

Installation Manual for VMAC Accessory

A700137

Replacement Regulator Assembly

www.vmacair.com

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Additional Application Information

The A700137 Replacement Inlet Regulator Assembly is compatible with select VMAC inlet regulated systems.

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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.).

Hose Information



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.

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

- None

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) to all fasteners (except nylon lock nuts) unless otherwise stated.

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

Maintenance and Repair Safety



It is impossible to warn of all the possible hazards that may result from operating, servicing, or repairing this system. Wear all appropriate Personal Protective Equipment and follow all industry standard safety practices.



Confirm that the system is depressurized and has cooled prior to performing any service work.



Never use flammable solvents to clean any components. If a flammable solvent has been used, rinse the component thoroughly with water and dry it before reinstalling it to prevent the possibility of explosion.



Use only genuine VMAC replacement parts to maintain the system.

Genuine VMAC replacement parts are designed to work with the high pressure and heat generated by the compressor. Substituting genuine VMAC replacement parts may void the warranty and could cause equipment damage, injury, or death.



This information is intended for people with mechanical trade certification who have the tools and equipment to properly and safely perform the service or repair. Do not attempt to service or repair this system without the appropriate mechanical training, knowledge and experience.

Follow all safety precautions and industry standard "best practices".

Safety Check List

- ☐ Open the ball valve or connect an air tool to the system to ensure all the stored air is released.
- ☐ Gently pull up on the ring on the pressure relief valve to confirm the system is depressurized



Do not use the pressure relief valve as a means of depressurizing the compressor system. Doing so will prematurely wear the internal spring or the seat, preventing the valve from maintaining normal system pressure.

Installation



Read the "Maintenance and Repair Safety" section prior to performing any work on the system (beginning on page 8). Wear appropriate Personal Protective Equipment and follow all industry standard safety practices.



Failure to follow these instructions may result in component damage, injury, or death.



With the exception of the setting bolt (as described in Step 2) and the "seat" (as described in step 3), do not re-use any components from the old regulator as they are worn and may cause premature failure if used with new regulator components.

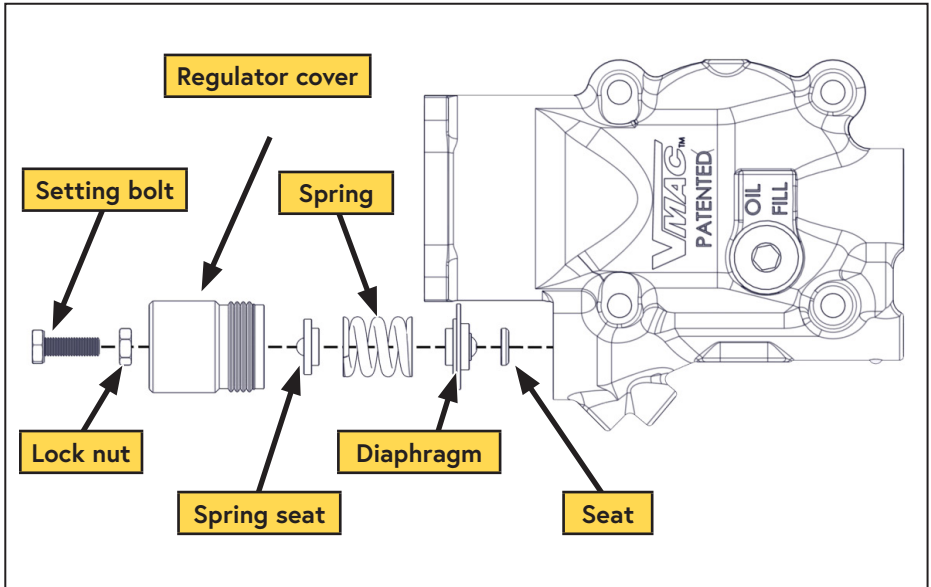


Figure 1 — Inlet valve and regulator

1. Measure how far the setting bolt extends from the existing regulator cover in the inlet valve. This can be used as a rough guide for setting system pressure in step 11.
2. Remove the regulator setting bolt and retain it. It will be used in step 13.
3. Remove the regulator cover from the inlet valve.

4. Invert the inlet valve to remove the regulator components. If the chamfered seat comes out, discard it as per the note below.



***If the seat falls out of the inlet easily, discard it, a new one is provided in the regulator replacement assembly (P/N: A700137).
If the seat does not fall out of the inlet when tipped, leave it in place as it will be re-used. Do not try to force or pry the seat out as you will damage the inlet valve.***

5. Remove any burrs from the Inlet threads using a mechanic's pick (or similar tool) to prevent galling of the threads when installing the new regulator cover.
6. If the seat is being replaced, apply just enough general purpose grease to the chamfered side of the seat to hold it in place during the install. Install the new seat with the chamfered edge of the seat facing into the Inlet and away from the regulator cover (Figure 2).

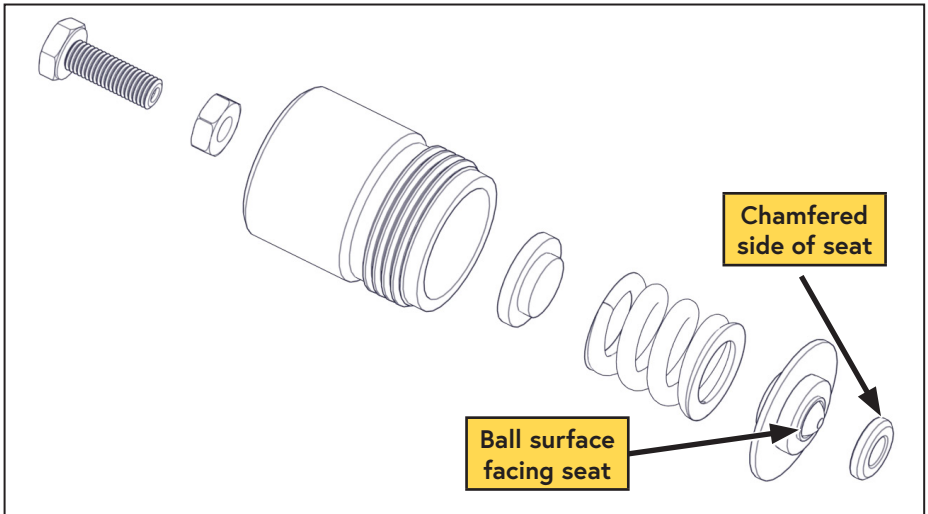


Figure 2 — Regulator assembly (P/N: A700137)

7. Ensure that there is no excess grease that will block the center of the seat or carry over into the air passage in the Inlet.
8. Install the rubber diaphragm into the Inlet with the ball surface of the diaphragm facing the seat (Figure 2).
9. Install the regulator spring over the brass boss on the diaphragm. Ensure the brass boss on the diaphragm sits inside the spring.
10. Install the brass spring seat boss into the spring, the ball surface should face the regulator cover and setting bolt (Figure 2).



Over tightening the regulator cover may damage rubber diaphragm.

11. Thread the regulator cover onto the inlet and hand tighten until it is in contact with the rubber diaphragm and tighten an additional 1/8 turn. The innermost thread on the regulator cover should be flush with the inlet (Figure 3).

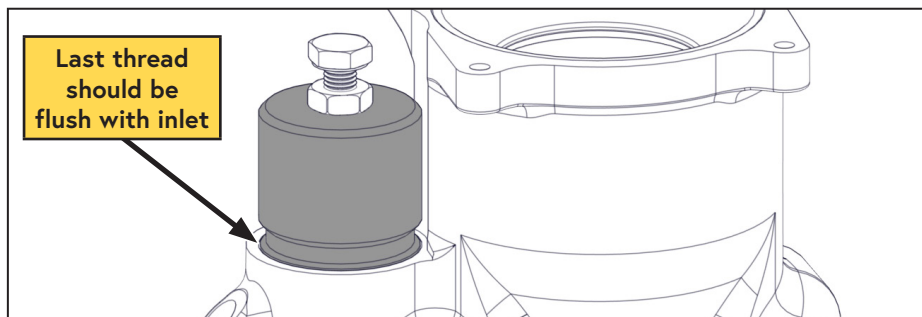


Figure 3 — Install O-rings and blanking plate

12. Install the regulator setting bolt (retained from Step 2) and lock nut. Hand tighten until spring resistance is felt.
13. Use the measurement taken in Step 1 as a rough measurement prior to the final pressure adjustment.

Adjusting the Pressure Regulator



Never adjust the pressure cutout to exceed 175 psi (1205 kPa). The pressure relief valve on the AOST will activate at 200 psi (1379 kPa) and rapid air loss will occur which may cause component damage, injury or death.



Prolonged operation above 175 psi / 1205 kPa may damage the pressure regulator.



In applications that require pressures below 150 psi, VMAC recommends leaving the maximum pressure set at 150 psi and installing a regulator downstream to regulate pressure to the desired amount. This will provide optimum performance and response time when air is demanded.

The pressure regulator is adjusted to limit maximum air pressure to a safe level. As air pressure and flow are related, this adjustment is also very important for optimum performance.

- ☐ Install the test tool in the tank outlet with the ball valve closed.
- ☐ Ensure that the oil level is correct and the system is at operating temperature.
- ☐ Operate the system until it reaches full pressure. Observe the pressure on the gauge.
- ☐ Loosen the lock nut on the regulator.

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VMAC Technical Support: 888-241-2289

VMAC Knowledge Base: kb.vmacair.com

- ☐ Pressure can be adjusted within a range of 145 psi (999 kPa) – 175 psi (1205 kPa), dependent upon requirements.
- ☐ Rotate the setting bolt clockwise to increase pressure, rotate the setting bolt counterclockwise to decrease pressure (Figure 4).

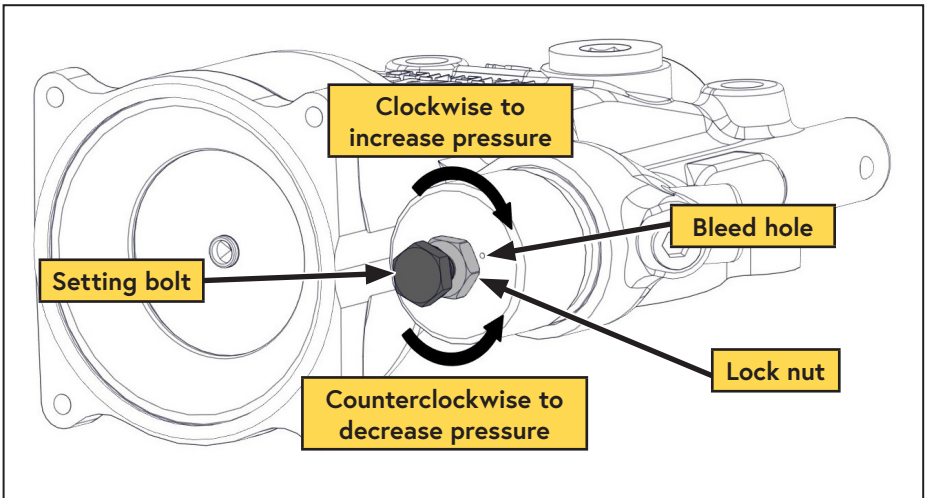


Figure 4 — Adjusting the pressure regulator

- ☐ Tighten the lock nut once adjustments are complete.
- ☐ Open the ball valve to allow air to flow and the pressure to drop, (engine speed should increase). Close the valve and observe the pressure to ensure that the adjustment is correct.

Manufactured by



888-241-2289



877-740-3202



www.vmacair.com



tech@vmacair.com



warranty@vmacair.com



kb.vmacair.com



1333 Kipp Road, Nanaimo, B.C., V9X 1R3 Canada