

VANAIR®
AIR POWER TO GO™



GASOLINE ENGINE-DRIVEN, 60-80 CFM / 100 PSIG, ROTARY SCREW AIR COMPRESSOR OPERATOR'S MANUAL & PARTS LIST

NOTE

This publication contains the latest information available at the time of preparation. Every effort has been made to ensure accuracy. Vanair Manufacturing, Inc. reserves the right to make design change modifications or improvements without prior notification.

NOTE

Use only Vanair Vanguard™ Premium Synthetic Oil and Genuine Vanair Parts. Inspect and replace damaged components before operation. Substituting non-Vanguard™ Oil or non-genuine Vanair filter components WILL VOID THE COMPRESSOR WARRANTY!

**KEEP THE MANUAL
WITH THE VEHICLE**



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Read this manual before installing, operating or servicing this equipment. Failure to comply with the operation and maintenance instructions in this manual WILL VOID THE EQUIPMENT WARRANTY.

NOTE

Making unauthorized modifications to the system components WILL VOID THE WARRANTY!

Always inform Vanair Manufacturing, Inc., before beginning any changes to the Viper Gas system.



VANAIR®
AIR POWER TO GO™

P/N: 090071-OP_r0

Effective Date:
FEBRUARY 2015

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VANAIR VANTAGE WARRANTY

This limited warranty supersedes all previous Vanair warranties and is exclusive with no other guarantees or warranties expressed or implied.

LIMITED WARRANTY—Subject to the expressed terms and conditions set forth below, Vanair Mfg., Inc. ("Vanair"), of Michigan City, Indiana (USA), warrants to the original retail purchaser of new Vanair equipment that such equipment is free from defects in materials and workmanship when shipped by Vanair.

For warranty claims received by Vanair within the applicable warranty periods described below, Vanair will repair or replace any warranted equipment, parts or components that fail due to defects in material or workmanship or refund the purchase price for the equipment, at Vanair's discretion. Vanair is not responsible for time or labor to gain access to the machine to perform work. **WARRANTY WILL BE VOID IF GENUINE VANAIR PARTS AND FLUIDS ARE NOT USED.**

Vanair must be notified in writing within thirty (30) days of any such defect or failure. No warranty work or returns without prior authorization is allowed. Vanair will provide instructions on the warranty claim procedures to be followed.

Warranty will commence upon receipt of the Warranty Registration Card. If the Warranty Registration Card is not received within six (6) months of shipment from Vanair, the warranty commencement date shall be thirty (30) days from the date of shipment from Vanair. Records of warranty adherence are the responsibility of the end user.

1. Lifetime Warranty Parts – 3 Years Labor
 - Rotary Screw Air Compressor Air End
2. 6 Years Parts – 3 Years Labor
 - Vanair Super Capacitor (VSC)
3. 3 Years Parts – 1 Year Labor
 - Reciprocating Compressor Air End
 - Generators
 - Welders
4. 2 Years Parts – 1 Year Labor
 - Hydraulic Motors
 - Hydraulic Pumps
5. 1 Year Parts – 1 Year Labor
 - All electronics including, but not limited to:
 - (i) I/O Boards
 - (ii) Modules
 - (iii) Panel Boxes
 - (iv) Instrumentation
 - (v) Clutches
 - (vi) Solenoids
 - (vii) Running Gear/Trailers
 - (viii) Compressor/Hydraulic Coolers, including Fan and Radiator Core

This Limited Warranty shall not apply to:

1. Consumable components, such as shaft seals, valves, belts, filters, capacitors, contactors, relays, brushes or parts that fail due to normal wear and use.
2. Items furnished by Vanair, but manufactured by others, such as engines and trade accessories (these items are covered by the manufacturer's warranty, if any).
3. Equipment that has been modified by any party other than Vanair or equipment which has not been used and maintained in accordance with Vanair's specifications.
4. Equipment which has been improperly installed and/or improperly operated, based upon Vanair's specifications for the equipment or industry standards.
5. Equipment installed by non-authorized or third party personnel.

Vanair products are intended for purchase and use by commercial/industrial users and persons trained and experienced in the use and maintenance of industrial equipment.

In the event of a warranty claim covered by this Limited Warranty, the exclusive remedies shall be, at Vanair's sole discretion: (i) repair; or (ii) replacement; (iii) where authorized in writing by Vanair in appropriate cases, the reasonable cost of repair or replacement at an authorized Vanair service facility; or (iv) payment of (or credit for) the purchase price (less reasonable depreciation based upon actual use) upon return of the equipment at the warranty claimant's risk and expense. Vanair will pay standard ground freight for any warranty item shipped to and from Vanair or (Vanair designated facility) within the first year of the applicable warranty period. Any additional expedited freight cost is the responsibility of the purchaser.

TO THE GREAT EXTENT PERMITTED BY APPLICABLE LAW, THE REMEDIES PROVIDED HEREIN ARE THE SOLE AND EXCLUSIVE REMEDIES APPLICABLE TO THE VANAIR EQUIPMENT. IN NO EVENT SHALL VANAIR BECOME LIABLE FOR DIRECT, INDIRECT, SPECIAL, PUNITIVE, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LOSS OF PROFIT OR LOST BUSINESS OPPORTUNITY), WHETHER BASED ON CONTRACT, TORT OR ANY OTHER LEGAL THEORY. IN NO EVENT SHALL VANAIR BECOME OBLIGATED TO PAY MORE ON ANY WARRANTY CLAIM THAN THE PURCHASE PRICE ACTUALLY PAID BY THE ORIGINAL RETAIL PURCHASER.

THIS LIMITED WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER WARRANTY OR GUARANTY ARISING BY OPERATION OF LAW. ANY WARRANTY NOT EXPRESSLY PROVIDED HEREIN, IMPLIED WARRANTY, GUARANTY AND ANY REPRESENTATION REGARDING THE PERFORMANCE OF THE EQUIPMENT, AND ANY REMEDY FOR BREACH OF CONTRACT, IN TORT, OR ANY OTHER LEGAL THEORY WHICH, BUT FOR THIS PROVISION, MIGHT ARISE BY IMPLICATION, OPERATION OF LAW, CUSTOM OF TRADE, OR COURSE OF DEALING ARE EXCLUDED AND DISCLAIMED BY VANAIR.

Some states in the United States of America do not allow limitations of how long an implied warranty lasts, or the exclusion of incidental, indirect, special or consequential damages, and as such, the above limitations and exclusions may not apply to you. This warranty provides specific legal rights. Other rights may be available to you, but may vary from state to state.

In Canada, legislation in some provinces provides for certain additional warranties or remedies other than as stated herein, and to the extent that they may not be saved, the limitations and exclusions set out forth above may not apply. This Limited Warranty provides specific legal rights, and other rights may be available, but may vary from province to province.



VANAIR®
MOBILE POWER SOLUTIONS™

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WARRANTY CLAIMS PROCEDURE

CLAIMS PROCESS FOR WARRANTED VANAIR PARTS

This process must be used by owners of Vanair® equipment in situations where a warranted item needs repair or replacement under the terms of the purchase warranty. Do not return items to Vanair without prior authorization from the Vanair Warranty Administrator.

PROCEDURE:

When a customer needs assistance in troubleshooting a system and/or returning parts, follow the steps below.

1. Locate the machine's serial number:

The machine package serial number plate is located inside the machine compartment on the wall of the enclosure near the compressor unit (see *Figure W-1*).

The engine and the compressor also have individual serial numbers respectively (see *Figure W-1*). For engine warranty issues, consult the Engine Operator's Manual for the engine's limited warranty details. For particular compressor unit issues, the compressor serial number may be needed. In any case, engine and/or compressor issues can be confirmed using the machine serial number as found in *Figure W-1*.

2. Have a list of the symptoms/condition/malfunctions along with any applicable temperature and pressure readings, and also the number of operational hours available:

Note that the above information will also need to be included on the Return Material

Authorization Form (per **Step #6**); this form is necessary for warranty processing if the warranty claim is deemed valid by the service case review.

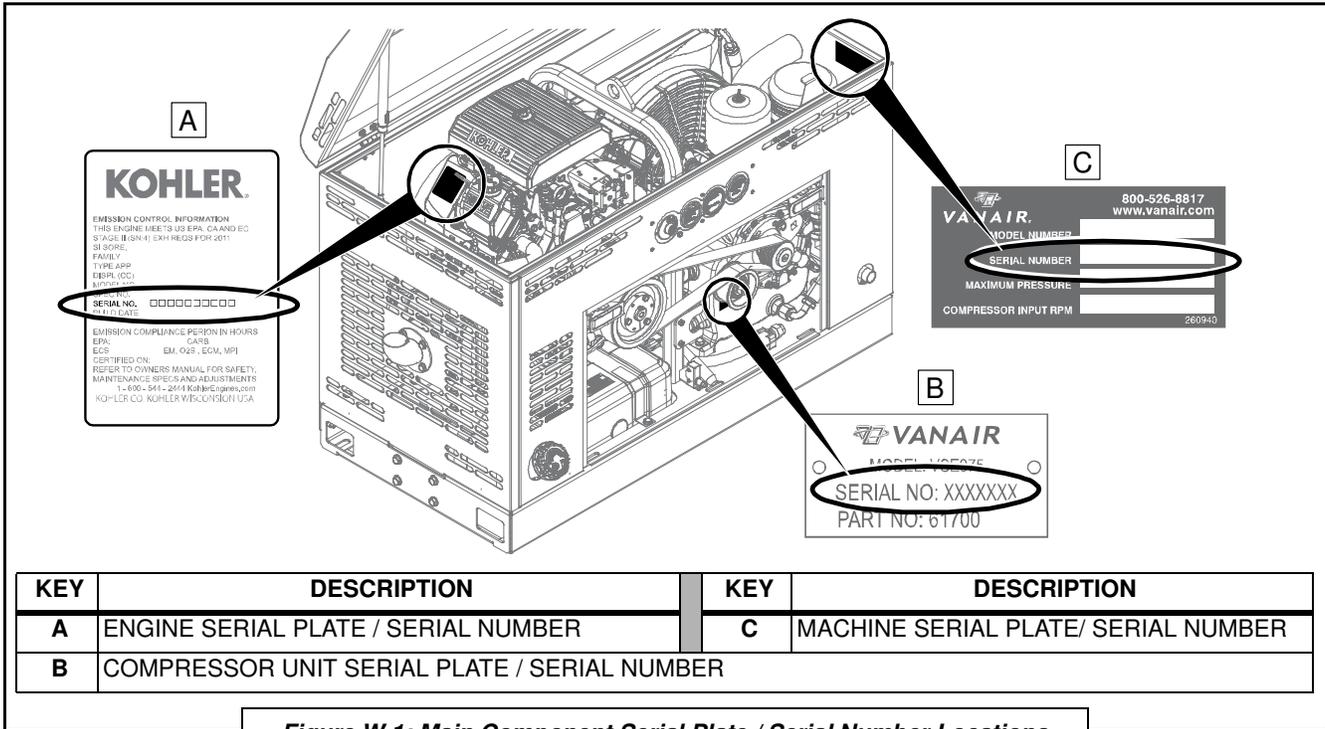
3. **Contact the Vanair® Service Department by phone (1-219-879-5100) to speak with a Service Technician.**
4. **Vanair Service will troubleshoot the problem based on the information provided by the customer, and attempt to return the unit to service as quickly as possible.**
5. **If the unit cannot be returned to service, and Vanair determines this matter is a warranty issue, the Service Technician will assign an RMA (Return Material Authorization) number that will provide for the return of the item to Vanair for analysis and a final determination as to the item's warranty status.**

NOTE

The RMA number must be placed on the outside of the package being returned.

6. **Warranty Claims are solicited via a Return Material Authorization (RMA) Form. This form can be obtained via download from the web site, or requested directly from the Vanair Service Department:**

Once a current form has been obtained, follow the instructions given on the form to fill in the information needed. This form is used for the purpose of soliciting a warranty case. All of the field information *except* for the bottom section block fields, which includes



KEY	DESCRIPTION	KEY	DESCRIPTION
A	ENGINE SERIAL PLATE / SERIAL NUMBER	C	MACHINE SERIAL PLATE/ SERIAL NUMBER
B	COMPRESSOR UNIT SERIAL PLATE / SERIAL NUMBER		

Figure W-1: Main Component Serial Plate / Serial Number Locations

Disposition of Goods, Notifications and Additional Notes, will be required.

Customers have 30 days after the RMA number is issued to return the item. If the part is not returned within this period, the RMA is void and any claims will be denied.

NOTE

All labor claims or invoices must be approved by the Vanair® Warranty Administrator prior to starting repair work along with the cost of the repair. All paper work associated with the returned item and warranty repair cost must reference the RMA number issued against the part, and be forwarded to Vanair within 30 days of the completion of work.

Before sending a warranty part to a customer, Vanair will need a P.O. or credit card number to cover the cost of the part and shipping. After the part is analyzed and deemed to be covered under warranty, Vanair will issue credit to the customer. All

parts eligible for warranty must have the RMA number on the invoice at the time of purchase.

No items can be returned “freight collect”. Freight costs will be addressed at the time the claim is closed. The customer pays any additional costs for warranty parts delivered through expedited services (i.e., Next Day, Second Day).

VANAIR WILL NEVER ACCEPT ANY INVOICES FOR PARTS RETURNED: ANY PARTS RETURNED VIA INVOICE WILL BE RETURNED FREIGHT COLLECT: NO PARTS ARE TO BE RETURNED FREIGHT COLLECT!

Vanair Mfg., Inc. strives to continuously improve its customer service. Please forward any questions, comments, or suggestions to Vanair Service:

Phone: 219-879-5100, ext. 400 or toll free 844-VAN-SERV (826-7378)

Email: warranty@vanair.com

SECTION 1: SAFETY

1.1 ▲ GENERAL INFORMATION

IMPORTANT



Read this manual before operating or servicing the Viper Gas compressor system. Failure to do could result in damage equipment, bodily injury, or death.

The products provided by Vanair® Manufacturing, Inc., are designed and manufactured for safe operation and maintenance. But it is ultimately the responsibility of the users and maintainers for safe use of this equipment. Part of this responsibility is to read and be familiar with the contents of this manual before operation or performing maintenance actions.

1.2 ▲ DANGERS, WARNINGS, CAUTIONS AND NOTES

These boxes are labeled clearly with the title block listing either Danger, Warning, Caution, or other non-safety issue. They draw attention to specific issues that are pertinent to the safe and correct operation of the machine.

The symbols shown and defined in **Section 1: Safety** are used throughout this manual and on the machine to call attention to, and identify, possible hazards.

The international warning symbol (shown below) is used on all decals, labels and signs that concern information pertaining to bodily harm. When you see the international warning symbol, **pay extremely careful**

attention, and follow the given instructions or indications to avoid any possible hazard.



1.3 ▲ SUMMARY OF DANGERS, WARNINGS AND CAUTIONS

These boxed inserts are placed throughout this manual in the sections where they apply. This subsection is a general summary of their contents.

1.3.1 ▲ DANGERS

- Keep tools or other conductive objects away from live electrical parts.
- Never touch electrical wires or components while the machine is operating. They can be sources of electrical shock.

1.3.2 ▲ WARNINGS

- **DO NOT EVER** use this compressor as a breathing air source. Vanair Manufacturing Inc., disclaims any and all liabilities for damage or loss due to fatalities, personal injuries resulting from the use of a Vanair compressor to supply breathing air.
- **DO NOT** perform any modifications to this equipment without prior factory approval.
- **DO NOT** install this compressor in a confined space that lacks proper ventilation and airflow; breathing and cooling air circulation must not be compromised.
- **DO NOT** operate the compressor or any of its systems if there is a known unsafe condition. Disable the equipment by disconnecting it from its power source. Install a lock-out tag to identify the equipment as inoperable to other personnel.

- **DO NOT** operate the compressor with any by-pass or other safety systems disconnected or rendered inoperative.
- **DO NOT** operate the equipment while you are under the influence of alcohol or drugs.
- **DO NOT** operate the equipment while you are feeling ill.
- **DO NOT** attempt to service the equipment while it is operating.
- Before performing maintenance or replacing parts, relieve the entire system pressure by opening a service valve which will vent all pressure to the atmosphere: remove all electrical power.
- **DO NOT** use the compressor for purposes other than for which it is intended. High pressure air can cause serious and even fatal injuries.
- **DO NOT** operate the compressor outside of its specified pressure and speed ratings. (See **Section 2: Specifications** or refer to the equipment data plate.)
- **DO NOT** use flammable solvents or cleaners for cleaning the compressor or its parts.
- **DO NOT** operate the compressor in areas where flammable, toxic, or corrosive fumes, or other damaging substance can be ingested by the compressor intakes.
- Keep arms, hands, hair and other body parts, and clothing away from fans, drive shafts, and other moving parts.
- **DO NOT** wear jewelry, unbuttoned cuffs, ties, or loose-fitting clothing when you are working near moving/rotating parts.
- **ALWAYS** confine long hair when working near moving/rotating parts.
- **NEVER** operate the equipment while wearing a headset to listen to music or the radio.
- Wear personal protective equipment such as gloves, work shoes, and eye and hearing protection as required for the task at hand.
- **DO NOT** operate the compressor with any guards removed or damaged, or other safety devices inoperative.
- **DO NOT** operate the compressor in enclosed or confined spaces where ventilation is restricted or closed-off.
- Ensure that hoses connected to service valves are fitted with correctly sized and rated flow limiting devices which comply with applicable codes. Pressurized broken or disconnected hoses can whip causing injuries or damage.
- Over speed is hazardous! **NEVER** tamper with the governor components or settings to increase the maximum speed. Severe personal injury and equipment damage can result if operated at speeds above the maximum.
- **DO NOT** use tools, hoses, or equipment that have maximum ratings below that of this compressor.
- Keep metal tools, and other conductive objects away from live electrical components.
- Before performing maintenance or repair operations on the compressor, ensure that all power has been removed and been locked out to prevent accidental application.
- **DO NOT** assume that because the compressor is in a STOPPED condition that power has been removed.
- Use this compressor only to compress atmospheric air. Use of this equipment as a booster pump and/or to compress any other gaseous or aerosol substance constitutes improper use. It can also cause damage or injuries. Such misuse will also void the warranty.
- Install, operate, and maintain this equipment in full compliance with all applicable OSHA, other Federal, state, local codes, standards, and regulations.
- When lifting objects, be aware of proper lifting techniques to avoid injury.
- **ALWAYS** read and follow safety related precautions found on containers of hazardous substances.
- **DO NOT** play with compressed air. It can cause serious injury.

1.3.3 CAUTIONS

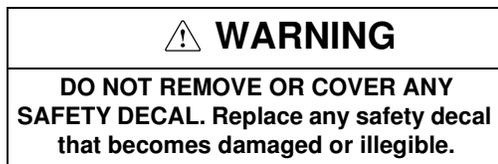
- Check all safety devices for proper operation on a routine basis.
- Ensure that no tools, rags, or other objects are left on compressor drive systems or near intakes.
- Keep the equipment clean when performing maintenance or service

actions. Cover openings to prevent contamination.

- **DO NOT** operate the compressor if cooling air is not available (fan/cooler not operating) or if lubricant levels are below their specified minimum levels.
- Ensure all plugs, hoses, connectors, covers, and other parts removed for maintenance actions are replaced before applying power to the compressor.
- Avoid touching hot surfaces and components.
- Ensure that electrical wiring, terminals; hoses and fittings are kept in serviceable condition through routine inspections and maintenance. Replace any damaged or worn components.
- **DO NOT** install safety devices and/or replacement parts other than authorized Vanair® replacement parts.
- Keep personnel out of line with, and away from discharge opening of valves, hoses and tools.
- Immediately clean up any lubricant or spills.

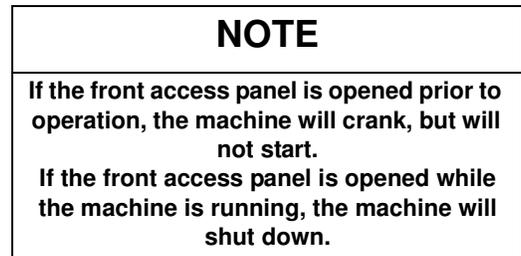
1.4 ▲ SAFETY DECALS

Safety decals are placed onto, or located near, system components that can present a hazard to operators or service personnel. All pertinent decals listed in **Section 7.10, Decals** are located near a component, which is subject to respect in terms of safety precautions. Always heed the information noted on the safety decals.



1.5 ▲ MACHINE FRONT ACCESS PANEL SAFETY SWITCH

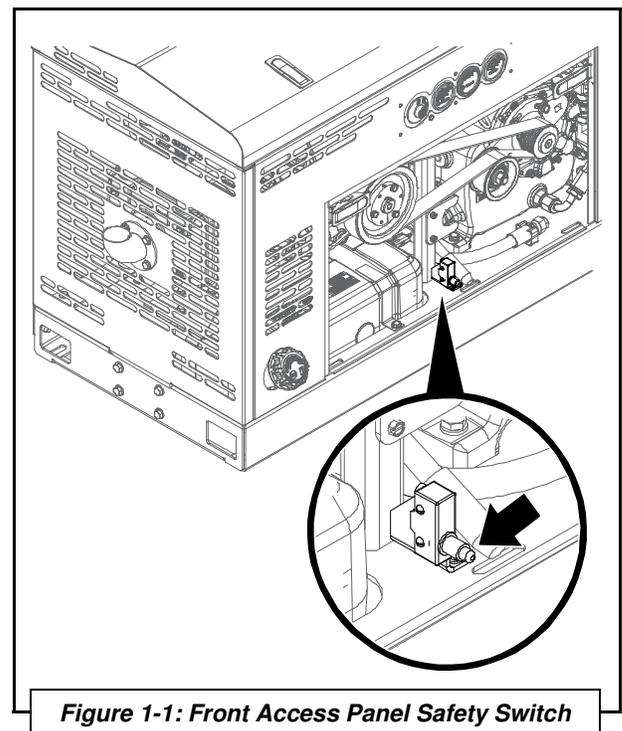
Consult **Figure 1-1**. The Viper Gas package is equipped with a **front access panel safety switch**, which will either shut down, or not allow the machine to start, if the front access door is bridged.



1.6 ♻️ DISPOSING OF MACHINE FLUIDS

Always dispose of machine fluids under the guidance of all applicable local, regional and/or federal law.

Vanair® encourages recycling when allowed. For additional information, consult the container label of the fluid in question.



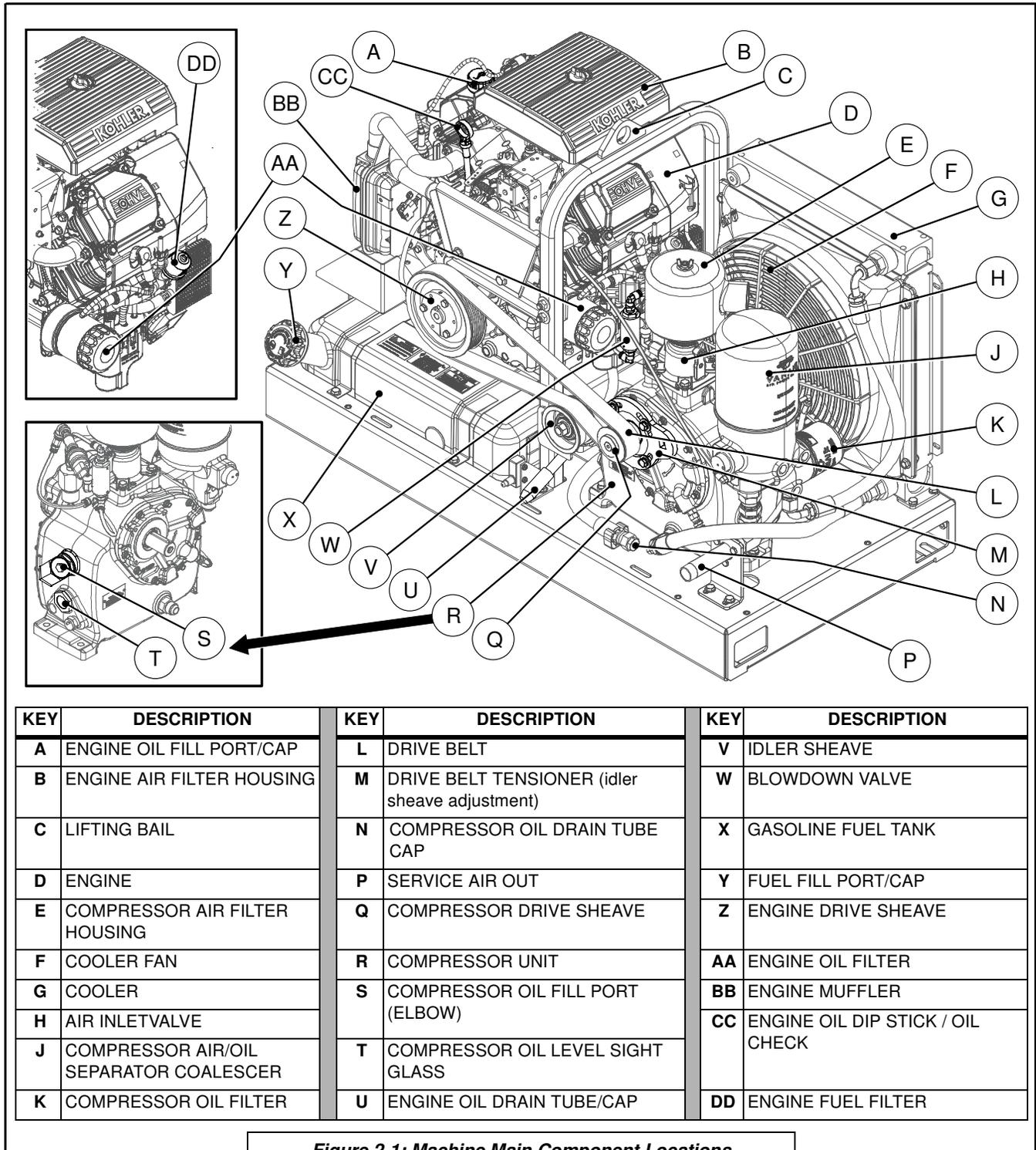


Figure 2-1: Machine Main Component Locations

SECTION 2: SPECIFICATIONS

TABLE 2A: SPECIFICATIONS FOR VIPER GASOLINE ROTARY SCREW COMPRESSOR		
GENERAL SYSTEM INFORMATION	SPECIFICATION	
ENGINE	23 HP or 26.5 HP, EFI	
Engine Speed	Idle Speed: 2500 RPM // Full Speed: 3600 RPM	
Engine Oil Capacity	Two (2) Quarts (Refer to Engine Operator's Manual for proper oil type)	
Fuel Consumption	Two (2) GPH at Full Engine Speed / Load	
Fuel Tank Capacity	Five (5) Gallons	
Fuel Type	Gasoline ^I	
Operating Temperature Limits	+10 °F (-7°C) to 120 °F (49 °C) ^{II}	
COMPRESSOR	Single Stage, Oil Injected Rotary Screw	Altitude Rating
Model	80 CFM / 100 PSIG	3,500 ft
	70 CFM / 100 PSIG	5,500 ft
	60 CFM / 150 PSIG	8,500 ft
	High Altitude: 70 CFM / 100 PSIG	11,000 ft
Inlet Control	Pneumatic	
Air Filter	Pleated Paper, Dry Type	
Oil Filter	Spin-on Style	
Oil Capacity / Type	Air End - 2 Quarts // Machine - 4 Quarts (1 gallon) (Vanguard™ Premium Synthetic Oil)	
Safety Relief Valve Setting	200 PSIG	
Electrical System	12 VDC	
Cooling System	Air to Oil Heat Exchanger	
Instrumentation Display	Run Hours, Compressor Temperature, Discharge Pressure	
^I For specification and requirements regarding the Kohler® Gasoline Engine, refer to the Engine Operator's Manual. IMPORTANT: Do not adjust the engine speed without first consulting the Vanair® Service Department.		
^{II} With cold weather option kit temperature range expands to: -40 °F (-40 °C). Order cold weather option kit no. 032983.		
NOTE: Refer to <i>Figure 2-1</i> for main component locations.		
NOTE: Specifications are subject to change without notice.		



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SECTION 3: INSTALLATION

3.1 MACHINE PACKAGE RECEIPT/INSPECTION

Upon receipt of the machine package, inspect the exterior of the shipping crate for signs of shipping/transit damage. Any damage should be reported immediately to the shipping company. Open the lid and inspect the component parts and supports to ensure that there has been no internal movements of assemblies or components which may have caused damage. To install the Viper Gas Compressor System, refer to the following sections.

NOTE

Contact Vanair® at
 (219) 879-5100 / (844) VAN-SERV
 Service Fax: (219) 879-5335
 www.vanair.com
 to report missing items, incorrect part numbers, or other discrepancies.

3.2 INSTALLATION INSTRUCTIONS

DANGER

DO NOT install in enclosed spaces.

WARNING

ELECTRICAL HAZARD! Be sure the battery is disconnected before starting the installation.

IMPORTANT

DO NOT install in an enclosed space. 2500 CFM is required for cooling; ensure there is no recirculation of hot air from the machine returning to the cool air intakes.

NOTE

In order to prevent accidental damage to vehicle components (fuel tanks, lines, brake lines, wiring harnesses), note their location before drilling any holes.

Refer to **Figure 3-1 (Parts 1 and 2)**, and the following procedure:

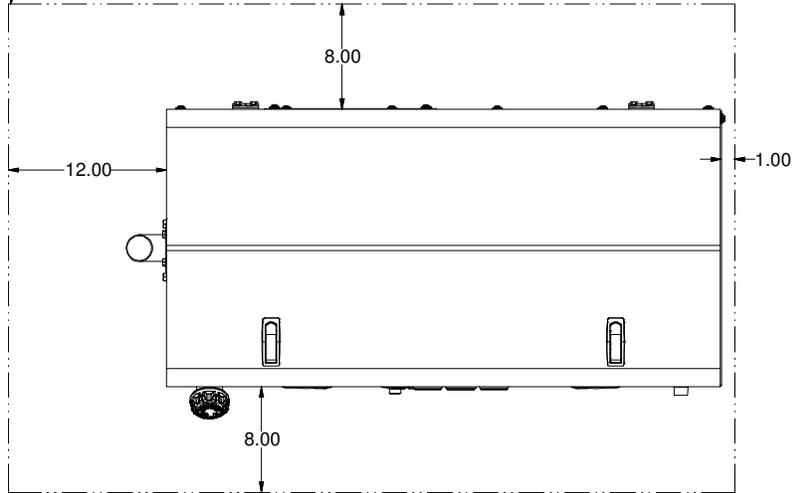
1. Position the machine so that there is no restriction of cooling air through the enclosure a minimum of eight (8) inches from front access side; minimum of eight (8) inches from rear side, and twelve (12") from the left side. Cooling air enters the enclosure through the rear panel, passes through the cooler, and exits through vents in the front and left sides. **NOTE: Air circulation from hot air exhaust must be prevented from heating cooling air circulation.**
2. Ensure that adequate height and clearance exists to allow for the hood to open (minimum of 46 inches from mounting surface), and a clear passage for service allowance to the maintenance access panel located at the front and back.
3. Mounting surface or support should be adequate for the weight of the machine and should be level for normal operation. Mounting holes for four (4) 1/2" hold down bolts are provided. Refer to **Section 7, Illustrations and Parts Lists** for additional installation and system schematic drawings.
4. Electrical connections (system designed for 12VDC negative ground).

Ensure all supply hoses and electrical wiring are correctly specified, adequately supported and do not touch or rest on any sharp edges. Wiring should be protected with split loom to prevent corrosion.

DISCLAIMER

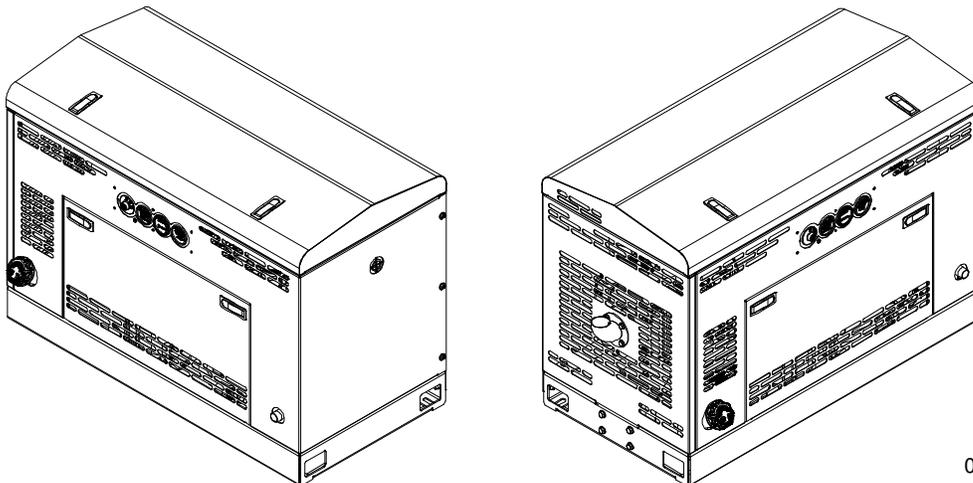
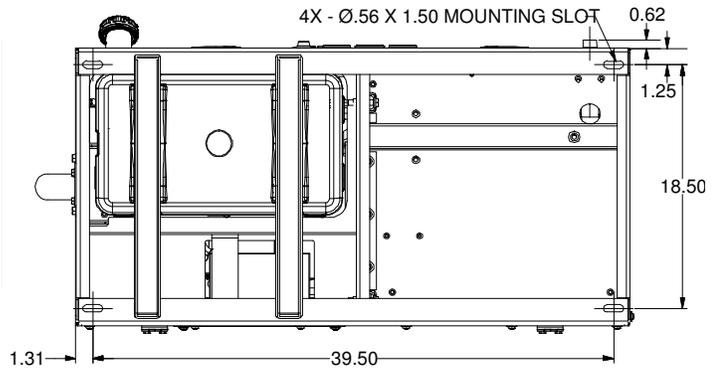
If machine package is to be mounted within a confined space such as beneath a canopy, the unit must have a minimum of eight (8) inch clearances on the front and back sides for ventilation. There must be large openings and baffles to prevent cooling air recirculation from hot air exhaust to cooling air intakes.

CLEARANCE REQUIRED AROUND MACHINE TO ALLOW FOR PROPER COOLING. IF THIS SPACE IS NOT AVAILABLE CONSULT FACTORY ABOUT "LOAD SPACE" OPTION TO REDUCE THE REQUIRED CLEARANCE ENVELOPE.



NOTE

The dimensions listed in this diagram are the *minimum* required clearance distances needed for properly cooling the machine. Additional clearance room may be desired for easier access for control and/or maintenance functions.



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Figure 3-1: Dimension Diagram - Part 1 of 2



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SECTION 4: OPERATION

4.1 GENERAL INFORMATION

The Vanair® Viper Gas compressor is very simple to operate. Controls are automatic and require no user interface. The engine is electronically fuel-injected for easy starting, especially in cold weather. There is no choke involved in starting the machine; the user starts the engine, and the compressor will regulate the engine speed (either full speed or idle) based on compressed air demand.

When compressed air is being demanded the compressor controls will modulate the inlet valve opening, matching output to demand.

IMPORTANT	
	<p>Before starting the Vanair Viper Gas compressor, read this section thoroughly and familiarize yourself with the controls and indicators - their purpose, location and use.</p>

NOTE
<p>If start-up and shut-down procedures are not followed, damage to the system and its components may occur.</p>

4.2 INSTRUMENTATION

Refer to *Figure 4-1*. The instrument panel will provide the operator with feedback on operating pressure, temperature and run time hours.

4.2.1 IGNITION SWITCH

The keyed ignition switch is used to start and stop the compressor. It has three positions: OFF, RUN and START.

4.2.2 TEMPERATURE GAUGE

The temperature gauge has two functions. It monitors and displays the current temperature of the compressor fluid, and it also acts as a safety shutdown if the fluid temperature exceeds its maximum. The shutdown point is 240°F, and is preset from the factory. This set point should be checked periodically to ensure that it remains set at the proper shutdown point.

4.2.3 HOUR METER

The Viper Gas is equipped with an hour meter to accurately log run time hours so that machine operation and service intervals can adhere to the maintenance schedule.

4.2.4 PRESSURE GAUGE

The pressure gauge has two functions. It monitors and displays the current line pressure of compressed air available to the user, and it also acts as a safety shutdown if the pressure exceeds the shutdown setting. The shutdown point can be lowered by the user if desired, but should not be set lower than 15 psig above the rated pressure of the model to avoid nuisance shutdowns. The shutdown point should not be set above 175 psig.

4.3 INITIAL START-UP PROCEDURE

The following procedure should be used to make the initial start-up of the compressor.

1. Position the compressor on a level surface so that proper amounts of liquid can be added, if required.
2. Check engine and compressor oil levels and add oil, if necessary.

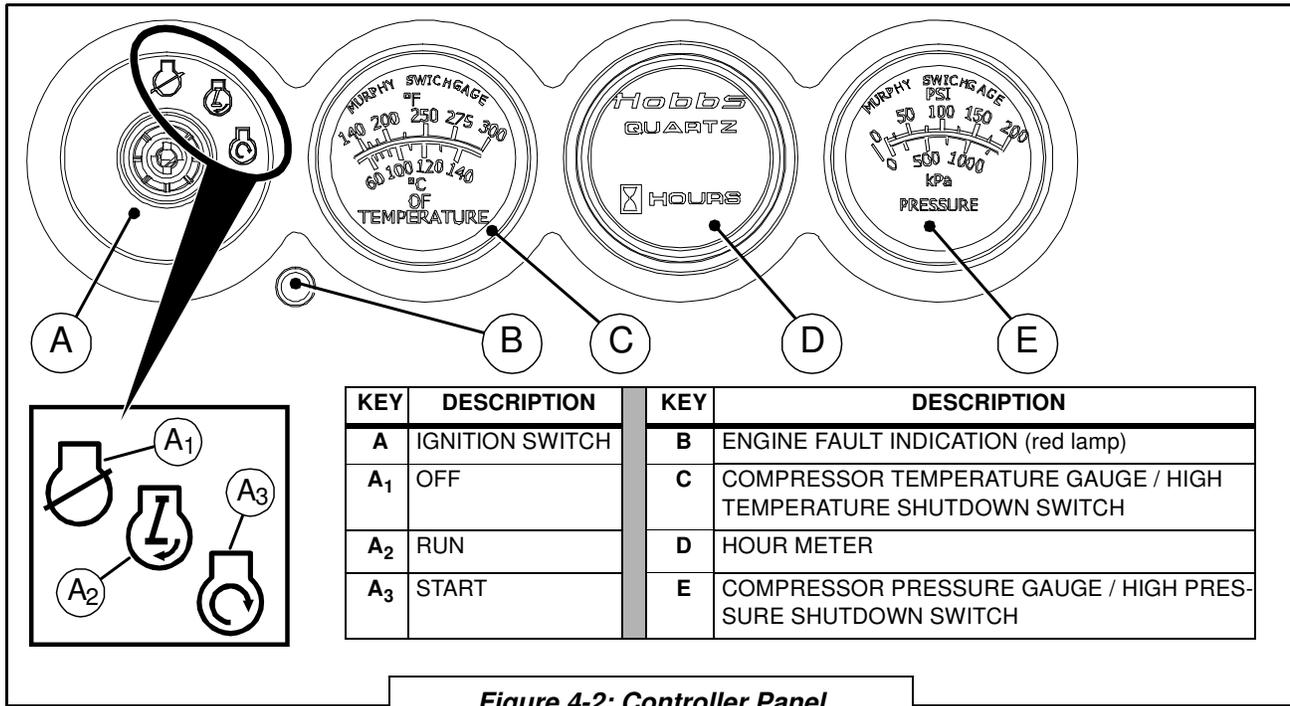


Figure 4-2: Controller Panel

3. Fill fuel tank.
4. Connect air hose/piping to discharge.
5. Turn key to start engine.
6. Once the machine starts the engine will run at high speed during a warm up period whether or not there is a demand for compressed air.

TIMER FOR WARM-UP PERIOD

NOTE

The length of the warm up period is governed by a timer located on the interior side of the instrument panel (see Figure 4-3).

The timer is adjustable and has a range of one (1) second to 120 seconds. The timer is preset from the factory at about 60 seconds.

- 6a. In **warm weather** the timer can be set to a shorter interval as engine warm up will occur rather quickly.
- 6b. In **cold weather** a longer interval may be necessary to successfully reach engine operating temperature.

NOTE

If the engine (timer) span interval is set too short, the engine will return to idle before it has warmed sufficiently. In such cases it may experience a slow and/or rough idle, or it may possibly stall.

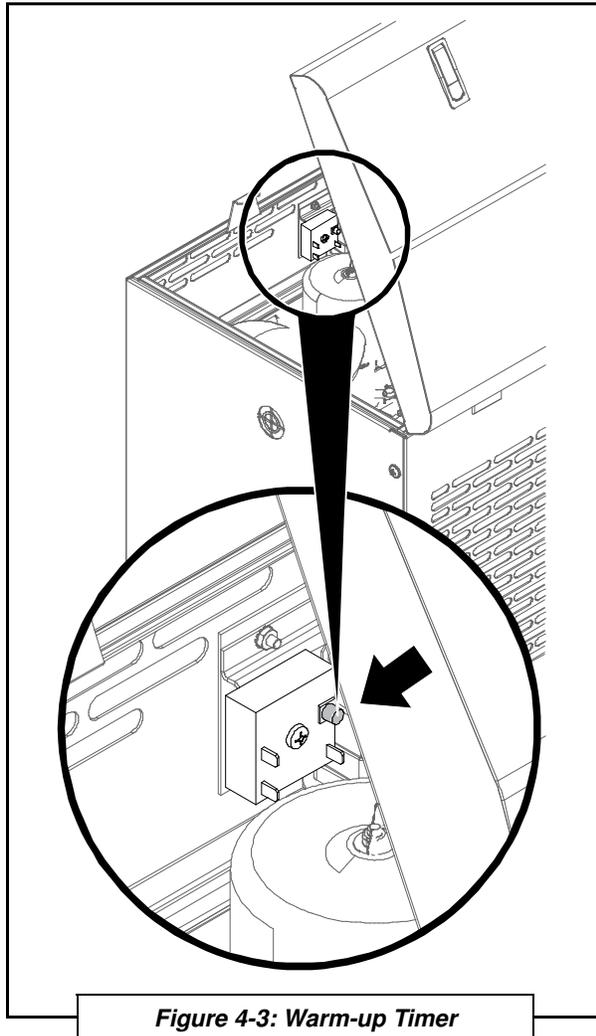
7. After the initial run, shut down machine allow it to de-pressurize and top off compressor oil sump, as required. Inspect for any leaks, and tighten any loose fittings.

4.4 SHUTDOWN PROCEDURE

1. Allow engine to run at idle for approximately sixty (60) seconds.
2. Turn key to "OFF" position; NOTE: Allow the compressor to blow down prior to re-starting.

4.5 SUBSEQUENT START-UP PROCEDURE

On subsequent starts, follow the procedure explained below:



1. Check engine and compressor oils and add oil, if necessary.
2. Fill the fuel tank.
3. Turn key to start engine.
4. Allow the machine to warm up sufficiently before operating.

4.6 OPERATION GUIDELINES

4.6.1 MACHINE ORIENTATION

The Viper Gas should only be operated on a level surface. Operation in a non-level orientation could result in improper fuel

system venting, oil carryover in the compressed air supply, and/or vibrational issues.

4.6.2 ENCLOSURE INTACT

The Viper Gas should only be operated with the hood closed, and the front and back access covers in place. The cooling system is designed to function properly only with the enclosure intact and closed.

4.6.3 SAFETY/PROTECTIVE SHUTDOWN DEVICES

- **Compressor Over Pressure** – The pressure gauge on the instrument panel is equipped with a settable shutdown switch. It is extremely important to keep the pressure gauge in good operating condition and the shutdown point set properly. If the gauge should ever malfunction it is imperative to replace it to protect the equipment as well as for personnel safety.
- **Compressor Over Temperature** - The temperature gauge on the instrument panel is equipped with a settable shutdown switch. It is extremely important to keep the temperature gauge in good operating condition and the shutdown point set properly. If the gauge should ever malfunction it is imperative to replace it to protect the equipment as well as for personnel safety.
- **Engine Oil Pressure** -The engine is equipped with an oil pressure monitor that will shut down the engine if a minimum pressure is not maintained. No user interface is required.
- **Engine Over Temperature** - The engine is equipped with an oil temperature monitor that will shut down the engine if the maximum oil temperature is exceeded. No user interface is required.

- **Front access panel safety switch –**
 The front panel is equipped with a switch that will prevent the engine from starting or running if the panel is not in place. The belt and pulleys are fully exposed when the panel is removed and would present an unsafe operating condition if the panel were removed while machine is in use.

NOTE
<p>There is also an emergency contact method whereby the machine can be incapacitated via a breach between the contact post/button and the bezel rim for either the temperature or the pressure gauge. Refer to Section 5.6 for details, including test procedure.</p>

4.6.4 COOLING SYSTEM

The Viper Gas cooling system consists of an integral engine cooling fan for air/air engine cooling and a compressor cooler and fan for air/oil cooling of the compressor fluid. Follow the guidelines for recommended air space allowance around the machine to avoid preheating the intake air and/or recirculating of exhaust air back to the intake openings. Intake openings and the compressor cooler need to be free of obstructions, dirt, buildup, etc. to keep from reducing the efficiency of the cooling system. The Viper Gas is equipped with a thermostat that will turn the compressor cooling fan on even when the machine is not in operation if the ambient temperature inside the enclosure is elevated. This is designed to keep components and enclosure surfaces from experiencing elevated temperatures during “heat soak”

immediately after the machine has been turned off and will usually only be apparent when high ambient operating conditions are present.

4.6.5 LIFTING

The Viper Gas is equipped with a single point lifting device. The lifting device is sufficient for supporting the weight of the machine ONLY. The lifting device is designed to support the weight of the machine in a vertical direction ONLY. Moving the machine in a horizontal direction resulting in a swinging motion should be prohibited and could cause the lifting device to fail resulting in damage to the equipment and pose a significant safety hazard to personnel.

4.6.6 COLD WEATHER OPTION

A kit is available for machine operation in cold weather (kit no. 032983). Consult **Section 6.3.2** for cold weather operation information.

4.7 EXTREME CONDITIONS

When operating in the presence of high humidity, in extreme cold or hot conditions, or at a high altitude, extra attention should be given to any indication that could lead to a serious problem. Preventative safeguards exist that can minimize the possibility of malfunctions that are prone to occur under certain ambient conditions. Refer to **Section 6.3, Extreme Condition Operation**, for additional information on variable ambient operating conditions, and adjustment adaptations that can be made accordingly.

SECTION 5: MAINTENANCE

5.1 GENERAL INFORMATION

A strict maintenance program is the key to long life for the Viper Series Compressor System package. Below is a program that, when adhered to, should keep the package in top operating condition. Refer to **Table 5A**, **Table 5B**, and **Section 5.4, Parts Replacement and Adjustment Procedures** for detailed descriptions of specific compressor system components. Refer to **Table 7A** in **Section 7** for part order information.

WARNING

To avoid accidental system start-ups during periods of maintenance, disconnect the positive (+) cable to the battery terminal, and place the wire aside, or tape the contact end so that it cannot accidentally contact the battery post.

NOTE

Operating the machine package in a severe environment requires more frequent service intervals.

WARNING

DO NOT remove caps, plugs and/or other components when compressor is running or pressurized. Stop compressor and depressurize system prior to maintenance of system. Relieve the entire system pressure by opening the air tank drain/vent valve, if equipped, which will vent all pressure to the atmosphere.

Wear personal protective equipment such as gloves, work boots, and eye and hearing protection as required for the task at hand.

NOTE

Follow the prescribed periodic maintenance (PM) schedule as recommended. Perform the required PM schedule at recommended intervals. Failure to follow this prescribed periodic maintenance at the recommended intervals will impair the package safety, performance characteristics, shorten the package's life, and will negatively affect the warranty coverage of the package.

5.2 ROUTINE MAINTENANCE SCHEDULE

Vanair® Manufacturing, Inc. considers the maintenance schedule given in **Table 5A** for compressor, and **Table 5B** for engine, to be part of the warranty agreement with the customer. This maintenance regimen must be followed in order to protect the warranty of the machine package.

WARNING

Follow all applicable safety recommendations as outlined in **Section 1: Safety** of this manual.

Vanair Manufacturing, Inc. requires that a consistent service regimen be established for engine oil changes, and engine and compressor air filter servicing. The following schedule is designed so that many of the other maintenance tasks are completed when the engine and compressor air filters are serviced, and the engine oil is changed.



Please take a moment to acquaint yourself with the service schedule presented in **Table 5A** for compressor, and **Table 5B** for engine, to assist the customer in establishing a maintenance routine log.

For assistance in obtaining routine maintenance or replacement parts, consult **Section 7.1, Parts Ordering Procedure**, and **Table 7A: Recommended Spare Parts List**.

5.3 REPLACEMENT PARTS

Replacement parts should be purchased through your local Vanair® representative or where the Viper Gas Air Compressor System was purchased. If, for any reason, parts are not available in this manner, they can be purchased through Vanair directly.

NOTE

For assistance when ordering new replacement parts, consult **Section 7.1, Parts Ordering Procedure**, and **Table 7A: Recommended Spare Parts List**.

NOTE

If additional spare parts are being stored for future use, make certain that they are stored in proper containers that allow for protection against contamination, and kept in a clean area of moderate temperature reading. For information on storing the machine package for periods of non-use, consult **Section 5.6.2, Long Term Storage**.

VANAIR MANUFACTURING, INC.

10896 West 300 North
Michigan City, IN 46360
Telephone: (219) 879-5100
Toll Free: (844) VAN-SERV [826-7378]
Service Fax: (219) 879-5335
Parts Fax: (219) 879-5340
Sales Fax: (219) 879-5800
www.vanair.com

TABLE 5A: MAINTENANCE SCHEDULE TABLE - COMPRESSOR INTERVALS

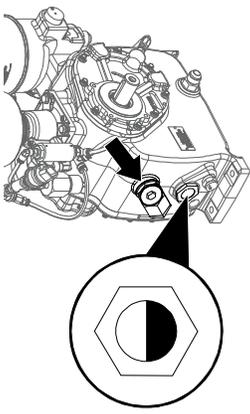
⚠ WARNING	BREAK-IN PERIOD	MAINTENANCE SCHEDULE				ROUTINE KIT AND PART NUMBER REFERENCE										
		First 50 Hours	DAILY	Every 100 Hours	Every 500 Hours or One (1) Year	Every 1000 Hours or Two (2) Years	DESCRIPTION	SCHEDULED USE								
<p>Before performing maintenance: Shut down machine, relieve all system pressure and lock out all power, as per the Safety Section of this manual.</p> <p>Always clearly tag the start-up instrumentation against accidental system start-ups during maintenance.</p>						<table border="1"> <tr> <td>KIT1250</td> <td>ENGINE MAINTENANCE</td> <td>PER ENG MFR SPECIFICATION</td> </tr> <tr> <td>KIT1212</td> <td>COMPRESSOR MAINTENANCE</td> <td>INITIAL 50 HOURS</td> </tr> <tr> <td>KIT1221</td> <td>COMPRESSOR MAINTENANCE</td> <td>ANNUAL/500 HOURS</td> </tr> </table>	KIT1250	ENGINE MAINTENANCE	PER ENG MFR SPECIFICATION	KIT1212	COMPRESSOR MAINTENANCE	INITIAL 50 HOURS	KIT1221	COMPRESSOR MAINTENANCE	ANNUAL/500 HOURS	
	KIT1250	ENGINE MAINTENANCE	PER ENG MFR SPECIFICATION													
KIT1212	COMPRESSOR MAINTENANCE	INITIAL 50 HOURS														
KIT1221	COMPRESSOR MAINTENANCE	ANNUAL/500 HOURS														
						<p>NOTE: If working in dusty or dirty conditions, reduce the recommended time intervals between servicing by half for engine and compressor oil change, and engine and compressor filter servicing.</p>										
KEY	TASK DESCRIPTION					ACTION TO TAKE	REFERENCE									
1	Check oil level (confirm machine rests on level surface)	●	●			<p>Oil top off is equal to the center of the sight glass. Add as necessary, but take caution to fill slowly in order to avoid overfill.</p> <p>Oil fill port located at elbow directly above the sight glass (as indicated by arrow in the reference figure).</p>										
2	Check line fittings and electrical connections	●	●			<p>Ensure that all connections and fittings, including tubing and electrical connections, are snugly fastened without being twisted or compromised by extreme bending or contact with sharp corners or surfaces. Zip-tie any loose length of fitting if it appears to have a tendency to shift or cause wear while machine is in operation.</p>										
3	System inspection	●	●			<p>Visually review the entire machine being mindful of any evidence of abnormal wear, including pooled oil, frayed or rubbed connection piping, loose fasteners or hardware, leaks, etc.</p>										
Continued on next page																

TABLE 5A: MAINTENANCE SCHEDULE TABLE - COMPRESSOR INTERVALS

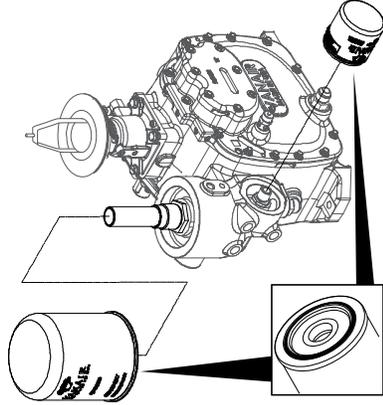
KEY	TASK DESCRIPTION	BREAK-IN PERIOD	MAINTENANCE SCHEDULE				ROUTINE KIT AND PART NUMBER REFERENCE	
			DAILY	Every 100 Hours	Every 500 Hours or One (1) Year	Every 1000 Hours or Two (2) Years	PART NO.	DESCRIPTION
<p>WARNING</p> <p>Before performing maintenance: Shut down machine, relieve all system pressure and lock out all power, as per the Safety Section of this manual.</p> <p>Always clearly tag the start-up instrumentation against accidental system start-ups during maintenance.</p>		First 50 Hours						
6	Clean cooler (check every 100 hours)				●			
7	Change separator element					●		
<p>ACTION TO TAKE</p> <p>Use low pressure wash down on exterior.</p>								
<p>REFERENCE</p> <p>Order separator/coalescer replacement element. Refer to Table 7A: Recommended Spare Parts for reorder number.</p> <p>NOTE Coat element sealing ring with a film of compressor oil before securing in place, to assure a complete seal.</p>								
<p>NOTE: If working in dusty or dirty conditions, reduce the recommended time intervals between servicing by half for engine and compressor oil change, and engine and compressor filter servicing.</p>								

TABLE 5B: MAINTENANCE SCHEDULE TABLE - ENGINE INTERVALS

<p>⚠ WARNING</p> <p>Before performing maintenance: Shut down machine, relieve all system pressure and lock out all power, as per the Safety Section of this manual.</p> <p>For lock-out/tag-out disconnect the negative (-) battery cable.</p>		<p>BREAK-IN PERIOD</p> <p>First 50 Hours</p>	<p>MAINTENANCE SCHEDULE</p>				
			<p>Daily</p>	<p>Every 25 Hours</p>	<p>Every 100 Hours or One (1) Year</p>	<p>Every 200 Hours</p>	<p>Every 300 Hours</p>
<p>KEY</p>	<p>TASK DESCRIPTION</p>						<p>ACTION TO TAKE</p>
<p>1</p>	<p>Change engine oil</p>	●		●			<p>Consult the Engine Operator's Manual for engine oil specification. Consult Table 7A: Recommended Spare Parts List for replacement kit or part order number.</p>
<p>2</p>	<p>Check fuel lines and clamps</p>	●		●			<p>Ensure that all fuel hose connections and fittings are free of any telltale signs of leaking and well connected. Zip-tie any loose length of hose fitting if it appears to have a tendency to shift or contact an abrasive surface while machine is in operation.</p>
<p>3</p>	<p>Check air intake hose</p>			●			<p>Ensure that the intake hose is properly fastened and free from any compromises such as tears or holes.</p>
<p>4</p>	<p>Clean or replace air filter pre-cleaner</p>			●			<p>Consult the Engine Operator's Manual for procedure on changing the engine air filter element. Should the element need to be replaced, refer to Table 7A: Recommended Spare Parts List for replacement kit or part order number. Consult the Engine Operator's Manual for procedure on cleaning the engine fuel filter.</p>
<p>5</p>	<p>Change engine oil filter</p>					●	<p>Consult the Engine Operator's Manual for procedure on changing the engine oil filter, and manufacturer's recommended oil usage.</p>
<p>Continued on next page</p>							

TABLE 5B: MAINTENANCE SCHEDULE TABLE - ENGINE INTERVALS

		BREAK-IN PERIOD	MAINTENANCE SCHEDULE					ROUTINE KIT AND PART NUMBER REFERENCE		
			Daily	Every 25 Hours	Every 100 Hours or One (1) Year	Every 200 Hours	Every 300 Hours	PART NO.	DESCRIPTION	SCHEDULED USE
<p>⚠ WARNING</p> <p>Before performing maintenance: Shut down machine, relieve all system pressure and lock out all power, as per the Safety Section of this manual.</p> <p>For lock-out/tag-out disconnect the negative (-) battery cable.</p>		First 50 Hours						KIT1250	ENGINE MAINTENANCE	PER ENG MFR SPECIFICATION
								<p>NOTE: If working in dusty or dirty conditions, reduce the recommended time intervals between servicing by half for engine and compressor oil change, and engine and compressor filter servicing.</p>		
								ACTION TO TAKE		
KEY	TASK DESCRIPTION							Consult the Engine Operator's Manual for procedure on replacing the engine fuel filter element. Refer to Table 7A: Recommended Spare Parts List for replacement kit or part order number.		
6	Replace fuel filter element						●			
7	Replace air filter element									●

5.4 PARTS REPLACEMENT AND ADJUSTMENT PROCEDURES

5.4.1 ADJUSTING THE BELT TENSION

Refer to Figure 5-1. Drive belt tension should be maintained to avoid premature belt wear, poor performance due to belt slippage, or damage to engine and/or compressor. The Viper Gas has an idler pulley mounted to a tensioning device to set the proper belt tension. To adjust the belt tension, loosen the four (4) tensioner mounting bolts and with a 1/2" square drive torque wrench, apply 40-44 ft-lbs. of torque to the tensioner while re-tightening the tensioner bolts.

5.5 SERVICING THE SYSTEM FUSES AND CIRCUIT BREAKER

NOTE

Refer to the Engine Operator's Manual for detailed maintenance and replacement procedures for the engine.

5.6 TESTING THE GAUGES' SHUTDOWN FEATURE

Periodically (every six [6] months or every 500 hours), the shutdown system should be tested as follows:

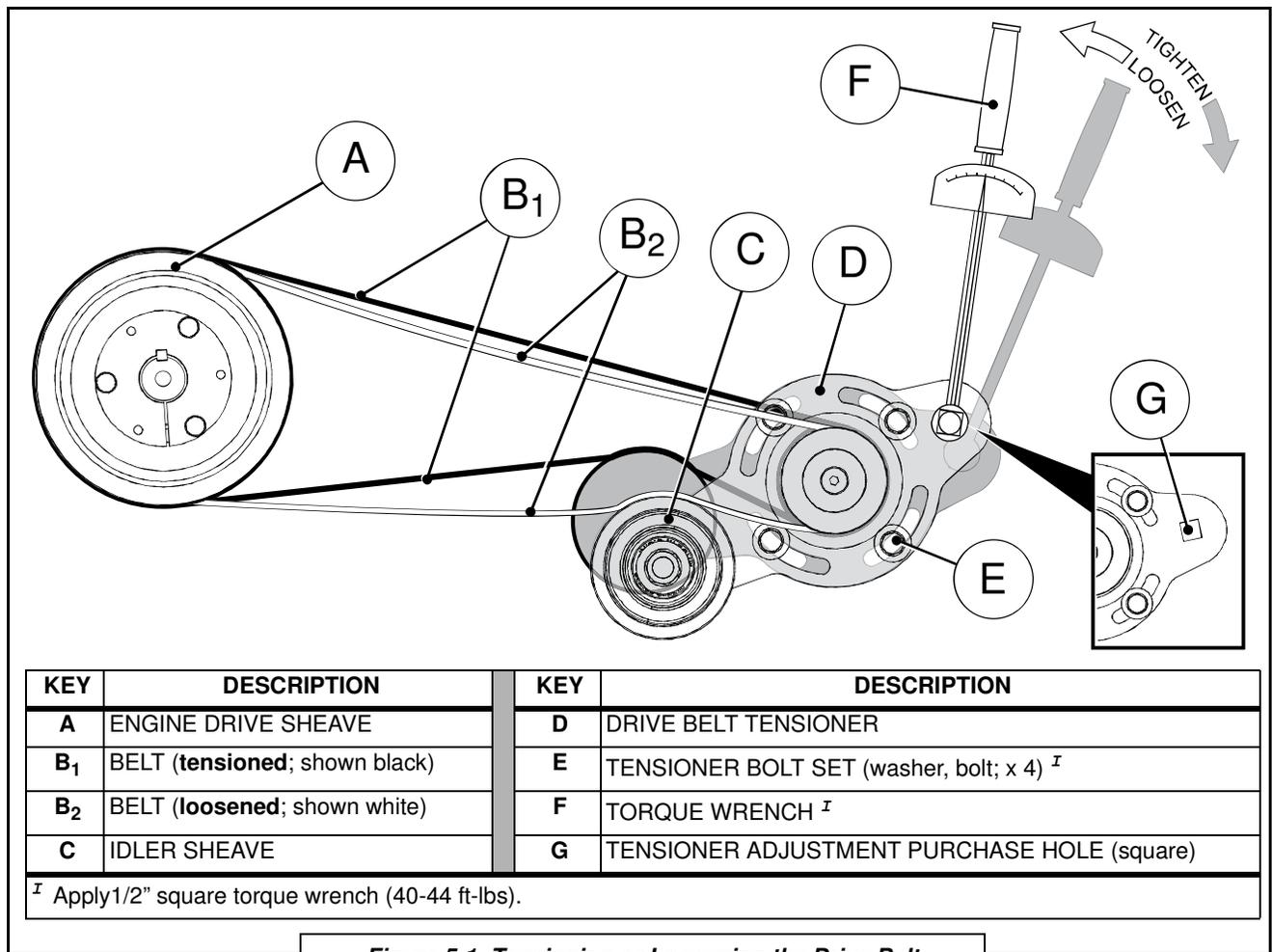


Figure 5-1: Tensioning or Loosening the Drive Belt

NOTE

Both the temperature and the pressure gauges should be tested using the contact method explained below.

Refer to **Figure 5-2**.

1. While compressor is operating, close service valve and allow compressor to unload (approximately two [2] minutes).
2. Touch across button contact [B] on gauge face to bezel [A] (surrounding the respective gauge) with an insulated screwdriver.

 **WARNING**

Before making the contact connection [D] between the test contact [B] and the bezel [A], ensure that you are not touching the machine to allow for grounding—only the screwdriver should be making any connection with the machine, and at the contact points indicated.

3. The compressor should stop, indicating that the gauge shutdown contact is working.
4. Switch compressor OFF.

NOTE

Ensure that system blows down fully before restarting.

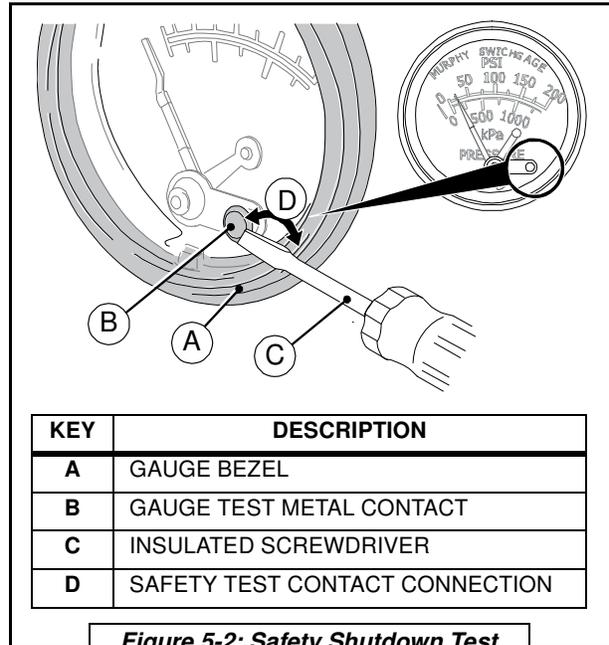


Figure 5-2: Safety Shutdown Test

5.7.2 LONG TERM STORAGE

Disconnect the battery cable that is connected to the negative (-) side of the battery.

Cover the unit with a tarp or plastic to prevent the accumulation of dust, but leave the bottom open for air circulation.

Fill the fuel tank with fuel and fuel stabilizer to prevent moisture build-up in the tank.

5.7 STORAGE AND INTERMITTENT USE**5.7.1 INTERMITTENT USE**

If the unit is not used very regularly always treat the fuel with a fuel stabilizer.

Check all belts and hoses for signs of deterioration such as visible surface cracks, stiffness or discoloration.



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SECTION 6: TROUBLESHOOTING

6.1 GENERAL INFORMATION

This section contains symptoms and usual causes for the most common types of problems that may occur. All available data concerning the trouble should be systematically analyzed before undertaking any repairs or component replacement.

A visual inspection is worth performing for almost all problems and may avoid unnecessary additional damage to the machine. The procedures which can be performed in the least amount of time and with the least amount of removal or disassembly of parts should be performed first.

WARNING

Before starting, performing maintenance, or replacing parts, relieve the entire system pressure by opening a service valve, which will vent all pressure to the atmosphere.

Although Vanair® strives to anticipate situations that may occur during the operation life of the machine package, the Troubleshooting Guide may not cover all possible situations. Be aware that additional troubleshooting information may be found in other sources, such as the Engine Operator's Manual. Should the situation remain unresolved after exhausting available sources, contact the Vanair Service Department at:

Toll Free: 844-VAN-SERV [826-7378]

Phone: 219-879-5100

Fax: 219-879-5335

NOTE

When contacting the Vanair Service Department, please have machine serial number on hand to quickly expedite service. See below for machine serial plate location.

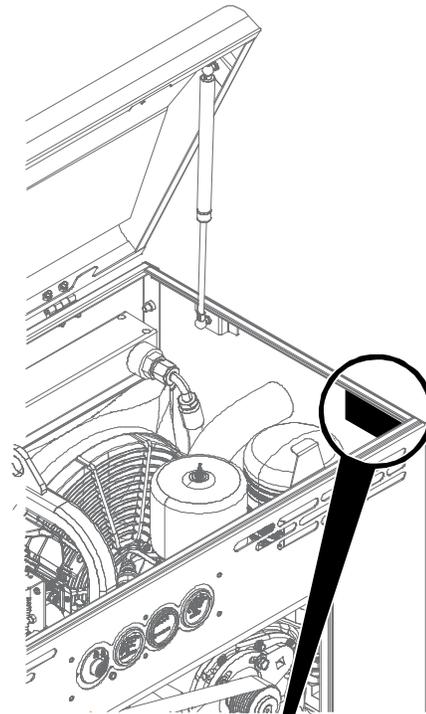


Figure 6-1: Machine Serial Plate Location

6.2 TROUBLESHOOTING GUIDE		
Fault/Malfunction	Possible Cause	Corrective Action
Engine Will Not Crank	Dead Battery	Replace or recharge battery
	Loose or Disconnected Wire(s)	Inspect wiring; look for loose or disconnected wires or loose, damaged, or corroded battery cables
	Faulty Ignition Switch	Replace
	Faulty Circuit Breaker	Replace
	Faulty Engine Starter	Service or replace starter and/or solenoid
	Other Engine Causes	Retrieve fault codes from engine diagnostic indicator
Engine Will Not Start	Front Access Panel Open or Removed	Close cover
	Low Fuel	Add fuel
	Faulty Engine Oil Temp Switch	Replace
	Faulty Engine Oil Pressure Switch	Replace
	Fuel Filter Plugged	Inspect/replace
	Faulty Fuel Pump	Inspect/check electrical connections/replace
	Other Engine Causes	Retrieve fault codes from engine diagnostic indicator
Engine Will Not Speed Up	Throttle Solenoid Stuck	Inspect/replace
	Air Hose Kinked or Malfunctioning Tool	Inspect/replace
	Minimum Pressure Valve Stuck Closed	Contact service
Engine Will Not Idle	Throttle Solenoid Wiring Loose/Disconnected	Inspect/reconnect
	Throttle Solenoid Stuck	Inspect/replace
	Control Pressure Switch Unplugged or Faulty	Inspect/replace
	Pressure Regulator Malfunction	Contact service
Engine Stops	Low Fuel	Add fuel
	Dead Battery	Check battery connections
		Check engine fuses
	High Temperature Shutdown (Engine or Compressor)	Verify that minimum clearance exists around machine for proper air flow
		Check for obstructions in air intake and exhaust openings
		Inspect/clean cooler
		Check oil levels in engine and compressor
		Inspect/replace engine oil temperature switch
		Inspect/replace compressor temperature switch
		Verify compressor shutdown temperature setting is at 240 °F
Faulty fan or connection loose or unplugged (verify that fan is operational)		
Inspect/replace engine air filter		

Continued on next page

6.2 TROUBLESHOOTING GUIDE		
Fault/Malfunction	Possible Cause	Corrective Action
Engine Stops (continued)	High Temperature Shutdown (Engine or Compressor) (continued)	Inspect/replace compressor air filter
	High Pressure Shutdown (Compressor)	Verify pressure gauge setting is at 175 PSIG
		Faulty minimum pressure valve (contact service)
		Faulty pressure regulator (contact service)
	Low Engine Oil Pressure	Check engine oil level
		Inspect/replace pressure switch
	Engine Idle Set Too Low	Adjust engine idle
	Engine Air Filter Dirty/Plugged	Inspect/replace
	Faulty Fuel Pump	Inspect/check electrical connections/replace
Other Engine Causes	Retrieve fault codes from engine diagnostic indicator	
Compressor Will Not Build Pressure	Minimum Pressure Valve Stuck Closed	Contact service
	Inlet Valve Stuck Closed	Contact service
	Compressor Air Filter or Intake Opening Plugged	Inspect/replace
Excessive Oil Carryover	Compressor Oil Level Too High	Check/adjust oil level
	Scavenge System Malfunction	Contact service
	Coalescing Element Damaged or Malfunctioning	Inspect/replace

6.3 EXTREME CONDITION OPERATION

When operating in extreme cold or hot conditions, in the presence of high humidity, or at a high altitude, extra attention should be given to any indication that could lead to a serious problem. Engine power and compressor air output will be reduced at high altitude or hot ambient temperatures.

Machine review and maintenance check schedules should be more frequent than the normal suggestions given in the **Maintenance Schedule Tables (Table 5A, and Table 5B in Section 5)**.

Become acquainted with the situation-adjusted operation approaches given in this section before operating the power system package in any type of extreme ambient condition. For additional operation

information consult the Engine Operator's Manual, or visit the engine manufacturer's web site given in that manual.

6.3.1 HIGH MOISTURE CONDITION: EMULSIFICATION OF OIL IN ROTARY SCREW COMPRESSOR SYSTEMS

Consult the information in **Table 6.3A** for preventative and/or repair measures. If machine is operating in a high moisture environment, water contamination may persist after following the regular preventative maintenance schedule and standard operating procedures.

6.3.2 COLD WEATHER OPERATION

Consult the information in **Table 6.3B** for preventative and/or repair measures. The Gas Viper can be more difficult to start in cold weather. Once the engine is started, the air density becomes larger and the intake



TABLE 6.3A HIGH MOISTURE CONDITION OPERATION		
Symptom	Cause	Prevention / Corrective Action
<p>Emulsification of oil in compressor system:</p> <ul style="list-style-type: none"> Compressor oil is milky white in color Compressor oil is broken down and lacks lubricity. Compressor oil may develop solid chunks or clumps 	<p>Operating the compressor system for short periods of time:</p> <ul style="list-style-type: none"> Short cycling prevents the temperature of the oil from attaining a high enough temperature capable of vaporizing the moisture droplets. <p>Operating the compressor system unloaded without air flow from the service line for long periods of time:</p> <ul style="list-style-type: none"> This can keep the oil temperature from getting hot enough to vaporize the moisture droplets, preventing the moisture from being able to escape the system. Additionally, there is no path for the moisture to escape the system. <p>The air filter is saturated with water:</p> <ul style="list-style-type: none"> This forces moisture to be ingested by the compressor. <p>Any of the above causes will be exacerbated in especially humid environments.</p>	<p>RECOMMENDED CHANGES:</p> <p>If the problem is not corrected by standard operating practices and regular preventative maintenance, consider the following:</p> <ul style="list-style-type: none"> Raise the average temperature of the compressor oil. Change the operating procedure to allow for the compressor oil temperature to reach 180 °F before discharging any air. If the compressor isn't discharging any air, it's not ingesting any potentially humid air. It will build pressure upon initial startup, but then it will run closed and allow it to heat up. <p>REPAIR/MAINTENANCE:</p> <p>Refer to Section 5 of the Operator's Manual for inspection, cleaning, and repair instructions.</p> <ol style="list-style-type: none"> Once the compressor oil becomes emulsified, it must be replaced along with the oil filter. Depending on the severity, other parts might also need to be replaced. Check that the separator element is in good, working condition. Check that the scavenge line is working properly. <p>If the system is badly contaminated, Vanair® recommends a lube flush that will help clean out any remaining contamination throughout the system. Consult Vanair Service Department for lube flush instructions.</p> <p>Check the moisture drain frequently on the air tank reservoir, to alleviate moisture build-up.</p>

efficiency also becomes higher. More output can be expected in cold areas. When the temperature is very low, extra care must be taken regarding fuel and oil changes in their viscosity, freezing of water contained in the piping, or of water adhering on the filter.

6.3.3 HIGH TEMPERATURE OPERATION

Consult the information in **Table 6.3C** for preventative and/or repair measures. Reduce load duty cycle to less than 60% when

operating in ambient temperatures above 104 °F (40 °C).

Extra care should be taken to keep the engine and air compressor clean and to not restrict the air flow around the unit. Consult the Engine Operator's Manual for fuel, lubrication oil and cooling requirements under extreme temperatures.

When operating the machine in high temperature areas, precautions should be taken to prevent overheating. At the minimum, all coolers, including air passage

TABLE 6.3B COLD WEATHER OPERATION

Symptom	Cause	Prevention / Corrective Action
Water freezes in the fuel line Lubrication oil viscosity increases	<p>WATER</p> <p>Water in the fuel can freeze at temperatures below 32°F (0°C), blocking fuel lines.</p> <p>At an extremely cold temperature, the viscosity of lubrication oil may increase and the torque of starter may exceed its permissible value, hindering proper starting.</p>	<ul style="list-style-type: none"> • Park the vehicle or equipment indoors when not in use. • Use a block heater. • Maintain the battery; this will make it easier to start a diesel engine in cold weather. • In below zero temperatures a fuel line deicer product may need to be used. • Check the fuel filter regularly to insure that it contains no water. • Vanguard™ Premium Synthetic Oil is suitable for use from -40°F to 110°F (-40°C to 43°C). • For additional engine precautions, consult the Engine Operator's Manual. • Vanair® recommends installation of the cold weather heater option kit. Consult Table 7A in Section 7 for cold weather kit option. • Keep the fuel tank full to prevent condensation from forming inside the tank and lessen the chances of water getting in the fuel line. • The standard recommendation of 15W-40 engine oil is suitable for temperatures down to -4°F (-20°C). If temperatures are consistently below 30°F (-1°C), it is recommended that 5W-30 oil be used. If temperatures are below -25°F (-32°C), a high-performance, fully synthetic oil, such as AMSOIL 5W-30 should be used which is suitable to temperatures of -55°F (-48°C).

TABLE 6.3C HIGH TEMPERATURE OPERATION

Symptom	Cause	Prevention / Corrective Action
Overheating/high compartment temperatures Diminished engine performance	High ambient temperatures, confined spaces, soundproof cases and other reasons. Among these the most important factor is the temperature of the intake and cooling air.	<ul style="list-style-type: none"> • Extra care should be taken to keep the engine and air compressor clean and to not restrict the air flow around the unit. • Consult the Engine Operator's Manual for fuel, lubrication oil and cooling requirements under extreme temperatures. • At the minimum, all coolers, including air passage ways around the coolers, should be free of debris and dirt. The fan, driven by the engine, is designed to run continuously to assure a constant flow of cooling air. • If high ambient overheating occurs, reduce the duty cycle. <p>The operator should be aware that high temperatures can influence engine performance, which can directly effect some machine function capacity outputs.</p>

ways around the coolers, should be free of debris and dirt.

The operator should be aware that high temperatures can influence engine performance, which can directly effect some machine function capacity outputs.

6.3.4 HIGH DUST CONTENT OPERATION

Consult the information in **Table 6.3D** for preventative and/or repair measures. When the machine is to be used in continuously dusty environments, special care must be taken with the engine's air cleaner, compressor air cleaner, and compressor oil cooler.

6.3.5 HIGH ALTITUDE OPERATION

Engine horsepower will decrease by 3.5% for every 1,000 feet above sea level. At high altitude overall unit performance will deteriorate, and care will need to be taken not to overload the engine.

6.4 ENGINE FAULT CODES

The engine ECU continuously monitors engine operation against preset performance limits. If the operation is outside the limits, the ECU activates the engine fault indicator lights, and stores a diagnostic code in its fault memory. If the component or system returns to proper function, the ECU will turn

the engine fault indicator lights off. If the engine fault indicator lights stay illuminated, a fault is currently happening, and service is required.

The fault code(s) can be accessed in order to help determine what portion of the system is malfunctioning. The 4-digit fault codes available are listed in **Table 6.4A**.

The codes are accessed through the key switch and displayed as blinks or flashes of the engine fault indicator lights, as shown in the example in **Figure 6-2**. Access the codes as follows:

1. Check that the battery voltage is above 11 volts.
2. Start with the key switch OFF.
3. Turn the key switch to the ON and OFF, then ON and OFF, then ON, leaving it on in the third sequence. Do not start the engine. The time between sequences must be less than 2.5 seconds.
4. The MIL will blink a series of times. The number of times the MIL blinks represents a number in the blink code.
5. A sequence of four digits make up a fault code. There is a one (1) second pause between the blinks of a fault code. There is a three (3) second pause between separate fault codes. After the fault code(s) are blinked

TABLE 6.3D HIGH DUST CONTENT OPERATION

Symptom	Cause	Prevention / Corrective Action
Overheating System contamination Stalling	Machine components exposed to frequent or constant dust interaction, can result in diminished system performance, or machine cessation.	<ul style="list-style-type: none"> • The intake air must be cleaned with the air cleaner—inspect the air filter frequently for dust build-up and replace as needed. • Ensure that the oil cooler fins are kept clean to prevent overheating. • If the machine is not being used for an extended period of time, an additional precaution, such as covering the machine with a tarp, will help to keep the inside of the machine free of dust particle accumulation. • For extreme cases of high dust content environments, machine fluids may need to be replaced at more frequent intervals. Adjust maintenance schedule accordingly.

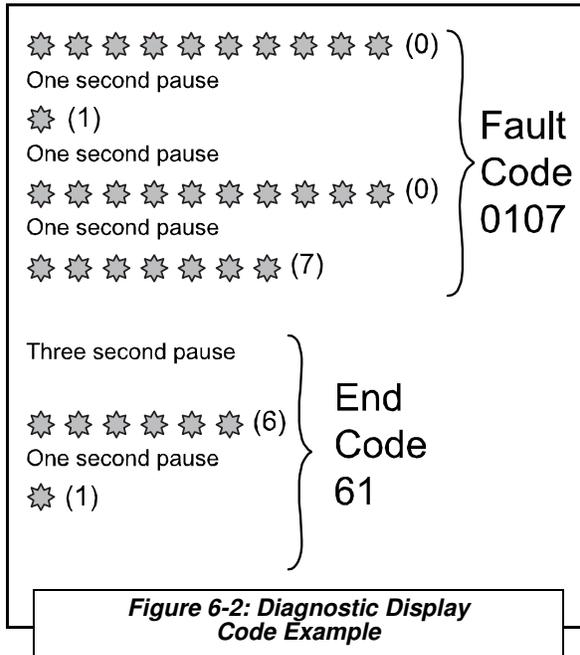


Figure 6-2: Diagnostic Display Code Example

a two digit 61 is blinked to indicate the program has completed.

- It is a good idea to write down the codes as they appear, as they may not be in numerical sequence.
- Code 61 will always be the last code displayed, indicating the end of code transmission. If code 61 appears immediately, no other fault codes are present.

After the problem has been corrected, the fault codes may be cleared by following the ECU Reset and TPS Learn Procedures (contact the Vanair® Service Department).

Table 6.4A lists the fault codes along with their corresponding descriptions.

TABLE 6.4A DIAGNOSTIC CODES	
FAULT	CONNECTION OR FAILURE DESCRIPTION
0031	Oxygen Sensor Heater Circuit High Voltage
0032	Oxygen Sensor Heater Circuit Low Voltage
0107	Manifold Absolute Pressure Sensor Circuit Low Voltage or Open
0108	Manifold Absolute Pressure Sensor Circuit High Voltage
0112	Intake Air Temperature Sensor Circuit Low Voltage
0113	Intake Air Temperature Sensor Circuit High Voltage or Open
0117	Coolant/Oil Temperature Sensor Circuit Low Voltage
0118	Coolant/Oil Temperature Sensor Circuit High Voltage or Open
0122	Throttle Position Sensor Circuit Low Voltage or Open
0123	Throttle Position Sensor Circuit High Voltage
0131	Oxygen Sensor 1 Circuit Low Voltage, or Open
0132	Oxygen Sensor 1 Circuit High Voltage
0171	Maximum Adaptation Limit Exceeded
0172	Minimum Adaptation Limit Exceeded
0174	Lean Fuel Condition at High Load (Open Loop)
0201	Injector 1 Circuit Malfunction
0202	Injector 2 Circuit Malfunction
0230	Fuel Pump Module Circuit Low Voltage or Open
0232	Fuel Pump Module Circuit High Voltage
0336	Crankshaft Position Sensor Noisy Signal
0337	Crankshaft Position Sensor No Signal
0351	Cylinder 1 Ignition Coil Malfunction
0352	Cylinder 2 Ignition Coil Malfunction
0562	System Voltage Low
0563	System Voltage High
61	End of Code Transmission



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SECTION 7:

ILLUSTRATED PARTS LIST

7.1 PARTS ORDERING PROCEDURE

Part orders should be placed through the distributor from whom the unit was purchased. If, for any reason parts cannot be obtained in this manner, contact the factory directly at the address or phone numbers below.

When ordering parts, always indicate the **Serial Number** of the machine package. This can be obtained from the Bill of Lading for the machine package, or from the compressor unit serial number plate. See **Figure 7-1** for location of machine package serial plate. Consult **Table 7A: Recommended Spare Parts List** on the next page for a listing of replacement parts.

VANAIR® MANUFACTURING, INC.

10896 West 300 N.
 Michigan City, IN 46360
 Toll Free: (844) VAN-SERV [(844) 826-7378]
 Telephone: (219) 879-5100
 Service Fax: (219) 879-5335
 Parts Fax: (219) 879-5340
 Sales Fax: (219) 879-5800
 www.vanair.com

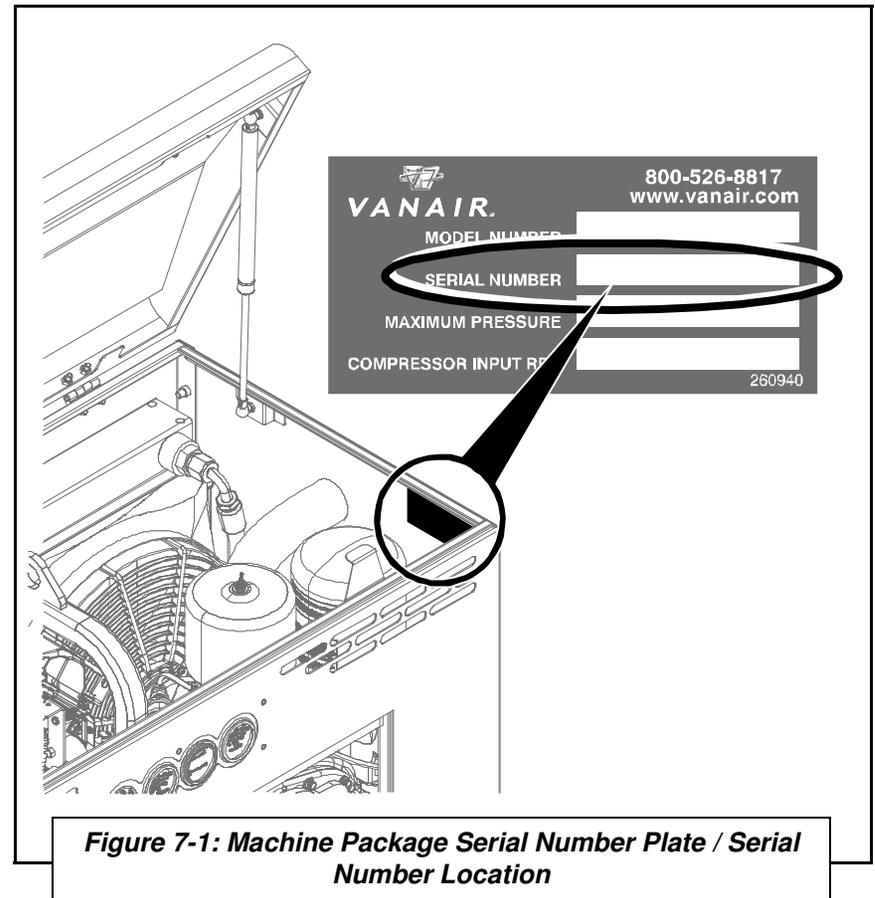


Figure 7-1: Machine Package Serial Number Plate / Serial Number Location



TABLE 7A: RECOMMENDED SPARE PARTS LIST			
KEY NO.	PART NUMBER	DESCRIPTION	QTY
ROUTINE/SCHEDULED MAINTENANCE ITEMS			
1	264626-1GAL	Vanguard™ Premium Oil (One [1] Gallon) [‡]	1
2	273080	Element, Compressor Coalescing Air/Oil Separator Spin-on Style	1
3	266801	Element, Compressor Oil Filter	1
4	265546-004	Element, Compressor Air Filter	1
5	262722	Element, Engine Air Filter Replacement	1
6	EN269654	Filter, Engine Fuel	1
7	270757	Filter, Engine Oil	1
KIT (FULL) MAINTENANCE ITEMS			
8	KIT1250	Kit, Maintenance for Engine Filters	1
9	KIT1212	Kit, Maintenance for Compressor - Initial 50 Hours	1
10	KIT1221	Kit, Maintenance for Compressor - Annual / 500 hours	1
11	KIT1257	Kit, Shaft Seal Replacement	1
12	032983	Option, (Kit for) Cold Weather	1
[‡] Use only Vanair® Vanguard™ Premium Synthetic Oil and Genuine Vanair Parts. Inspect and replace damaged components before operation. Substituting non-Vanguard™ Oil or non-genuine Vanair filter components WILL VOID THE COMPRESSOR WARRANTY!			

IMPORTANT

The above table listing contains items that require maintenance on a routine basis, and also those parts that may require maintenance over the course of the compressor package's performance schedule. Although this recommended list is proffered as a comprehensive guide to replacement parts, damage may occur to the machine beyond the scope of this listing.

Should any part of the compressor package that is not listed in Table 7A become damaged or inoperable, use the various sub-sections in Section 7 to best locate and identify the damaged part(s).

IMPORTANT

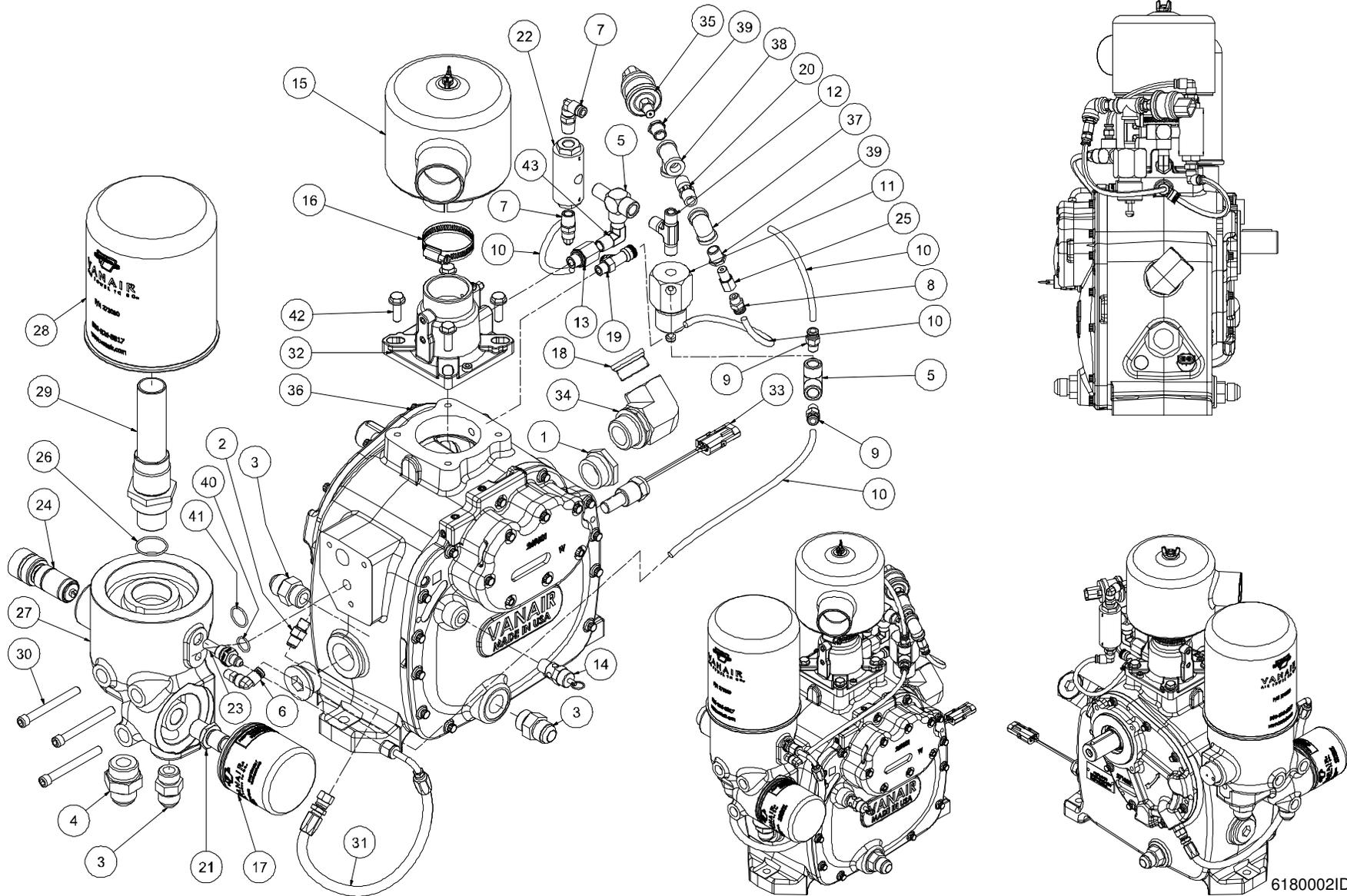
If additional spare parts are being stored for future use, make certain that they are stored in proper containers that allow for protection against contamination, and kept in a clean area of moderate temperature reading. For information on storing the machine package for periods of non-use, consult *Section 5.7.2, Long Term Storage*.

7.2 COMPRESSOR AND PARTS

KEY NO.	DESCRIPTION	PART NUMBER	QTY	KEY NO.	DESCRIPTION	PART NUMBER	QTY
1	ELBOW, 1/4T x 1/8P PUSH-ON	261309	1	15	CAPSCREW, HEX GR5 5/16-18 X 1.00	829105-100	4
2	TUBING, PLASTIC 1/4 WHITE	261322	2 FT	16	CAPSCREW, HEX GR5 3/8-16 X 1 1/2	829106-150	3
3	NIPPLE, PIPE 3/4 x 5 w/ FLANGE CON ED	268134	1	17	BOLT, CARRIAGE 1/2-13UNC X 2-1/2" LG.	829508-250	1
4	UNION,SWIVEL FJIC X FJIC 3/4	271844-005	1	18	SCREW, SER WASH 5/16-18 x 0.75	829705-075	2
5	SCREW,MACH FLAT HD 5/16-18 X 1 1/4 SOCKET HD	273311	1	19	WASHER, FLAT 5/16	838205-071	4
6	SHEAVE,DRIVE K SECTION 8 GROOVE 2.50 OD	273878	1	20	WASHER, FLAT 1/2	838208-112	1
7	TENSIONER, BELT GAS VIPER	273988	1	21	WASHER, LOCK 1/4	838504-062	3
8	RETAINER,SHEAVE GAS VIPER	274066	1	22	WASHER, LOCK 5/16	838505-078	4
9	SUPPORT, DISCHARGE CONNECTION GAS VIPER	274083	1	23	WASHER, LOCK 3/8	838506-094	3
10	SHEAVE, DRIVE K SECTION 8 GROOVE 3.00 OD	274921	1	24	WASHER, LOCK 1/2	838508-125	1
11	AIREND & ATT, VSE075GDSS	6180002	1	25	ELBOW, 37FL/90F 3/4 x 3/4	860312-075	1
12	NUT, HEX 1/4-20	825204-226	3	26	SHEAVE, DRIVE K SECTION 8 GROOVE 2.75 OD	DR274335	1
13	NUT, HEX 1/2-13	825208-448	1	27	IDLER, 1.375 WIDTH, 3 3/8DIA	DR46584	1
14	CAPSCREW, HEX GR5 1/4-20 x 0.75	829104-075	3				

PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.

7.3 AIREND AND ATTACHMENTS



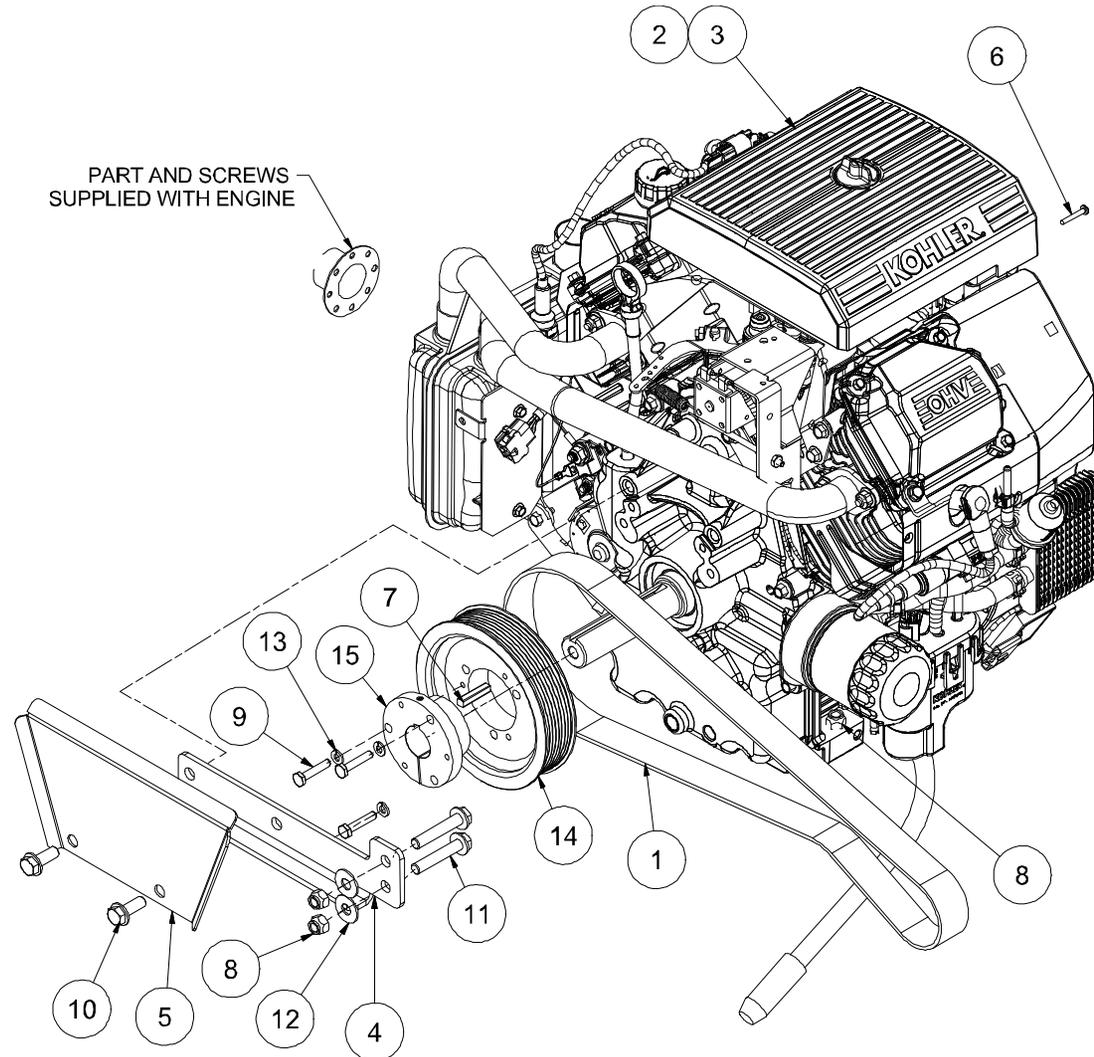
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7.3 AIREND AND ATTACHMENTS

KEY NO.	DESCRIPTION	PART NUMBER	QTY	KEY NO.	DESCRIPTION	PART NUMBER	QTY
1	SIGHTGLASS, O-RING TMBD 1 5/16"	250097-610	1	23	ORIFICE, STRAINER 0.030 #6 MSAE X #4 MJIC	271054	1
2	CONNECTOR, O-RING 1/4 SAE x 1/4 JIC	260387-103	1	24	VALVE, MIN PRESS INTERNAL PARTS VMI80	271079	1
3	CONNECTOR, O-RING 5/8 x 5/8 JIC	260387-109	3	25	ORIFICE, 0.125 DIA 1/8-27 NPTF x 1/8-27 NPTM	272327	1
4	CONNECTOR, O-RING 1-3/16 x 3/4 JIC	260387-143	1	26	O-RING, VITON 1/16 DIA X 1.176 ID	272689	1
5	TEE, MALE STREET 1/4 x 1/4 x 1/4	260402-102	2	27	MANIFOLD, AIR/OIL VMI80	272920	1
6	ELBOW, 1/4T x 1/8P PUSH-ON	261309	1	28	SEPARATOR, AIR/OIL SPIN ON 106CFM	273080	1
7	ELBOW, 90 deg. PUSH ON 1/4T x 1/4P	261310	2	29	ADAPTER, AIR/OIL SEPARATOR M42 X M39	273081	1
8	CONNECTOR, 1/8P x 1/4T PUSH ON	261316	1	30	CAPSCREW, HX SOC 5/16-18 X 3	273239	3
9	CONNECTOR, 1/4P x 1/4T PUSH ON	261317	2	31	HOSE, ASSY 0.25 X 18 JIC SWV STR X JIC SWV 90	273247	1
10	TUBING, PLASTIC 1/4 WHITE	261322	2 ft	32	VALVE INLET, 1.5" VMC RH38	273396	1
11	VALVE, REGULATOR, 6:1	262047	1	33	SWITCH, TEMP (ELECTRIC) 185 NO LONG	273786	1
12	TEE, MALE PIPE 1/4	262781-002	1	34	ELBOW, 90 16MSAE X 16FSAE	274743	1
13	ADAPTER, FEMALE PIPE x BSPP 1/4	263748-004	1	35	SWITCH, PRESSURE NO 10 PSI METRIPACK	275332	1
14	VALVE, RELIEF 200 PSI 1/4 NPT MALE	264232	1	36	COMPR & PARTS VSE075DDSS000	6170002	1
15	FILTER, AIR UNDERHOOD	265546	1	37	ELBOW, PIPE GALV 90 DEG 1/4	803515-010	1
16	CLAMP, HOSE #28	265560	1	38	TEE, PIPE GALV 1/4	804415-010	1
17	FILTER, OIL 6" TANK	266801	1	39	BUSHING, RED STEEL 1/4 x 1/8	807600-005	2
18	PLUG, SAE O-RING HOLLOW HEX #16	268081-010	2	40	O-RING, VITON .691 OD X .070	826502-015	1
19	FITTING, MALE RUN TEE 1/4 x 1/4 PUSH ON	268779	1	41	O-RING, VITON .941 OD X .070	826502-019	1
20	VALVE, CHECK 1/4 NPT MALE	269893	1	42	SCREW, SER WASH 5/16-18 x 1	829705-100	4
21	CONNECTOR, OIL FILTER VANAIR ENCAPS	270037	1	43	ELBOW, PIPE 1/4M x 1/4M	860504-025	1
22	VALVE, BLOWDOWN 1/4 PISTON	270807	1				

PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.

7.4 ENGINE AND DRIVE PARTS

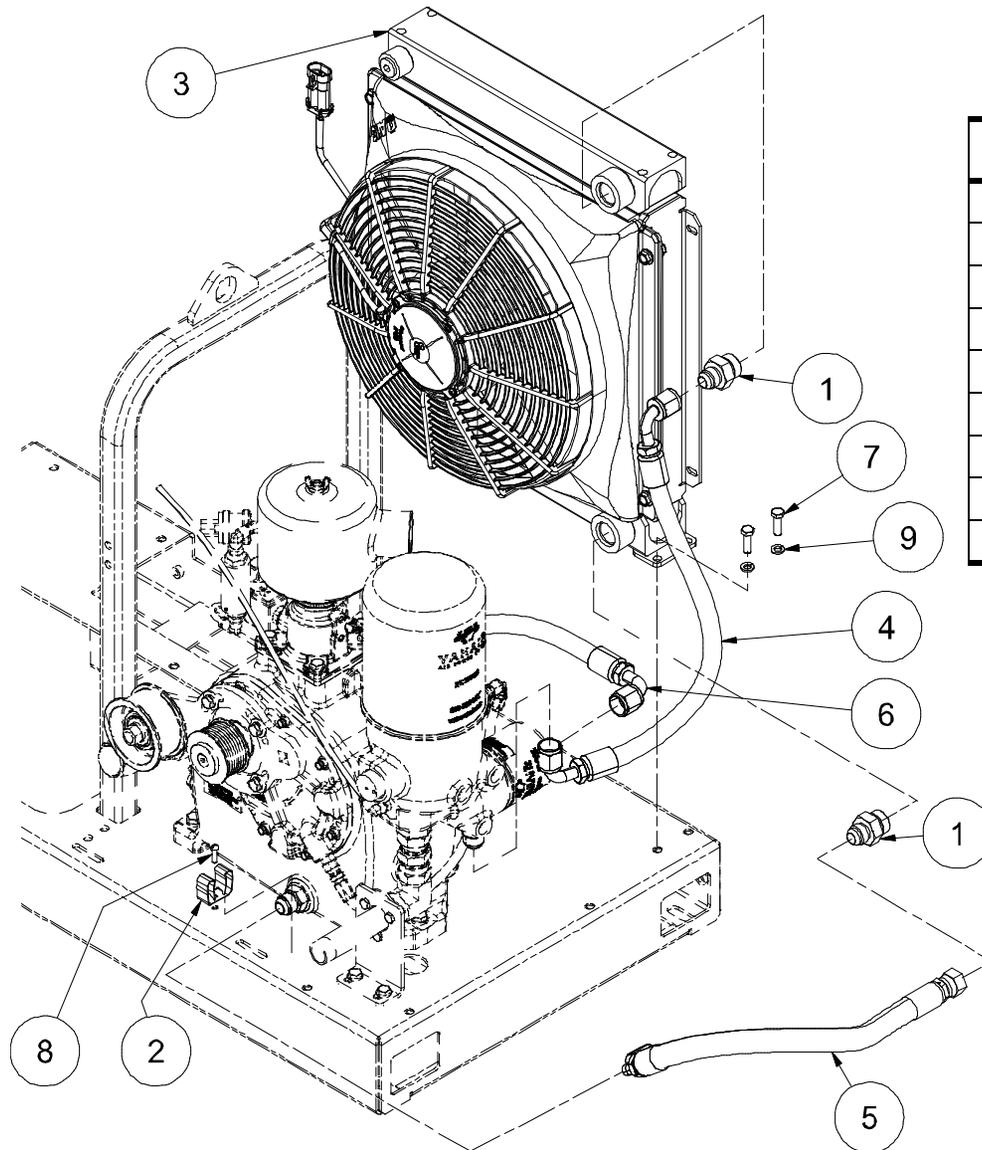


KEY NO.	DESCRIPTION	PART NUMBER	QTY
1	BELT, SERPENTINE	273458	1
2	ENGINE, KOHLER 23 HP EFI ECH730	274061	1
3	ENGINE, KOHLER 26.5 HP EFI ECH749	274519	1
4	BRACKET, ENGINE TO LIFT BALE GAS VIPER II	274792	1
5	SHIELD, HEAT ENGINE GAS VIPER II	274996	1
6	SCREW, MACHINE PAN HEAD M4-0.7 X 25MM	275577	1
7	KEY, SQUARE 1/4 x 1/4 x 1.25	821104-125	1
8	NUT, HEX LOCKING 3/8-16	825506-198	6
9	CAPSCREW, HEX GR5 1/4-20 x 1.25	829104-125	3
10	SCREW, SER WASH 3/8-16 x 1	829706-100	2
11	SCREW, SER WASH 3/8-16 x 2	829706-200	2
12	WASHER, FLAT 3/8	838206-071	2
13	WASHER, LOCK 1/4	838504-062	3
14	SHEAVE, SERPENTINE, 8 GROOVE	A15891Z	1
15	BUSHING, SDS, QD, 1 1/8DIA	DR85785Z	1

PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.

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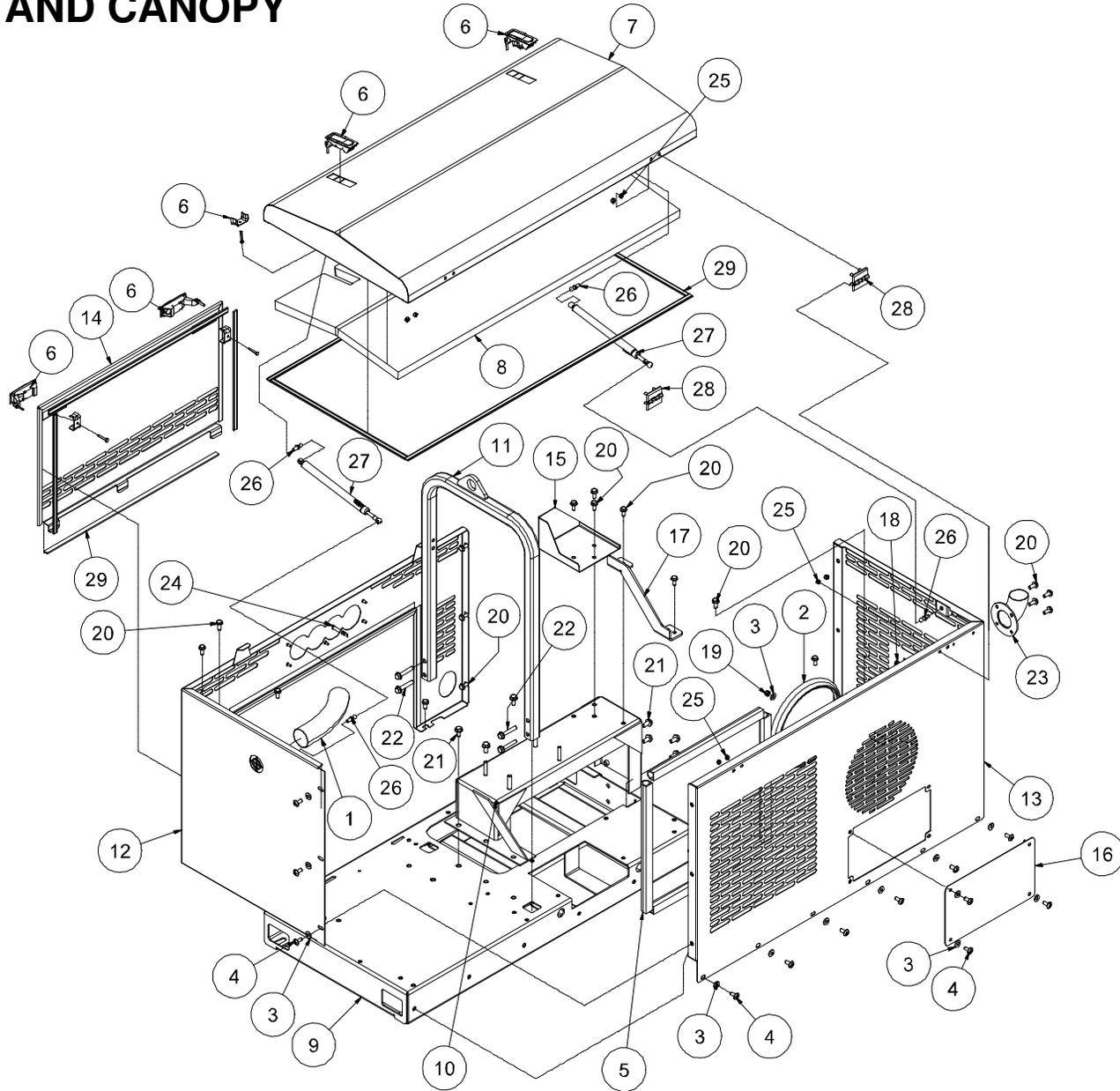
7.5 COOLING SYSTEM



KEY NO.	DESCRIPTION	PART NUMBER	QTY
1	CONNECTOR, #12 MSAE x #10 MJIC	260387-110	2
2	CLIP, TOOL ZINC 3/4 TO 1-1/8	272059	1
3	COOLER, FAN ASSY GAS VIPER II	274062	1
4	HOSE, ASSY 0.63 X 22.0 90FJIC X 90FJIC	274195	1
5	HOSE, ASSY 0.63 X 22.25 X 90FJIC X FJIC	274196	1
6	HOSE, ASSY 0.63 X 25.5 X FJIC X 90FJIC	274197	1
7	CAPSCREW, HEX GR5 5/16-18 X 1.00	829105-100	4
8	SCREW, ROUND HD #10-24 x 0.75	831602-075	1
9	WASHER, LOCK 5/16	838505-078	4

PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.

7.6 FRAME AND CANOPY



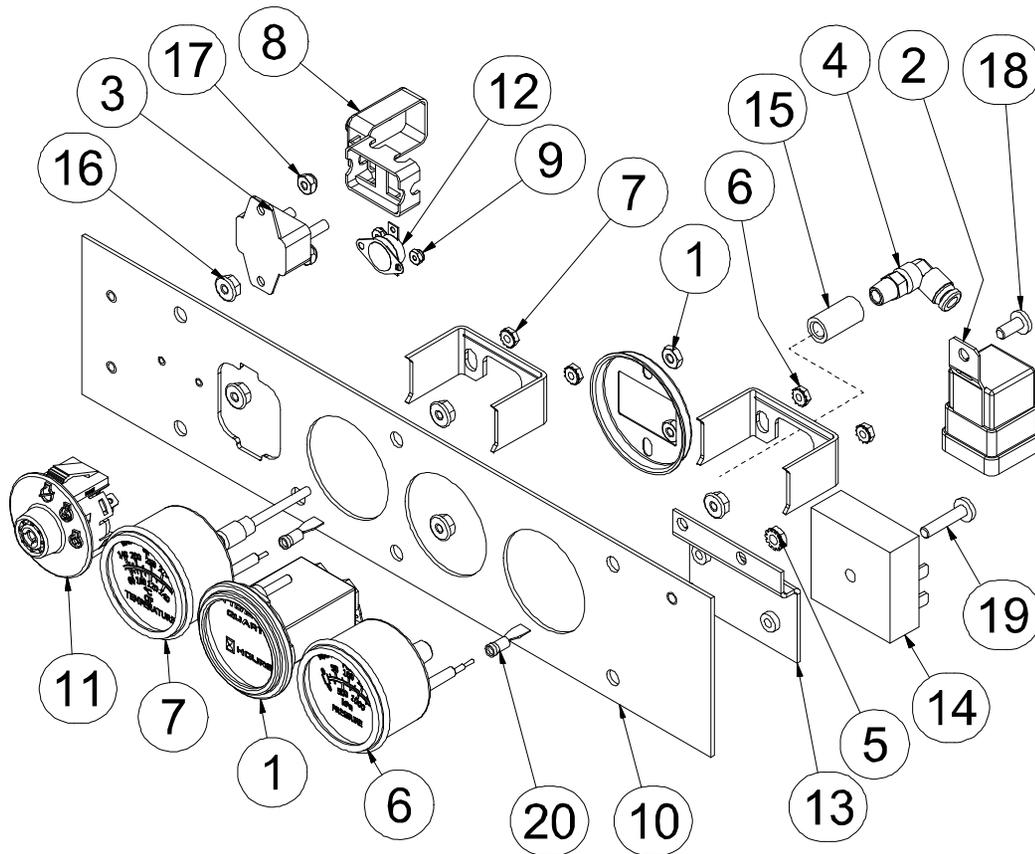
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7.6 FRAME AND CANOPY

KEY NO.	DESCRIPTION	PART NUMBER	QTY	KEY NO.	DESCRIPTION	PART NUMBER	QTY
1	HOSE, FLEX 2"	262705	1	16	PANEL, ACCESS GAS VIPER II	274768	1
2	SEAL, RUBBER AIR INLET	262785	2.5	17	BRACE, ENGINE SUPPORT GAS VIPER II	274769	1
3	WASHER, NYLON 5/16-18	262943	13	18	NUT, HEX FLANGE 5/16-18	825305-283	4
4	SCREW, TRUSS HD 5/16-18x3/4 SS	262945	12	19	NUT, HEX LOCKING 5/16-18	825505-166	1
5	SEAL, RUBBER "D" TRIM-LOK	264138	5.5	20	SCREW, SER WASH 5/16-18 x 0.75	829705-075	18
6	LATCH, SENTRY PANEL	267124	4	21	SCREW, SER WASH 3/8-16 x 0.75	829706-075	7
7	HOOD, CANOPY	272250	1	22	SCREW, SER WASH 3/8-16 x 2	829706-200	4
8	INSULATION, ACOUSTICAL FOAM, HOOD	272713-001	1	23	EXHAUST, OUTLET	A14883P	1
9	FRAME,GAS VIPER	273985	1	24	LAMP, INDICATOR, LED, RED	CO89659	1
10	SUPPORT, ENGINE GAS VIPER	273986	1	25	NUT, LOCK, M6 X 1.0 PITCH	FA55272	8
11	BAIL, LIFTING GAS VIPER	273987	1	26	STUD, BALL, .39DIA. X .55LG.	FA58724	4
12	PANEL, FRONT GAS VIPER	274005	1	27	GAS SPRING, 6 STROKE, 20#	HA72205	2
13	PANEL, REAR SIDE	274006	1	28	HINGE, 2" X 2", BLACK	HA88014	2
14	PANEL, DOOR FRONT ACCESS GAS VIPER	274007	1	29	GASKET, SEAL AND TRIM	PR35734	18.0 ft
15	SHIELD, HEAT GAS VIPER II	274333	1				

PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.

7.7 INSTRUMENT PANEL

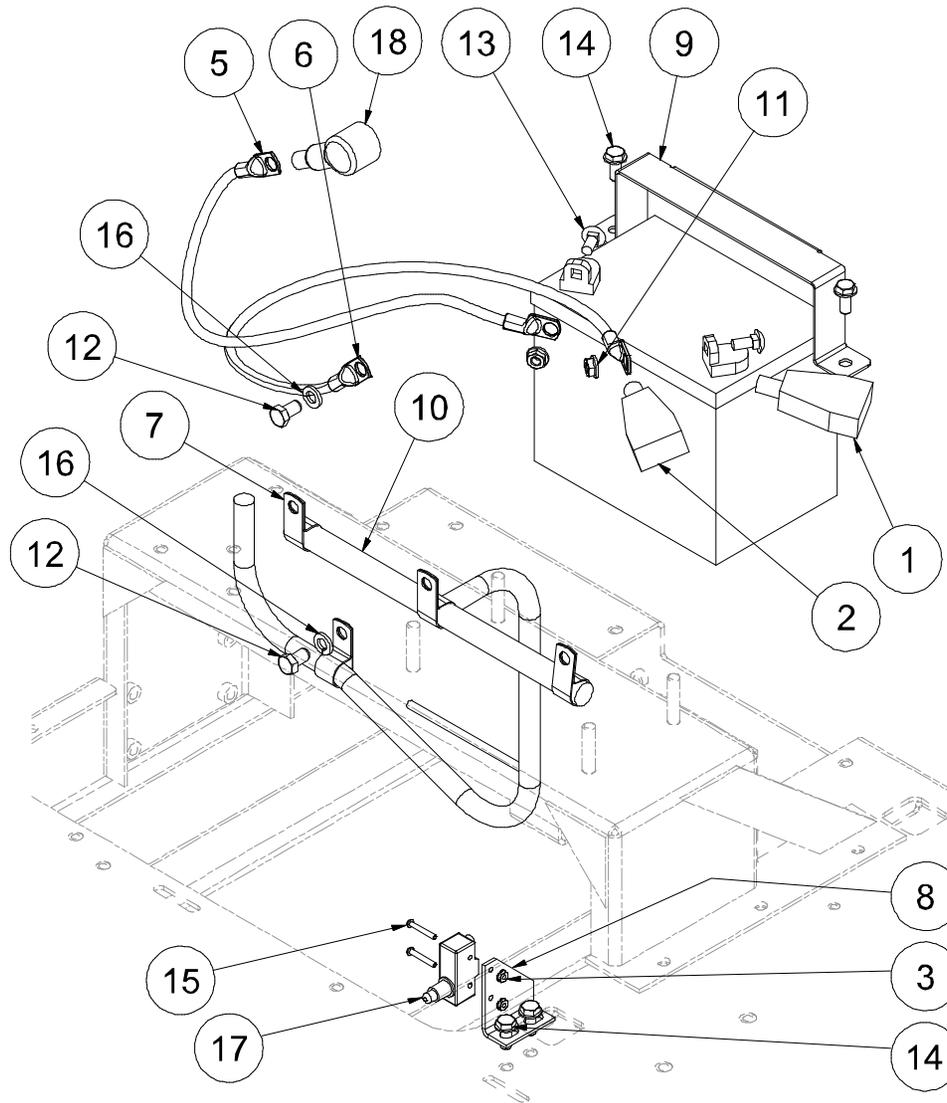


KEY NO.	DESCRIPTION	PART NUMBER	QTY
1	GAUGE, HOUR METER	040035	1
2	RELAY, NO/NC WEATHERPROOF w/	260246	1
3	BREAKER, CIRCUIT w/ STUDS 30A	260837	1
4	ELBOW, 1/4T x 1/8P PUSH-ON	261309	1
5	NUT, HEX #10-32 KEPS	261595-024	1
6	GAUGE, AIR PRESSURE w/ SWITCH	261974	1
7	GAUGE, TEMP. MURPHY 6 1/2	266740	1
8	BOOT, CIRCUIT BREAKER COVER	267307	1
9	NUT, HEX LOCKING #4-40 UNC	271840	2
10	PANEL, INSTRUMENT GAS VIPER II	274008	1
11	SWITCH, KEYED IGNITION 5 PIN	274173	1
12	THERMOSTAT, SNAP DISC 1/2 NO 170°	275011	1
13	BRACKET, TIMER/RELAY MOUNT VIPER	275445	1
14	TIMER, ON DELAY N.O. RELAY	275446	1
15	COUPLING, PIPE 1/8	806230-005	1
16	NUT, HEX FLANGE #10-24	825302-219	6
17	NUT, HEX LOCKING #8-32	825501-070	2
18	SCREW, MACHINE #12-24X1/2	831603-050	1
19	SCREW, MACHINE #12-24 X 1	831603-100	1
20	TERMINAL, SPADE 16-14 MALE .250	850016-250	2

PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.

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7.8 ELECTRICAL SYSTEM

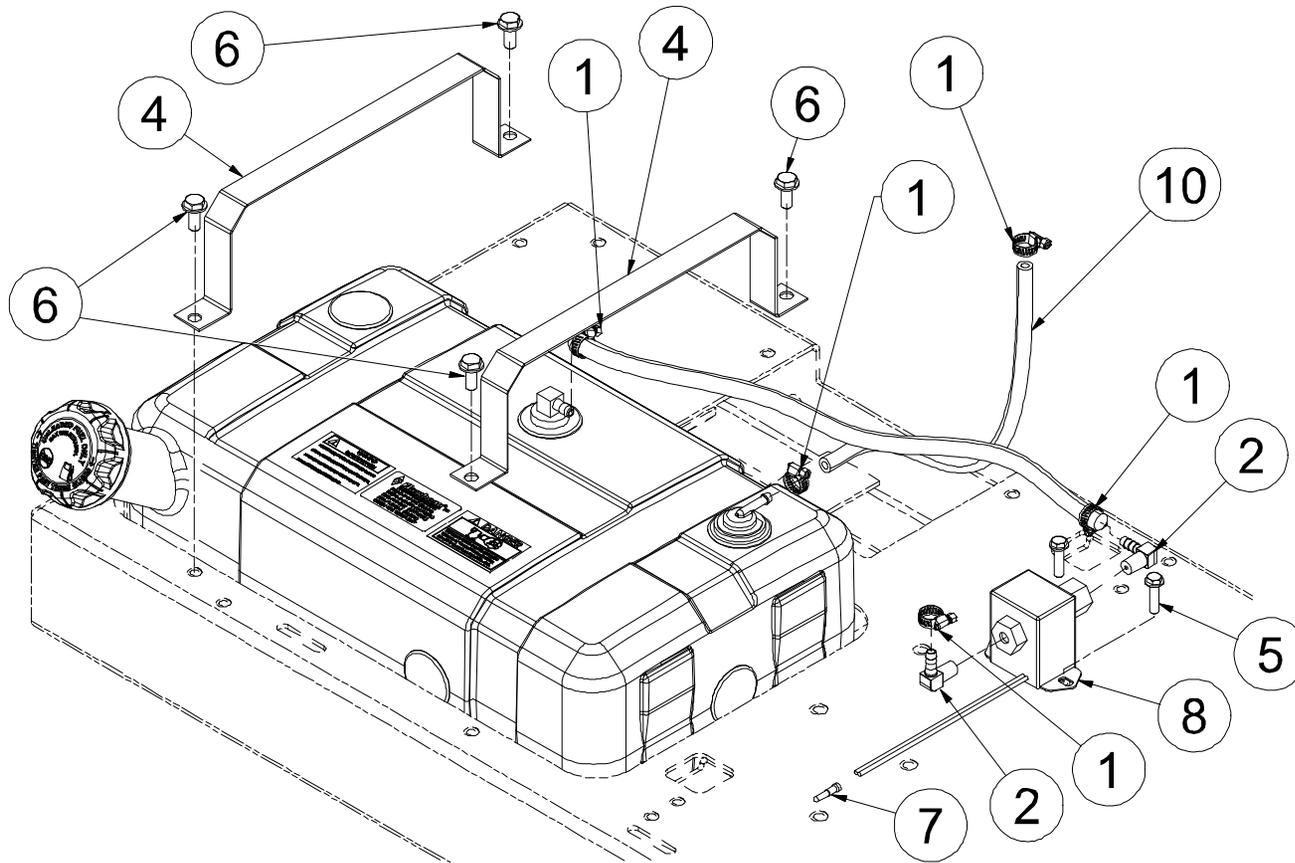


KEY NO.	DESCRIPTION	PART NUMBER	QTY
1	INSULATOR, BATTERY TERM. RED	261191	1
2	INSULATOR, BATTERY TERM. BLACK	261192	1
3	NUT, HEX #6-32 KEPS	261595-632	2
4	BATTERY, 12 VOLT BCI GROUP #U1LF	262596	1
5	CABLE, BATTERY POSITIVE	263942	1
6	CABLE, BATTERY VIPER NEG	263943	1
7	CLAMP, HOSE SUPPORT 3/4 I.D.	265711	4
8	BRACKET, FRONT DOOR SWITCH	273509	1
9	RETAINER, BATTERY GAS VIPER	274080	1
10	HARNESS, WIRING GAS VIPER II	274600	1
11	NUT, HEX FLANGE 5/16-18	825305-283	2
12	CAPSCREW, HEX GR5 3/8-16 x 0.625	829106-062	2
13	BOLT, CARRIAGE 5/16-18UNC X 3/4" LG.	829505-075	2
14	SCREW, SER WASH 5/16-18 x 0.75	829705-075	4
15	SCREW, MACHINE #6-32 X 1	831600-100	2
16	WASHER, LOCK 3/8	838506-094	2
17	SWITCH, HOOD SAFETY NO/NC 15A-125V.	CO81774	1
18	BOOT, PROTECTIVE, BATTERY POST	PR95497	1

PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.

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7.9 FUEL TANK ASSEMBLY

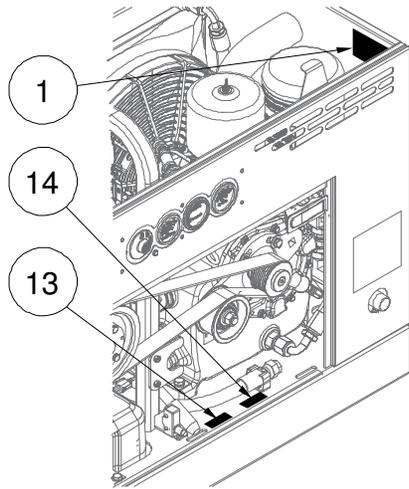


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KEY NO.	DESCRIPTION	PART NUMBER	QTY	KEY NO.	DESCRIPTION	PART NUMBER	QTY
1	CLAMP, HOSE 3/16 - 5/16 HOSE	260864	5	6	SCREW, SER WASH 5/16-18 x 0.75	829705-075	4
2	ELBOW, 1/8 NPT x 1/4 HOSE BARB	269963	2	7	TERMINAL, BULLET, MALE .156 14-16	EL71619	1
3	TANK, FUEL GAS VIPER II	274063	1	8	FUEL PUMP, 12V SOLID STATE, 1.5-2.5 PSI	MA53288	1
4	RETAINER, FUEL TANK GAS VIPER	274082	2	9	HOSE, FUEL 1/4" SAE 30R9 CARB	TU269439	2 ft
5	SCREW, SER WASH 1/4-20 x 1	829704-100	2	10	HOSE, FUEL 3/16" SAE 30R7 CARB	TU28641	1.5 ft

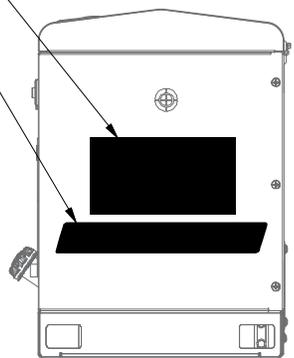
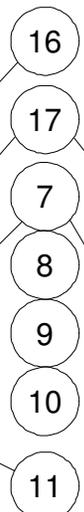
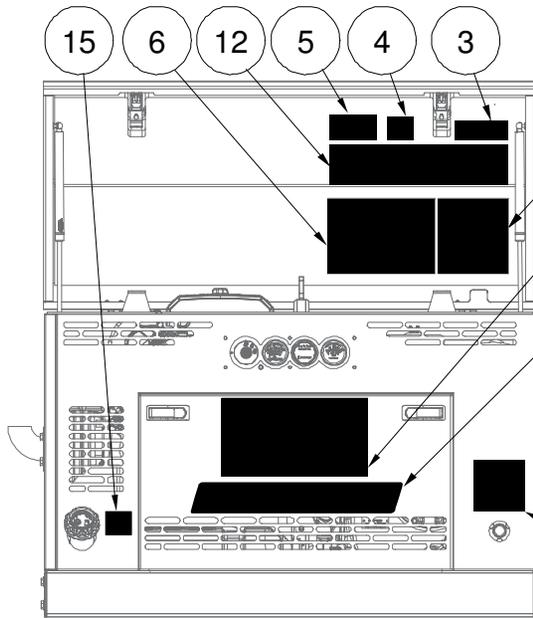
PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.

7.10 DECALS (1 OF 2) (SEE PART 2 OF 2 FOR DECAL IDENTIFICATION)

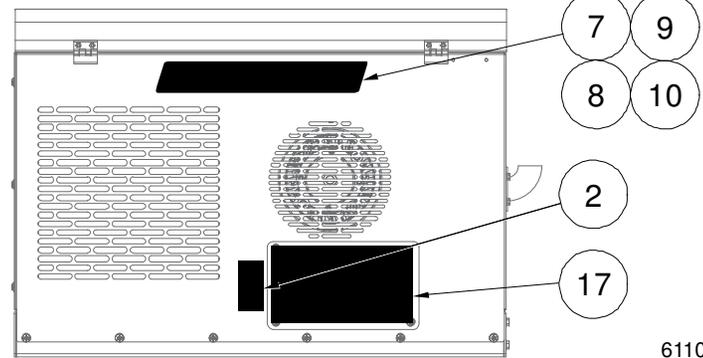


ITEM	DESCRIPTION	PART NUMBER	QTY	ITEM	DESCRIPTION	PART NUMBER	QTY
1	PLATE, SERIAL VANAIR	260940	1	9	DECAL, MACHINE LOGO VIPER G80 [‡]	275034	3
2	DECAL, SULFURIC ACID	264375	1	10	DECAL, MACHINE LOGO VIPER G70A [‡]	275035	3
3	DECAL, VANAIR ADDRESS	265605	1	11	DECAL, WARNINGS EXTERIOR GAS VIPER	275051	1
4	DECAL, WARNING ELECTRIC TAMPER	271510	1	12	DECAL, WARNINGS INTERIOR GAS VIPER	275052	1
5	DECAL, ROTARY SCREW OIL	272501	1	13	DECAL, ENGINE OIL DRAIN	275053	1
6	DECAL, WIRING DIAGRAM GAS VIPER	275015	1	14	DECAL, COMPRESSOR FLUID DRAIN	275054	1
7	DECAL, MACHINE LOGO VIPER G60	275032	3	15	DECAL, WARNING FUEL FILL GAS VIPER	275070	1
8	DECAL, MACHINE LOGO VIPER G70 [‡]	275033	3	16	DECAL, COMPRESSOR MAINTENANCE GAS VIPER	275100	1
[‡] This decal is not shown; features are similar to decal #7.				17	DECAL, VANAIR STACK LOGO 12.5" SLVR AIR PWR	275192	3

PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.



⚠ WARNING
DO NOT REMOVE OR COVER ANY SAFETY DECAL. Replace any safety decal that becomes damaged or illegible.



6110039ID_r0

7.10 DECALS (2 OF 2)

VANAIR. 800-526-9817
www.vanair.com

MODEL NUMBER _____

SERIAL NUMBER _____

MAXIMUM PRESSURE _____

COMPRESSOR INPUT RPM _____ 260940

1

5

WARNING

Sulfuric acid in batteries can cause severe injury or death.

Change only in well ventilated areas.

Keep sources of ignition away.

2

800-526-9817 www.vanair.com

3

WARNING

DO NOT TAMPER with any electrical harness in this machine.

Tampering with any electrical system harness may cause harm, damage the system and/or void the warranty. For electrical assistance, consult the Vanair Service Department.

4

WARNING

Do not use air from this compressor for breathing purposes or processing consumables except in full compliance with federal, state and local codes.

WARNING

Connect air hoses in full compliance with federal, state and local codes.

Safety devices should be tested in accordance with manufacturer's recommendations.

11

VANAIR

Vanguard

ROTARY SCREW COMPRESSOR OIL

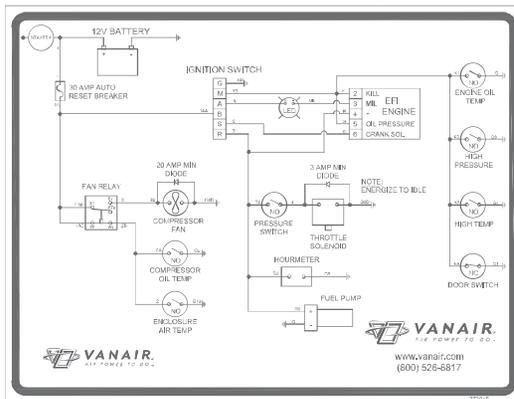
VANGUARD PREMIUM ROTARY SCREW COMPRESSOR OIL is recommended for this unit. Use of different oil will void warranty.

Do not mix oil types. Cap is self-sealing. No pipe dope is required.

CALL (800) 526-8817 Order# 264626-10AL

6

VIPER G60



ENGINE OIL DRAIN

13

COMPRESSOR FLUID DRAIN

14

WARNING

FILL ON LEVEL SURFACE
DO NOT OVERFILL
ALLOW SOME AIR SPACE ABOVE FUEL LEVEL FOR PROPER VENTING OF FUEL SYSTEM

15

COMPRESSOR MAINTENANCE

DAILY OPERATION: (BEFORE STARTING)

- CHECK COMPRESSOR FLUID LEVEL WITH MACHINE LEVEL.
- CHECK FOR FLUID LEAKS AND LOOSE BOLTS.

AFTER FIRST 50 HOURS: USE KIT1212

- CHANGE COMPRESSOR OIL WITH VANGUARD OIL AND OIL FILTER WITH GENUINE VANAIR PARTS.
- CHECK FOR FLUID LEAKS AND LOOSE BOLTS.

EVERY 500 HOURS OR ANNUALLY: USE KIT1249

- CHANGE COMPRESSOR OIL WITH VANGUARD OIL AND OIL FILTER WITH GENUINE VANAIR PARTS.
- CHANGE AIR FILTER WITH GENUINE VANAIR PARTS.
- CHANGE SEPARATOR ELEMENT WITH GENUINE VANAIR PARTS.
- CHECK FOR FLUID LEAKS AND LOOSE BOLTS.
- CHECK PRESSURE SAFETY RELIEF VALVE.
- CLEAN EXTERIOR OF OIL COOLER CORE.

NOTE: MORE FREQUENT SERVICE INTERVALS MAY BE REQUIRED WHEN USED IN AN EXTREME ENVIRONMENT.

VANAIR AIR POWER TO GO

(800) 526-8817 • www.vanair.com

275100

WARNING

Accidental starts can cause severe injury or death.

Disconnect battery and ground spark plug lead before servicing.

WARNING

Carbon monoxide can cause severe nausea, fainting or death.

Do not operate engine in closed or confined area.

WARNING

Do not operate without fan guard in place.

WARNING

Hot parts can cause severe burns.

Do not touch any internal surfaces while operating or just after stopping.

WARNING

Read the operator's manual before starting this unit.

Failure to adhere to instructions can result in personal injury.

Replacement manuals can be obtained from

Vanair Manufacturing
1-800-526-8817
www.vanair.com

WARNING

Do not remove caps, plugs, or other components when compressor is running or pressurized.

Stop compressor and relieve all internal pressure before doing so.

WARNING

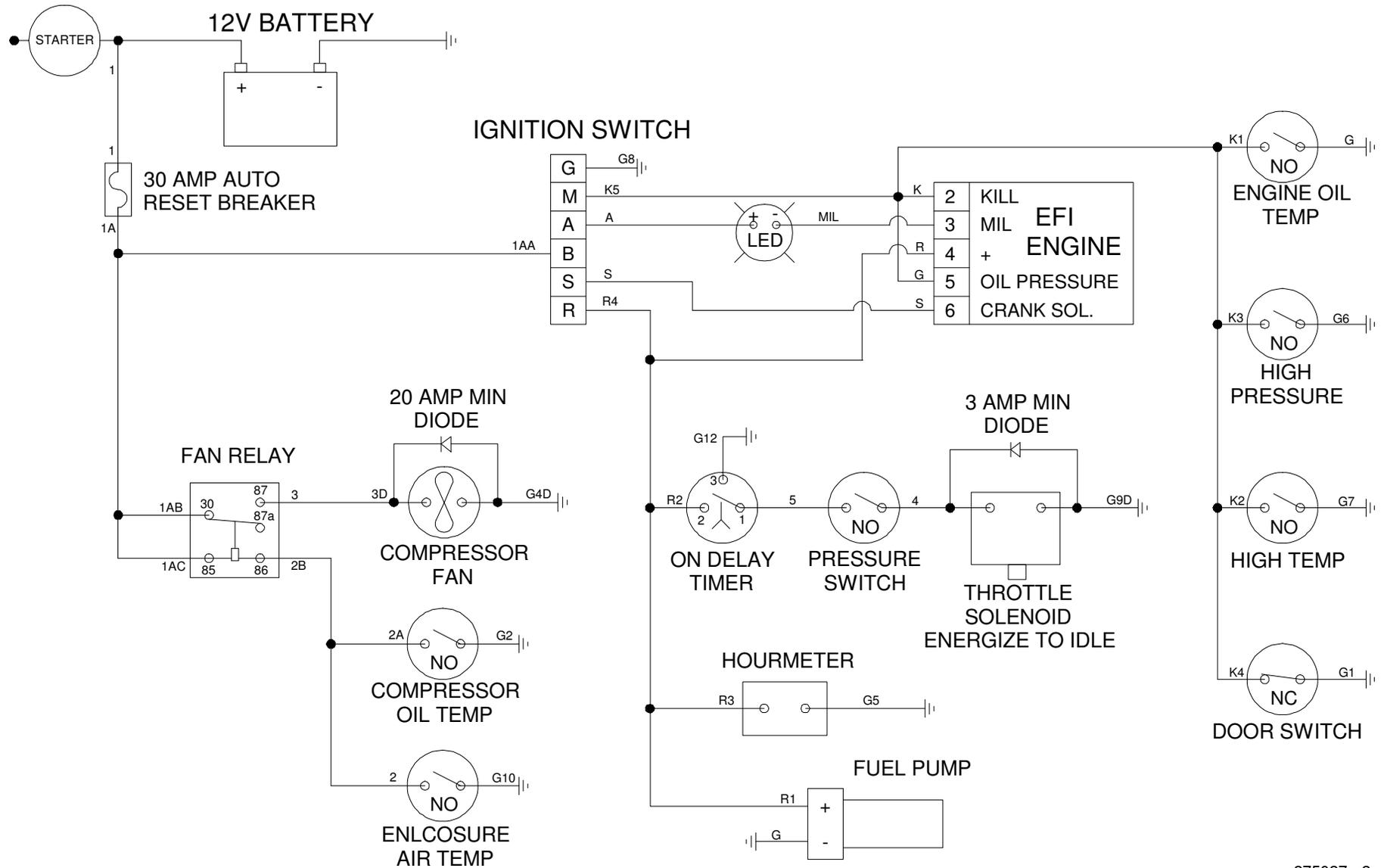
Rotating parts can cause severe injury.

Stay away while engine and compressor are in operation.

16

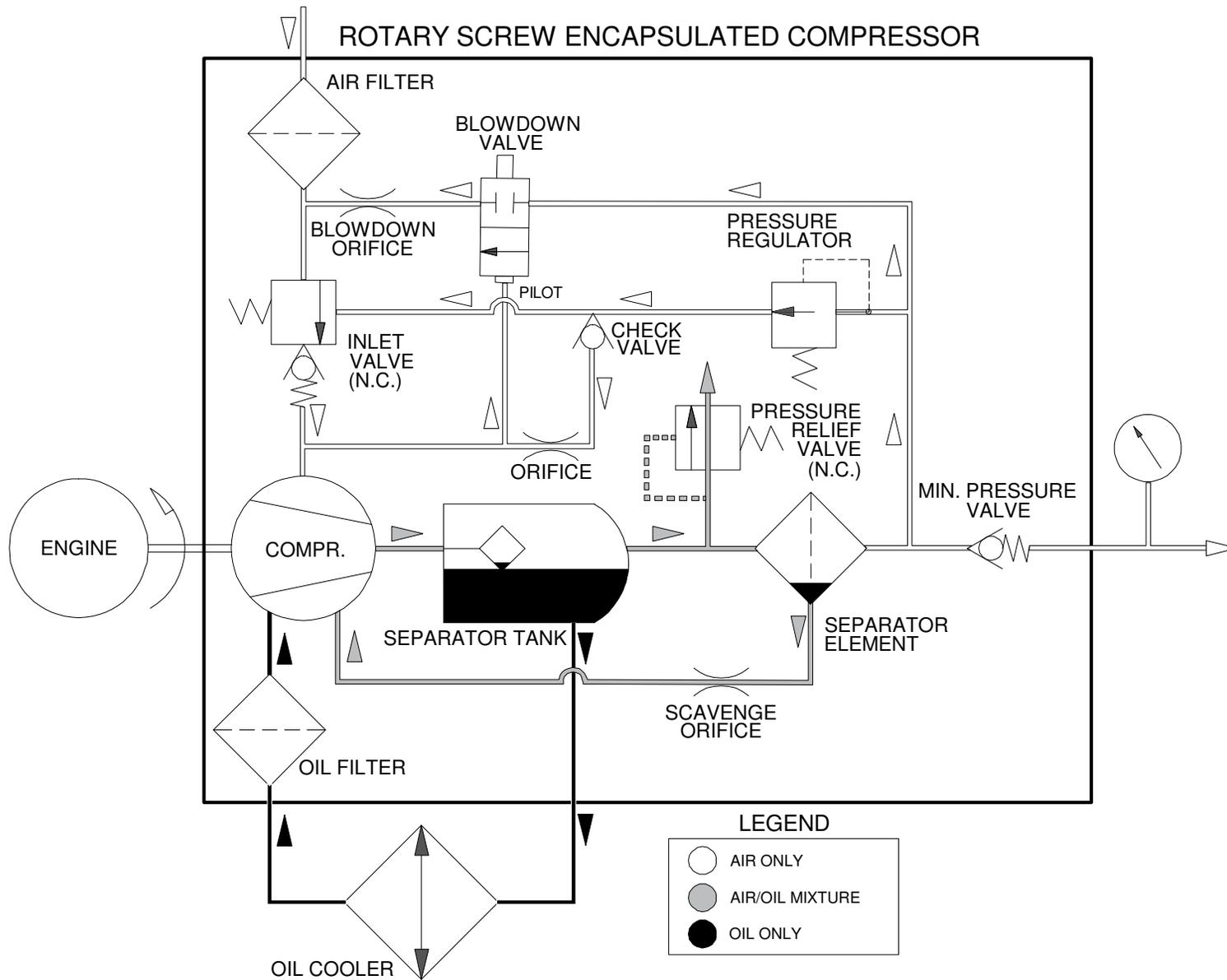
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7.11 WIRING DIAGRAM



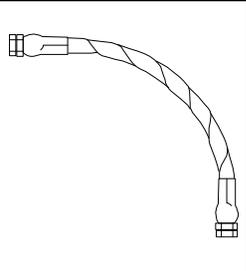
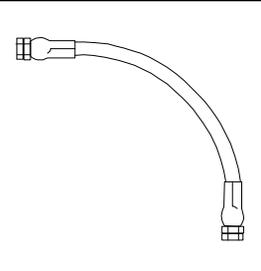
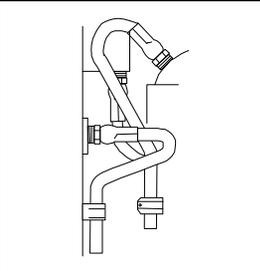
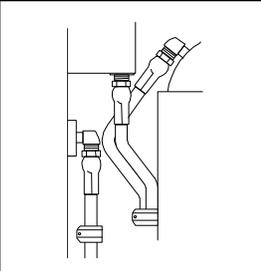
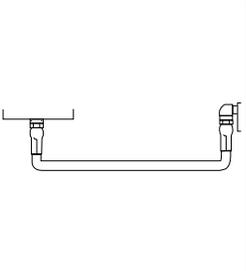
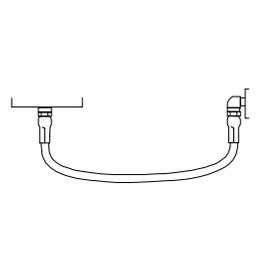
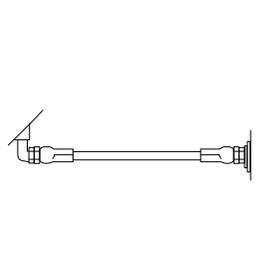
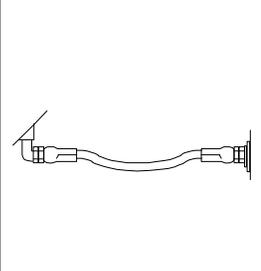
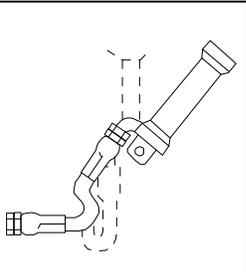
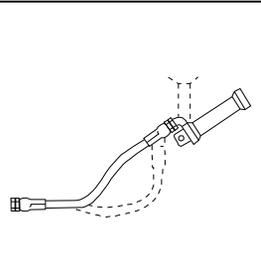
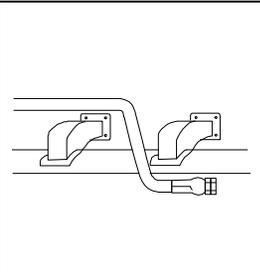
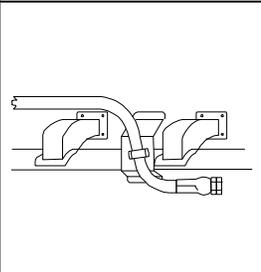
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7.12 SCHEMATIC FLOW DIAGRAM



275106_r2

7.13 HOSE INSTALLATION GUIDE

HOSE LAYOUT CONSIDERATION	WRONG	RIGHT	HOSE LAYOUT CONSIDERATION	WRONG	RIGHT
1. Hose is weakened when installed in twisted position. Pressure in twisted hose tends to loosen fitting connections. Design so that machine motion produces bending rather than twisting.			4. Use elbows or other adapters as necessary to eliminate excess hose length and to insure neater installation for easier maintenance.		
2. Ample bend radius should be provided to avoid collapsing of line and restriction of flow.			5. When hose assembly is installed in a flexing application, remember that metal hose fittings are not part of the flexible portion. Allow ample free length for flexing.		
3. Exceeding minimum bend radius will greatly reduce hose assembly life.			6. When properly routing, use clamps to secure the hose in its proper position.		



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AIR POWER TO GO™

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