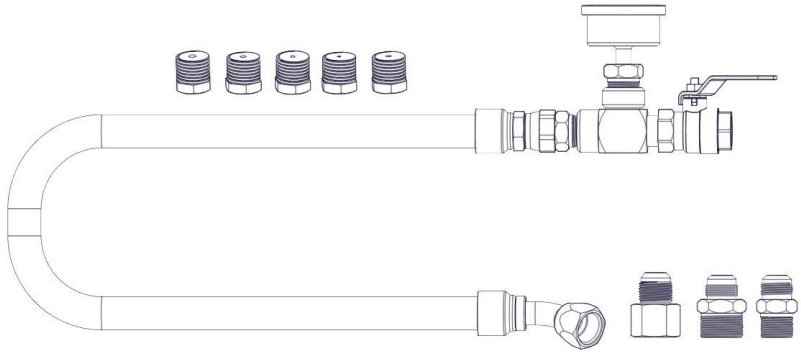


Operating Instructions

A700052 VMAC Air Test Tool



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Changes and Revisions

Revision	Revision Details	Revised by	Checked by				Implemented
			Eng.		Tech.	Qual.	
			Mech.	Elec.			
A	Engineering Release	MSP	ALP	N/A	DSB	AMG	17 May 2016

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

Notice

Manuals are subject to change without notice.

Ordering Parts

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:

Tel: 1-800-738-8622

Web: www.vmacair.com/dealer-locator



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VMAC – Vehicle Mounted Air Compressors

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General Information

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 and service techniques. If a discrepancy is noted in this manual, contact VMAC prior to initiating or proceeding with installation, service or repair; current information may clarify the issue. Any person with knowledge of such discrepancies who performs 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 assure that their safety and that of others is not being compromised and that there will be no adverse effects on performance or the operational safety 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 any person to properly adhere to the procedures set out in this manual or standard safety practices. Safety should be your first consideration in performing service operations. If you have any questions concerning the procedures in this manual or require any more information on details that are not included in this manual, please contact VMAC before beginning repairs.

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 your attention to instructions concerning your personal safety. Watch for this symbol, it points out important safety precautions, it means, "Attention, be alert! Your personal safety is involved". Read the message that follows and be alert to the possibility of personal injury or death. While it is impossible to warn about every conceivable hazard, let good common sense be your guide.

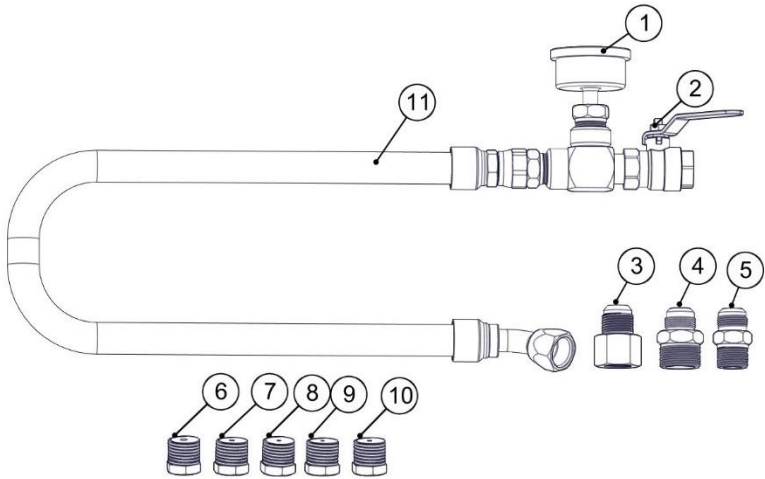


This symbol is used to call your attention to instructions on a specific procedure that if not followed may damage or reduce the useful life of the compressor.



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

Parts List



Item	Part #	Description
1	3600047	GAUGE, BACK MOUNT 200 PSI, 2 1/2
2	3600074	VALVE, BALL, NPT-NPT, 3/4-3/4
3	4900235	ADAPTOR, STEEL, 1/2 JIC - 3/4 JIC
4	4900076	CONNECTOR, STEEL NPT-JIC, 1-3/4
5	4900033	CONNECTOR, STEEL NPT-JIC, 3/4-3/4
6	3200473	FITTING MODIFIED .125 ORIFICE (30 cfm Orifice)
7	3200314	FITTING, MODIFIED .156 ORIFICE (40 cfm Orifice)
8	3200500	FITTING, MODIFIED .176 ORIFICE (60 cfm Orifice)
9	3200224	FITTING MODIFIED .190 ORIFICE (70 cfm Orifice)
10	3200223	FITTING MODIFIED .250 ORIFICE (150 cfm Orifice)
11	1771043	HOSE, CRIMPED, 3/4" X 43

Intended Use

This air test tool is designed to aid customers in diagnosing air flow issues, as well as setting up an air system without knowing the demands on the system, by using an orifice in the outlet of the air test tool to simulate air tool use.

Engine rpm adjustments also can be made so that the amount of air delivered by the system matches the requirements of the air tools or equipment that will be used (Not applicable to self-driven or hydraulic drive systems).

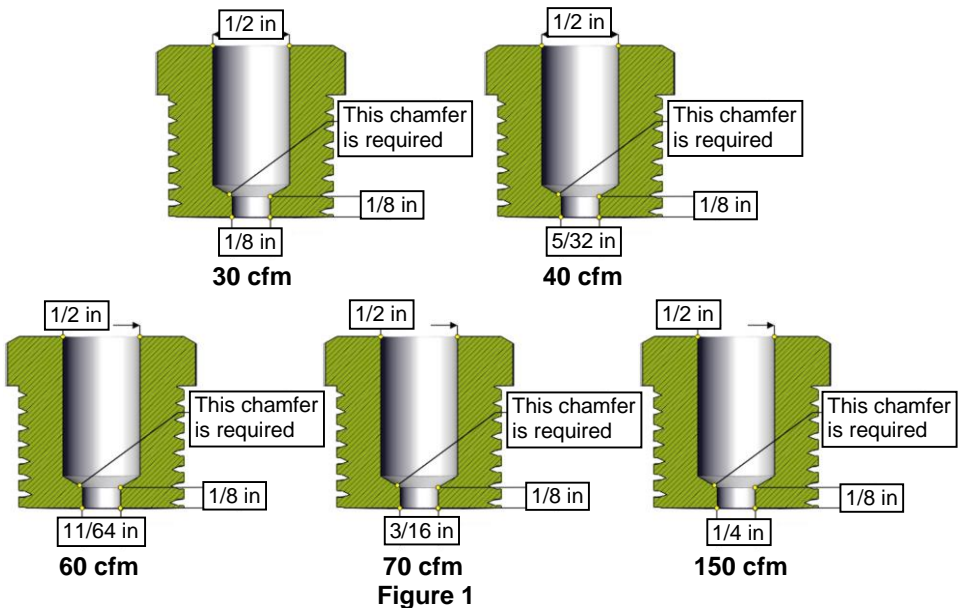
Airflow and system pressure are related.

If airflow demands on the system are low, operating pressure will remain high. If airflow demands are high, operating pressure will decrease. By making adjustments to the engine speed while operating a specific air tool, you will achieve optimum performance.

There are several size orifices that come with the air test tool. These are specifically designed for each product application.



The correct orifice for the product must be used or the values seen will not be accurate.



Setup, Performance Testing and Adjustments

New installation setup

Underhood systems only (DM, VR Lite and VR 70 / 150 systems only)

- Connect the VMAC Air Test Tool (A700052) to the discharge outlet of the Air Oil Separator Tank (AOST) or the Waste Heat Separation Package (WHASP) tank.
- With the ball valve closed, start the engine and allow it to warm up to its normal operating temperature.
- Start the VMAC compressor and observe the pressure gauge. Air pressure should increase to approximately 150 psi.



Refer to the appropriate VMAC Owner's Manual for instructions on adjusting system pressure. Available at www.vmacair.com/manuals

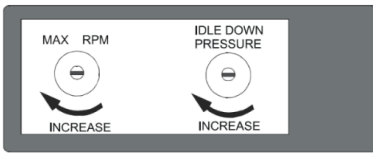


VMAC compressor systems are optimized to work at 150 psi system pressure. To reduce pressure for individual work tool use, VMAC suggests installing a Filter Regulator Lubricator (FRL) downstream of the AOST, receiver tank or WHASP tank.

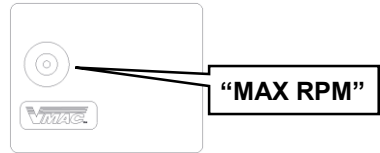
Setting correct engine speed

Underhood systems only (DM, VR Lite and VR 70 / 150 systems only)

- Connect the VMAC Air Test Tool (A700052) to the discharge outlet of the Air Oil Separator Tank (AOST) or the Waste Heat Separation Package (WHASP) tank.
- Remove any orifice that may be installed in the VMAC Air Test Tool.
- Start the engine and allow it to warm up to its normal operating temperature.
- Locate the VMAC Throttle Control on the vehicle. This is normally located under the dashboard.
- Start the VMAC compressor and allow it to build to maximum air pressure. The engine speed should reduce to VMAC base idle for VR70 / 150 (approximately 1,000 rpm) or OEM base idle for VR Lite.
- Slowly open the ball valve on the test tool until the gauge reads a steady 80 psi. The engine speed should increase to maintain this air flow.
- While observing the engine speed, use a small flat blade screwdriver to adjust the "MAX RPM" screw on the VMAC Throttle Control. (Figure 2)



VR70 / VR150



VR Lite

Figure 2 Underhood Throttle Controls

Approximate rpm values



The following rpm values will satisfy the majority of air tool requirements. If more air volume is required, increasing the engine speed via the “MAX RPM” adjustment on the VMAC Throttle Control will increase the cfm output.



The rpm values below should yield approximately:

*DM70 / VR70: 58 cfm**

*VR150: 120 cfm**

*VR Lite: 30 cfm**

Approximate maximum rpm	
VR70 / DM70 (Gas engine)	2,400 rpm
VR150 (Gas engine)	2,400 rpm
VR70 DM70 (Diesel engine)	2,100 rpm
VR150 (Diesel engine)	2,100 rpm
VR Lite V300001 (6.7 L Diesel)	3,000 rpm
VR Lite V300002 (3.6 L Gas)	4,000 rpm
VR Lite V300003 (3.0 L Diesel)	3,000 rpm
VR Lite V300004 (3.7 L Gas)	3,000 rpm
VR Lite V300005 (V8 Gas)	3,000 rpm
VR Lite V300006 (6.7 L Diesel)	2,100 rpm
VR Lite V300007 (V8 Gas)	3,000 rpm

Figure 3

**cfm values calculated at sea level.*

Idle Down Pressure (IDP)

Underhood (VR70 / 150 systems only)

The “IDLE DOWN PRESSURE” adjustment determines how much pressure is lost before the VMAC Throttle Control increases engine speed to compensate for the pressure drop. VR Lite throttle controls are pre-set from the factory with the appropriate IDP setting which is non-adjustable. This pressure drop should be around 10 - 15 psi below the maximum system pressure (150 psi factory default) before the engine rpm starts to rise.

If the IDP is set too close to the maximum system pressure, the VMAC Throttle Control will be continuously reacting to minute pressure changes (fluttering) while setting the IDP too low may not allow the VMAC Throttle Control to react fast enough to compensate for large air use resulting in the tool “stalling”.

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Setting correct Idle Down Pressure

- Connect the VMAC Air Test Tool (A700052) to the discharge outlet of the Air Oil Separator Tank (AOST) or the Waste Heat Separation Package (WHASP) tank.
- Start the engine and allow it to warm up to its normal operating temperature.
- Locate the VMAC Throttle Control on the vehicle. This is normally located under the dashboard.
- Start the VMAC compressor and allow it to build to maximum air pressure. The vehicle rpm should reduce to “VMAC Base Idle” (approximately 1,000 rpm).
- Slowly open the ball valve on the test tool until the gauge reads a 140 - 135 psi (10 – 15 psi below maximum system pressure). The engine speed should increase to maintain this air flow.
- Adjust the “IDLE DOWN PRESSURE” as necessary to increase or decrease engine speed to compensate for the air loss.

Diagnosing Compressor Air Flow Issues

- Make sure all of the above adjustments have been made and are within VMAC’s recommendations.
- Connect the VMAC Air Test Tool (A700052) to the discharge outlet of the Air Oil Separator Tank (AOST) or the Waste Heat Separation Package (WHASP) tank.
- Install the appropriate orifice for your VMAC system into the air test tool. (Figure 1)
- Start the engine and allow it to warm up to its normal operating temperature.
- Start the VMAC compressor and allow it to build to maximum air pressure. The vehicle rpm should reduce to “VMAC Base Idle” (approximately 1,000 rpm).
- Slowly open the ball until it is completely open. The engine speed should increase as system pressure drops and then maintain:
 - DM and VR 150 / 70 95 psi or higher
 - PREDATAIR 60 / 40 95 psi or higher
 - RAPATAIR60 / MF 95 psi or higher
 - VR Lite 75 psi or higher

If the compressor does not maintain the minimum pressures listed above, contact VMAC Technical Support at:
Telephone: 1-888-241-2289
Email: tech@vmacair.com