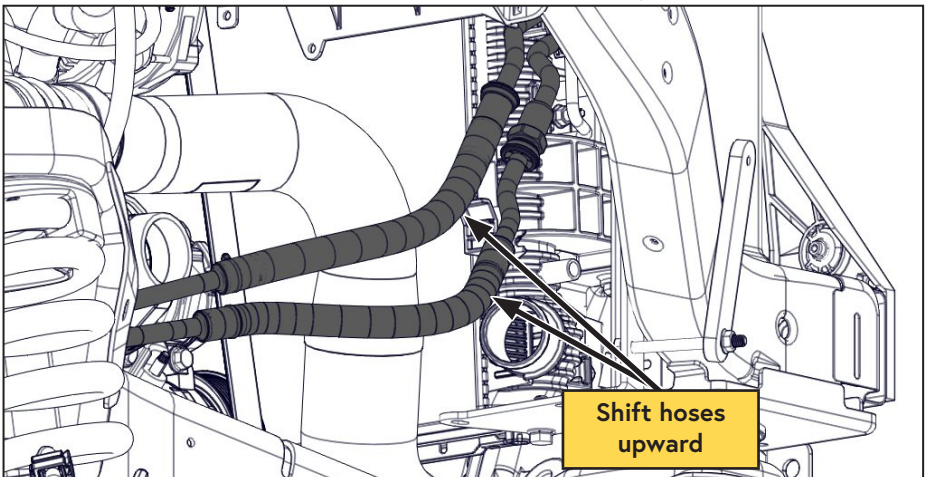


Figure 41 — Deflect hoses

- ☐ Using one of the supplied gear clamps, install the modified lower radiator hose onto the cooler. Leave the gear clamp loose to allow the hose to be adjusted.
- ☐ Mount the cooler onto the cooler bracket, fitting the hoses loosely onto the cooler spigots (Figure 42).

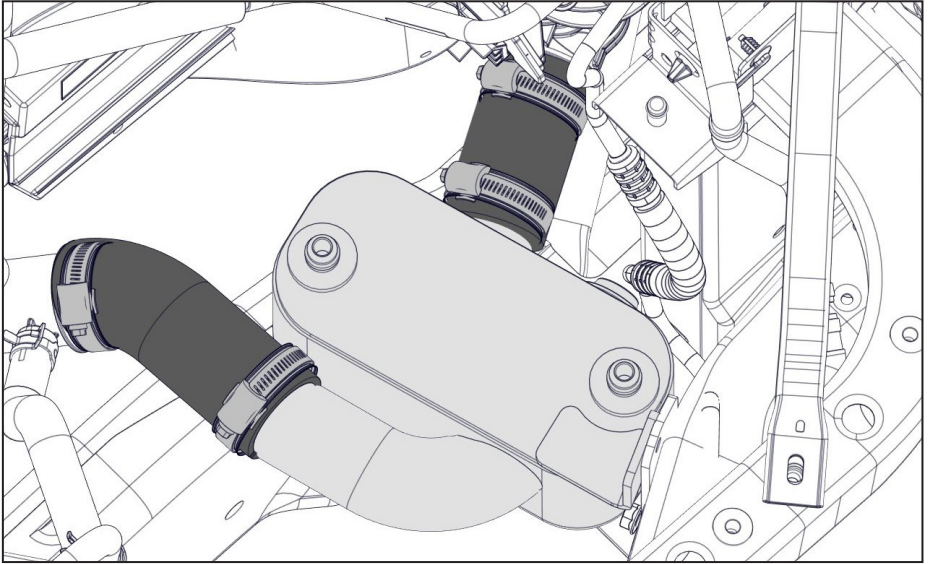


Figure 42 — Mount cooler

- ☐ Install the top cooler bracket fastener finger tight (Figure 43).

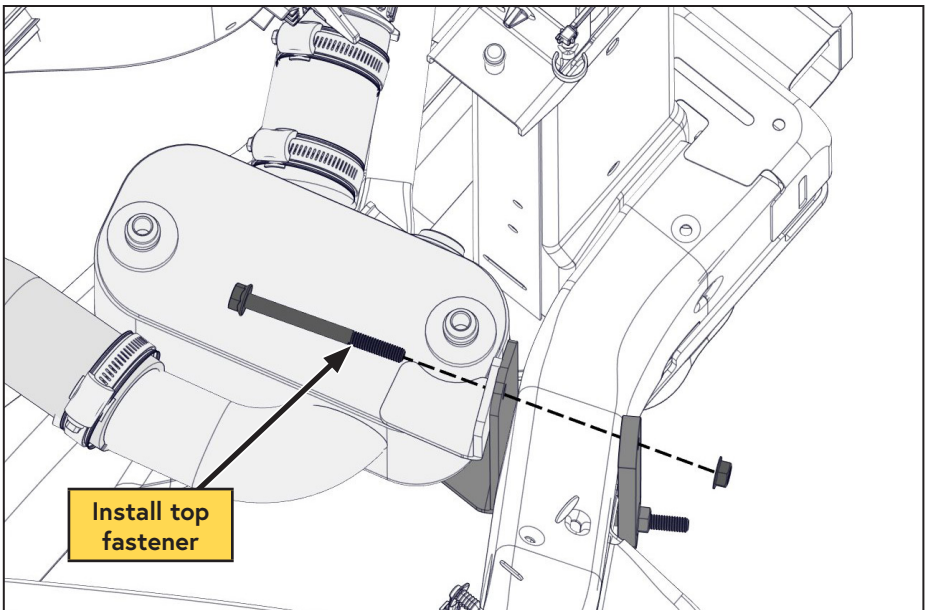


Figure 43 — Install top fastener

- ☐ Install the (x2) bottom cooler fasteners (Figure 44).

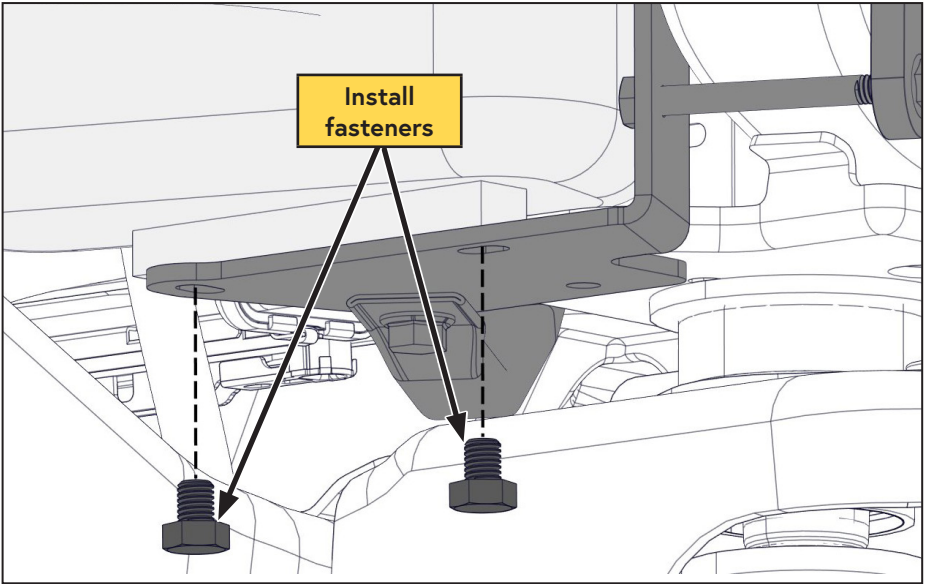


Figure 44 — Install bottom cooler fasteners

- ☐ Adjust the coolant hoses to ensure they are not kinked or restricted, and tighten the hose clamps.
- ☐ Torque the fasteners securing the cooler and bracket to specification.

Installing the Air Oil Separator Tank (AOST)



Dependent upon other installed equipment, it may be necessary to move the AOST from its intended location. The hoses used in VMAC compressor systems have a specific inner liner that is compatible with VMAC compressor oil. Use of hoses other than those supplied or recommended by VMAC may cause compressor damage and may void the warranty.



The AOST must be level for proper air/oil separation, and to ensure that the oil level will display accurately in the sight glass.



Apply Loctite 242 (blue) to all fasteners.

Installing the AOST



The AOST will mount to the passenger side frame rail behind the body mount (Figure 45).

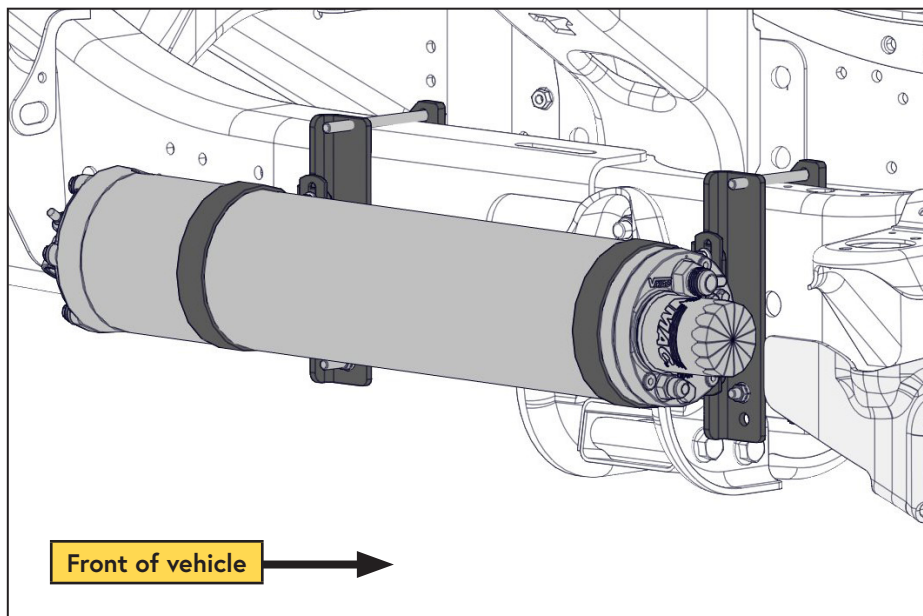


Figure 45 — AOST installed



When installing the AOST tank mounts, care must be taken to ensure the harness running along the top of the frame is not pinched.

- Using the (x2) 3/8 in x 4 1/2 in bolts, install the front tank mount and backing strap (the lower fastener is installed between the radius arm and the frame). Leave the bolts finger tight to allow for minor adjustments (figure 46).

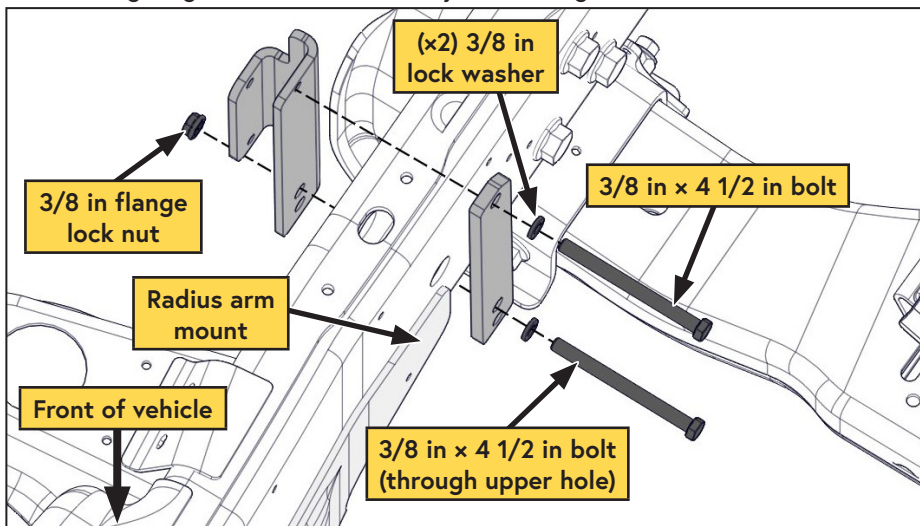


Figure 46 — Installing the AOST

- Using the (x2) 3/8 in x 6 in bolts, install the rear tank mount and backing strap where the frame begins to narrow, behind the transmission cross member. Leave the bolts finger tight to allow for minor adjustments (Figure 47).

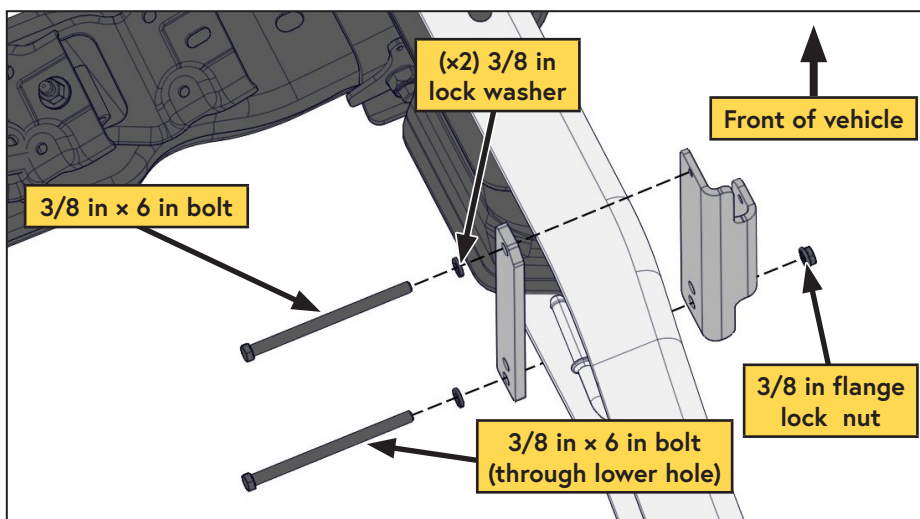


Figure 47 — Installing the AOST

Drop bracket installation (for pickup applications only)

- ☐ Install the tank clamps onto the drop brackets; leave the tank clamps loose to allow the tank to be slid into place (Figure 48).

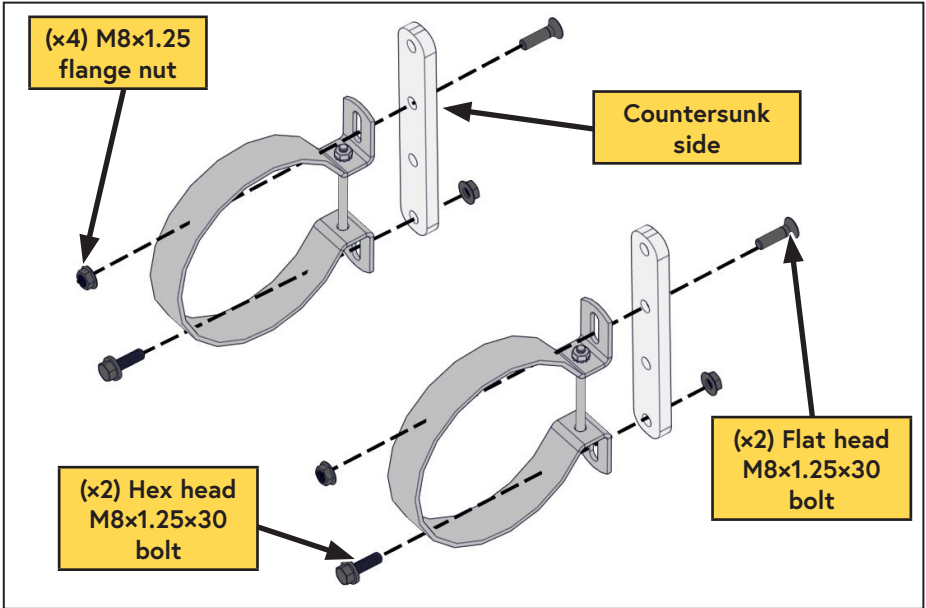


Figure 48 — Install AOST

- ☐ Mount the tank clamps onto the AOST mounts (Figure 49)

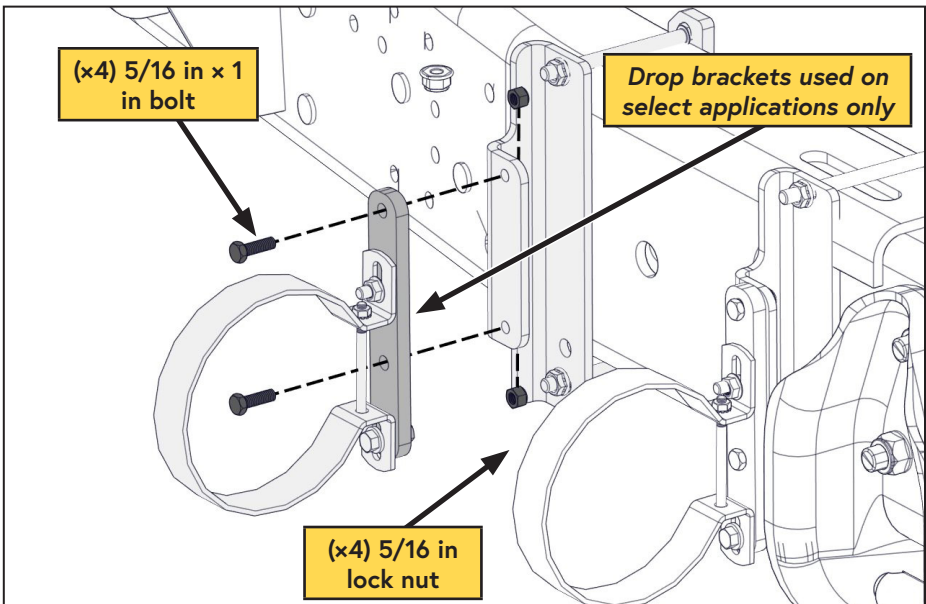


Figure 49 — Install AOST

- ☐ Remove the tank clamp pinch bolts and set them aside (Figure 50).

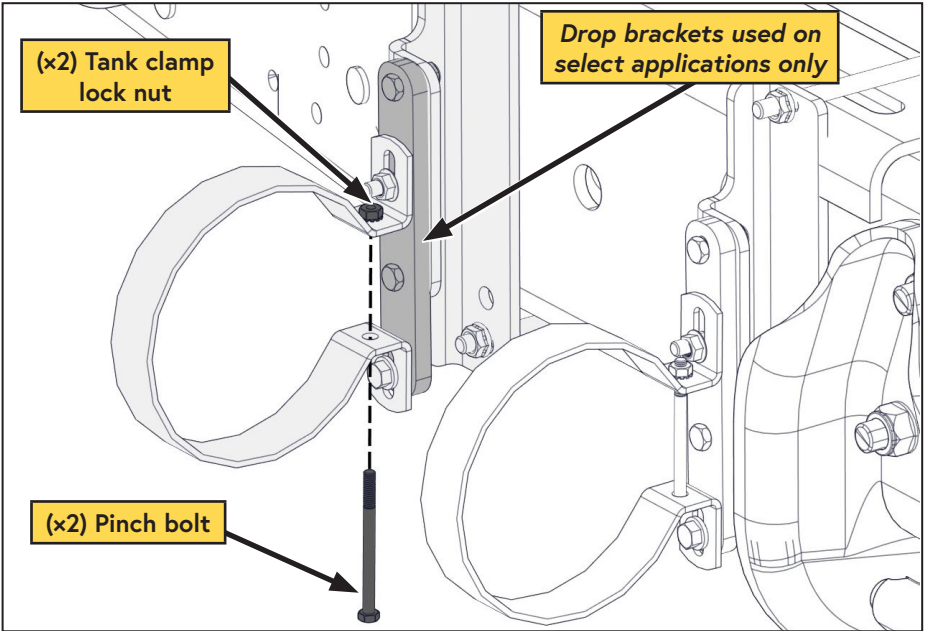


Figure 50 — Install AOST
(AOST not shown for clarity)

Install the tank onto the tank mounts (Figure 50):

- ☐ Adjust the tank in the straps to bring the front of the tank close to (but not touching) the vibration dampener or cab mount.
- ☐ Install the (x2) 3 in x 1/4 in pinch bolts into the mounting clamps.
- ☐ Rotate the tank so that the directional arrow on the blowdown cap, at the rear of the tank, is pointing upward.



AOST orientation is critical. The arrow on the blowdown cap at the rear of the tank must be pointing up to prevent compressor failure due to oil starvation, or oil in the discharge air.

Hose Requirements



Only attempt to shorten the supplied hose if there is access to the appropriate equipment. Do not attempt to cut the hose and splice it using hose clamps.



VMAC Compressor oil will degrade rubber lined hoses, use only hoses with an AQP elastomer type liner. Contact VMAC Technical Support at 1-888-241-2289 for further information.

The PTFE tubes and AQP elastomer lined hoses are specifically designed to work with VMAC compressor oil and at compressor operating temperatures.

Dependant upon the desired location of the AOST, the hose lengths provided with this system may not be ideal. VMAC suggests first trying to adjust the AOST within its mounts to take up any excess slack in the hoses. If this is not effective, the hoses can be shortened or replaced as necessary, or hose extenders can be used.

VMAC recommends shortening these hoses as a preferred alternative to coiling up and securing the excess. ***Shorter hose length will maximize system performance.***



Avoid using 90° fittings wherever possible as they cause flow restrictions and negatively impact performance.

The following hoses are included with this compressor kit:

- 3/4 in × 84 in.
- 1/2 in × 69 in.
- 1/2 in × 78 in.
- 1/4 in (PTFE tube) × 126 in.
- 3/16 in (PTFE tube) × 126 in.

If longer hoses are required:

To order parts, contact a VMAC dealer. The dealer will ask for the VMAC serial number, part number, description and quantity. See page 6 for ordering information.

- Eaton Aeroquip hoses with an "AQP" type inner liner are required.
- OTC fittings are required for the VMAC supplied hose.
- Push-lock fittings are suitable if FC332 hose is used.
- If -lock fittings are being used, do not use hose clamps as they will damage the hose and cause leaks.

Connecting the Hoses



When routing hoses, ensure cap plugs are installed so that contaminants do not get in the line. Take care when routing hoses, as a hose failure may damage the compressor and/or cause injury.



All hoses, tubes and wires that are installed, rerouted or shifted during the installation must be secured so that they do not contact any hot, sharp or moving parts. Use rubber coated P-clips wherever possible. Follow the routing suggestions in this manual and cover all hoses with plastic loom.



Ensure there is sufficient slack in the hose routing to allow for normal engine movement.

PTFE Tubing, Loom, and Push-To-Connect Fittings

- ☐ PTFE tubing should only be cut using proper tubing cutters. Side cutters, utility knives, etc. will deform the tube, preventing a proper seal (or leave sharp edges which cut the internal O-ring).
- ☐ When applying loom to the PTFE tube, leave approximately 1 in between the loom and the fitting.
- ☐ Ensure the tube is clean, cut at 90° and that there are not sharp edges.
- ☐ Lubricate the tube and firmly push it into the fitting so that the tube fully seats in the fitting.
- ☐ Slide the collet out, away from the body of the fitting to lock the tubing in place.
- ☐ Ensure the tube does not have any "play" to prevent the O-ring from wearing.

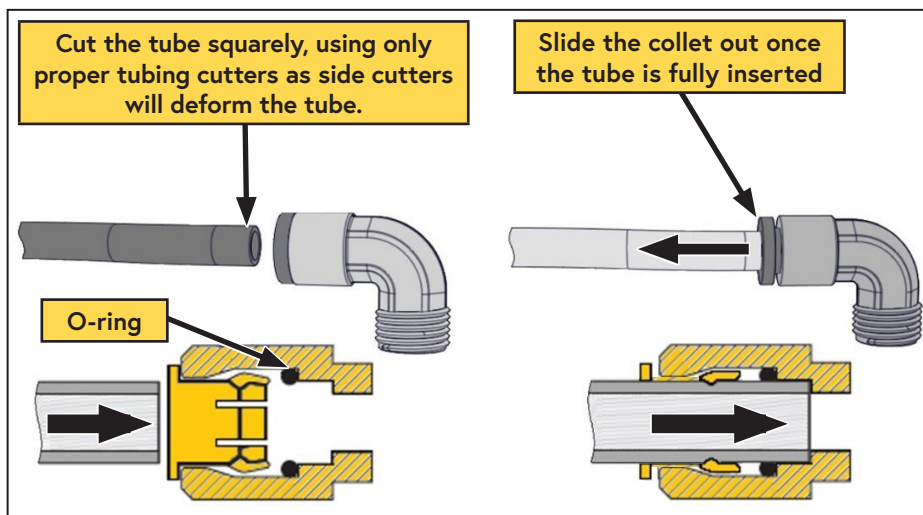


Figure 51 — Push-to-connect fittings

- ☐ Apply the supplied loom to the 1/4 in and 3/16 in PTFE tubes.
- ☐ Connect the 3/4 in discharge hose to the matching fitting on the compressor.
- ☐ Connect the PTFE tubes their respective fittings on the inlet.
- ☐ Route the 1/4 in and 3/16 in PTFE tubes, along with the 3/4 in discharge hose to the firewall, and toward the passenger side of the vehicle, following the same path as the AC return line.
- ☐ Using the supplied 1 5/8 in P-clip and fastener, secure the bundle near the brace (Figure 52).

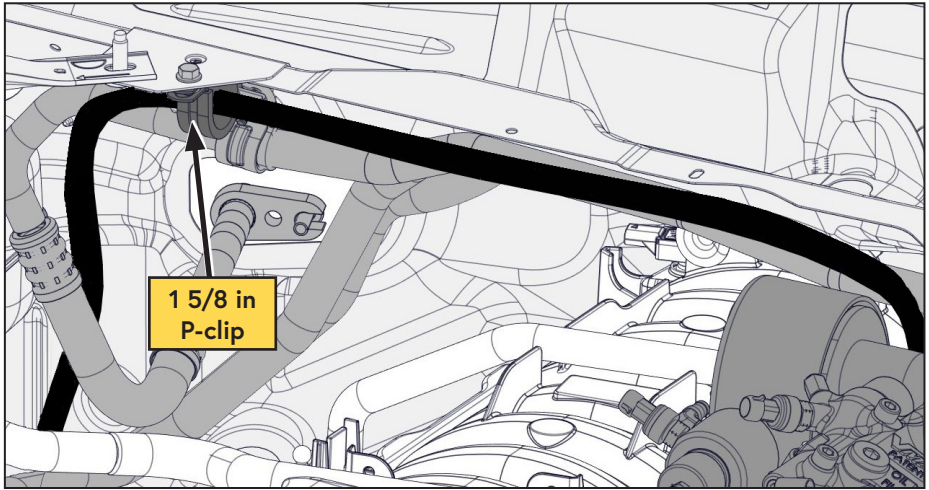


Figure 52 — Route discharge hose

- ☐ From the P-clip, route the hose bundle down the firewall to the passenger side frame rail, securing it to the firewall with the supplied (x2) 1 1/8 in P-clips (Figure 53).

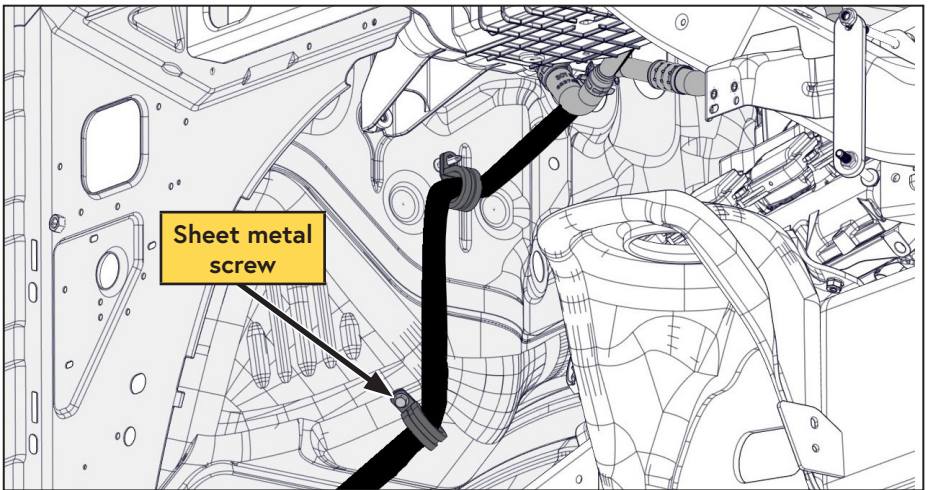


Figure 53 — Route discharge hose



Due to variations in AOST location, the hoses may be a little longer than required. Route the hoses such that any excess hose will not contact any hot, sharp or moving parts, and will not be impacted by road hazards.

- ☐ Route the bundle between the wheel well and the frame, and connect them to their respective fittings on the AOST. A 45° 3/4 in fitting (included) may be used when connecting the discharge hose to the AOST.
- ☐ Connect the straight fitting on the longer 1/2 in oil supply hose to the matching fitting on the compressor.
- ☐ Route the 1/2 in hose to the passenger frame rail, following the same path as the 3/4 in discharge hose bundle; secure the hose as necessary using the supplied cable ties.
- ☐ Once at the frame rail, route the hose over the shock tower, passing it under the AC and degas coolant lines, and connect it to the driver side port of the oil cooler.
- ☐ Connect the 90° fitting on the shorter 1/2 in oil return hose to the passenger side fitting on the oil cooler.
- ☐ Route the 1/2 in oil return hose along the same path and connect it to the respective fitting on the AOST.

Adding Oil to the System



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

Do not overfill the system. Overfilling the system with oil can flood the sight glass window and make the system appear empty.

- ☐ Ensure the vehicle is parked on level ground.
- ☐ Remove the oil filter from the AOST and discard the cardboard warning tag.
- ☐ Apply a light film of compressor oil to the filter gasket and thread the filter onto the AOST until the gasket makes contact. Tighten the filter an additional 3/4 to 1 turn after the gasket contacts the base.
- ☐ Remove the fitting from the inlet (mounted on the top of the compressor) (Figure 54).

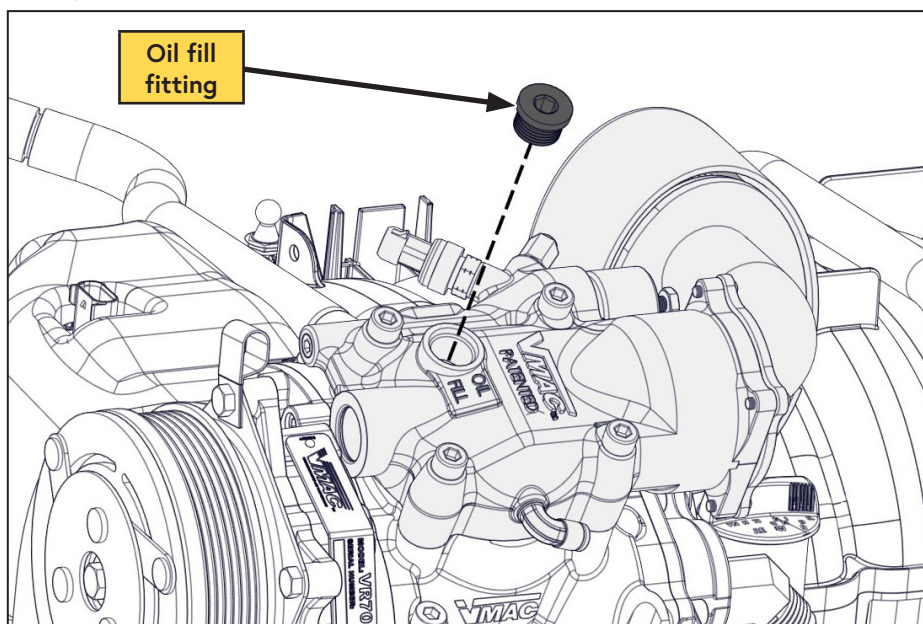


Figure 54 — Oil fill location

- ☐ Using a funnel, fill the system with the supplied oil. When dry, the system will take approximately 5 L (5.2 qt) of oil.
- ☐ Rotate the clutch clockwise (do not use power tools to rotate the clutch) while adding oil to help drive the oil to the AOST.
- ☐ Check the level at the sight glass at the front of the AOST. Continue adding oil until the level is correct.
- ☐ Replace the oil fill fitting and tighten.

Installing the Control Components

Best Practices

- To confirm a good ground, use an ohm meter to measure the resistance between the ground point and the negative battery terminal. Resistance should be less than 1 Ω .
- Route all wires to ensure they will not contact hot, sharp or moving parts (including the park brake mechanism, steering column, and pedals).
- Before drilling any holes ensure there are no OEM wires, hoses, or components that may be damaged.
- Do not use a test light to probe for power on vehicle circuits, the increased current draw of the test light may damage components.
- VMAC recommends using only sealed crimp and solder butt connectors for all electrical connections.
- To ensure a durable connection, use only good quality crimping tools.
- Apply loom to all wiring:
 - Use high temperature loom in areas where high temperatures may be expected.
 - Use spiral loom in areas with high vibration.

In-line Butt Splice Connections

- Cut the wire approximately 2 in from the from any connector.
- Strip approximately 3/8 in from the end of both sides of the cut wire, as well as from the end of the wire being spliced in-line.
- Twist the wire to be spliced in-line, together with the "live" side of the wire (not the wire attached to the connector).
- Slide the butt connector onto the twisted wires and crimp it.
- Insert the "connector side" of the wire into butt connector and crimp it.
- Lightly tug the wires to ensure they are properly crimped.
- Using a heat gun, carefully apply heat to the butt connectors to seal the connection.

Digital Throttle Control Wire Schematic

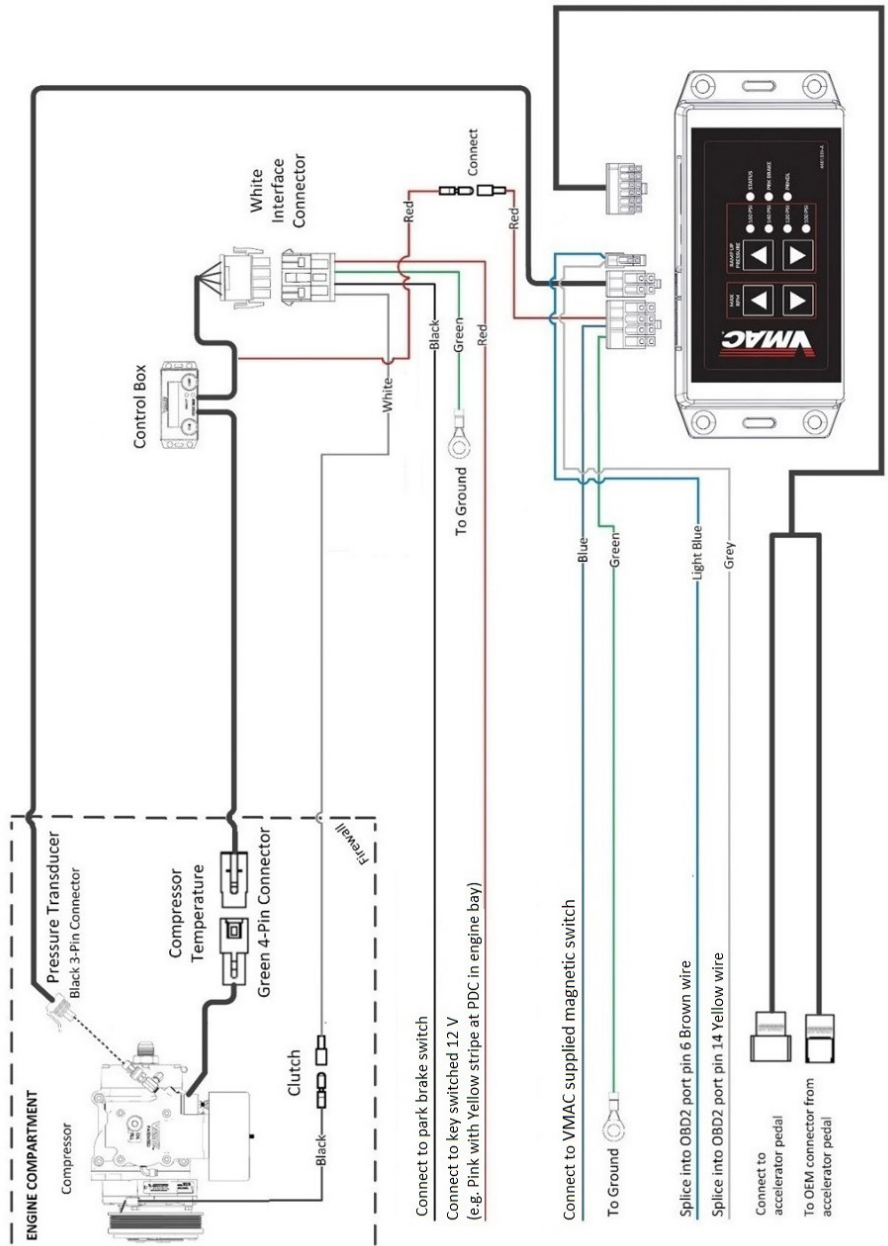


Figure 55 — Digital throttle control



On vehicles equipped with VSIM, the upfitter is able to connect the VMAC Park/Neutral and Park Brake wires via the following locations:

- **Black wire (Park Brake) from the white interface connector: Pin 11 in the brown 16 cavity connector (dark green wire with white stripe).**
- **Blue wire (Park/Neutral) from the VMAC throttle control: Pin 7 in the grey 24 cavity connector (yellow wire with dark blue stripe).**

Control Box

- ☐ Remove the plastic trim panel from the doorsill and the kick panel on the driver side.
- ☐ Install the Control Box in a convenient location in the cab, positioned so that the wire harness will reach the compressor. The most common location for the control box is between the driver side seat and the door.

Throttle Control

- ☐ Using cable ties, secure the throttle control under the dashboard, next to the OBD II port. Ensure it is away from moving parts and positioned so that the buttons and LED lights, are accessible.

Connecting the Wiring

- ☐ Unplug the OEM cable from the accelerator pedal and plug it into the matching connector from the throttle control. Plug the cable from the throttle control into the matching connector on the accelerator pedal.
- ☐ Connect the interface harness to the matching connector from the Control Box.
- ☐ Replace the doorsill trim and the kick panel.
- ☐ Attach the (x2) green wires with ring connectors to a good ground under the dash.
- ☐ Locate the OBD II port (generally located under the dashboard, beneath the steering wheel column).
- ☐ Remove the fasteners securing the OBD II port to the dashboard; this provides easier access to the wires at the back.
- ☐ Peel back the tape on the harness a few inches.



The wires populating pins 6 and 14 are a twisted pair (brown and yellow wires).

- ☐ Splice the light blue wire from the throttle control to the brown wire at pin 6 of the OBD II port (Figure 56).

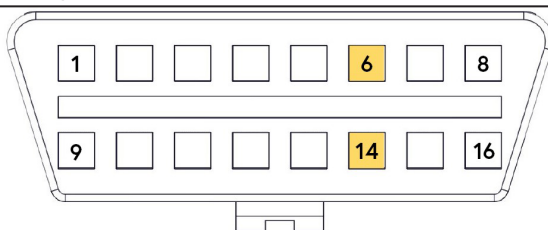


Figure 56 — OBD II connector

- ☐ Splice the grey wire from the throttle control to the yellow wire at pin 14 of the OBD II port (Figure 56).

Disregard if connecting via VSIM:

- ☐ Unplug the connector from the park brake switch and connect the black wire 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 following wires into the engine compartment via a grommet in the firewall:

- ☐ White wire from the 4 pin connector (clutch wire).
 - ☐ Grey wire with the green 4 pin connector (temperature sensor).
 - ☐ Grey wire with the black 3 pin connector (pressure sensor).
 - ☐ Red wire from the white 4 pin interface (key switched 12 V).
 - ☐ Long blue wire (*disregard if connecting via VSIM*).
- ☐ Cover all of the engine compartment wires with plastic loom.

Compressor connections

- ☐ Route the (x2) grey wires and the white wire over to the compressor.

Transmission connection (*disregard if connecting via VSIM*).

- ☐ Route the long blue wire to the shift linkage / transmission range sensor on the driver side of the transmission.

Aisin AS69RC transmission:

- ☐ Locate the 10 pin connector plugged into the transmission range sensor on the driver side of the transmission (Figure 57).

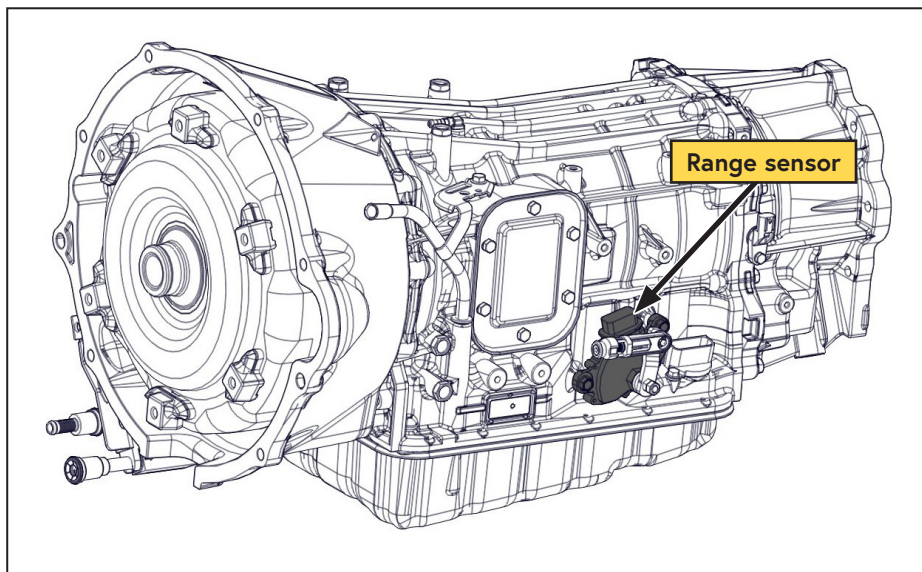


Figure 57 — Locate range sensor

- ☐ Locate the yellow wire with blue stripe going to pin 9 in the transmission range sensor connector (Figure 58).

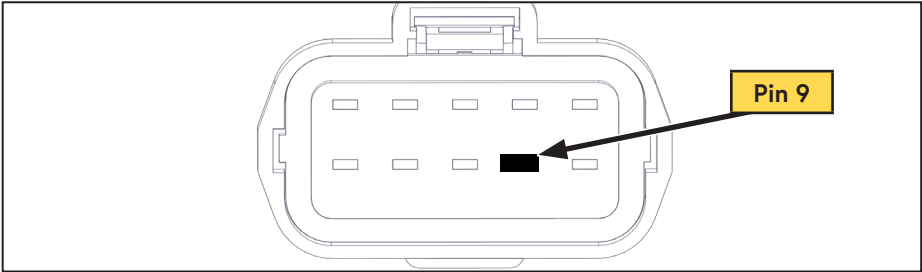


Figure 58 — View from front of connector

- ☐ Splice the blue wire from the throttle control to the yellow wire with blue stripe going to pin 9 in the transmission range sensor connector (Figure 58).

ZF 8HP75 Transmission:

- ☐ Using the supplied Philips head screws, mount the magnetic switch to the park sensor adapter (Figure 59).

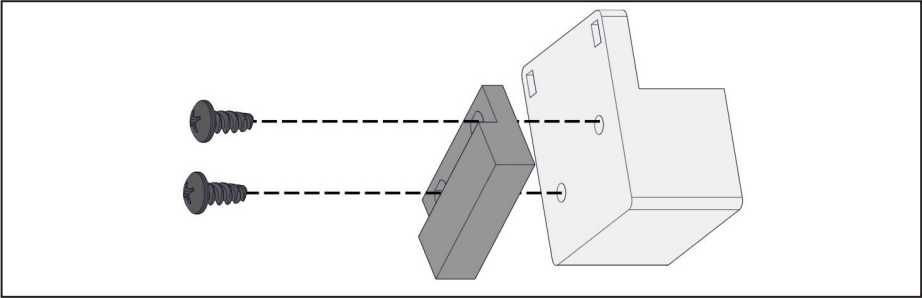


Figure 59 — Mount magnetic switch

- ☐ Remove the cover from the box protecting the shift linkage (Figure 60).



Figure 60 — Shift linkage cover

- Place jig over lower box cavity and against the plastic tab receivers (Figure 61).

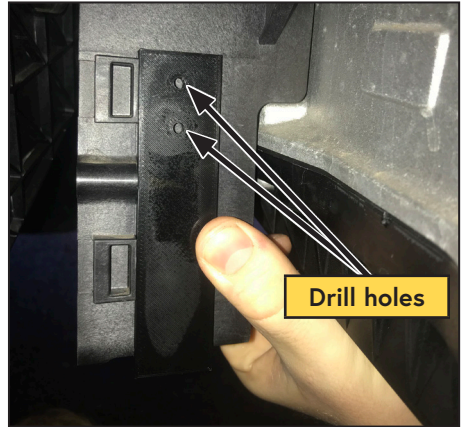
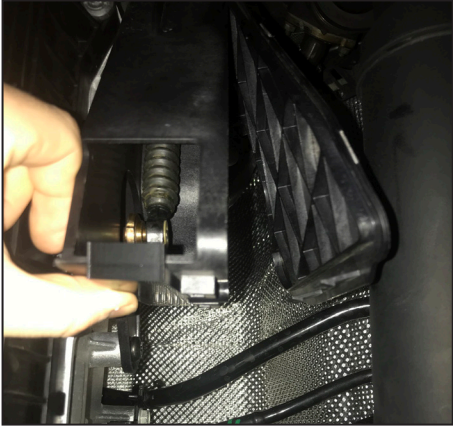


Figure 61 — Mount jig

- With the jig securely in place, drill the (x2) holes.
- Using the (x2) M3x14 screws, (x2) washers, and (x2) M3 lock nuts, mount the magnetic switch (with the wires toward the ground) to the shift linkage box via the holes drilled previously (Figure 62).

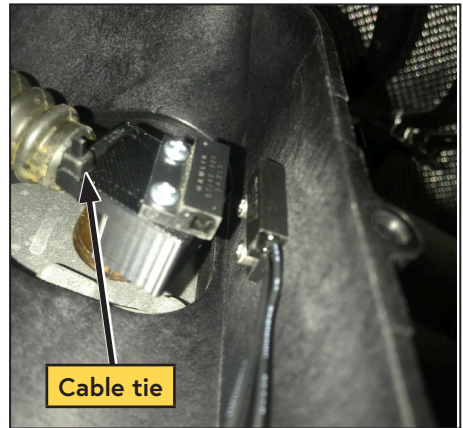
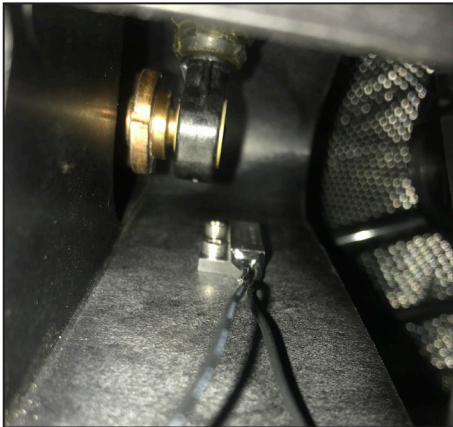


Figure 62 — Mount the magnetic switch

- Using the supplied cable ties, secure the magnetic switch to the shift linkage (Figure 62).
- Locate the empty, threaded transmission hole toward the front of the transmission.
- Cut the green ground wire to length.
- Strip approximately 3/8 in from the end of both wires.
- Slide the supplied heat shrink tube onto the green wire, crimp the large ring terminal onto the wire, slide the heat shrink tubing over the ring terminal and apply heat to shrink it in place.

- ☐ Attach the ring terminal on the green ground wire to the threaded hole in the transmission using the supplied M10x1.5x12 fastener
- ☐ Using the supplied butt connector, splice the blue wires together.
- ☐ Lightly tug the wires to ensure they are properly crimped.
- ☐ Using a heat gun, carefully apply heat to the butt connectors to seal the connection.
- ☐ Apply the supplied loom to the wires.



Ensure there is very little slack in the harness to prevent it from being snagged by road debris.

- ☐ Drill holes in the bottom of the box, as necessary, and secure the harness using the supplied cable ties (Figure 63).



Figure 63 — Secure harness



The instructions provided below can be used in cases where no upfitter switched power circuits (minimum 10 A free) are available.

Connecting to Key Switch 12 V Supply

- ☐ Locate the Power Distribution Center (PDC) fuse box under hood of the vehicle (Figure 64).

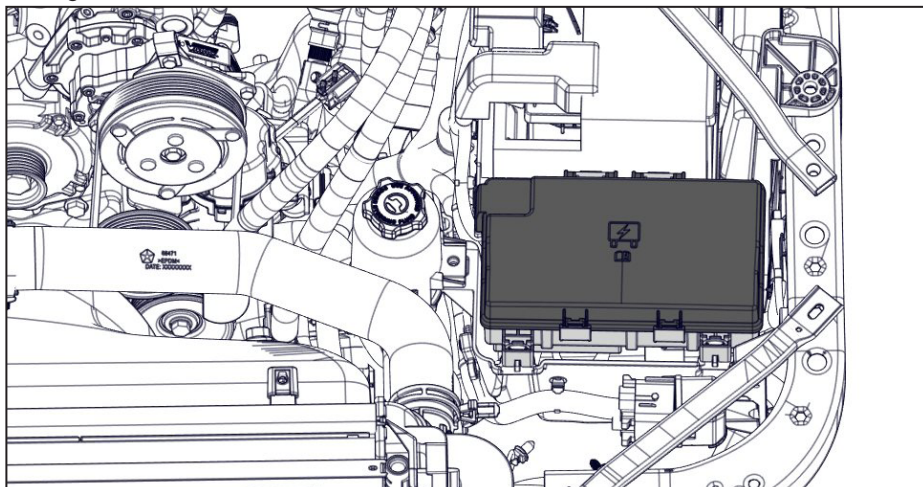


Figure 64 — Locate PDC

- ☐ Remove the PDC housing from the bracket by simultaneously squeezing the (x4) latches and pulling the PDC housing up out of the bracket (Figure 65).

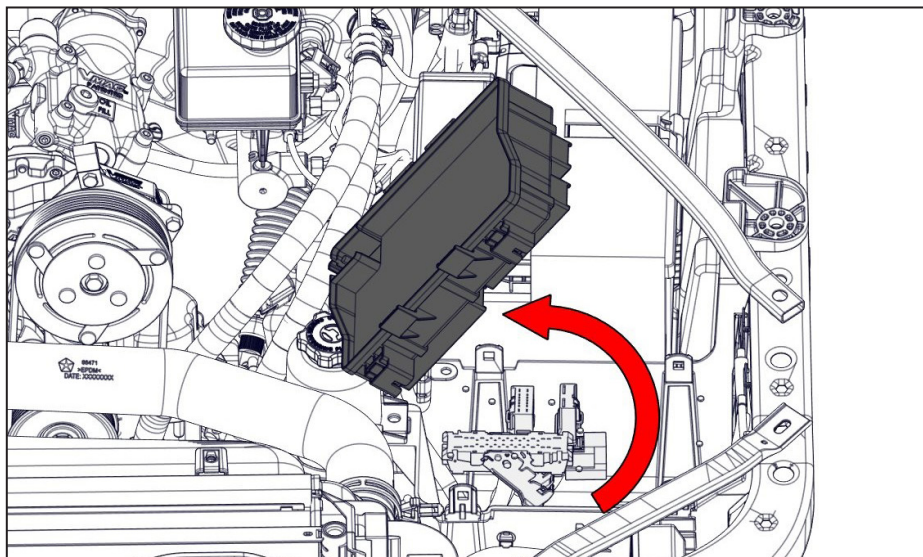


Figure 65 — Remove PDC



The OEM recommended key switched power source is a pink wire with yellow stripe. Dependant on the vehicle's date of manufacture, this wire may be located on connector C7 at pin 9, or on connector C5 at pin 7.

- ☐ Locate the connector containing the pink wire with yellow stripe on the bottom of the PDC housing. While holding the release, pull the locking lever down and pull the connector out of the fuse box.
- ☐ Splice the red wire from the control box to the pink wire with yellow stripe (pin 7 / connector C5, or pin 9 / connector C7).
- ☐ Use 1/4 in wire loom (not supplied) or equivalent protection to cover the wires, and secure the VMAC key switched wire to the OEM harness with a cable tie.
- ☐ Reinstall the PDC into its holder.

Air Receiver Tank



If an air receiver tank will be used with this system, a check valve (not supplied) must be installed to prevent damage to the system.

Once a check valve is installed, pressure in the air receiver tank will not be relieved when the compressor system blows down. This is normal operation.

Prior to performing any service work on the system, discharge any stored air in the air receiver tank.



If an air receiver tank will be used with this system, the following installation procedure must be used to prevent damage to the system.

The VMAC compressor system will automatically depressurize when it is shutdown, therefore the hose from the VMAC AOST to the air receiver tank must have a check valve installed; this prevents blow back and moisture from the receiver tank entering the AOST.

While the air receiver tank can be installed at any height in relation to the AOST, the discharge hose running from the AOST must be installed as high as possible on the air receiver tank to prevent problems with condensation that may have accumulated in the receiver tank (Figure 66).

Drain the condensed water from the receiver tank daily.

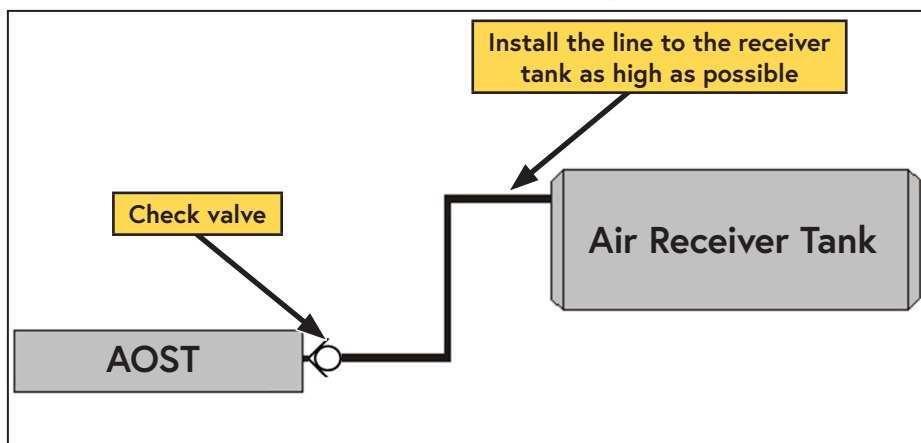


Figure 66 — Air receiver tank

Recommended Accessories

While the compressor system will function without the following accessories, VMAC strongly recommends their use for optimal performance.

See the "Accessory Product" section of this manual on page 60 for a list of products available for purchase through VMAC.

Receiver Tank

An air receiver tank provides a buffer as it gives the compressor time to react by increasing the engine speed and producing air before the tool stalls. It also has the advantage of lowering the duty cycle of the compressor system.

Pressure Gauge

While not critical to system performance, a pressure gauge is important for fine tuning the system and simplifies any potential troubleshooting.

Install a 200 psi pressure gauge downstream of the air discharge valve.

Pressure Regulator and/or Lubricator or FRL

The compressor can produce air pressures up to approximately 175 psi (1206 kPa). It is the responsibility of the user to know the pressure and air flow requirements of the tools powered by the air compressor system.

An appropriate air pressure regulator and lubricator can be installed downstream of the air discharge valve. Failure to regulate the air pressure may cause damage to the tool.

Completing the Installation

- ☐ Check all wiring, hoses and tubes to ensure that they will not contact any hot or moving components and will not interfere with the operation of the vehicle. Ensure all wiring, hoses and tubes are secured with cable ties and protected with loom as required.
- ☐ Pull any excess wiring back into the cab and tie it up and out of the way under the dash with cable ties.
- ☐ Replace all dash panels and covers removed during installation.
- ☐ Gently place the fan on the lower fan shroud.
- ☐ Reinstall the upper fan shroud.
- ☐ Install the fan.
- ☐ Remount any electrical connectors mounted on the fan shroud.
- ☐ Connect the upper radiator hose.
- ☐ Fill the cooling system with the coolant set aside earlier in the installation.
- ☐ Install the inner fender liners.
- ☐ Reinstall the radiator cover and intake ducting.
- ☐ Reinstall the air box, ensuring the electrical connectors are reconnected.
- ☐ Replace all engine bay covers removed during installation.
- ☐ Connect the batteries.

Testing the Installation

Safety Test

Ensure the following has been completed:

- ☐ Place the automatic transmission in "PARK" and apply the park brake. Turn the ignition "ON" but do not start the engine.
- ☐ Check the control box to see if it is illuminated. If there is no display, there is no power to the control box.
- ☐ Press the "ON" button. The green LED should come on and the compressor clutch will engage, this should be audible.



On systems equipped with VMAC's Digital Throttle Control, the "PRK BRAKE" LED will remain illuminated at all times, regardless of park brake position.

- ☐ Release the park brake. The green light on the control box should flash and the display will flash "PARK BRAKE". Apply the park brake again and press the "ON" button. The green light should come on.
- ☐ Press the "OFF" button.
- ☐ Turn the ignition "OFF".

The engine must be running to complete the final steps in the safety test. This will be done after the pre-start checks have been completed.



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

Before Starting the Engine Checklist

Ensure the following has been completed:

- ☐ Verify that the compressor oil level at the AOST sight glass is correct.
- ☐ Verify that the vehicle coolant level is correct.
- ☐ Perform a final inspection of the installation to ensure everything has been completed.
- ☐ Check all wiring for security and protection. Ensure nothing is touching the compressor body.
- ☐ Install the VMAC Air Test Tool (P/N: A700052) with the 70 cfm (0.190 in) orifice installed and the ball valve closed.
- ☐ Ensure all of the compressor outlets are closed.
- ☐ Ensure the parking brake is engaged and the transmission is in "PARK".
- ☐ Start the engine.

After Starting the Engine Checklist

- ☐ Check for any leaks, confirm belt alignment, and ensure the belts are rotating properly.
- ☐ Close and latch the hood.

- ☐ Allow the vehicle to reach operating temperature.
- ☐ Turn on the compressor.



The VMAC digital throttle is a "slow ramp" throttle. Each time the system is powered on, it will quickly increase engine speed to 1,500 rpm; then increase to maximum VMAC rpm over 8 seconds (provided the system has not reached full system pressure before maximum VMAC rpm is reached).

After the initial slow ramp, the throttle will respond normally to air demand

- ☐ When the VMAC system is first engaged, the engine speed should increase to 1,500 rpm and then drop down to VMAC base idle (approximately 1,100 rpm) once system pressure is reached.

With the system running, check for:

- ☐ Coolant leaks.
- ☐ Compressor oil leaks.
- ☐ Allow the compressor to run until the system reaches full system pressure.
- ☐ Engine speed should reduce to between 900 rpm to 1,100 rpm.
- ☐ Turn off the compressor.
- ☐ Shut down the engine.
- ☐ Check the compressor oil level after the engine has been shut down and the oil level has had time to stabilize.



Ensure any stored air is drained from the system prior to adding oil.

- ☐ Add oil as necessary to bring the level to the "FULL" line in the sight glass and check for leaks.
- ☐ Start the engine.
- ☐ Turn on the compressor and allow it to build to full system pressure.
- ☐ Release the park brake.
 - The control box should read "PARK BRAKE", the compressor clutch should disengage and engine speed should reduce to OEM idle.
- ☐ Re-engage the park brake and start the compressor.
- ☐ Allow engine speed to stabilize after re-engaging the compressor.

With the brake pedal firmly depressed, shift the truck into "REVERSE".

- ☐ *The engine speed reduces to OEM base idle (Approximately 650 rpm).
- ☐ *The green LED on the control box remains illuminated.
- ☐ *The "STATUS" and "PRNDL" LED's on the digital throttle control will turn off and engine speed will reduce to base idle.
- ☐ *Shift the vehicle back into "PARK".
- ☐ *Cycle the compressor off, then on again to reset the safety parameters.
- ☐ Repeat these steps in all gear selector positions to ensure the engine speed does not increase unless the gear selector is in "PARK".

VMAC - Vehicle Mounted Air Compressors

VMAC Technical Support: 888-241-2289

VMAC Knowledge Base: www.kb.vmacair.com

Digital Throttle Auto Calibration



When first installed, the VMAC digital throttle will perform an auto-calibration as it adjusts to the vehicle's tune, this process takes approximately 3 minutes.

- ☐ Remove the orifice from the VMAC Air Test Tool.
- ☐ Open the ball valve slowly, until the system maintains approximately 85 psi.
- ☐ Allow the system to run for 3 minutes while the VMAC digital throttle calibrates itself. During this time, engine speed may gradually increase until achieving the maximum VMAC rpm (2,500 rpm).
- ☐ Close the ball valve.
- ☐ Allow the compressor to run until the system reaches full system pressure.
- ☐ Confirm all air valves are closed and the system has no air leaks.
- ☐ Turn off the compressor.
- ☐ Ensure any stored air is drained from the system.

Final Testing

Ensure the following has been completed:

- ☐ Operate the system with an air tool (or the VMAC Air Test Tool with the appropriate orifice installed) for at least 1/2 hour (1 hour preferred).
- ☐ Road test the vehicle for approximately 14 miles (20 km).
- ☐ Observe the compressor operation to ensure that the belt alignment is good and nothing is rubbing or contacting hot components.
- ☐ Check all components, connections and fasteners once the engine is turned off and the system has cooled.
- ☐ Check the coolant level after the engine has been operated.
- ☐ Check the compressor oil level after the engine has been shut down and the oil level has had time to stabilize.

Performance Testing and System Adjustments

Performance Testing and System Adjustment

System operation can be tested using the tools that will be operated by the system or by using the VMAC Test Tool (A700052) with the 70 cfm (0.190 in) orifice in the outlet to simulate tool use (Figure 67).

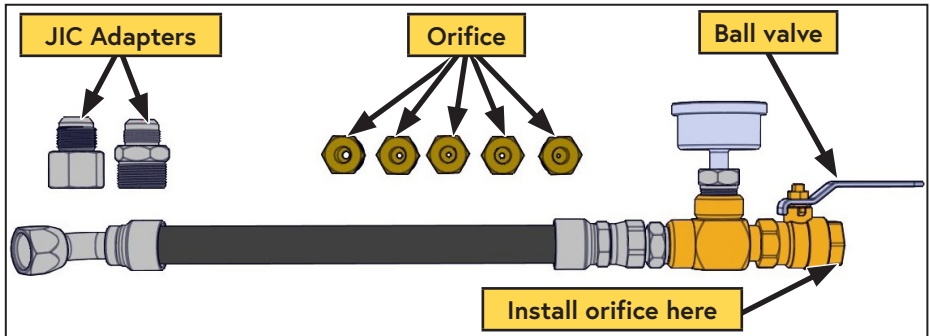


Figure 67 — A700052 VMAC Air Test Tool



Disconnect all downstream equipment (hose reels, etc.) and connect the test tool directly to the discharge fitting on the AOST.

Ensure there are no leaks in the test tool. The system may not idle down if there are leaks in the lines or fittings.

- ☐ Install the VMAC test tool at the AOST outlet with the 70 cfm (0.190) orifice.
- ☐ Ensure that the ball valve is closed.
- ☐ Place the transmission in "PARK" and fully apply the park brake.
- ☐ Allow the engine to run until it is at operating temperature.
- ☐ Turn on the air compressor system and allow it to operate until the oil is warm.
- ☐ Observe the pressure gauge. Pressure should be approximately 150 psi.

Open the ball valve on the test tool and observe the engine tachometer:

- ☐ Engine speed should increase to approximately 2,500 rpm.
- ☐ Close the air valve slowly to allow the system pressure to rise. When the pressure reaches 150 psi (factory setting), the system will close the inlet valve poppet and reduce the engine speed to VMAC base idle (approximately 1,100 rpm).
- ☐ 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 ramp up when the pressure drops to approximately 140 psi. This value can be adjusted via the "IDLE DOWN PRESSURE" (analog throttle) / "RAMP UP PRESSURE" (digital throttle) adjustment.

Digital Throttle Control Operation and Adjustments



The VMAC digital throttle is a "slow ramp" throttle. Each time the system is powered on, it will quickly increase engine speed to 1,500 rpm; then increase to maximum VMAC rpm over 8 seconds (provided the system has not reached full system pressure before maximum VMAC rpm is reached).

After the initial slow ramp, the throttle will respond normally to air demand.

The throttle control is configured at the factory for optimum performance at maximum cfm. In applications where maximum cfm is not required, or noise is a concern, the throttle control can be adjusted to reduce the maximum VMAC rpm.

Safety features

The throttle control has built in safety features that will disable the system if an unsafe condition is detected, or either of the lock out parameters is not met (the vehicle must be in "PARK" and the park brake must be engaged).

If an unsafe condition is detected, the "STATUS" LED will turn off, and engine speed will return to idle. Once all unsafe conditions have been removed, the system must be cycled off, then on again to reset it. Once the system powers up, the "STATUS" LED will illuminate, and the system will operate normally.

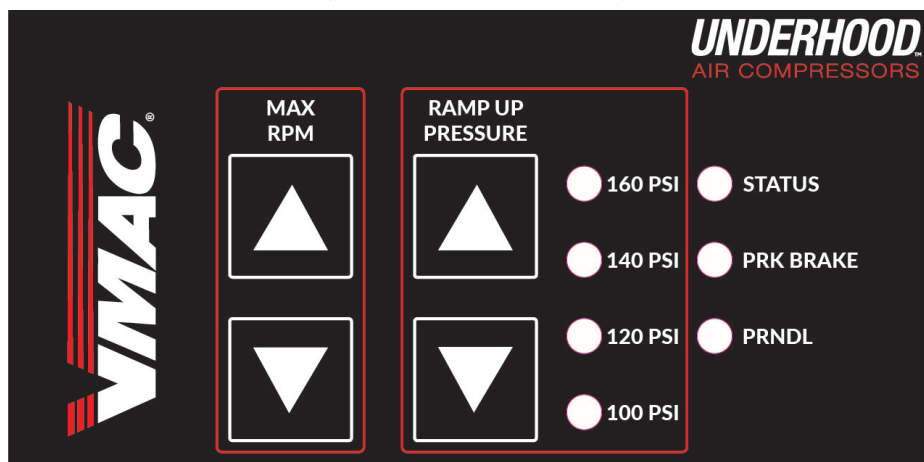


Figure 68 — Throttle control



If the vehicle is placed into gear, the "STATUS" LED and the PRNDL LED will turn off and the throttle control will deactivate. This will reduce engine speed to base idle.

In order to activate the system again, re-engage the appropriate lockout and cycle the VMAC "OFF" then "ON" via the control box.



The "PRK BRAKE" LED will remain illuminated at all times, regardless of park brake position.

MAX RPM

The cfm produced by the system is directly related to engine speed; this system delivers 63 cfm at 2,500 rpm.

Maximum VMAC rpm can be adjusted between 1,100 rpm and 2,600 rpm (in 50 rpm increments) via the "▲" or "▼" buttons in the "MAX RPM" column.



If the system is at full system pressure while the rpm is being adjusted, the engine speed will increase to the new value for 4 seconds, then return to base idle.

RAMP UP PRESSURE

"RAMP UP PRESSURE" is the amount of pressure the system will drop before the engine speed is increased to generate air; as air continues to be used and the pressure drops, engine speed will increase until maximum VMAC rpm is achieved.

"RAMP UP PRESSURE" is set to 140 psi (10 psi below the factory default maximum system pressure of 150 psi). This allows for a small amount of air use without the need to increase engine speed.



"RAMP UP PRESSURE" should only be adjusted if the maximum system pressure is changed (via the inlet regulator). To maintain proper performance, and rapid response to air demand, ensure the "RAMP UP PRESSURE" is set at no more than 20 psi below the maximum system pressure.

The "RAMP UP PRESSURE" can be set to "100 PSI", "120 PSI", "140 PSI", or "160 PSI" via the "▲" or "▼" buttons in the "RAMP UP PRESSURE" column; an LED will illuminate beside the setting that has been selected.

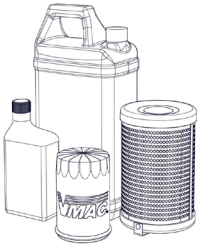
Factory Reset

The throttle control can be reset to factory default values via a button inside the throttle control box.

To perform a factory reset, turn the system on and allow the engine speed to drop to VMAC base idle (approximately 1,100 rpm). Using a paper clip (or similar object), and hold the factory reset button for 5 seconds. All of the LED lights will illuminate for several seconds while the settings revert to their defaults. Once the LED's return to their normal state, the system is ready for use again.

Accessory Products from VMAC

Compressor Service Kits



200 Hour or 6 Month Service Kit -

Part number: A700019

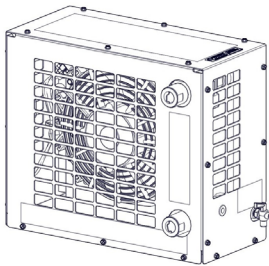
Includes 5 L VMAC high performance compressor oil, oil filter, air filter, and next service due decal.

400 Hour or 1-Year Service Kit -

Part number: A700020

Includes 5 L VMAC high performance compressor oil, oil filter, air filter, coalescing filter, pressure relief valve, muffler, and next service due decal.

Air Aftercooler

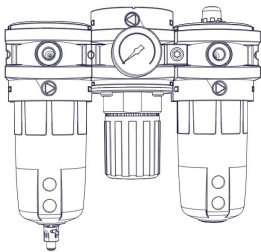


Part number: A800070

Improves tool performance and extends the life of air tools; removes up to 80% of water from compressed air; includes automatic water drain.

- Max air flow: 70 cfm / 175 psi.
- Port size: 3/4 in NPT inlet and outlet.
- Electrical: 12 V.
- Dimensions: 17 in (43.2 cm) L x 8.0 in (20.3 cm) W x 14.5 in (36.8 cm) H .
- Weight: 35 lb (15.8 kg).

Filter Regulator Lubricator (FRL) – 70 cfm

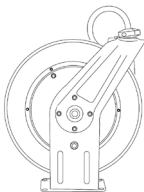


Part number: A700151

Extends the life of air tools; filter removes contaminants from the compressed air, adjustable regulator can reduce air pressure going to tools, lubricator adds atomized tool oil to the air stream to lubricate air tools (Tool oil not included).

- Max air flow: up to 70 cfm / 150 psi.
- Port size: 3/4 in NPT inlet and outlet.

1/2 in x 50 ft Hose Reel



Part number: A700007

Spring-loaded 1/2 in x 50 ft hose reel; steel construction; full flow shaft and swivel for maximum performance.

VMAC De-icer Kit



Part number: A700031

Cold climate heater package for operating VMAC compressors in cold climates; proven at temperatures of -30 °C (-22 °F). Requires 12V DC at 10A.

10 Gallon, 200 psi Air Receiver Tank w/ Mounting Feet

Part number: A300047

Air receiver tanks are used for lowering compressor duty cycle and removing water from compressed air. Recommended for optimum operation of VMAC Hydraulic Air Compressors, VMAC Diesel Driven Air Compressors, UNDERHOOD40, UNDERHOOD70 (including Green Series Air Compressors), DTM70/DTM70-H, and VMAC Multifunction Power Systems, which include standby mode; ASME certified; includes fittings, 200 psi pressure relief valve, tank drain, and 200 psi pressure gauge.

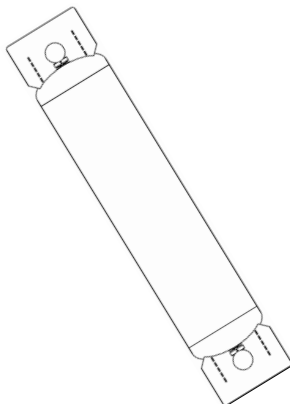


- Max pressure: up to 200 psi.
- Dimensions: 30 in (76.2 cm) L x 10 in (25.4 cm) D.
- Weight: 33 lb (15 kg).

35 Gallon, 200 psi Air Receiver Wing Tank

Part number: A300010

Air receiver tanks are used for lowering compressor duty cycle and removing water from compressed air. Recommended for optimum operation of VMAC Diesel Air Compressors, Hydraulic Air Compressors, UNDERHOOD40, UNDERHOOD70 (including Green Series Air Compressors), DTM70/DTM70-H, and VMAC Multifunction Power Systems, which include standby mode; ASME certified; includes fittings, 200 psi pressure relief valve, tank drain, and 200 psi pressure gauge.



- Max pressure: up to 200 psi.
- Dimensions: 73 3/4 in (187.3 cm) L x 14 in (35.6 cm) D.
- Weight: 95 lb (43.1 kg).

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Warranty Registration

This form must be fully completed and returned to VMAC at the time the vehicle is put into service. Warranty may be void if this form is not received by VMAC within 3 months of receiving the vehicle, or 200 hours of operation, whichever occurs first.



VMAC's Warranty policy and registration can be viewed online at:

www.vmacair.com/warranty

Product Information

System Identification Number: V _____

Compressor Serial Number: P _____

Owner / End User Information

Company Name: _____

City: _____ State / Province: _____

Phone: (____) ____-_____

Email Address: _____

Date vehicle was put into service: ____/____/____
Day Month Year

Installer Information

Installer Company Name: _____

City: _____ State / Province: _____

Submitted by

Name: _____ Phone: (____) ____-_____

Email: _____

Vehicle Information (Optional)

Unit: _____ Year: _____

Make: _____ Model: _____

Vehicle Identification Number: _____

Manufactured by



888-241-2289



877-740-3202



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