



# VIPER

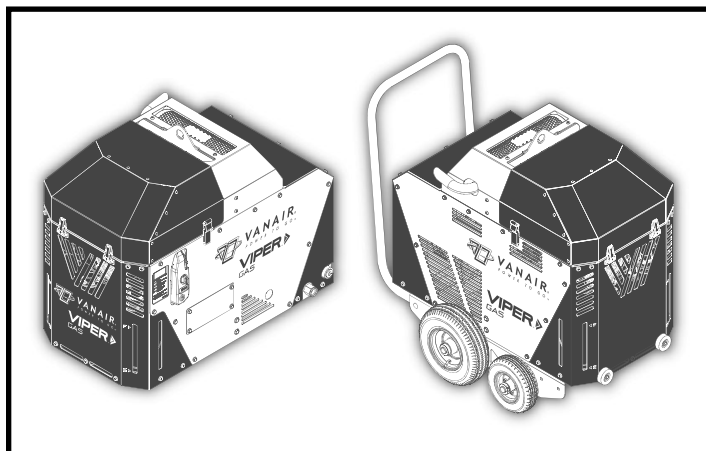
## GAS

### GASOLINE ENGINE-DRIVE, 60-80 CFM, 100-175 PSIG, ROTARY SCREW AIR COMPRESSOR OPERATION 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.



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

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

#### Vanair Manufacturing, Inc.

10896 West 300 North

Michigan City, IN 46360

Telephone (toll free): (800) 526-8817

Service (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](http://www.vanair.com)

#### NOTE

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

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



**VANAIR**  
POWER TO GO™

**P/N: 090195-OP\_r0**

**KEEP THE MANUAL  
WITH THE VEHICLE**

©2022 Vanair Manufacturing, Inc.  
All rights reserved

Effective Date:  
**JANUARY - 2022**

AIR N ARC®

ALL-IN-ONE POWER-SYSTEMS®

RELIANT™ SERIES

POWERFLEX™ SERIES

PRO SERIES

VIPER™ SERIES

**ALL WARRANTY OR  
RETURNS MUST BE  
PRE-AUTHORIZED PRIOR  
TO PERFORMING  
ANY WARRANTY WORK.**

**(844) VAN - SERV**

**SERVICE@VANAIR.COM**

**PARTS@VANAIR.COM**

**10896 W. 300 N.**

**MICHIGAN CITY, IN 46360**

**(800) 526-8817**

**VANAIR.COM**

**EFFECTIVE: JUNE 15, 2020**



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. All warranty or returns must be pre-authorized in writing prior to performing warranty work. Call Vanair for process and forms. 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 GUARANTEE ARISING BY OPERATION OF LAW. ANY WARRANTY NOT EXPRESSLY PROVIDED HEREIN, IMPLIED WARRANTY, GUARANTEE 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™

# TABLE OF CONTENTS

|                                                                             |                     |
|-----------------------------------------------------------------------------|---------------------|
| <b>WARRANTY .....</b>                                                       | <b>BEHIND COVER</b> |
| <b>TABLE OF CONTENTS .....</b>                                              | <b>TOC - I</b>      |
| <b>WARRANTY CLAIMS PROCEDURE .....</b>                                      | <b>WARRANTY - I</b> |
| CLAIMS PROCESS FOR WARRANTED PARTS .....                                    | WARRANTY - I        |
| PROCEDURE .....                                                             | WARRANTY - I        |
| <i>Figure W-1: Machine Serial Plate / Serial Number Location .....</i>      | <i>WARRANTY - I</i> |
| <b>SECTION 1: ▲ SAFETY .....</b>                                            | <b>1 - 1</b>        |
| 1.1 ▲ GENERAL INFORMATION .....                                             | 1 - 1               |
| 1.2 ▲ DANGERS, WARNINGS, CAUTIONS AND NOTES .....                           | 1 - 1               |
| 1.3 ▲ SUMMARY OF DANGERS, WARNINGS AND CAUTIONS .....                       | 1 - 1               |
| 1.3.1 ▲ DANGERS.....                                                        | 1 - 1               |
| 1.3.2 ▲ WARNINGS.....                                                       | 1 - 1               |
| 1.3.3 ▲ CAUTIONS.....                                                       | 1 - 2               |
| 1.4 ▲ SAFETY DECALS.....                                                    | 1 - 3               |
| 1.5 ▲ CALIFORNIA PROPOSITION 65 WARNINGS .....                              | 1 - 3               |
| 1.6 ♻ DISPOSING OF MACHINE FLUIDS.....                                      | 1 - 3               |
| <b>SECTION 2: SPECIFICATIONS .....</b>                                      | <b>2 - 1</b>        |
| 2.1 GENERAL INTRODUCTION .....                                              | 2 - 1               |
| TABLE 2A: SPECIFICATIONS FOR VIPER GASOLINE ROTARY SCREW<br>COMPRESSOR..... | 2 - 1               |
| <i>Figure 2-1: Machine Main Component Locations.....</i>                    | <i>2 - 2</i>        |
| TABLE 2B: STANDARD TORQUE VALUES.....                                       | 2 - 3               |
| <b>SECTION 3: INSTALLATION .....</b>                                        | <b>3 - 1</b>        |
| 3.1 MACHINE PACKAGE RECEIPT/INSPECTION .....                                | 3 - 1               |

*Continued on next page...*

## SECTION 3: INSTALLATION (CONTINUED)

|     |                                                                                  |              |
|-----|----------------------------------------------------------------------------------|--------------|
| 3.2 | INSTALLATION INSTRUCTIONS.....                                                   | 3 - 1        |
|     | <i>Figure 3-1: Installation and Dimensions Diagram.....</i>                      | <i>3 - 2</i> |
|     | <i>Figure 3-2: Installation and Dimensions Diagram - Optional Wheel Kit.....</i> | <i>3 - 3</i> |

## SECTION 4: OPERATION ..... 4 - 1

|     |                                                                             |              |
|-----|-----------------------------------------------------------------------------|--------------|
| 4.1 | GENERAL INFORMATION.....                                                    | 4 - 1        |
| 4.2 | INSTRUMENTATION.....                                                        | 4 - 1        |
|     | 4.2.1 IGNITION SWITCH.....                                                  | 4 - 1        |
|     | 4.2.2 ENGINE FAULT INDICATOR LAMP.....                                      | 4 - 1        |
|     | 4.2.3 PRESSURE/TIMER ADJUSTMENT LEVER.....                                  | 4 - 1        |
|     | 4.2.4 HOUR METER.....                                                       | 4 - 1        |
|     | 4.2.5 INFORMATION/DATA DISPLAY.....                                         | 4 - 1        |
|     | <i>Figure 4-1: Instrumentation and Controls.....</i>                        | <i>4 - 2</i> |
| 4.3 | START-UP PROCEDURE.....                                                     | 4 - 2        |
| 4.4 | PROGRAMABLE PARAMETERS.....                                                 | 4 - 3        |
|     | 4.4.1 AUTO START/STOP.....                                                  | 4 - 3        |
|     | 4.4.2 COMPRESSOR PRESSURE ADJUSTMENT<br>(OPERATING PRESSURE SELECTION)..... | 4 - 3        |
| 4.5 | SHUTDOWN PROCEDURE.....                                                     | 4 - 3        |
| 4.6 | MACHINE CONTROLLER LED STATUS CHART.....                                    | 4 - 3        |
| 4.7 | OPERATION GUIDELINES.....                                                   | 4 - 3        |
|     | 4.7.1 MACHINE ORIENTATION.....                                              | 4 - 3        |
|     | TABLE 4.6A - GREEN LED STATUS.....                                          | 4 - 4        |
|     | TABLE 4.6B - BLUE LED STATUS.....                                           | 4 - 4        |
|     | TABLE 4.6C - YELLOW LED STATUS.....                                         | 4 - 4        |
|     | TABLE 4.6D - RED LED STATUS.....                                            | 4 - 4        |
|     | 4.7.2 ENCLOSURE INTACT.....                                                 | 4 - 5        |
|     | 4.7.3 SAFETY/PROTECTIVE SHUTDOWN DEVICES.....                               | 4 - 5        |

**Continued on next page...**



**SECTION 4: OPERATION (CONTINUED)**

4.7.4 COOLING SYSTEM..... 4 - 5

4.7.5 LIFTING..... 4 - 5

4.7.6 COLD WEATHER OPTION..... 4 - 5

4.7.7 EXTREME CONDITIONS ..... 4 - 5

4.7.8 HIGH MOISTURE CONDITION: EMULSIFICATION OF OIL IN  
ROTARY SCREW COMPRESSOR SYSTEMS..... 4 - 5

TABLE 4A - HIGH MOISTURE CONDITION OPERATION ..... 4 - 6

4.7.8.1 PREVENTION OF EMULSIFICATION..... 4 - 6

4.7.8.2 INFREQUENT USE ..... 4 - 6

4.7.9 EXTREME CONDITION MACHINE APPLICATIONS ..... 4 - 6

**SECTION 5: MAINTENANCE..... 5 - 1**

5.1 GENERAL INFORMATION..... 5 - 1

5.2 ROUTINE MAINTENANCE SCHEDULE..... 5 - 1

5.3 REPLACEMENT PARTS ..... 5 - 1

TABLE 5A: GAS VIPER GV3 - MAINTENANCE SCHEDULE AT A GLANCE ..... 5 - 3

TABLE 5B: VIPER MAINTENANCE SCHEDULE INTERVALS ..... 5 - 4

TABLE 5C: ROUTINE MAINTENANCE REPLACEMENT KITS -  
COMPRESSOR..... 5 - 4

5.4 PARTS REPLACEMENT AND ADJUSTMENT PROCEDURES ..... 5 - 17

5.4.1 ADJUSTING THE BELT TENSION ..... 5 - 17

5.4.1.1 CHANGING THE BELT ..... 5 - 17

5.4.1.2 ADJUSTING BELT TENSION ..... 5 - 17

5.5 SERVICING THE SYSTEM FUSES AND CIRCUIT BREAKER..... 5 - 18

5.6 STORAGE AND INTERMITTENT USE..... 5 - 18

5.6.1 INTERMITTENT USE..... 5 - 18

5.6.2 LONG TERM STORAGE ..... 5 - 18

**SECTION 6: TROUBLESHOOTING..... 6 - 1**

6.1 GENERAL INFORMATION..... 6 - 1

*Continued on next page...*

## SECTION 6: TROUBLESHOOTING (CONTINUED)

|                                                                                                  |       |
|--------------------------------------------------------------------------------------------------|-------|
| TABLE 6A: TROUBLESHOOTING GUIDE .....                                                            | 6 - 1 |
| 6.2 EXTREME CONDITION OPERATION .....                                                            | 6 - 3 |
| 6.2.1 HIGH MOISTURE CONDITION: EMULSIFICATION OF OIL IN ROTARY<br>SCREW COMPRESSOR SYSTEMS ..... | 6 - 4 |
| 6.2.2 COLD WEATHER OPERATION .....                                                               | 6 - 4 |
| TABLE 6.2A - COLD WEATHER OPERATION .....                                                        | 6 - 4 |
| 6.2.3 HIGH TEMPERATURE OPERATION .....                                                           | 6 - 4 |
| TABLE 6.2B - HIGH TEMPERATURE OPERATION .....                                                    | 6 - 5 |
| 6.2.4 HIGH DUST CONTENT OPERATION .....                                                          | 6 - 5 |
| TABLE 6.2C - HIGH DUST CONTENT OPERATION .....                                                   | 6 - 5 |
| 6.2.5 HIGH ALTITUDE OPERATION .....                                                              | 6 - 6 |

## SECTION 7: ILLUSTRATED PARTS LIST ..... 7 - 1

|                                                                 |        |
|-----------------------------------------------------------------|--------|
| 7.1 PARTS ORDERING INFORMATION .....                            | 7 - 1  |
| Figure 7-1: Machine Serial Plate / Serial Number Location ..... | 7 - 1  |
| TABLE 7A: RECOMMENDED SPARE PARTS LIST .....                    | 7 - 2  |
| 7.2 COMPRESSOR AND PARTS - WITH TYPE-A AIR FILTER .....         | 7 - 4  |
| 7.3 COMPRESSOR AND PARTS - WITH TYPE-B AIR FILTER .....         | 7 - 6  |
| 7.4 ENGINE AND DRIVE PARTS .....                                | 7 - 8  |
| 7.5 FRAME AND DRIVE - 1 OF 4 .....                              | 7 - 10 |
| 7.5 FRAME AND DRIVE - 2 OF 4 .....                              | 7 - 12 |
| 7.5 FRAME AND DRIVE - 3 OF 4 .....                              | 7 - 14 |
| 7.5 FRAME AND DRIVE - 4 OF 4 .....                              | 7 - 16 |
| 7.6 CANOPY ASSEMBLY - 1 OF 2 .....                              | 7 - 18 |
| 7.6 CANOPY ASSEMBLY - 2 OF 2 .....                              | 7 - 20 |
| 7.7 COOLING SYSTEM .....                                        | 7 - 22 |
| 7.8 ELECTRICAL SYSTEM .....                                     | 7 - 24 |
| 7.9 ELECTRICAL SYSTEM - COLD WEATHER (OPTIONAL) .....           | 7 - 26 |
| 7.10 FUEL TANK ASSEMBLY .....                                   | 7 - 28 |
| 7.11 DECAL LOCATION/IDENTIFICATION - 1 OF 2 .....               | 7 - 30 |

**Continued on next page...**

**SECTION 7: ILLUSTRATED PARTS LIST (CONTINUED)**

7.11 DECAL LOCATION/IDENTIFICATION - 2 OF 2 ..... 7 - 32

7.12 HEATER PADS - DETAIL COLD WEATHER (OPTIONAL) ..... 7 -34

7.13 WIRING DIAGRAM - 1 OF 2 ..... 7 - 35

7.13 WIRING DIAGRAM - 2 OF 2 ..... 7 - 36

7.14 WIRING DIAGRAM - COLD WEATHER 12V (OPTIONAL)..... 7 - 37

7.15 SCHEMATIC FLOW DIAGRAM VSE WITH INLET ..... 7 - 38

7.16 HOSE INSTALLATION GUIDE ..... 7 - 39

TABLE 7B: MAINTENANCE TRACKING LOG..... 7 - 40



**BLANK PAGE**



# 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.

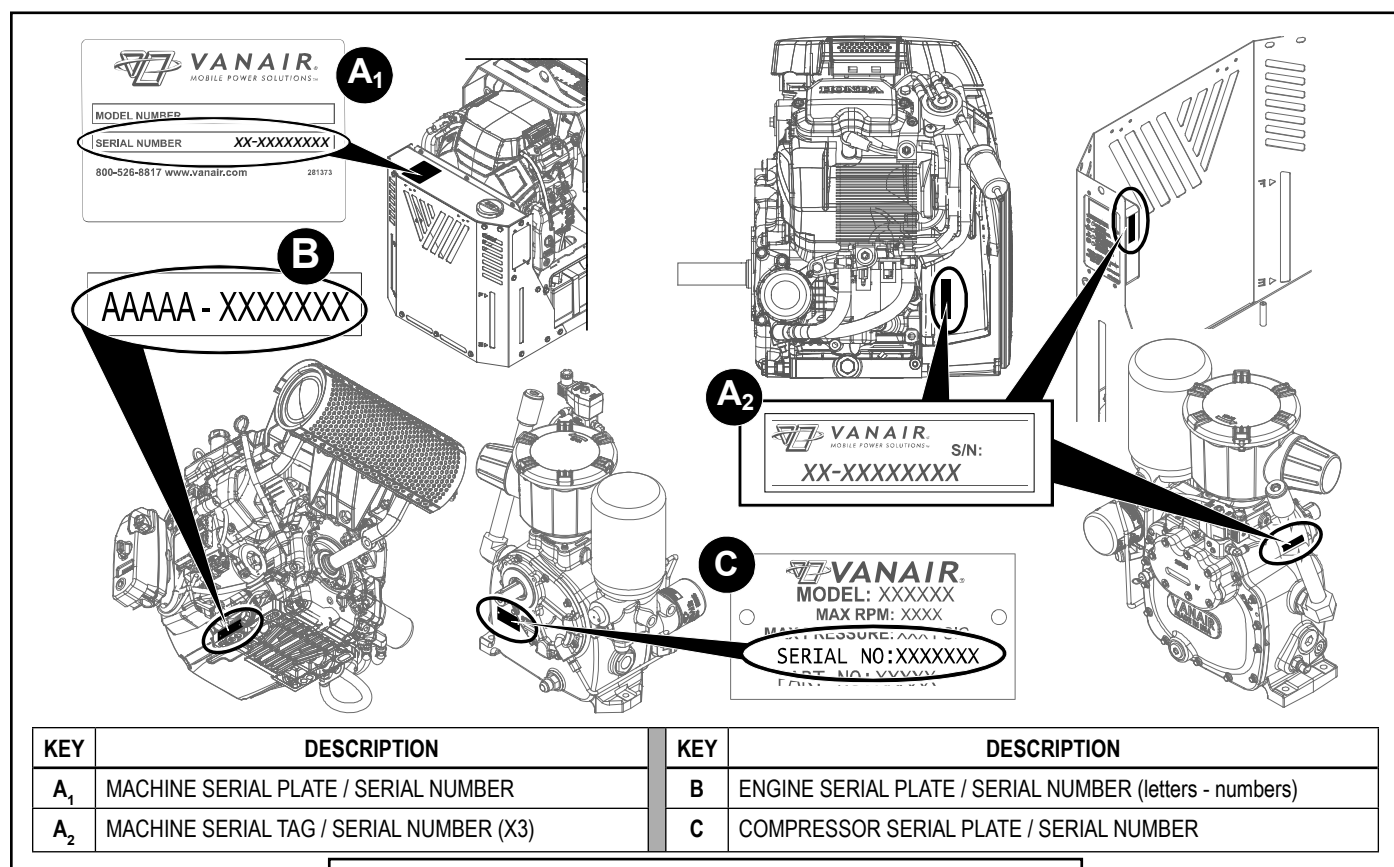
#### 1. Locate the machine's serial number:

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



**Figure W-1: Machine Serial Plate / Serial Number Location**

**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 (1-844-VAN-SERV) 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.**

|                                                                             |
|-----------------------------------------------------------------------------|
| <b>NOTE</b>                                                                 |
| 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 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.

|                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>NOTE</b>                                                                                                                                                                                                                                                                                                                                               |
| 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).

|                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>IMPORTANT</b>                                                                                                                                                        |
| 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:

|                                       |
|---------------------------------------|
| <b>Vanair Manufacturing, Inc.</b>     |
| 10896 West 300 North                  |
| Michigan City, IN 46360               |
| Telephone (toll free): (800) 526-8817 |
| Service (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                        |

# 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.

#### ! DANGER

**DO NOT OPERATE IN AN ENCLOSED SPACE WITHOUT ADEQUATE VENTILATION.**

**DO NOT OPERATE IN AN ENCLOSED SPACE.**

Running any combustion engine in an enclosed space without adequate ventilation may result in Carbon Monoxide (CO) poisoning and may cause overheating, which may result in fire and/or explosion.

**Carbon monoxide (CO) build-up may cause death!**

**Overheating may result in fire and/or explosion resulting in injury/death and equipment damage.**

### 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 [!] 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 bypass 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 7.11, Decal Identification/Location** are located near a component, which is subject to respect in terms of safety precautions. Always heed the information noted on the safety decals.

|                                                                                                             |
|-------------------------------------------------------------------------------------------------------------|
|  <b>WARNING</b>          |
| <b>DO NOT REMOVE OR COVER ANY SAFETY DECAL. Replace any safety decal that becomes damaged or illegible.</b> |

## 1.5 CALIFORNIA PROPOSITION 65 WARNINGS

|                                                                                                    |
|----------------------------------------------------------------------------------------------------|
|  <b>WARNING</b> |
| <b>Discharge from this machine may cause cancer and/or reproductive harm.</b>                      |

Proposition 65 requires businesses to provide warnings to Californians about significant exposures to chemicals that cause cancer, birth defects or other reproductive harm. Exposure to these chemicals may take place when products are acquired or used. Exposure may also occur in homes, workplaces, or other environments in California. By requiring that this information be provided, Proposition 65 enables Californians to make informed decisions about their exposures to these chemicals.

Proposition 65 also prohibits California businesses from knowingly discharging significant amounts of listed chemicals into sources of drinking water.

## 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.



**BLANK PAGE**

# SECTION 2: SPECIFICATIONS

## 2.1 GENERAL INTRODUCTION

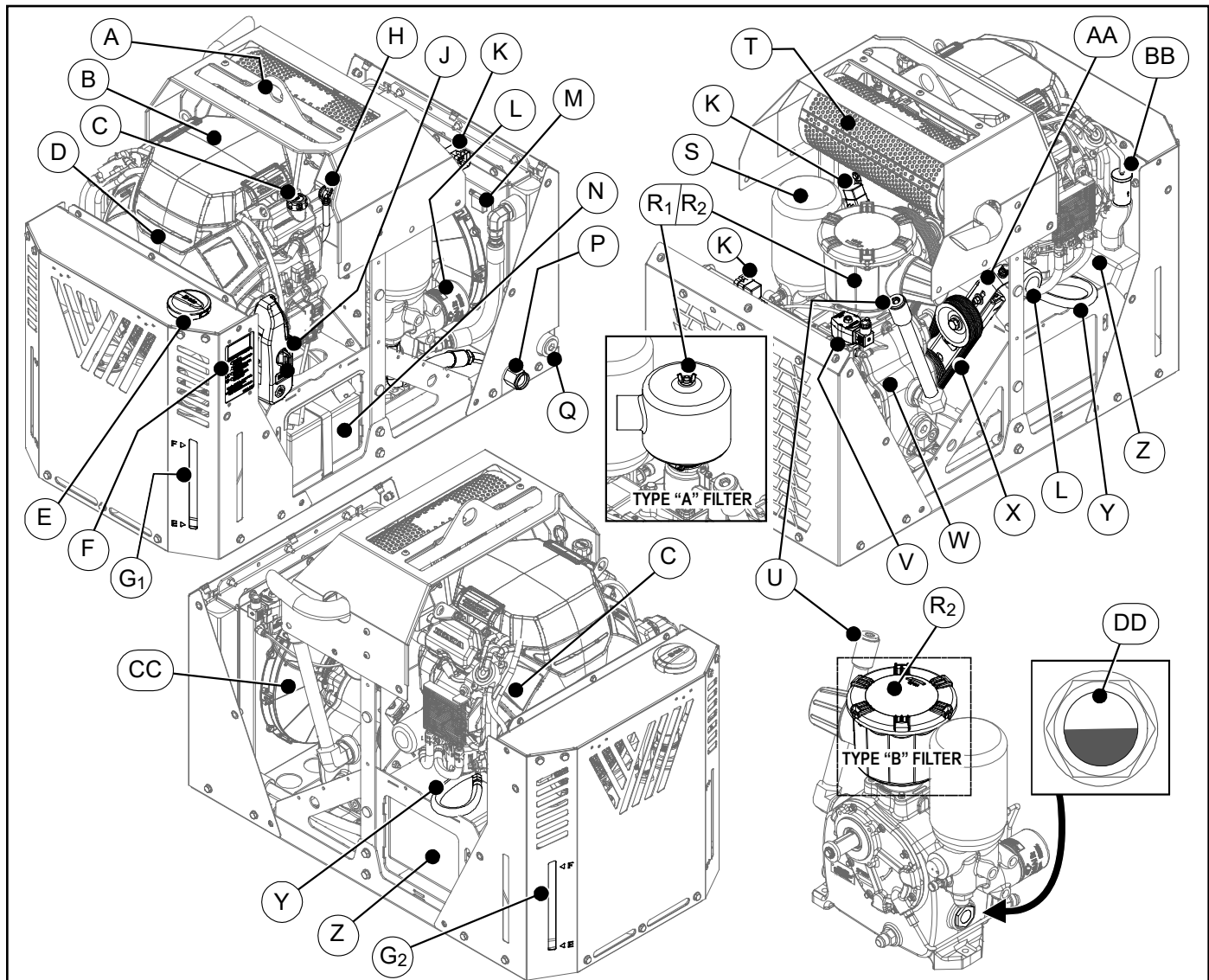
The tables and figures in this section list the specifications (including operational, output and dimensional) of the overall machine. Contact the Vanair® Service Department if additional specifications are needed that cannot be found in this

manual.

Refer to **Figure 2-1** for general machine component locations. For additional information, including measurement specifications, refer to **Figure 3-1** (machine and identification and dimensions) in **Section 3, Installation**.

**TABLE 2A: SPECIFICATIONS FOR VIPER GASOLINE ROTARY SCREW COMPRESSOR**

| GENERAL SYSTEM INFORMATION                                                                                                                  | SPECIFICATION                                                                                       |                 |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------|
| ENGINE:                                                                                                                                     | 24.9 HP (18.6 Kw) @ 3600 RMP (SAE J1349)                                                            |                 |
| Engine Speed:                                                                                                                               | Idle Speed: 1400 RPM Unloaded, to 2500 to 3600 RPM Loaded                                           |                 |
| Engine Oil Capacity:                                                                                                                        | 2.0 Quarts                                                                                          |                 |
| Fuel Consumption:                                                                                                                           | Two (2) GPH at Full Engine Speed / Load                                                             |                 |
| Fuel Tank Capacity:                                                                                                                         | Ten (10) Gallons                                                                                    |                 |
| Fuel Type:                                                                                                                                  | Gasoline <sup>i</sup>                                                                               |                 |
| Operating Temperature Limits:                                                                                                               | +10°F (-7°C) to 120°F (49°C) <sup>xx</sup>                                                          |                 |
| COMPRESSOR:                                                                                                                                 | Single Stage, Oil Injected Rotary Screw                                                             | Altitude Rating |
| Model:                                                                                                                                      | 80 CFM / 100 PSIG                                                                                   | 2,000 ft        |
|                                                                                                                                             | 70 CFM / 125 PSIG                                                                                   | 4,000 ft        |
|                                                                                                                                             | 60 CFM / 150 PSIG                                                                                   | 10,000 ft       |
|                                                                                                                                             | 55 CFM / 175 PSIG                                                                                   | 11,000 ft       |
| Inlet Control:                                                                                                                              | 12VDC                                                                                               |                 |
| Air Filter:                                                                                                                                 | Pleated Paper, Dry Type                                                                             |                 |
| Oil Filter:                                                                                                                                 | Spin-on Style                                                                                       |                 |
| Oil Capacity / Type:                                                                                                                        | Air End - <b>2 Quarts</b> // Machine - <b>4 Quarts</b> (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, Engine Temperature                           |                 |
| <sup>i</sup> For specification and requirements regarding the Honda Gasoline Engine, refer to the Engine Operation Manual.                  |                                                                                                     |                 |
| <sup>xx</sup> With cold weather option kit temperature range expands to: -40 °F (-40 °C). Order cold weather option kit <b>no. 032983</b> . |                                                                                                     |                 |
| <b>NOTE:</b> Refer to <b>Figure 2-1</b> for main component locations.                                                                       |                                                                                                     |                 |
| <b>NOTE:</b> Specifications are subject to change without notice.                                                                           |                                                                                                     |                 |



| KEY            | DESCRIPTION                            | KEY            | DESCRIPTION                                                                            | KEY                                                                                                 | DESCRIPTION                              |
|----------------|----------------------------------------|----------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------|
| A              | LIFTING BAIL                           | L              | COMPRESSOR OIL FILTER ELEMENT                                                          | W                                                                                                   | COMPRESSOR UNIT                          |
| B              | ENGINE AIR FILTER HOUSING              | M              | 30A FUSE                                                                               | X                                                                                                   | BELT DRIVE ASSEMBLY                      |
| C              | ENGINE OIL FILL PORT/CAP               | N              | BATTERY                                                                                | Y                                                                                                   | ENGINE OIL DRAIN TUBE                    |
| D              | ENGINE <sup>‡</sup>                    | P              | SERVICE AIR OUTLET                                                                     | Z                                                                                                   | FUEL TANK                                |
| E              | FUEL FILL PORT/CAP                     | Q              | COMPRESSOR OIL DRAIN PORT                                                              | AA                                                                                                  | TENSION ASSEMBLY                         |
| F              | INSTRUMENT PANEL                       | R <sub>1</sub> | COMPRESSOR AIR FILTER ASSEMBLY - TYPE-A                                                | BB                                                                                                  | ENGINE FUEL FILTER                       |
| G <sub>1</sub> | FUEL LEVEL GAUGE (FRONT)               | R <sub>2</sub> | COMPRESSOR AIR FILTER ASSEMBLY - TYPE-B                                                | CC                                                                                                  | COOLING FAN ASSEMBLY                     |
| G <sub>2</sub> | FUEL LEVEL GAUGE (BACK)                | S              | COMPRESSOR SEPARATOR ELEMENT                                                           | DD                                                                                                  | COMPRESSOR OIL LEVEL GAUGE / SIGHT GLASS |
| H              | ENGINE OIL LEVEL DIPSTICK/GAUGE        | T              | MUFFLER                                                                                | <sup>‡</sup> For information and specifications on the engine, consult the Engine Operation Manual. |                                          |
| J              | IGNITION/ CONTROL PANEL                | U              | COMPRESSOR OIL FILL TUBE                                                               |                                                                                                     |                                          |
| K              | NO/NC WEATHERPROOF RELAY WITH RESISTOR | V              | SOLENOID VALVE (solenoid valve with differ between Type-A and Type-B air filter usage) |                                                                                                     |                                          |

Figure 2-1: Machine Main Component Locations

| TABLE 2B: STANDARD TORQUE VALUES |       |            |
|----------------------------------|-------|------------|
| SIZE                             | GRADE | LUBRICATED |
| 1/4 - 20 UNC                     | 5     | 6 ft-lbs   |
| 5/16 - 18 UNC                    | 5     | 13 ft-lbs  |
| 3/8 - 16 UNC                     | 5     | 23 ft-lbs  |
| 1/2 - 13 UNC                     | 5     | 55 ft-lbs  |
| 3/4 - 10 UNC                     | 5     | 200 ft-lbs |



**BLANK PAGE**

# 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.

**To report missing items, incorrect part numbers, or other discrepancies, contact Vanair® at:**

**Vanair Manufacturing, Inc.**  
10896 West 300 North  
Michigan City, IN 46360  
Telephone (toll free): (800) 526-8817  
Service (toll free): (844) VAN-SERV  
(844) 826-7378  
Telephone: (219) 879-5100  
Service Fax: (219) 879-5335  
[www.vanair.com](http://www.vanair.com)

## 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.

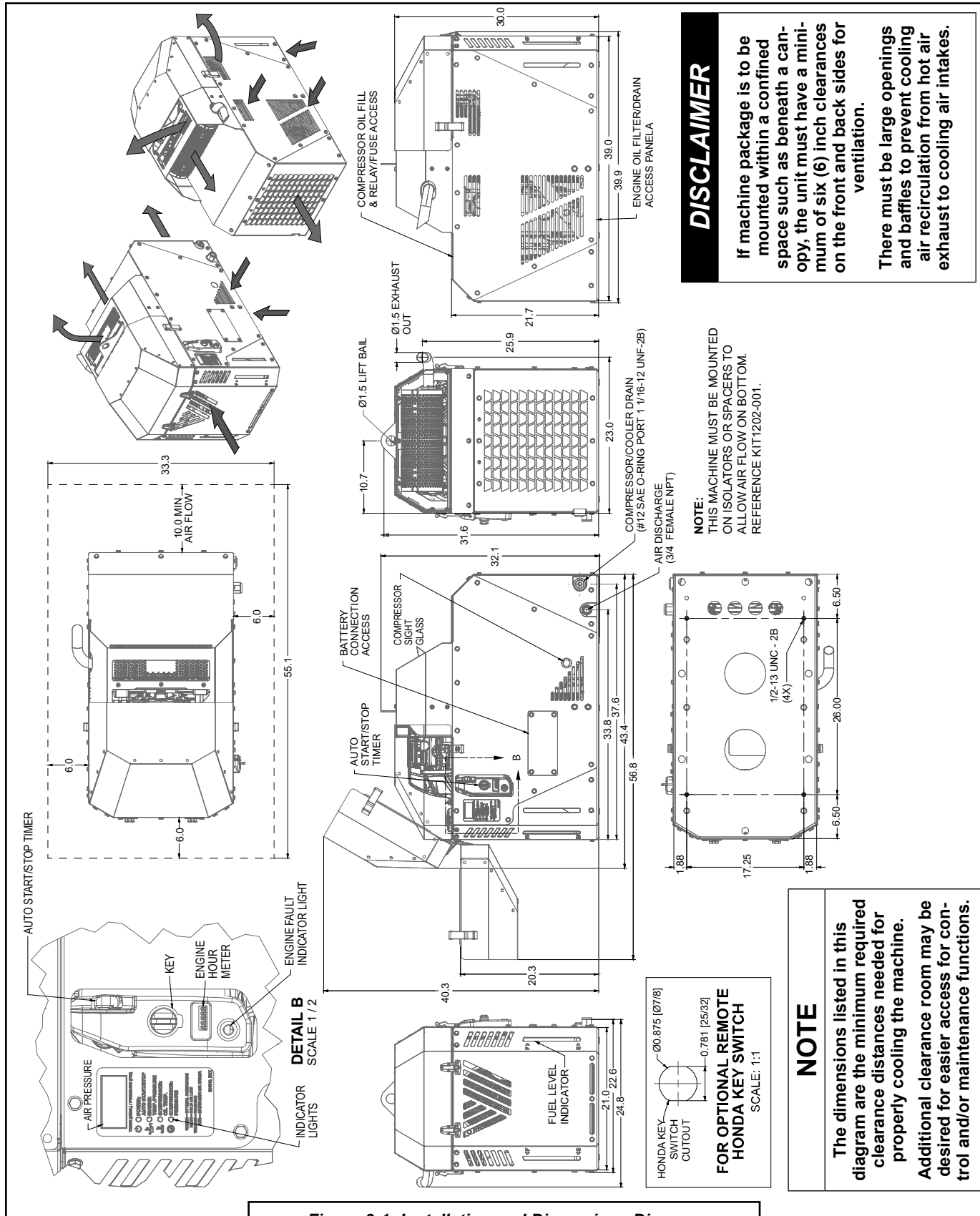
### NOTE

**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**, and the following procedure:

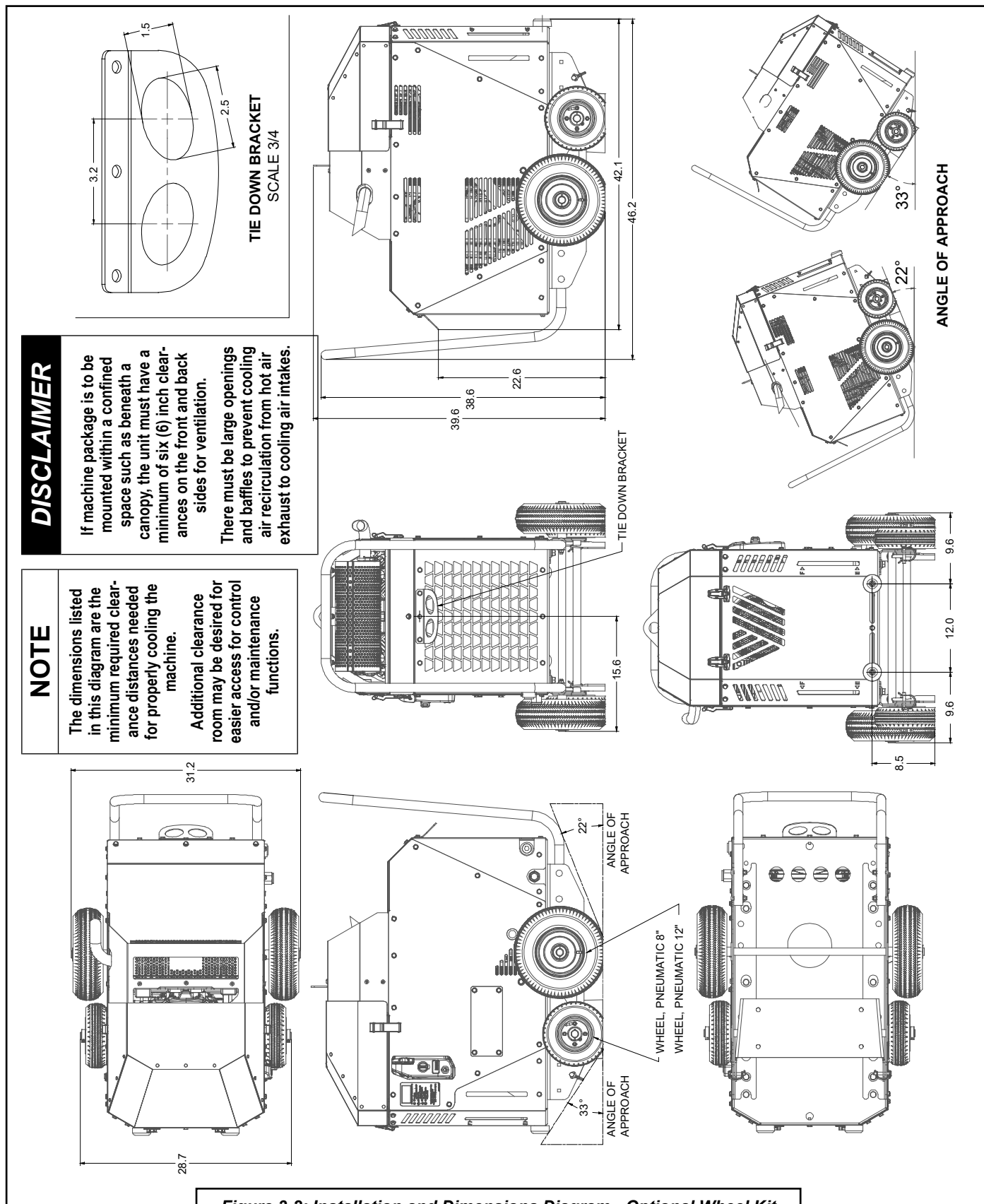
1. Position the machine so that there is no restriction of cooling air through the enclosure a minimum of six (6) inches from front access side; minimum of ten (10) inches from rear side, and six (6) inches from the left side. Cooling air enters the enclosure through the rear panel, passes through the 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 46.5 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 (as provided in kit no. KIT1202-001) 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.



283093ID\_r1\_1





283093ID\_r1\_2



**BLANK PAGE**

# SECTION 4: OPERATION

## 4.1 GENERAL INFORMATION

The Vanair® Viper Gas compressor allows the user to engage variable control settings for machine operation. The goal of variable control setting is to allow the control factors of 1) machine pressure setpoints, 2) timing input, 3) engine RPM, and 4) compressor inlet valve modulation to gain consistent matching between air output and demand.

Once parameters are set 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.

### DANGER

**DO NOT OPERATE IN AN ENCLOSED SPACE WITHOUT ADEQUATE VENTILATION.**

**DO NOT OPERATE IN AN ENCLOSED SPACE.**

**Running any combustion engine in an enclosed space without adequate ventilation may result in Carbon Monoxide (CO) poisoning and may cause overheating, which may result in fire and/or explosion.**

**Carbon monoxide (CO) build-up may cause death!**

**Overheating may result in fire and/or explosion resulting in injury/death and equipment damage.**

### IMPORTANT



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

### NOTE

**If start-up and shut-down procedures are not followed, damage to the system and its components may occur.**

## 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, ON and START.

### 4.2.2 ENGINE FAULT INDICATOR LAMP

When lit indicates when an engine fault is at hand.

### 4.2.3 PRESSURE/TIMER ADJUSTMENT LEVER

This lever adjusts both the pressure operating range setting from 75 up to 175 PSI, and also sets the amount of time the compressor inlet must be closed before the machine enters sleep state. It is also used to turn the Auto Start/Stop function off.

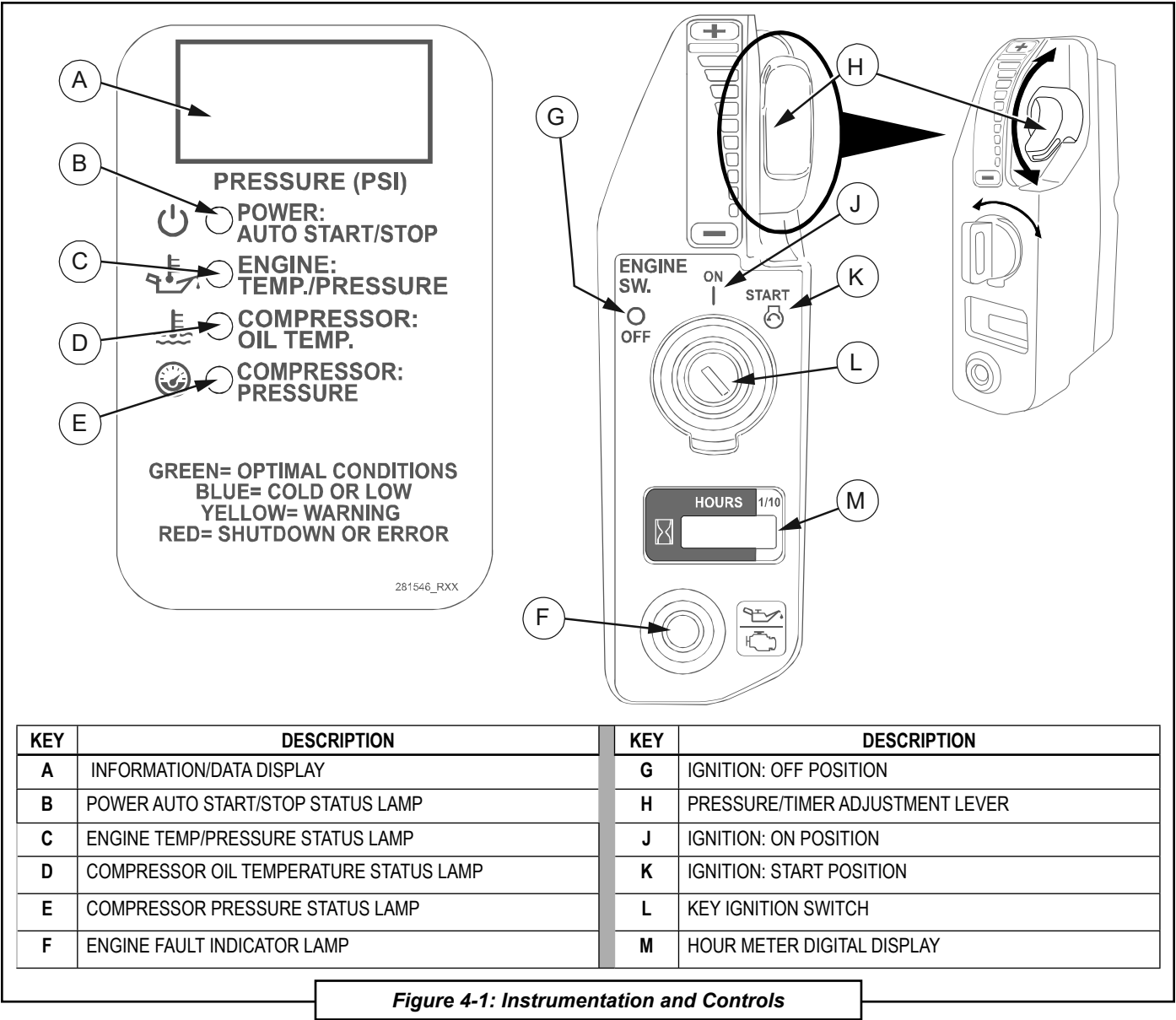
### 4.2.4 HOUR METER

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.

### 4.2.5 INFORMATION/DATA DISPLAY

This panel contains a digital pressure display screen along with five state of control indication lamps for the following indications:

- Power: Auto Start/Stop
- Engine: Temp/Pressure



- Compressor: Oil Temp.
- Compressor: Pressure

Each indication above is gauged with an LED light that changes color in real time with the evolving state of its condition. Refer to **Figure 4-1** for information on lamp color relationships.

4.3 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.
3. Fill fuel tank.
4. Connect air hose/piping to discharge.
5. Close service valve.
6. Start the engine using the key switch.
7. Allow engine to warm up for a few moments until the engine idles smoothly.

## IMPORTANT

In conditions where environment has a high moisture content (humidity, etc.) a precaution should be taken in regard to operating the compressor. refer to **Section 4.7.8** before starting the machine in such conditions.

## 4.4 PROGRAMABLE PARAMETERS

The Viper Gas control system allows the user to edit (set and/or change) the value(s) of operating inputs such as pressure set points and timer function increments.

### 4.4.1 AUTO START/STOP

When the Auto Start/Stop operating mode is enabled, the compressor package will turn off until air demand is needed again. Auto Shutdown (If enabled) will cause *Machine Sleep State*. When the inlet control output is not active, a timer that will count up to the Auto Shutdown Parameter value. Engine will shut down when the timer value is reached.

Refer to **Figure 4-1**. To set the time increment:

1. With the machine off, turn the key to the "ON" position (do not Crank/Start).
2. The screen will display "A" followed by the number of minutes that Auto Stop will occur ("A 0" = Auto Start/Stop OFF). Auto Stop time is now adjustable using the adjustment lever [H].
3. Set time will automatically appear after three seconds (three consecutive dots appear on screen).

### 4.4.2 COMPRESSOR PRESSURE ADJUSTMENT (OPERATING PRESSURE SELECTION)

The compressor pressure adjustment parameter can be edited using the auto start/stop lever while the machine is running.

This parameter adjusts compressor cut-out pressure from 75 PSI (minimum pressure setting) to the maximum system pressure (maximum pressure setting) in increments of five (5) PSI.

1. With the machine running or in sleep mode move the adjustment lever [H] quickly to the top position, then to the bottom position again.
2. "SET" will appear on the screen and flash the current set point.
3. The pressure may now be adjusted (in 5 PSI increments): Move the adjustment lever [H] to the desired pressure. Let go of the lever once the desired pressure is shown.
4. The new setting will automatically apply after three (3) seconds.
5. Use the pressure/timer adjustment lever [H] along with the information/data screen [A] readout to set the pressure.

## 4.5 SHUTDOWN PROCEDURE

1. Close service valve to stop the demand for compressed air.
2. Allow engine to run at idle for a few minutes to cool down.
3. Turn the key switch to the OFF position.

## 4.6 MACHINE CONTROLLER LED STATUS CHART

The controller on the GV3 will indicate with the LED's the status of:

- Engine: Oil Temperature & Pressure
- Compressor: Oil Temperature & Pressure

| COLOR OF LAMP | MACHINE STATUS/CONDITION INDICATED         |
|---------------|--------------------------------------------|
| BLUE          | LOW PRESSURE / LOW TEMPERATURE             |
| GREEN         | OPTIMAL OPERATING CONDITIONS               |
| YELLOW        | HIGH PRESSURE OR HIGH TEMPERATURE          |
| RED           | SUTDOWN (OVER TEMPERATURE / OVER PRESSURE) |

Refer to **Figure 4-1** and **Table 4.6A** through **Table 4.6D** for controller LED status descriptions.

## 4.7 OPERATION GUIDELINES

### 4.7.1 MACHINE ORIENTATION

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

**TABLE 4.6A - GREEN LED STATUS**

| LAMP | Light Description             | Green LED solid | Green LED blink slow          | Green LED blink fast |
|------|-------------------------------|-----------------|-------------------------------|----------------------|
| O    | Power - Auto Start/Stop       | Engine Running  | Power but not running         | 1min prior to sleep  |
| O    | ENGINE TEMP/PRESS             | 110F-230°F      |                               |                      |
| O    | COMPRESSOR TEMPERATURE        | 170F-230°F      |                               |                      |
| O    | COMPRESSOR PRESSURE (100 PSI) | 70-110 PSI      | Pressure Setpoint Adjust Mode |                      |
|      | COMPRESSOR PRESSURE (125 PSI) | 70-135 PSI      | ^^                            |                      |
|      | COMPRESSOR PRESSURE (150 PSI) | 70-160 PSI      | ^^                            |                      |
|      | COMPRESSOR PRESSURE (175 PSI) | 70-185 PSI      | ^^                            |                      |

**TABLE 4.6B - BLUE LED STATUS**

| LAMP | Light Description       | Blue LED solid | Blue LED blink slow             |
|------|-------------------------|----------------|---------------------------------|
| O    | Power - Auto Start/Stop | Sleep state    | Waiting for blowdown            |
| O    | ENGINE TEMP/PRESS       | 40-109°F       | <0-39°F, low speed no auto stop |
| O    | COMPRESSOR TEMPERATURE  | 60-169°F       | <60°F, no inlet output          |

**TABLE 4.6C - YELLOW LED STATUS**

| LAMP | Light Description                      | Yellow LED solid | Yellow blink Slow | Yellow LED blink fast            |
|------|----------------------------------------|------------------|-------------------|----------------------------------|
| O    | Power - Auto Start/Stop                |                  |                   | 3 sec prior to start, sound horn |
| O    | ENGINE TEMP/PRESS                      | 261°F-270°F      |                   |                                  |
| O    | COMPRESSOR TEMPERATURE                 |                  | 231F-244F         |                                  |
| O    | COMPRESSOR PRESSURE (100 PSI Setpoint) | 0-69 PSI         | 111-130 PSI       |                                  |
|      | COMPRESSOR PRESSURE (125 PSI Setpoint) | 0-69 PSI         | 136-160 PSI       |                                  |
|      | COMPRESSOR PRESSURE (150 PSI Setpoint) | 0-69 PSI         | 161-180 PSI       |                                  |
|      | COMPRESSOR PRESSURE (175 PSI Setpoint) | 0-69 PSI         | 186-194 PSI       |                                  |

**TABLE 4.6D - RED LED STATUS**

| LAMP | Light Description                      | Red LED Solid       | RED LED blink slow             | RED LED blink Fast             |
|------|----------------------------------------|---------------------|--------------------------------|--------------------------------|
| O    | Power - Auto Start/Stop                | Error               | Any shutdown                   | Low voltage                    |
| O    | ENGINE TEMP/PRESS                      | >270°F              | Eng oil press shut-down        |                                |
| O    | COMPRESSOR TEMPERATURE                 |                     | >245° = Shutdown               | Sensor error, do not run/start |
| O    | COMPRESSOR PRESSURE (100 PSI Setpoint) | >130 PSI = Shutdown | Sensor error, do not run/start |                                |
|      | COMPRESSOR PRESSURE (125 PSI Setpoint) | >155 PSI = Shutdown | Sensor error, do not run/start |                                |
|      | COMPRESSOR PRESSURE (150 PSI Setpoint) | >175 PSI = Shutdown | Sensor error, do not run/start |                                |
|      | COMPRESSOR PRESSURE (175 PSI Setpoint) | >195 PSI = Shutdown | Sensor error, do not run/start |                                |

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

#### 4.7.2 ENCLOSURE INTACT

The Viper Gas Compressor 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.

#### 4.7.3 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.

#### 4.7.4 COOLING SYSTEM

The Viper Gas cooling system consists of an integral engine cooling fan for air/air engine, and air/oil cooler 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.

#### 4.7.5 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.

#### 4.7.6 COLD WEATHER OPTION

Consult **Section 6.2.2** for cold weather operation information.

#### 4.7.7 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 6.2, Extreme Condition Operation**, for additional information on variable ambient operating conditions, and adjustment adaptations that can be made accordingly.

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

A serious condition may occur in operating environments that contain high levels of moisture, whereby condensation can occur within the oil system, and possibly lead to emulsification of the lubricant. Emulsification occurs when the system's oil absorbs moisture present in the operation system via condensation.

If the condition persists, consider changing to a different type of lubricant (consult supplier).

Consult the information in **Table 4A**, and follow the instructions given in **Section 4.7.8.1** for preventative and corrective actions necessary to

**TABLE 4A - HIGH MOISTURE CONDITION OPERATION**

| Symptom                                                                                                                                                                                                                                                     | Cause                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Prevention / Corrective Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Emulsification of oil in compressor system: <ul style="list-style-type: none"> <li>Compressor oil is milky white in color</li> <li>Compressor oil is broken down and lacks lubricity.</li> <li>Compressor oil may develop solid chunks or clumps</li> </ul> | <p><b>Operating the compressor system for short periods of time:</b></p> <ul style="list-style-type: none"> <li>Short cycling prevents the temperature of the oil from attaining a high enough temperature capable of vaporizing the moisture droplets.</li> </ul> <p><b>Operating the compressor system unloaded without air flow from the service line for long periods of time:</b></p> <ul style="list-style-type: none"> <li>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.</li> </ul> <p><b>The air filter is saturated with water:</b></p> <ul style="list-style-type: none"> <li>This forces moisture to be ingested by the compressor.</li> </ul> <p><b>Any of the above causes will be exacerbated in especially humid environments.</b></p> | <p><b>RECOMMENDED CHANGES:</b></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"> <li>Raise the average temperature of the compressor oil.</li> <li>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.</li> </ul> <p><b>REPAIR/MAINTENANCE:</b></p> <p>Refer to Section 5 of the Operator's Manual for inspection, cleaning, and repair instructions.</p> <ol style="list-style-type: none"> <li>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.</li> <li>Check that the separator element is in good, working condition.</li> <li>Check that the scavenge line is working properly.</li> </ol> <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> |

take for high moisture ambient environment operation. See also **Section 6.3.1** in the Troubleshooting Section.

#### 4.7.8.1 PREVENTION OF EMULSIFICATION

1. Start the machine normally.
2. Do not immediately engage service air when full load is reached; allow the system to first warm up to 180°F. This warm-up period allows the moisture within the system to vaporize.
3. After temperature reaches 180°F, open service valve and discharge air for approximately ten (10) minutes to purge the system of moisture vapor.

#### 4.7.8.2 INFREQUENT USE

In some installations the compressor may not be regularly used. In order to ensure the compressor system is maintained in working order, the compressor should be started and run at least once per month. Follow the procedure outlined in **Section 4.7.8.1** on a once per month basis.

Be sure to follow all fluid and filter maintenance as outlined in this manual following the recommended change intervals. In cases whereby the machine is scheduled to be idle for long periods of time, consult **Section 5.6, Storage and Intermittent Use** for long idle preparation.

#### 4.7.9 EXTREME CONDITION MACHINE APPLICATIONS

When operating in extreme hot or cold conditions, extra attention should be given to any indications that could lead to a serious problem. Machine review and maintenance check schedules should be more frequent than the normal suggestions given in **Section 5, Tables 5A and 5B** (Routine Maintenance Schedules for Engine and Compressor, respectively).

For additional information concerning extreme operating conditions and steps to take to optimize machine performance, refer to **Section 6.2, Extreme Condition Operation**, in **Section 6, Troubleshooting**.



# SECTION 5: MAINTENANCE

## 5.1 GENERAL INFORMATION

A strict maintenance program is the key to long life for the Viper Gas. Below is a program that, when adhered to, should keep the package in top operating condition. Refer to **Section 5.4, Parts Replacement and Adjustment Procedures** in this section of the manual for detailed descriptions of specific compressor system components. The following table lists the main topics in order of appearance for this section:

|                                                                                                  |
|--------------------------------------------------------------------------------------------------|
|  <b>DANGER</b>  |
| Disconnect the battery before performing any non-routine maintenance functions on the Viper Gas. |

|                                                                                                    |
|----------------------------------------------------------------------------------------------------|
|  <b>WARNING</b> |
| Follow all applicable safety recommendations as outlined in Section 1: Safety of this manual.      |

|                                                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>WARNING</b>                                                                           |
| <b>DO NOT</b> remove caps, plugs and/or other components when compressor is running or pressurized. Stop compressor and de-pressurize system prior to maintenance of system. |
| Wear personal protective equipment such as gloves, work boots, and eye and hearing protection as required for the task at hand.                                              |

|                                                                                                    |
|----------------------------------------------------------------------------------------------------|
| <b>NOTE</b>                                                                                        |
| Operating the machine package in a severe environment may require more frequent service intervals. |

## 5.2 ROUTINE MAINTENANCE SCHEDULE

|                                                                                                            |
|------------------------------------------------------------------------------------------------------------|
| <b>IMPORTANT</b>                                                                                           |
| Follow and perform the prescribed routine maintenance schedule at the recommended intervals (continued)... |

### IMPORTANT (continued)

**Failure to follow the prescribed 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.**

Vanair® Manufacturing, Inc., considers the maintenance schedule given in **Table 5B: Routine Maintenance Schedule**, 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.

Vanair especially requires that a consistent service regimen be established for engine oil changes, and engine and compressor air filter servicing. The schedule given in **Table 5A** (at a glance), and **Table 5B** provide a suggested regimen for keeping the Viper Gas in top running condition. The service schedule given in **Table 5B** 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. There is also a corresponding service log (**Table 5B**) to assist the customer in establishing a maintenance routine log.

For assistance in obtaining routine maintenance or replacement parts, consult **Table 5C, 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 package was purchased. If, for any reason, parts are not available in this manner, they can be purchased from Vanair directly.



### IMPORTANT

Table 5A: Recommended Spare Parts List, in Section 5, contains items that require maintenance on a routine basis, and also those parts that may require maintenance over the course of the Viper Gas 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 Viper Gas package that is not listed in Table 5A become damaged or inoperable, use the various sub-sections in Section 5 to best locate and identify the damaged part(s).

### VANAIR MANUFACTURING, INC.

10896 West 300 N.

Michigan City, IN 46360

Telephone: (800) 526-8817

(219) 879-5100

Service: (844) VAN-SERV

(844) 826-7378

Service Fax: (219) 879-5335

Parts Fax: (219) 879-5340

Sales Fax: (219) 879-5800

[www.vanair.com](http://www.vanair.com)

**TABLE 5A: GAS VIPER GV3 - MAINTENANCE SCHEDULE AT A GLANCE**

| TASK / DESCRIPTION                                                                                      | SERVICE INTERVAL |                     |                   |           |           |
|---------------------------------------------------------------------------------------------------------|------------------|---------------------|-------------------|-----------|-----------|
|                                                                                                         | DAILY            | 50 HOUR<br>BREAK-IN | ANNUALLY OR EVERY |           |           |
|                                                                                                         |                  |                     | 100 HOURS         | 200 HOURS | 500 HOURS |
| Check - Engine & Compressor oil levels                                                                  | ■                |                     |                   |           |           |
| Check - Coolant recovery tank level                                                                     | ■                |                     |                   |           |           |
| Inspect - Unit for Oil leaks or damage                                                                  | ■                |                     |                   |           |           |
| Inspect - Belt drive tension                                                                            | ■                |                     |                   |           |           |
| Inspect - Ventilation openings and surroundings                                                         | ■                |                     |                   |           |           |
| Inspect - Engine Cooler fins                                                                            | ■                |                     |                   |           |           |
| Change - Engine Oil, VAN AIR P/N: 276041 (2x)<br>*Engine Oil Capacity - IGX800: 1.9 QT / IGX700: 1.8 QT |                  | ■                   |                   |           |           |
| Change - Engine Oil Filter, VAN AIR P/N: 281452-26                                                      |                  | ■                   |                   |           |           |
| Inspect - Engine Fuel Lines & Connections                                                               |                  | ■                   |                   |           |           |
| Change - Engine Oil, VAN AIR P/N: 276041 (2x)<br>*Engine Oil Capacity - IGX800: 1.9 QT / IGX700: 1.8 QT |                  |                     | ■                 |           |           |
| Change - Engine Oil Filter, VAN AIR P/N: 281452-26                                                      |                  |                     | ■                 |           |           |
| Inspect - Engine Fuel Lines & Connections                                                               |                  |                     | ■                 |           |           |
| Inspect/Clean - Engine & Compressor Air Filters                                                         |                  |                     | ■                 |           |           |
| Change - Engine Fuel Filter Element, VAN AIR P/N: 281452-01                                             |                  |                     |                   | ■         |           |
| Change - Compressor Air Filter, VAN AIR P/N: 281414-01                                                  |                  |                     |                   | ■         |           |
| Inspect - Engine Valve Clearance.                                                                       |                  |                     |                   | ■         |           |
| Adjust - Engine Valve Clearance if needed. Replace SHAFT, ROCKER ARM if damaged. VAN AIR P/N: 281452-31 |                  |                     |                   | ■         |           |
| Inspect - Compressor Cooler Hoses                                                                       |                  |                     |                   | ■         |           |
| Inspect - Unit mounting bolts/isolator condition                                                        |                  |                     |                   | ■         |           |
| Inspect - Battery cables and connections                                                                |                  |                     |                   | ■         |           |
| Inspect - Engine Spark Plugs                                                                            |                  |                     |                   | ■         |           |
| Blow out the Compressor Oil Cooler                                                                      |                  |                     |                   | ■         |           |
| Change - Compressor Oil, VAN AIR P/N: 264626-1GAL                                                       |                  |                     |                   |           | ■         |
| Change - Compressor Air Filter, VAN AIR P/N: 281414-01                                                  |                  |                     |                   |           | ■         |
| Change - Compressor Oil Separator Element, VAN AIR P/N: 273080                                          |                  |                     |                   |           | ■         |
| Change - Compressor Oil Filter, VAN AIR P/N: 266801                                                     |                  |                     |                   |           | ■         |
| Change - Belt 80 CFM Unit, VAN AIR P/N: 281454 // Belt 70, 60 & 55 CFM Units, VAN AIR P/N: 282725       |                  |                     |                   |           | ■         |
| Change - Engine Air Filter Element, VAN AIR P/N: 281452-03                                              |                  |                     |                   |           | ■         |
| Change - Engine Air PRE-Filter Element, VAN AIR P/N: 281452-02                                          |                  |                     |                   |           | ■         |
| Replace - Engine Spark Plugs                                                                            |                  |                     |                   |           | ■         |
| Inspect - Belt System Tensioners                                                                        |                  |                     |                   |           | ■         |

| ENGINE MAINTENANCE - KIT 1482: |           |     | COMPRESSOR 1YR/500HRS MAINTENANCE - KIT 1483: |             |     | COMPRESSOR 500HR MAINTENANCE - KIT 1221: |             |     |
|--------------------------------|-----------|-----|-----------------------------------------------|-------------|-----|------------------------------------------|-------------|-----|
| PART DESCRIPTION               | ORDER NO. | QTY | PART DESCRIPTION                              | ORDER NO.   | QTY | PART DESCRIPTION                         | ORDER NO.   | QTY |
| Oil, Honda motor 10W-30 (1 qt) | 276041    | 2   | Oil, Vanguard compressor (1 gal)              | 264626-1GAL | 2   | Oil, Vanguard compressor (1 gal)         | 264626-1GAL | 2   |
| Filter, fuel Honda IGX800      | 281452-01 | 1   | Filter, compressor oil                        | 266801      | 1   | Element, air filter 80 CFM               | 265546-004  | 1   |
| Element, air pre-filter        | 281452-02 | 1   | Separator, air/oil spin on                    | 273080      | 1   | Filter, compressor oil                   | 266801      | 1   |
| Element, primary air filter    | 281452-03 | 1   | Filter, air element GV3                       | 281414-01   | 1   | Separator, air/oil spin on               | 273080      | 1   |
| Filter, oil Honda              | 281452-26 | 1   |                                               |             |     |                                          |             |     |

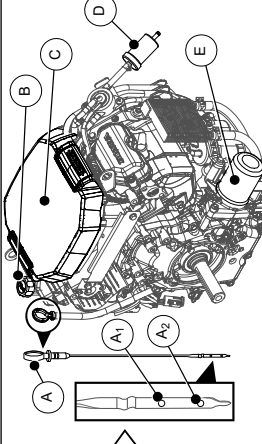
NOTE: Refer to Table 5B and Table 5C for additional maintenance information.



TABLE 5B: VIPER MAINTENANCE  
SCHEDULE INTERVALS

| SERVICE INTERVAL- Refer to<br>IMPORTANT under Table 5B                                                                                                                                                                                                                                              | ANNUALLY OR<br>EVERY... |                |           |           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------------|-----------|-----------|
|                                                                                                                                                                                                                                                                                                     | BREAK-IN PERIOD         |                |           |           |
|                                                                                                                                                                                                                                                                                                     | DAILY                   | First 50 Hours | 100 HOURS | 200 HOURS |
| <b>⚠ WARNING</b><br><br>Before performing maintenance:<br>Shut down machine, relieve all system<br>pressure and lock out all power, as per<br>the Safety Section of this manual.<br>Always clearly tag the start-up instru-<br>mentation against accidental system<br>start-ups during maintenance. |                         |                |           |           |

**REFERENCE:**  
Figure for  
Engine Routine  
Maintenance  
Component  
Locations



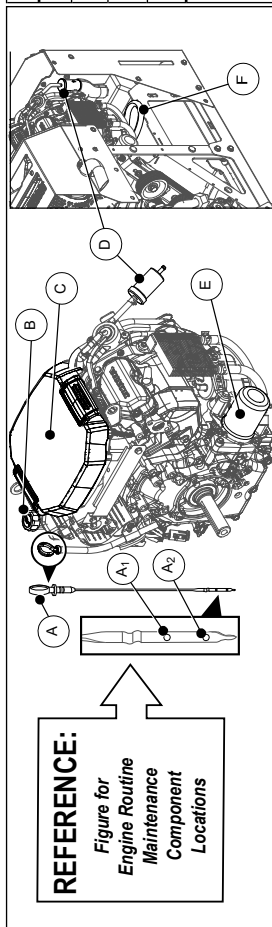
| TABLE 5C: ROUTINE MAINTENANCE REPLACEMENT KITS - COMPRESSOR                                                                                                                                                  |                                                                                                         |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----|
| KEY NO.                                                                                                                                                                                                      | DESCRIPTION                                                                                             | QTY |
| KIT1482                                                                                                                                                                                                      | Kit, Engine Service - filters [air pre-cleaner, air, oil, fuel], and motor oil [x2 qt]                  | 1   |
| KIT1212                                                                                                                                                                                                      | Kit, Compressor First 50 Hour Service - Vanguard™ oil [x2 gal], oil filter                              | 1   |
| KIT1221                                                                                                                                                                                                      | Kit, Compressor 500 Hour Service - Type "A" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1   |
| KIT1483                                                                                                                                                                                                      | Kit, Compressor 500 Hour Service - Type "B" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1   |
| <b>NOTE:</b> Refer to <b>Section 7, Table 7A</b> for kit content item identification, and additional replacement parts items.                                                                                |                                                                                                         |     |
| <b>IMPORTANT:</b> 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. |                                                                                                         |     |
| <b>PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.</b>                                                                                                                                     |                                                                                                         |     |

| KEY                                                                                                                                                                                                 | DESCRIPTION                     | KEY | DESCRIPTION               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-----|---------------------------|
| A                                                                                                                                                                                                   | ENGINE OIL LEVEL GAUGE DIPSTICK | C   | ENGINE AIR FILTER HOUSING |
| A <sub>1</sub>                                                                                                                                                                                      | OIL LEVEL MARK - HIGH           | D   | ENGINE FUEL FILTER        |
| A <sub>2</sub>                                                                                                                                                                                      | OIL LEVEL MARK - LOW            | E   | ENGINE OIL FILTER         |
| B                                                                                                                                                                                                   | ENGINE OIL FILL PORT/CAP        | F   | ENGINE OIL DRAIN HOSE     |
| <b>NOTE:</b> The figure shown here is for reference to the engine's main routine maintenance check points. For full instruction on engine maintenance, please refer to the Engine Operation Manual. |                                 |     |                           |

| ACTION TO TAKE / REFERENCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |   |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---|---|
| KEY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | TASK DESCRIPTION           |   |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            |   |   |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Check engine oil level     | ■ | ■ |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Check compressor oil level | ■ | ■ |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            |   |   |
| <div>REFERENCE:</div> <div>• Refer to the Engine Reference Figure at the top of the page.</div> <div>PROCEDURE:</div> <div>Refer to the Engine Operation Manual for engine oil level check procedure. For engine oil top off/re-<br/>placement order engine oil no. 276041 (sold in quart containers [engine capacity = 1.7 to 1.9 qts]). Note<br/>that the Engine Service Kit no. KIT1482 includes two quarts of motor oil.</div> <div><div></div><div>REFERENCE (TYPICAL):</div><div><ul style="list-style-type: none"><li>• Oil fill port [◀▶]</li><li>• Oil sight glass</li><li>• Optimal oil level range [★] <sup>z</sup></li></ul></div><div><div><sup>z</sup> Optimal oil level is between 1/4 - 3/4 of sight glass. <b>DO NOT TOP OFF AT THE FILL PORT / DO NOT OVERFILL</b> - use the sight glass only to determine proper compressor oil level.</div></div><div>...continued next page...</div></div> |                            |   |   |
| Continued on next page                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                            |   |   |

**TABLE 5B: VIPER MAINTENANCE  
SCHEDULE INTERVALS**

|                                                                                                                                                                                                                                                                                                     | SERVICE INTERVAL- Refer to<br>IMPORTANT under Table 5B |                                   |                         |           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-----------------------------------|-------------------------|-----------|
|                                                                                                                                                                                                                                                                                                     | DAILY                                                  | BREAK-IN PERIOD<br>First 50 Hours | ANNUALLY OR<br>EVERY... | 500 HOURS |
| <b>▲ WARNING</b><br><br>Before performing maintenance:<br>Shut down machine, relieve all system<br>pressure and lock out all power, as per<br>the Safety Section of this manual.<br>Always clearly tag the start-up instru-<br>mentation against accidental system<br>start-ups during maintenance. |                                                        |                                   |                         |           |



| TABLE 5C: ROUTINE MAINTENANCE REPLACEMENT KITS - COMPRESSOR                                                                                                                                           |                                                                                                         |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----|
| KEY NO.                                                                                                                                                                                               | DESCRIPTION                                                                                             | QTY |
| KIT1482                                                                                                                                                                                               | Kit, Engine Service - filters [air pre-cleaner, air, oil, fuel], and motor oil [x2 qt]                  | 1   |
| KIT1212                                                                                                                                                                                               | Kit, Compressor First 50 Hour Service - Vanguard™ oil [x2 gal], oil filter                              | 1   |
| KIT1221                                                                                                                                                                                               | Kit, Compressor 500 Hour Service - Type "A" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1   |
| KIT1483                                                                                                                                                                                               | Kit, Compressor 500 Hour Service - Type "B" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1   |
| NOTE: Refer to Section 7, Table 7A for kit content item identification, and additional replacement parts items.                                                                                       |                                                                                                         |     |
| IMPORTANT: 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. |                                                                                                         |     |
| PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.                                                                                                                                     |                                                                                                         |     |

| KEY            | DESCRIPTION                     | KEY | DESCRIPTION               |
|----------------|---------------------------------|-----|---------------------------|
| A              | ENGINE OIL LEVEL GAUGE DIPSTICK | C   | ENGINE AIR FILTER HOUSING |
| A <sub>1</sub> | OIL LEVEL MARK - HIGH           | D   | ENGINE FUEL FILTER        |
| A <sub>2</sub> | OIL LEVEL MARK - LOW            | E   | ENGINE OIL FILTER         |
| B              | ENGINE OIL FILL PORT/CAP        | F   | ENGINE OIL DRAIN HOSE     |

NOTE: The figure shown here is for reference to the engine's main routine maintenance check points. For full instruction on engine maintenance, please refer to the Engine Operation Manual.

**ACTION TO TAKE / REFERENCE**

...continued from previous page...

**PROCEDURE:**

Remove fill port cap. Add oil as necessary at the oil fill port, but take caution to fill slowly in order to avoid overfill. Never top off at the fill port tube - use the sight glass oil range shown above [★]. DO NOT mix different oil types.

**▲ WARNING**

Do not remove the radiator cap while coolant is hot. When cool to the touch, rotate cap to the first stop to allow excess pressure to escape. Then remove cap completely.

If overheating should occur, escaping pressurized steam may be present from the radiator or recovery tank. Severe burns can result in contact with this steam.

**PROCEDURE:**

Add a mixture of 50/50 antifreeze if low. Recovery tank is marked with a FULL and LOW level indicator; proper level is between these lines.

Do not overfill recovery tank. For coolant change procedures refer to the Engine Operation Manual.

**PROCEDURE:**

Inspect the unit for any signs of leaks or damage. Remedy by tightening any plugs, connections, etc.

*Continued on next page*

**Continued on next page**



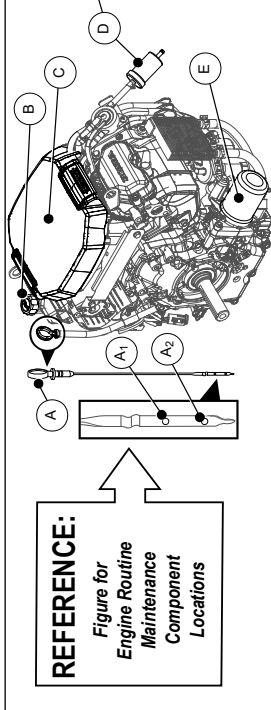
| TABLE 5B: VIPER MAINTENANCE SCHEDULE INTERVALS |                                         |                                                      |                                   |                      | TABLE 5C: ROUTINE MAINTENANCE REPLACEMENT KITS - COMPRESSOR |                                                                                                                                                                                                                                                                                                                                             |                                                                                                         |                                                                                                         |   |
|------------------------------------------------|-----------------------------------------|------------------------------------------------------|-----------------------------------|----------------------|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|---|
| KEY                                            | TASK DESCRIPTION                        | SERVICE INTERVAL - Refer to IMPORTANT under Table 5B |                                   |                      |                                                             | KEY NO.                                                                                                                                                                                                                                                                                                                                     | DESCRIPTION                                                                                             | QTY                                                                                                     |   |
|                                                |                                         | DAILY                                                | BREAK-IN PERIOD<br>First 50 Hours | ANNUALLY OR EVERY... |                                                             |                                                                                                                                                                                                                                                                                                                                             |                                                                                                         |                                                                                                         |   |
| 9                                              | Change engine oil filter                | ■                                                    | ■                                 | ■                    | ■                                                           | KIT1482                                                                                                                                                                                                                                                                                                                                     | Kit, Engine Service - filters [air pre-cleaner, air, oil, fuel], and motor oil [x2 qt]                  | 1                                                                                                       |   |
|                                                |                                         |                                                      |                                   |                      |                                                             |                                                                                                                                                                                                                                                                                                                                             | KIT1212                                                                                                 | Kit, Compressor First 50 Hour Service - Vanguard™ oil [x2 gal], oil filter                              | 1 |
| 10                                             | Inspect engine fuel lines & connections | ■                                                    | ■                                 | ■                    | ■                                                           | KIT1221                                                                                                                                                                                                                                                                                                                                     | Kit, Compressor 500 Hour Service - Type "A" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1                                                                                                       |   |
|                                                |                                         |                                                      |                                   |                      |                                                             |                                                                                                                                                                                                                                                                                                                                             | KIT1483                                                                                                 | Kit, Compressor 500 Hour Service - Type "B" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1 |
| 11                                             | Inspect/clean engine air filters        | ■                                                    | ■                                 | ■                    | ■                                                           | NOTE: Refer to Section 7, Table 7A for kit content item identification, and additional replacement parts items.                                                                                                                                                                                                                             |                                                                                                         |                                                                                                         |   |
|                                                |                                         |                                                      |                                   |                      |                                                             | IMPORTANT: 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.                                                                                                                                       |                                                                                                         |                                                                                                         |   |
|                                                |                                         |                                                      |                                   |                      |                                                             | PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.                                                                                                                                                                                                                                                                           |                                                                                                         |                                                                                                         |   |
|                                                |                                         |                                                      |                                   |                      |                                                             | ACTION TO TAKE / REFERENCE                                                                                                                                                                                                                                                                                                                  |                                                                                                         |                                                                                                         |   |
|                                                |                                         |                                                      |                                   |                      |                                                             | REFERENCE:                                                                                                                                                                                                                                                                                                                                  |                                                                                                         |                                                                                                         |   |
|                                                |                                         |                                                      |                                   |                      |                                                             | • Refer to the Engine Reference Figure at the top of the page.                                                                                                                                                                                                                                                                              |                                                                                                         |                                                                                                         |   |
|                                                |                                         |                                                      |                                   |                      |                                                             | PROCEDURE:                                                                                                                                                                                                                                                                                                                                  |                                                                                                         |                                                                                                         |   |
|                                                |                                         |                                                      |                                   |                      |                                                             | Refer to Table 7A in Section 7 to obtain order numbers for ordering replacement component parts (oil filter, replacement oil) separately. For full Engine Service Kit no. KIT1482. Refer to the Engine Operation Manual for engine oil filter replacement procedure.                                                                        |                                                                                                         |                                                                                                         |   |
|                                                |                                         |                                                      |                                   |                      |                                                             | PROCEDURE:                                                                                                                                                                                                                                                                                                                                  |                                                                                                         |                                                                                                         |   |
|                                                |                                         |                                                      |                                   |                      |                                                             | Inspect all fuel lines and connections. Tighten if necessary. Refer to the Engine Operation Manual for additional details. If necessary replace fuel filter (refer to Table 7A in Section 7).                                                                                                                                               |                                                                                                         |                                                                                                         |   |
|                                                |                                         |                                                      |                                   |                      |                                                             | REFERENCE:                                                                                                                                                                                                                                                                                                                                  |                                                                                                         |                                                                                                         |   |
|                                                |                                         |                                                      |                                   |                      |                                                             | • Refer to the Engine Reference Figure at the top of the page.                                                                                                                                                                                                                                                                              |                                                                                                         |                                                                                                         |   |
|                                                |                                         |                                                      |                                   |                      |                                                             | PROCEDURE:                                                                                                                                                                                                                                                                                                                                  |                                                                                                         |                                                                                                         |   |
|                                                |                                         |                                                      |                                   |                      |                                                             | Refer to the Engine Operation Manual for engine air filter inspection procedure. Should the filter(s) need replacement, order engine pre-filter replacement no. 281452-02, and engine air filter replacement no. 281452-03. Note that the full Engine Service Kit no. KIT1482 also comes with both a pre-filter and air filter replacement. |                                                                                                         |                                                                                                         |   |
|                                                |                                         |                                                      |                                   |                      |                                                             | Continued on next page                                                                                                                                                                                                                                                                                                                      |                                                                                                         |                                                                                                         |   |

**TABLE 5B: VIPER MAINTENANCE  
SCHEDULE INTERVALS**

| SERVICE INTERVAL- Refer to<br>IMPORTANT under Table 5B | ANNUALLY OR<br>EVERY... |                |                                     |
|--------------------------------------------------------|-------------------------|----------------|-------------------------------------|
|                                                        | DAILY                   | First 50 Hours | 100 HOURS<br>200 HOURS<br>500 HOURS |

**▲ WARNING**

Before performing maintenance:  
Shut down machine, relieve all system pressure and lock out all power, as per the Safety Section of this manual.  
Always clearly tag the start-up instrumentation against accidental system start-ups during maintenance.



| TABLE 5C: ROUTINE MAINTENANCE REPLACEMENT KITS - COMPRESSOR |                                                                                                         |     |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----|
| KEY NO.                                                     | DESCRIPTION                                                                                             | QTY |
| KIT1482                                                     | Kit, Engine Service - filters [air pre-cleaner, air, oil, fuel], and motor oil [x2 qt]                  | 1   |
| KIT1212                                                     | Kit, Compressor First 50 Hour Service - Vanguard™ oil [x2 gal], oil filter                              | 1   |
| KIT1221                                                     | Kit, Compressor 500 Hour Service - Type "A" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1   |
| KIT1483                                                     | Kit, Compressor 500 Hour Service - Type "B" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1   |

NOTE: Refer to Section 7, Table 7A for kit content item identification, and additional replacement parts items.

IMPORTANT: 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.

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

| KEY            | DESCRIPTION                     | KEY | DESCRIPTION               |
|----------------|---------------------------------|-----|---------------------------|
| A              | ENGINE OIL LEVEL GAUGE DIPSTICK | C   | ENGINE AIR FILTER HOUSING |
| A <sub>1</sub> | OIL LEVEL MARK - HIGH           | D   | ENGINE FUEL FILTER        |
| A <sub>2</sub> | OIL LEVEL MARK - LOW            | E   | ENGINE OIL FILTER         |
| B              | ENGINE OIL FILL PORT/CAP        | F   | ENGINE OIL DRAIN HOSE     |

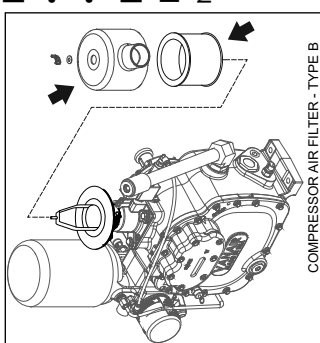
NOTE: The figure shown here is for reference to the engine's main routine maintenance check points. For full instruction on engine maintenance, please refer to the Engine Operation Manual.

**ACTION TO TAKE / REFERENCE**
**REFERENCE - TYPE "A" AIR FILTER:**

- Air filter housing [↗]
- Air filter [↘]

**PROCEDURE:**

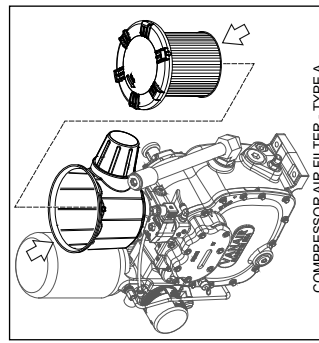
Inspect filter for holes, tears and dirt build-up. Replace if necessary; refer to key #14A of this table for air filter replacement procedure..


**REFERENCE - TYPE "B" AIR FILTER:**

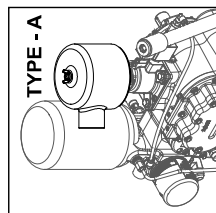
- Air filter housing [↗]
- Air filter [↘]

**PROCEDURE:**

Inspect filter for holes, tears and dirt build-up. Replace if necessary; refer to key #14B of this table for air filter replacement procedure.

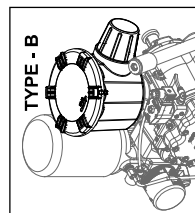

**TASK DESCRIPTION**

Inspect/clean compressor air filter  
(Type "A")



12A

Inspect/clean compressor air filter  
(Type "B")



12B

Continued on next page





# TABLE 5B: VIPER MAINTENANCE SCHEDULE INTERVALS

## ⚠ WARNING

Before performing maintenance:

Shut down machine, relieve all system pressure and lock out all power, as per the Safety Section of this manual.

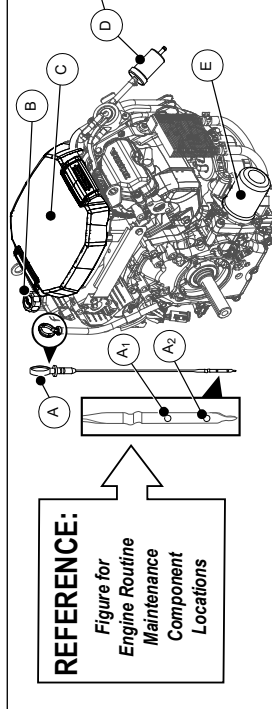
Always clearly tag the start-up instrumentation against accidental system start-ups during maintenance.

SERVICE INTERVAL- Refer to IMPORTANT under Table 5B

DAILY  
BREAK-IN PERIOD  
First 50 Hours

ANNUALLY OR  
EVERY...

100 HOURS  
200 HOURS  
500 HOURS



## REFERENCE:

Figure for  
Engine Routine  
Maintenance  
Component  
Locations

# TABLE 5C: ROUTINE MAINTENANCE REPLACEMENT KITS - COMPRESSOR

| KEY NO. | DESCRIPTION                                                                                             | QTY |
|---------|---------------------------------------------------------------------------------------------------------|-----|
| KIT1482 | Kit, Engine Service - filters [air pre-cleaner, air, oil, fuel], and motor oil [x2 qt]                  | 1   |
| KIT1212 | Kit, Compressor First 50 Hour Service - Vanguard™ oil [x2 gal], oil filter                              | 1   |
| KIT1221 | Kit, Compressor 500 Hour Service - Type "A" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1   |
| KIT1483 | Kit, Compressor 500 Hour Service - Type "B" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1   |

NOTE: Refer to Section 7, Table 7A for kit content item identification, and additional replacement parts items.

IMPORTANT: 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.

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

| KEY            | DESCRIPTION                     | KEY | DESCRIPTION               |
|----------------|---------------------------------|-----|---------------------------|
| A              | ENGINE OIL LEVEL GAUGE DIPSTICK | C   | ENGINE AIR FILTER HOUSING |
| A <sub>1</sub> | OIL LEVEL MARK - HIGH           | D   | ENGINE FUEL FILTER        |
| A <sub>2</sub> | OIL LEVEL MARK - LOW            | E   | ENGINE OIL FILTER         |
| B              | ENGINE OIL FILL PORT/CAP        | F   | ENGINE OIL DRAIN HOSE     |

NOTE: The figure shown here is for reference to the engine's main routine maintenance check points. For full instruction on engine maintenance, please refer to the Engine Operation Manual.

## ACTION TO TAKE / REFERENCE

### PROCEDURE:

Refer to the Engine Operation Manual for engine valve maintenance. Replace Shaft, Rocker Arm if damaged (order Vanair part no. 281452-31).

### REFERENCE:

- Refer to the Engine Reference Figure at the top of the page.

### PROCEDURE:

Order fuel filter replacement no. 281452-01. Note that a fuel filter replacement is also included with the full Engine Service Kit no. KIT1482. Refer to the Engine Operation Manual for fuel filter replacement instructions.

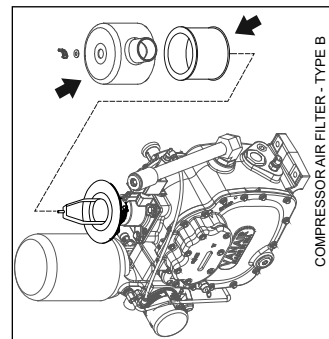
### REFERENCE - TYPE "A" AIR FILTER:

- Air filter housing [A]
- Air filter [B]

### PROCEDURE:

Order air filter replacement element no. 265546-004. Note that the 500 hour kit no. KIT1221 also includes a Type "A" air filter replacement element.

Remove the wing nut and washer securing the air filter housing cover to the air inlet. Remove the cover then remove the worn air filter element. Replace with new filter, replace the cover, washer, and wing nut and tighten wing nut to secure. Discard/recycle worn air filter assembly.



COMPRESSOR AIR FILTER - TYPE B

Continued on next page

**TABLE 5B: VIPER MAINTENANCE  
SCHEDULE INTERVALS**

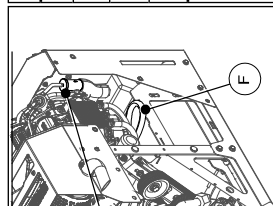
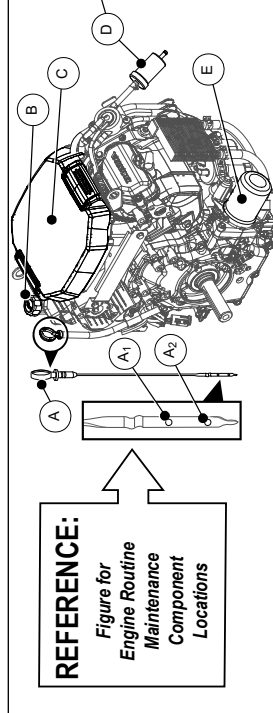
| SERVICE INTERVAL- Refer to<br>IMPORTANT under Table 5B | ANNUALLY OR<br>EVERY... |           |           |           |
|--------------------------------------------------------|-------------------------|-----------|-----------|-----------|
|                                                        | First 50 Hours          |           |           |           |
|                                                        | DAILY                   | 100 HOURS | 200 HOURS | 500 HOURS |

**▲ WARNING**

Before performing maintenance:

Shut down machine, relieve all system pressure and lock out all power, as per the Safety Section of this manual.

Always clearly tag the start-up instrumentation against accidental system start-ups during maintenance.



| TABLE 5C: ROUTINE MAINTENANCE REPLACEMENT KITS - COMPRESSOR |                                                                                                         |     |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----|
| KEY NO.                                                     | DESCRIPTION                                                                                             | QTY |
| KIT1482                                                     | Kit, Engine Service - filters [air pre-cleaner, air, oil, fuel], and motor oil [x2 qt]                  | 1   |
| KIT1212                                                     | Kit, Compressor First 50 Hour Service - Vanguard™ oil [x2 gal], oil filter                              | 1   |
| KIT1221                                                     | Kit, Compressor 500 Hour Service - Type "A" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1   |
| KIT1483                                                     | Kit, Compressor 500 Hour Service - Type "B" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1   |

**NOTE:** Refer to Section 7, Table 7A for kit content item identification, and additional replacement parts items.

**IMPORTANT:** 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.

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

| KEY            | DESCRIPTION                     | KEY | DESCRIPTION               |
|----------------|---------------------------------|-----|---------------------------|
| A              | ENGINE OIL LEVEL GAUGE DIPSTICK | C   | ENGINE AIR FILTER HOUSING |
| A <sub>1</sub> | OIL LEVEL MARK - HIGH           | D   | ENGINE FUEL FILTER        |
| A <sub>2</sub> | OIL LEVEL MARK - LOW            | E   | ENGINE OIL FILTER         |
| B              | ENGINE OIL FILL PORT/CAP        | F   | ENGINE OIL DRAIN HOSE     |

**NOTE:** The figure shown here is for reference to the engine's main routine maintenance check points. For full instruction on engine maintenance, please refer to the Engine Operation Manual.

**ACTION TO TAKE / REFERENCE**
**REFERENCE - TYPE "B" AIR FILTER:**

- Air filter housing [K]
- Air filter [K]

**PROCEDURE:**

Order air filter replacement element no. 281414-01. Note that the 500 hour kit no. KIT1483 also includes a Type "B" air filter replacement element.

The air filter replacement comes attached to a new housing lid. Remove the air filter housing cover by twisting counter-clockwise. Place the new replacement air filter/cover assembly onto the air filter body clockwise until the replacement air filter assembly is seated.

Discard worn air filter assembly.

**PROCEDURE:**

Inspect radiator hoses for wear, cracks, etc. Replace if necessary.

**PROCEDURE:**

Inspect the compressor mounting bolts and isolators condition. Replace if necessary.

**Continued on next page**

**TABLE 5B: VIPER MAINTENANCE  
SCHEDULE INTERVALS**

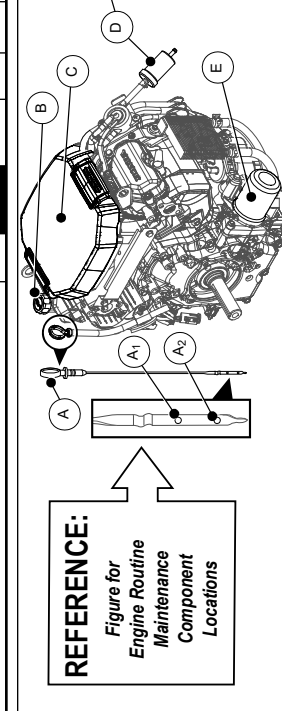
|  | SERVICE INTERVAL- Refer to<br>IMPORTANT under Table 5B |                         |           |           |
|--|--------------------------------------------------------|-------------------------|-----------|-----------|
|  | DAILY                                                  | BREAK-IN PERIOD         |           |           |
|  |                                                        | First 50 Hours          | 100 HOURS | 200 HOURS |
|  |                                                        | ANNUALLY OR<br>EVERY... |           |           |

**⚠ WARNING**

Before performing maintenance:

Shut down machine, relieve all system pressure and lock out all power, as per the Safety Section of this manual.

Always clearly tag the start-up instrumentation against accidental system start-ups during maintenance.



| TABLE 5C: ROUTINE MAINTENANCE REPLACEMENT KITS - COMPRESSOR |                                                                                                         |     |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----|
| KEY NO.                                                     | DESCRIPTION                                                                                             | QTY |
| KIT1482                                                     | Kit, Engine Service - filters (air pre-cleaner, air, oil, fuel), and motor oil [x2 qt]                  | 1   |
| KIT1212                                                     | Kit, Compressor First 50 Hour Service - Vanguard™ oil [x2 gal], oil filter                              | 1   |
| KIT1221                                                     | Kit, Compressor 500 Hour Service - Type "A" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1   |
| KIT1483                                                     | Kit, Compressor 500 Hour Service - Type "B" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1   |

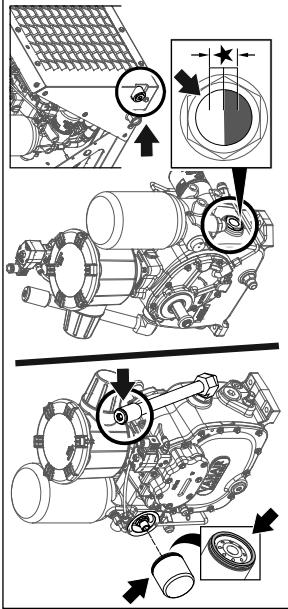
**NOTE:** Refer to Section 7, Table 7A for kit content item identification, and additional replacement parts items.

**IMPORTANT:** 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.

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

| KEY            | DESCRIPTION                     | KEY | DESCRIPTION               |
|----------------|---------------------------------|-----|---------------------------|
| A              | ENGINE OIL LEVEL GAUGE DIPSTICK | C   | ENGINE AIR FILTER HOUSING |
| A <sub>1</sub> | OIL LEVEL MARK - HIGH           | D   | ENGINE FUEL FILTER        |
| A <sub>2</sub> | OIL LEVEL MARK - LOW            | E   | ENGINE OIL FILTER         |
| B              | ENGINE OIL FILL PORT/CAP        | F   | ENGINE OIL DRAIN HOSE     |

**NOTE:** The figure shown here is for reference to the engine's main routine maintenance check points. For full instruction on engine maintenance, please refer to the Engine Operation Manual.

| KEY  | TASK DESCRIPTION                                                                  | ACTION TO TAKE / REFERENCE |  |  |                                                                                                                                                                                                                                                                                                                                                    |
|------|-----------------------------------------------------------------------------------|----------------------------|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 18   | Inspect battery cables and connections                                            |                            |  |  | <b>PROCEDURE:</b><br>Inspect battery cables and connections for wear and/or corrosion. Replace as needed; clear connections by wiping off any build-up, dirt, etc., with a clean cloth.                                                                                                                                                            |
| 19   | Inspect engine spark plugs                                                        |                            |  |  | <b>PROCEDURE:</b><br>Inspect spark plug for signs of corrosion, carbon and/or grime build-up. Refer to The Engine Operation manual for inspection and cleaning or replacement details.                                                                                                                                                             |
| 20   | Blow out the radiator                                                             |                            |  |  | <b>PROCEDURE:</b><br>Remove any loose debris from around the radiator. Clear radiator surface with an air source such as shop air or a leaf blower taking care not to damage the radiator cooling fins.                                                                                                                                            |
| 21.1 | Compressor full service change: oil filter, air filter, oil separator: OIL FILTER |                            |  |  | <b>REFERENCE (TYPICAL):</b> <ul style="list-style-type: none"> <li>Oil fill port [↔]</li> <li>Oil filter [↔]</li> <li>Oil filter seal [↔]</li> <li>Oil drain port/plug [↔]</li> <li>Oil level sight glass [↔]</li> <li>Optimal oil level range [★]</li> </ul>  |

...continued next page...

Continued on next page

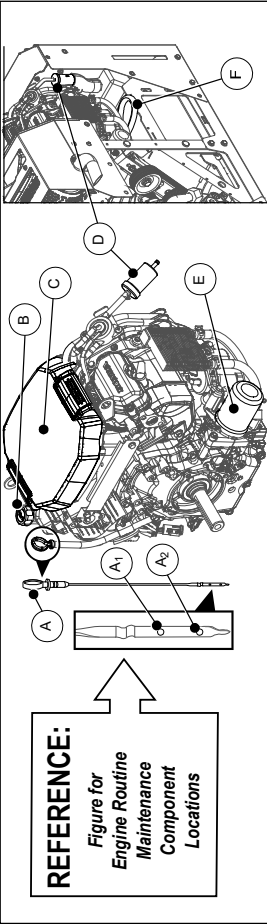


TABLE 5B: VIPER MAINTENANCE SCHEDULE INTERVALS

| SERVICE INTERVAL- Refer to IMPORTANT under Table 5B | ANNUALLY OR EVERY... |           |           |           |
|-----------------------------------------------------|----------------------|-----------|-----------|-----------|
|                                                     | First 50 Hours       |           |           |           |
|                                                     | DAILY                | 100 HOURS | 200 HOURS | 500 HOURS |

**⚠ WARNING**

Before performing maintenance:  
Shut down machine, relieve all system pressure and lock out all power, as per the Safety Section of this manual.  
Always clearly tag the start-up instrumentation against accidental system start-ups during maintenance.

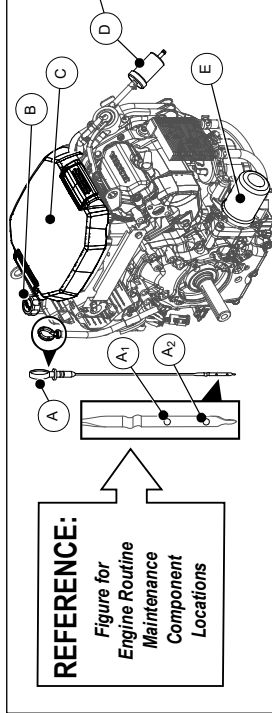


REFERENCE:  
Figure for Engine Routine Maintenance Component Locations

| KEY  | TASK DESCRIPTION                                                                                    | ACTION TO TAKE / REFERENCE                                                                                                                                                                                                                                                                                                                            |  |  |  |
|------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| 21.2 | Compressor full service change: oil filter, air filter, oil separator:<br>OIL FILTER<br>(continued) | ...continued from previous page...                                                                                                                                                                                                                                                                                                                    |  |  |  |
|      |                                                                                                     | <b>PROCEDURE:</b><br>Order the 500 hour replacement kits (Refer to Table 5C for reorder number, depending upon air filter Type A [no. KIT1221], or air filter type Type B [no. KIT1483]).                                                                                                                                                             |  |  |  |
|      |                                                                                                     | <b>NOTE</b><br>For a FULL SERVICE application for the compressor unit the oil filter, air filter and separator element are replaced. It is recommended that all replacement components in the service kit are used, regardless of the condition of the parts to be replaced.                                                                          |  |  |  |
|      |                                                                                                     | Remove oil drain port plug [A]. Allow oil to completely drain from the compressor unit. Replace plug. At this time, for the full service maintenance, remove and replace the oil filter [B], and remove and replace the separator element as well per key 21.3.                                                                                       |  |  |  |
|      |                                                                                                     | <b>NOTE</b><br>Coat element sealing rings on oil filter element and separator with a film of compressor oil before securing in place, to assure a complete seal.                                                                                                                                                                                      |  |  |  |
|      |                                                                                                     | Remove the oil fill port cap [C] and add oil as necessary (see key no. 2) at the oil fill port, but take caution to fill slowly in order to avoid overflow. <b>Never top off</b> oil at the fill port tube, as this floods the system - use the sight glass oil range shown above [D] to achieve proper level. <b>DO NOT</b> mix different oil types. |  |  |  |
|      |                                                                                                     | ...continued next page...                                                                                                                                                                                                                                                                                                                             |  |  |  |
|      |                                                                                                     | Continued on next page                                                                                                                                                                                                                                                                                                                                |  |  |  |

**TABLE 5B: VIPER MAINTENANCE  
SCHEDULE INTERVALS**

|                                                                                                                                                                                                                                                                                                     | SERVICE INTERVAL - Refer to<br>IMPORTANT under Table 5B |                         |           |           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-------------------------|-----------|-----------|
|                                                                                                                                                                                                                                                                                                     | DAILY                                                   | ANNUALLY OR<br>EVERY... |           |           |
|                                                                                                                                                                                                                                                                                                     |                                                         | First 50 Hours          | 100 HOURS | 200 HOURS |
| <b>▲ WARNING</b><br><br>Before performing maintenance:<br>Shut down machine, relieve all system<br>pressure and lock out all power, as per<br>the Safety Section of this manual.<br>Always clearly tag the start-up instru-<br>mentation against accidental system<br>start-ups during maintenance. |                                                         |                         |           |           |



| TABLE 5C: ROUTINE MAINTENANCE REPLACEMENT KITS - COMPRESSOR                                                                                                                                                  |                                                                                                         |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----|
| KEY NO.                                                                                                                                                                                                      | DESCRIPTION                                                                                             | QTY |
| KIT1482                                                                                                                                                                                                      | Kit, Engine Service - filters [air pre-cleaner, air, oil, fuel], and motor oil [x2 qt]                  | 1   |
| KIT1212                                                                                                                                                                                                      | Kit, Compressor First 50 Hour Service - Vanguard™ oil [x2 gal], oil filter                              | 1   |
| KIT1221                                                                                                                                                                                                      | Kit, Compressor 500 Hour Service - Type "A" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1   |
| KIT1483                                                                                                                                                                                                      | Kit, Compressor 500 Hour Service - Type "B" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1   |
| <b>NOTE:</b> Refer to Section 7, Table 7A for kit content item identification, and additional replacement parts items.                                                                                       |                                                                                                         |     |
| <b>IMPORTANT:</b> 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. |                                                                                                         |     |
| <b>PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.</b>                                                                                                                                     |                                                                                                         |     |

| KEY                                                                                                                                                                                                 | DESCRIPTION                     | KEY | DESCRIPTION               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-----|---------------------------|
| A                                                                                                                                                                                                   | ENGINE OIL LEVEL GAUGE DIPSTICK | C   | ENGINE AIR FILTER HOUSING |
| A <sub>1</sub>                                                                                                                                                                                      | OIL LEVEL MARK - HIGH           | D   | ENGINE FUEL FILTER        |
| A <sub>2</sub>                                                                                                                                                                                      | OIL LEVEL MARK - LOW            | E   | ENGINE OIL FILTER         |
| B                                                                                                                                                                                                   | ENGINE OIL FILL PORT/CAP        | F   | ENGINE OIL DRAIN HOSE     |
| <b>NOTE:</b> The figure shown here is for reference to the engine's main routine maintenance check points. For full instruction on engine maintenance, please refer to the Engine Operation Manual. |                                 |     |                           |

**ACTION TO TAKE / REFERENCE**

|                                |                                             |                                |                                |
|--------------------------------|---------------------------------------------|--------------------------------|--------------------------------|
|                                |                                             |                                |                                |
| • Separator element filter [↙] | • Separator element filter seal [↖]         | • Oil filter [↗]               | • Oil filter [↗]               |
| • Oil filter seal [↘]          | • Oil fill port [↗]                         | • Air filter [↗] <sup>xx</sup> | • Air filter [↗] <sup>xx</sup> |
| • Oil level sight glass [↘]    | • Optimal oil level range [↗] <sup>xx</sup> | • Oil drain port access [↗]    | • Oil drain port access [↗]    |

There are two air filter types available. Refer to Key #12A and #12B of this Table to determine which type properly matches the machine. Type A is shown in the illustration above.

<sup>xx</sup> Optimal oil level is between 1/4 - 3/4 of sight glass. **DO NOT TOP OFF AT THE FILL PORT / DO NOT OVERFILL** - use the sight glass only to determine proper compressor oil level.

...continued next page...

Continued on next page



| TABLE 5B: VIPER MAINTENANCE SCHEDULE INTERVALS                                                                                                                                                                                                                                                        |                                                                                                        |                      |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------|--|--|
| <div><div>⚠ WARNING</div><p>Before performing maintenance:<br/>Shut down machine, relieve all system pressure and lock out all power, as per the Safety Section of this manual.<br/>Always clearly tag the start-up instrumentation against accidental system start-ups during maintenance.</p></div> | SERVICE INTERVAL- Refer to IMPORTANT under Table 5B                                                    |                      |  |  |
|                                                                                                                                                                                                                                                                                                       | BREAK-IN PERIOD<br>First 50 Hours                                                                      | ANNUALLY OR EVERY... |  |  |
|                                                                                                                                                                                                                                                                                                       |                                                                                                        | 100 HOURS            |  |  |
|                                                                                                                                                                                                                                                                                                       |                                                                                                        | 200 HOURS            |  |  |
| <div>REFERENCE:<br/>Figure for Engine Routine Maintenance Component Locations</div>                                                                                                                                                                                                                   | DAILY                                                                                                  |                      |  |  |
|                                                                                                                                                                                                                                                                                                       |                                                                                                        |                      |  |  |
| KEY                                                                                                                                                                                                                                                                                                   | TASK DESCRIPTION                                                                                       |                      |  |  |
| 21.4                                                                                                                                                                                                                                                                                                  | Compressor full service change: oil filter, air filter, oil separator:<br>OIL SEPARATOR<br>(continued) |                      |  |  |
|                                                                                                                                                                                                                                                                                                       |                                                                                                        |                      |  |  |

| TABLE 5C: ROUTINE MAINTENANCE REPLACEMENT KITS - COMPRESSOR                                                                                                                                           |                                                                                                         |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----|
| KEY NO.                                                                                                                                                                                               | DESCRIPTION                                                                                             | QTY |
| KIT1482                                                                                                                                                                                               | Kit, Engine Service - filters [air pre-cleaner, air, oil, fuel], and motor oil [x2 qt]                  | 1   |
| KIT1212                                                                                                                                                                                               | Kit, Compressor First 50 Hour Service - Vanguard™ oil [x2 gal], oil filter                              | 1   |
| KIT1221                                                                                                                                                                                               | Kit, Compressor 500 Hour Service - Type "A" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1   |
| KIT1483                                                                                                                                                                                               | Kit, Compressor 500 Hour Service - Type "B" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1   |
| NOTE: Refer to Section 7, Table 7A for kit content item identification, and additional replacement parts items.                                                                                       |                                                                                                         |     |
| IMPORTANT: 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. |                                                                                                         |     |
| PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.                                                                                                                                     |                                                                                                         |     |

| KEY                                                                                                                                                                                          | DESCRIPTION                     | KEY | DESCRIPTION               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-----|---------------------------|
| A                                                                                                                                                                                            | ENGINE OIL LEVEL GAUGE DIPSTICK | C   | ENGINE AIR FILTER HOUSING |
| A <sub>1</sub>                                                                                                                                                                               | OIL LEVEL MARK - HIGH           | D   | ENGINE FUEL FILTER        |
| A <sub>2</sub>                                                                                                                                                                               | OIL LEVEL MARK - LOW            | E   | ENGINE OIL FILTER         |
| B                                                                                                                                                                                            | ENGINE OIL FILL PORT/CAP        | F   | ENGINE OIL DRAIN HOSE     |
| NOTE: The figure shown here is for reference to the engine's main routine maintenance check points. For full instruction on engine maintenance, please refer to the Engine Operation Manual. |                                 |     |                           |

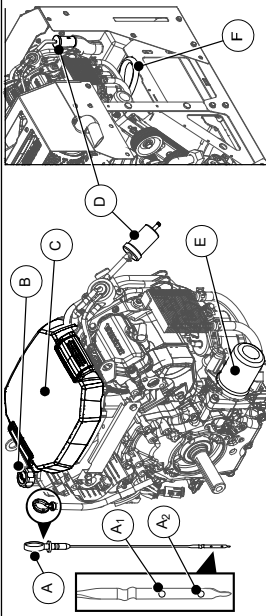


| TABLE 5B: VIPER MAINTENANCE SCHEDULE INTERVALS |                                                                                                           |       |                                   |                         | TABLE 5C: ROUTINE MAINTENANCE REPLACEMENT KITS - COMPRESSOR |                                                                                                                                                                                              |                                 |     |                           |     |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-------|-----------------------------------|-------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-----|---------------------------|-----|
| KEY                                            | TASK DESCRIPTION                                                                                          | DAILY | BREAK-IN PERIOD<br>First 50 Hours | ANNUALLY OR<br>EVERY... | SERVICE INTERVAL- Refer to<br>IMPORTANT under Table 5B      | KEY                                                                                                                                                                                          | DESCRIPTION                     | KEY | DESCRIPTION               | QTY |
|                                                |                                                                                                           |       |                                   |                         |                                                             |                                                                                                                                                                                              |                                 |     |                           |     |
| 21.5                                           | Compressor full service<br>change: oil filter, air filter, oil<br>separator:<br>AIR FILTER<br>(continued) |       |                                   | 100 HOURS               | 500 HOURS                                                   | A                                                                                                                                                                                            | ENGINE OIL LEVEL GAUGE DIPSTICK | C   | ENGINE AIR FILTER HOUSING | 1   |
|                                                |                                                                                                           |       |                                   | 200 HOURS               |                                                             | A <sub>1</sub>                                                                                                                                                                               | OIL LEVEL MARK - HIGH           | D   | ENGINE FUEL FILTER        | 1   |
|                                                |                                                                                                           |       |                                   | 500 HOURS               |                                                             | A <sub>2</sub>                                                                                                                                                                               | OIL LEVEL MARK - LOW            | E   | ENGINE OIL FILTER         | 1   |
|                                                |                                                                                                           |       |                                   |                         |                                                             | B                                                                                                                                                                                            | ENGINE OIL FILL PORT/CAP        | F   | ENGINE OIL DRAIN HOSE     | 1   |
|                                                |                                                                                                           |       |                                   |                         |                                                             | NOTE: The figure shown here is for reference to the engine's main routine maintenance check points. For full instruction on engine maintenance, please refer to the Engine Operation Manual. |                                 |     |                           |     |
| 22                                             | Change drive belt                                                                                         |       |                                   |                         |                                                             |                                                                                                                                                                                              |                                 |     |                           |     |
| 23                                             | Change engine air pre-filter, and<br>filter elements                                                      |       |                                   |                         |                                                             |                                                                                                                                                                                              |                                 |     |                           |     |
| 24                                             | Replace engine spark plugs                                                                                |       |                                   |                         |                                                             |                                                                                                                                                                                              |                                 |     |                           |     |

**WARNING**

Before performing maintenance:  
Shut down machine, relieve all system pressure and lock out all power, as per the Safety Section of this manual.  
Always clearly tag the start-up instrumentation against accidental system start-ups during maintenance.

**REFERENCE:**  
Figure for  
Engine Routine  
Maintenance  
Component  
Locations



**PROCEDURE:**  
Refer to key no. 15A or 15B for procedure on replacing the compressor air filter element.

**PROCEDURE:**  
Refer to **Section 5.4.1, Adjusting the Belt Tension** in **Section 5, Maintenance**. Order replacement belt no. **281454** for 80 CFM units; order replacement belt no. **282725** for 55,60 & 70 CFM units.

**REFERENCE:**  
• Refer to the Engine Reference Figure at the top of the page.

**PROCEDURE:**  
Refer to the Engine Operation Manual for engine air filter inspection procedure. Should the filter(s) need replacement, order engine pre-filter replacement no. **281452-02**, and engine air filter replacement no. **281452-03**. Note that the full Engine Service Kit no. **KIT1482** also comes with both a pre-filter and air filter replacement.

**PROCEDURE:**  
Refer to the Engine Operation Manual for spark plug information.

**ACTION TO TAKE / REFERENCE**

**Continued on next page**



TABLE 5B: VIPER MAINTENANCE SCHEDULE INTERVALS

| SERVICE INTERVAL - Refer to IMPORTANT under Table 5B                                                                                                                                                                                                                                                  | ANNUALLY OR EVERY... |                |           |           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|-----------|-----------|
|                                                                                                                                                                                                                                                                                                       | BREAK-IN PERIOD      |                |           |           |
|                                                                                                                                                                                                                                                                                                       | DAILY                | First 50 Hours | 100 HOURS | 200 HOURS |
| <div><div>⚠ WARNING</div><p>Before performing maintenance:<br/>Shut down machine, relieve all system pressure and lock out all power, as per the Safety Section of this manual.<br/>Always clearly tag the start-up instrumentation against accidental system start-ups during maintenance.</p></div> |                      |                |           | 500 HOURS |
|                                                                                                                                                                                                                                                                                                       |                      |                |           |           |
|                                                                                                                                                                                                                                                                                                       |                      |                |           |           |
|                                                                                                                                                                                                                                                                                                       |                      |                |           |           |

REFERENCE:  
Figure for Engine Routine Maintenance Component Locations

| TABLE 5C: ROUTINE MAINTENANCE REPLACEMENT KITS - COMPRESSOR                                                                                                                                           |                                                                                                         |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----|
| KEY NO.                                                                                                                                                                                               | DESCRIPTION                                                                                             | QTY |
| KIT1482                                                                                                                                                                                               | Kit, Engine Service - filters [air pre-cleaner, air, oil, fuel], and motor oil [x2 qt]                  | 1   |
| KIT1212                                                                                                                                                                                               | Kit, Compressor First 50 Hour Service - Vanguard™ oil [x2 gal], oil filter                              | 1   |
| KIT1221                                                                                                                                                                                               | Kit, Compressor 500 Hour Service - Type "A" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1   |
| KIT1483                                                                                                                                                                                               | Kit, Compressor 500 Hour Service - Type "B" air filter, oil & separator elements, Vanguard oil [x2 gal] | 1   |
| NOTE: Refer to Section 7, Table 7A for kit content item identification, and additional replacement parts items.                                                                                       |                                                                                                         |     |
| IMPORTANT: 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. |                                                                                                         |     |
| PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.                                                                                                                                     |                                                                                                         |     |

| KEY            | DESCRIPTION                     | KEY | DESCRIPTION               |
|----------------|---------------------------------|-----|---------------------------|
| A              | ENGINE OIL LEVEL GAUGE DIPSTICK | C   | ENGINE AIR FILTER HOUSING |
| A <sub>1</sub> | OIL LEVEL MARK - HIGH           | D   | ENGINE FUEL FILTER        |
| A <sub>2</sub> | OIL LEVEL MARK - LOW            | E   | ENGINE OIL FILTER         |
| B              | ENGINE OIL FILL PORT/CAP        | F   | ENGINE OIL DRAIN HOSE     |

NOTE: The figure shown here is for reference to the engine's main routine maintenance check points. For full instruction on engine maintenance, please refer to the Engine Operation Manual.

| ACTION TO TAKE / REFERENCE                                                                                                                                                                                                                              |                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| KEY                                                                                                                                                                                                                                                     | PROCEDURE:                     |
| 25                                                                                                                                                                                                                                                      | Inspect belt system tensioners |
| Refer to Section 5.4.1, Adjusting the Belt Tension in Section 5, Maintenance. If belt needs to be replaced, refer to key #27 in this Table to determined proper belt to order. If the tensioner is broken please contact the Vanair Service Department. |                                |



## 5.4 PARTS REPLACEMENT AND ADJUSTMENT PROCEDURES

### 5.4.1 ADJUSTING THE BELT TENSION

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 Compressor Package has an idler pulley assembly with a tensioning device to set the proper belt tension.

#### 5.4.1.1 CHANGING THE BELT

##### NOTE

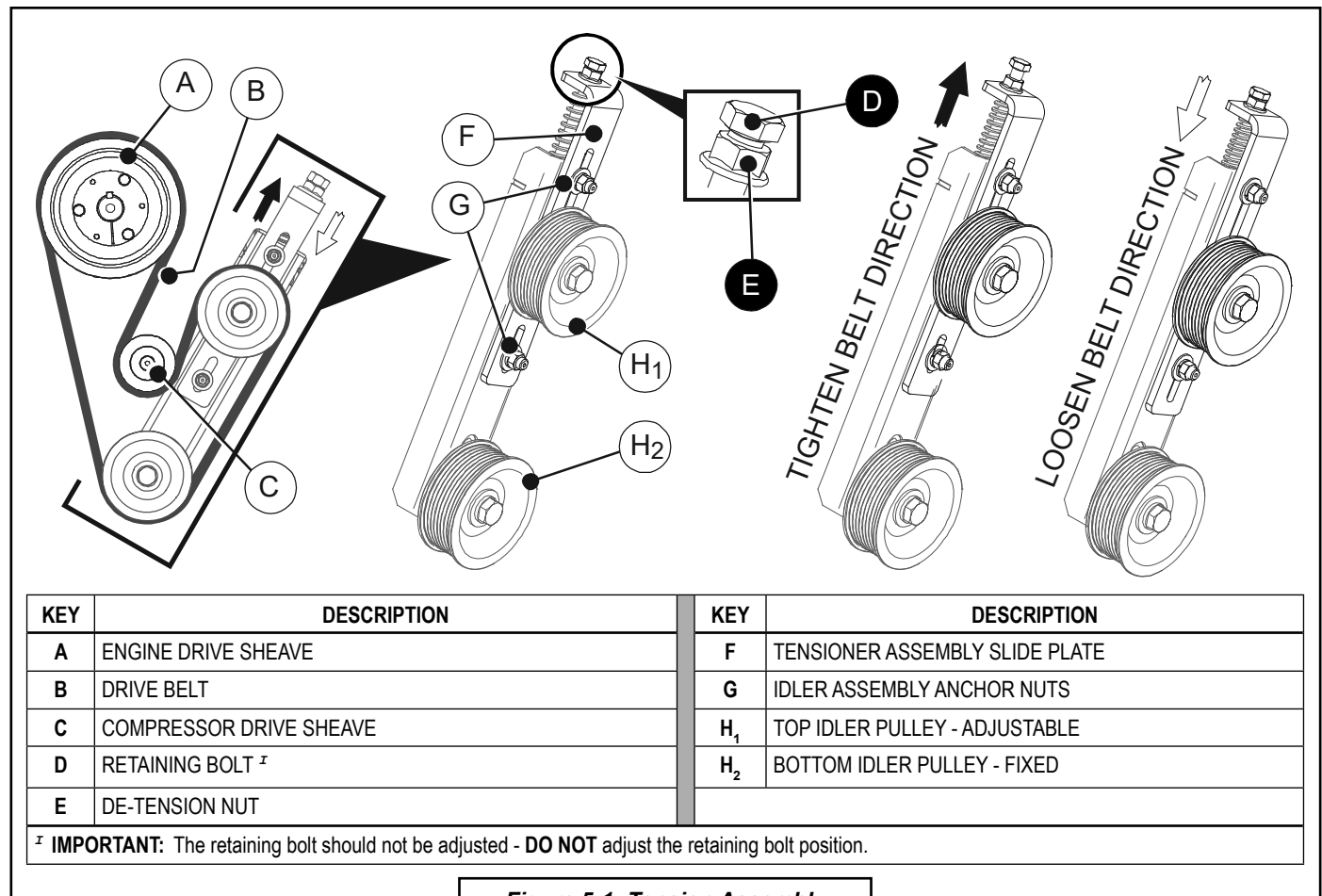
Order replacement belt as follows:

- For 80 CFM units order Vanair® replacement belt no. 281454.
- For 55, 60 & 70 CFM units order Vanair replacement belt no. 282725.

1. Loosen but do not remove the idler assembly anchor nuts [G].
2. Using a 9/16" wrench (ratcheting if available) loosen the de-tension nut [E] and spin it down to the tension bracket [F]. Using the same wrench, tighten nut down until the belt is loose/removable. Tighten top idler assembly anchor nut [G].
3. Remove worn belt and replace with new belt.
4. Loosen top anchor nut [G]. Back out the de-tension nut [E], ensuring that the belt is properly seated in the grooves of idlers and pulleys.
5. Press down on the top idler pulley [H<sub>1</sub>] one inch, and release to allow spring to reapply proper tension force.
6. Tighten both idler assembly anchor nuts [G].

#### 5.4.1.2 ADJUSTING BELT TENSION

1. Using a 9/16" wrench (ratcheting if available)



**Figure 5-1: Tension Assembly**



Loosen both idler assembly anchor nuts [G].

2. Press down on the top idler pulley [H<sub>1</sub>] one inch, and release to allow spring to reapply proper tension force.
3. Tighten both idler assembly anchor nuts [G].

## 5.5 SERVICING THE SYSTEM FUSES AND CIRCUIT BREAKER

Refer to the Engine Operation Manual for detailed maintenance and replacement procedures for the engine.

## 5.6 STORAGE AND INTERMITTENT USE

### 5.6.1 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.

### NOTE

In order to ensure that the compressor is maintained in working order during prolonged periods of non-use, refer to Section 4.7.8.2, Infrequent Use, for steps to take to avoid the condition of oil emulsification.

### 5.6.2 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.

# 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 Operation Manual. Should the situation remain unresolved after exhausting available sources, contact the Vanair Service Department at:

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

**Phone: 219-879-5100**

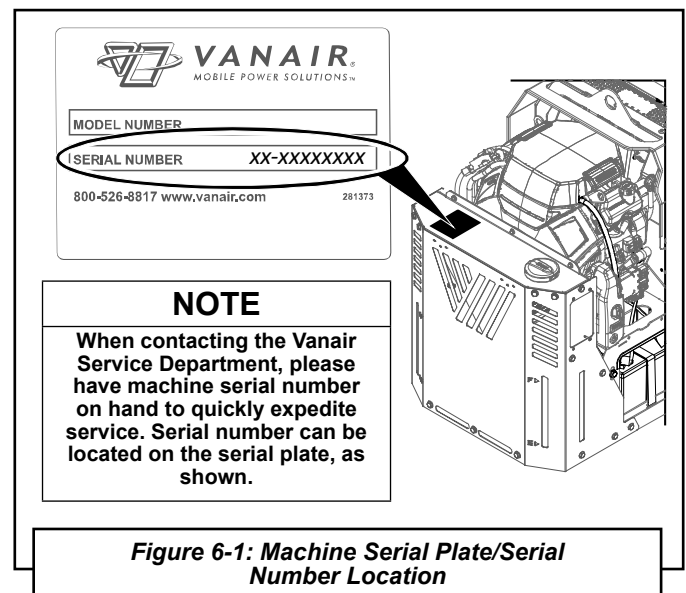
**Fax: 219-879-5335**

This section contains symptoms and usual causes for the most common types of problems that may occur. All available data concerning the trou-

ble 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.

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. Should the situation remain unresolved after exhausting available sources, contact the Vanair Service Department, with the machine serial number readily available (refer to **Figure 6-1**).



**Figure 6-1: Machine Serial Plate/Serial Number Location**

## TABLE 6A: TROUBLESHOOTING GUIDE

| Fault/Malfunction | Possible Cause    | Corrective Action   |
|-------------------|-------------------|---------------------|
| Failure to Start  | No Fuel           | Fill if necessary.  |
|                   | Pinched Fuel Line | Replace or reroute. |

*Continued on next page*

**TABLE 6A: TROUBLESHOOTING GUIDE**

| <b>Fault/Malfunction</b>                     | <b>Possible Cause</b>                 | <b>Corrective Action</b>                                 |
|----------------------------------------------|---------------------------------------|----------------------------------------------------------|
| <b>Failure to Start<br/>(continued)</b>      | Plugged Fuel Filter                   | Replace fuel filter / fuel filter element.               |
|                                              | Low Battery Voltage                   | Recharge or replace.                                     |
|                                              |                                       | Loose connections-tighten.                               |
|                                              |                                       | Dirty connections-clean.                                 |
|                                              | Plugged Air Filter                    | Replace air filter element.                              |
|                                              | Defective Oil Pressure Switch         | Check continuity-replace.                                |
|                                              | Defective Air Temperature Switch      | Check continuity-replace.                                |
|                                              | Blown Fuse                            | Check continuity-replace.                                |
|                                              | Poor ground connection                | Check and clean/renew.                                   |
|                                              | Engine problems                       | Refer to Engine Operation Manual.                        |
| <b>Compressor Shuts Down with Air Demand</b> | No Fuel                               | Fill if necessary.                                       |
|                                              | Compressor Temperature Switch Opening | Low oil level-top up.                                    |
|                                              |                                       | Restricted cooling air intake; clean-reposition machine. |
|                                              |                                       | Fan not operating; check ground, check fan switch.       |
|                                              | Plugged Oil Filter                    | Replace oil filter element.                              |
|                                              | Dirty Cooler Core                     | Clean.                                                   |
|                                              | Contaminated Cooler Core              | Remove and clean.                                        |
|                                              | Defective Engine Oil Pressure Switch  | Replace.                                                 |
| <b>Compressor will Not Build Up Pressure</b> | Air Demand Too Great                  | Check for leaks/correct.                                 |
|                                              |                                       | Too much air demand.                                     |
|                                              | Air Filter Plugged                    | Check and replace air filter element, if needed.         |
|                                              | Engine Does Not Speed Up              | Engine governor stuck.                                   |
|                                              | Belts Slipping                        | Readjust.                                                |
| <b>Compressor Over-Pressures</b>             | Leak in Air Control Line              | Check and correct.                                       |
|                                              | Inlet Valve Stuck                     | Free or replace, if necessary.                           |
|                                              | Restriction in Control Line           | Dirt or ice, clean/free up.                              |
|                                              | Defective Safety Valve                | Replace.                                                 |
|                                              | Plugged Coalescer                     | Replace coalescer element.                               |
| <b>Insufficient Air Delivery</b>             | Plugged Air Filter                    | Replace air filter element.                              |
|                                              | Plugged Coalescer                     | Replace coalescer element.                               |
|                                              | Inlet Valve Stuck                     | Free or replace.                                         |
|                                              | Belts Slipping                        | Readjust.                                                |
| <b>Oil Carryover</b>                         | Oil Level Overfull                    | Drain to correct level.                                  |
|                                              | Plugged Oil Scavenge Orifice          | Remove and clean.                                        |
|                                              | Scavenge Return Line Kinked           | Replace/re-route.                                        |
|                                              | Check Valve Stuck                     | Replace.                                                 |
|                                              | Defective Coalescer                   | Replace coalescer element.                               |

***Continued on next page***

**TABLE 6A: TROUBLESHOOTING GUIDE**

| Fault/Malfunction                                   | Possible Cause                               | Corrective Action                                                                      |
|-----------------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------|
| Oil Carryover<br>(continued)                        | Discharge Pressure Too Low                   | Review air usage.                                                                      |
|                                                     |                                              | Check pressure regulator setting.                                                      |
| Sleep Mode Does Not Activate                        | Air Leak in Discharge Minimum Pressure Valve | Check valve. Replace if necessary.                                                     |
| System Does Not Actiate From Sleep Mode with Demand | System in Hybernation Mode                   | Power cycle the machine. Contact Vanair Service Department for additional information. |
| Compressor Overheating                              | Insufficient Oil                             | Check level and top up ( <b>DO NOT</b> overfill).                                      |
|                                                     | Restricted Cooling Air Flow                  | Reposition machine; remove restrictions to air flow.                                   |
|                                                     | Fan Not Operating                            | Check ground connection.                                                               |
|                                                     |                                              | Check circuit breaker.                                                                 |
|                                                     |                                              | Check for shorted wires.                                                               |
|                                                     |                                              | Check fan motor.                                                                       |
|                                                     | Plugged Oil Filter                           | Replace oil filter element.                                                            |
|                                                     | Cooler Core Plugged                          | Clean.                                                                                 |
|                                                     | Pressure Set Too High                        | Readjust.                                                                              |
|                                                     | Restricted Cooling Air Flow                  | Reposition machine.                                                                    |
|                                                     | Contaminated Cooler Core                     | Remove and clean.                                                                      |
| System Retains Pressure After Shutdown              | No Signal to Blowdown Valve                  | Check solenoid line for leak/fold.                                                     |
|                                                     | Blowdown Valve Plugged                       | Inspect; clean if necessary.                                                           |
|                                                     | Plugged Coalescer Element                    | Replace.                                                                               |
| Improper Control Operation                          | Engine Does Not Speed Up                     | Cylinder stuck, replace.                                                               |
|                                                     |                                              | Operating pressure too high.                                                           |
|                                                     |                                              | Fuel filter partly plugged.                                                            |
|                                                     | Engine Does Not Slow Down                    | Faulty pressure sensor - replace.                                                      |
|                                                     | Faulty Pressure Sensor                       | Replace.                                                                               |
| Engine Overheating <sup>x</sup>                     | Low Oil Level                                | Top up to acceptable level; <b>DO NOT</b> overfill.                                    |
|                                                     | Oil Filter Plugged                           | Replace oil filter element.                                                            |
|                                                     | Restricted Cooling Air In/Out                | Clean engine intake grill.                                                             |
|                                                     |                                              | Too close to obstruction; move machine or remove obstruction.                          |
|                                                     |                                              | Engine oil cooler plugged; inspect/clear.                                              |
|                                                     | Compressor Pressure Too High                 | Readjust.                                                                              |

<sup>x</sup> Consult Engine Manual for additional engine information.

## 6.2 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 Operation Manual, or visit the engine manufacturer's web site given in that manual.

### 6.2.1 HIGH MOISTURE CONDITION: EMULSIFICATION OF OIL IN RO- TARY SCREW COMPRESSOR SYSTEMS

If machine is operating in a high moisture environment, water contamination may persist after following the regular preventative maintenance schedule and standard operating procedures.

Refer to **Section 4.7.8**, in **Section 4**, which addresses start-up concerns for high moisture con-

ditions.

### 6.2.2 COLD WEATHER OPERATION

Consult the information in **Table 6.2A** 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 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.

### 6.2.3 HIGH TEMPERATURE OPERATION

Consult the information in **Table 6.2B** for preventative and/or repair measures. Reduce load duty

**TABLE 6.2A - COLD WEATHER OPERATION**

| Symptom                                                               | Cause                                                                                                                                                                                                                                                                         | Prevention / Corrective Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Water freezes in the fuel line<br>Lubrication oil viscosity increases | <b>WATER</b><br>Water in the fuel can freeze at temperatures below 32°F (0°C), blocking fuel lines.<br>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. | <ul style="list-style-type: none"> <li>• Park the vehicle or equipment indoors when not in use.</li> <li>• Check the fuel filter regularly to insure that it contains no water.</li> <li>• Use a block heater.</li> <li>• Maintain the battery; this will make it easier to start a diesel engine in cold weather.</li> <li>• In below zero temperatures a fuel line deicer product may need to be used.</li> <li>• Vanguard™ Premium Synthetic Oil is suitable for use from -40°F to 110°F (-40°C to 43°C).</li> <li>• For additional engine precautions, consult the Engine Operation Manual.</li> <li>• Vanair® recommends installation of the cold weather heater option kit. Consult <b>Sections 7.9, 7.12 and 7.14</b> for cold weather kit option.</li> <li>• Keep the fuel tank full to prevent condensation from forming inside the tank and lessen the chances of water getting in the fuel line.</li> <li>• 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).</li> </ul> |

**TABLE 6.2B - HIGH TEMPERATURE OPERATION**

| Symptom                                                                        | Cause                                                                                                                                                                   | Prevention / Corrective Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Overheating/high compartment temperatures<br><br>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"> <li>• Extra care should be taken to keep the engine and air compressor clean and to not restrict the air flow around the unit.</li> <li>• Consult the Engine Operation Manual for fuel, lubrication oil and cooling requirements under extreme temperatures.</li> <li>• 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.</li> <li>• If high ambient overheating occurs, reduce the duty cycle.</li> </ul> <p>The operator should be aware that high temperatures can influence engine performance, which can directly effect some machine function capacity outputs.</p> |

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, includ-

ing air passage 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.

## 6.2.4 HIGH DUST CONTENT OPERATION

Consult the information in **Table 6.2C** for preven-

**TABLE 6.2C - HIGH DUST CONTENT OPERATION**

| Symptom                                         | Cause                                                                                                                                   | Prevention / Corrective Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Overheating<br>System contamination<br>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"> <li>• The intake air must be cleaned with the air cleaner—inspect the air filter frequently for dust build-up and replace as needed.</li> <li>• Ensure that the oil cooler fins are kept clean to prevent overheating.</li> <li>• 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.</li> <li>• For extreme cases of high dust content environments, machine fluids may need to be replaced at more frequent intervals. Adjust maintenance schedule accordingly.</li> </ul> |



tative 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.

### **6.2.5 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.

**Table 6.3** lists the fault codes along with their corresponding descriptions.



# SECTION 7: ILLUSTRATED PARTS LIST

## 7.1 PARTS ORDERING INFORMATION

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 unit's 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 North

Michigan City, IN 46360

Telephone (toll free): (800) 526-8817

Service (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](http://www.vanair.com)

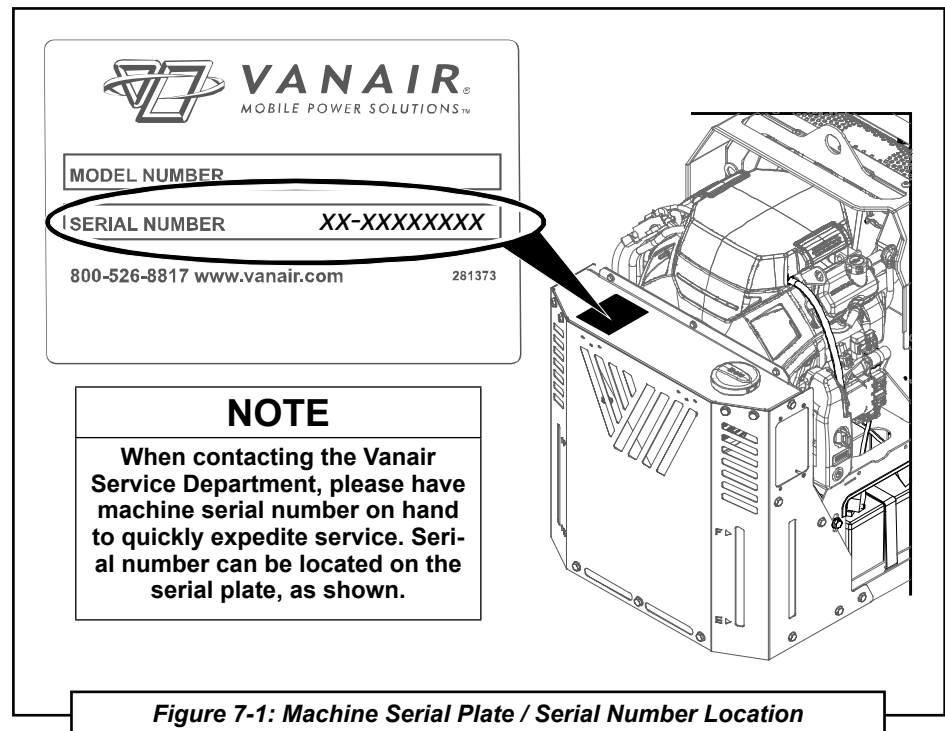


Figure 7-1: Machine Serial Plate / Serial Number Location

**TABLE 7A: RECOMMENDED SPARE PARTS LIST**

| FULL SERVICE MAINTENANCE KITS |                                                                                                                     |                |     |         |                                        |                |     |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------|-----|---------|----------------------------------------|----------------|-----|
| KEY NO.                       | DESCRIPTION                                                                                                         | ORDER NO.      | QTY | KEY NO. | DESCRIPTION                            | ORDER NO.      | QTY |
| 1                             | Kit, Compressor Service - 1 year / 500 Hours (Type "A" air filter - see <b>Figure 7-2</b> ) <sup>I &amp; III</sup>  | <b>KIT1221</b> | 1   | 3       | Kit, Engine Service <sup>IV</sup>      | <b>KIT1482</b> | 1   |
| 2                             | Kit, Compressor Service - 1 year / 500 Hours (Type "B" air filter - see <b>Figure 7-2</b> ) <sup>II &amp; III</sup> | <b>KIT1483</b> | 1   | 4       | Kit, Compressor Shaft Seal Replacement | <b>KIT1257</b> | 1   |

| INDIVIDUAL MAINTENANCE ITEMS |                                               |                    |       |         |                                            |                  |     |
|------------------------------|-----------------------------------------------|--------------------|-------|---------|--------------------------------------------|------------------|-----|
| KEY NO.                      | DESCRIPTION                                   | ORDER NO.          | QTY   | KEY NO. | DESCRIPTION                                | ORDER NO.        | QTY |
| 5                            | Filter, replacement element engine oil        | <b>281452-26</b>   | 1     | 12      | Filter, replacement element compressor air | <b>266801</b>    | 1   |
| 6                            | Filter, replacement element engine fuel       | <b>281452-01</b>   | 1     | 13      | Belt, serpentine replacement               | <sup>V</sup>     | 1   |
| 7                            | Pre-filter, replacement engine air            | <b>281452-02</b>   | 1     | 14      | Option, (Kit for) cold weather             | <b>032983</b>    | 1   |
| 8                            | Filter, replacement element engine air        | <b>281414-01</b>   | 1     | 15      | Kit, engine valve                          | <sup>VI</sup>    | 1   |
| 9                            | Oil, engine motor (1 quart container)         | <b>276041</b>      | 2 qts | 16      | Spark plug, replacement                    | <sup>VII</sup>   | 1   |
| 10                           | Filter, replacement engine in-line fuel (75µ) | <b>RC81465</b>     | 1     | 17      | Shaft, rocker arm                          | <b>281452-31</b> | 1   |
| 11                           | Oil, compressor Vanair Vanguard™ premium oil  | <b>264626-1GAL</b> | 1 gal | 18      | Kit, cold weather option                   | <sup>VIII</sup>  | 1   |

<sup>I</sup> Compressor 500 hour service (with Type "A" air filter) kit **no. KIT1483** consists of: Vanair Premium Synthetic Oil, by gallon (**no. 264626-1GAL**; x 2 [gallons]); compressor oil filter (**no. 266801**); air filter element (**no. 26281414-01**); and air/oil separator spin-on element **no. 273080**. Refer to **Section 7.2**, item #12 to identify Type "A" air filter housing.

<sup>II</sup> Compressor 500 hour service (with Type "B" air filter) kit **no. KIT1221** consists of: Vanair Premium Synthetic Oil, by gallon (**no. 264626-1GAL**; x 2 [gallons]), compressor oil filter (**no. 266801**), and air filter element (**no. 265546-004**). Refer to **Section 7.3**, item #26 to identify Type "B" air filter housing.

<sup>III</sup> Use only Vanair® Vanguard™ Premium Synthetic Oil and Genuine Vanair Parts. Substituting non-Vanguard™ Oil or non-genuine Vanair filter components **WILL VOID THE COMPRESSOR WARRANTY!** Inspect and replace damaged components before operation. System fill capacity is approximately four (4) quarts.

<sup>IV</sup> Engine service kit **no. KIT1482** consists of: Honda 10W-30 motor oil **no. 276041** (quart; quantity of two quarts); fuel filter **no. 281452-01**; air pre-filter element (**no. 281452-02**), air filter element (**no. 262722**), air filter element **no. 281452-03**; and engine oil filter (**no. 281452-26**).

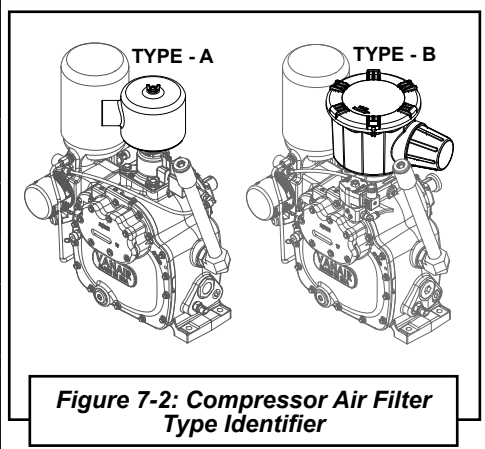
<sup>V</sup> Refer to footnote table shown in **Section 7.5, Frame and Drive**, for specifications on matching the proper: replacement belt, engine size and/or compressor type to the machine.

<sup>VI</sup> For kit component details consult the Vanair Service Department.

<sup>VII</sup> Some standard components such as spark plugs, may be obtained quicker and more economically from local sources such as an Auto Supply Store, etc.

<sup>VIII</sup> Refer to **Sections 7.9**, **7.12** and **7.14** for details. For ordering information contact the Vanair Service Department.

**PLEASE NOTE:  
WHEN ORDERING PARTS, INDICATE MA-  
CHINE SERIAL NUMBER.**

**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, contact the Vanair Service Department.

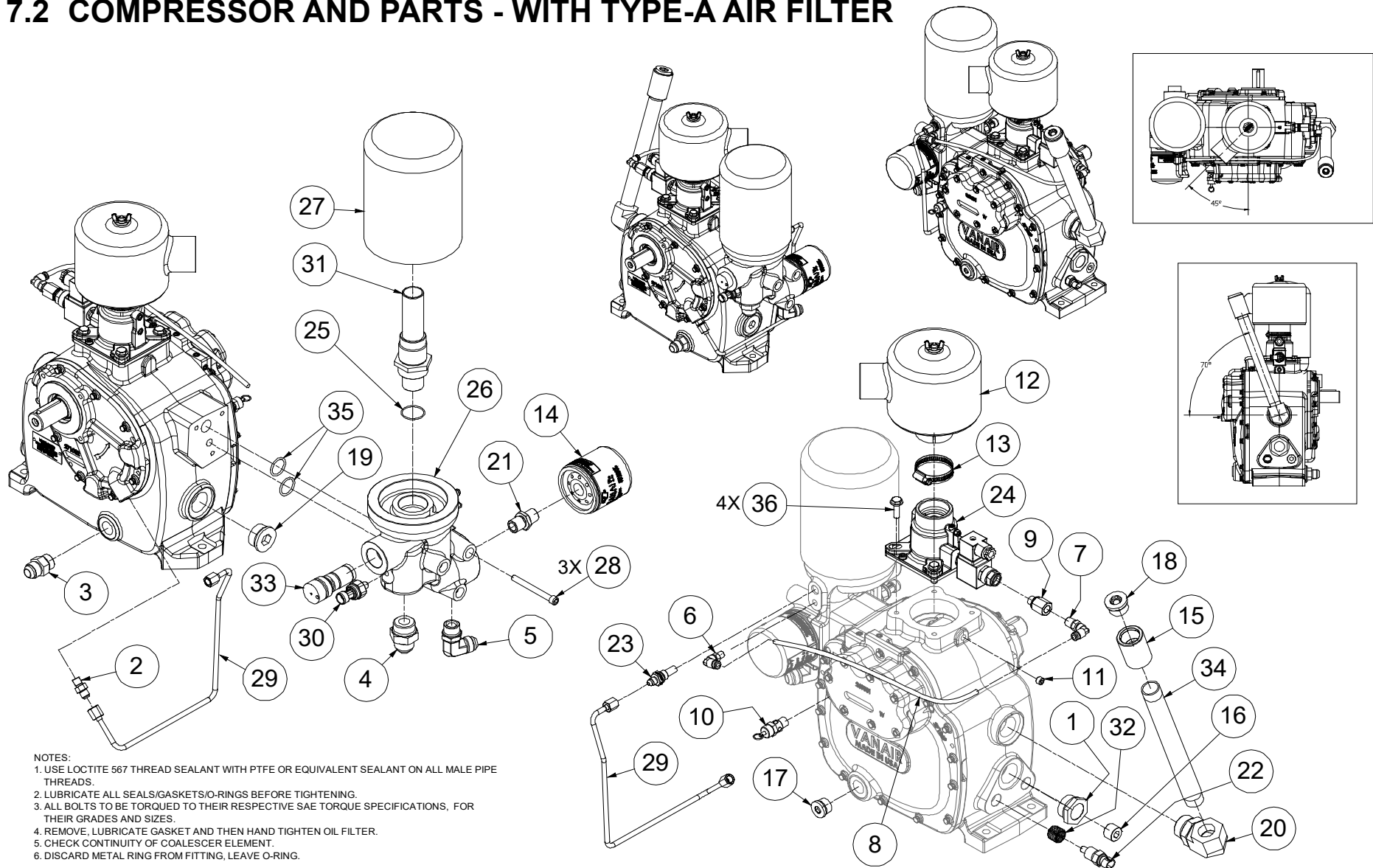
**IMPORTANT**

If additional spare parts are being stored for future use, ensure 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**.



NOTES

## 7.2 COMPRESSOR AND PARTS - WITH TYPE-A AIR FILTER

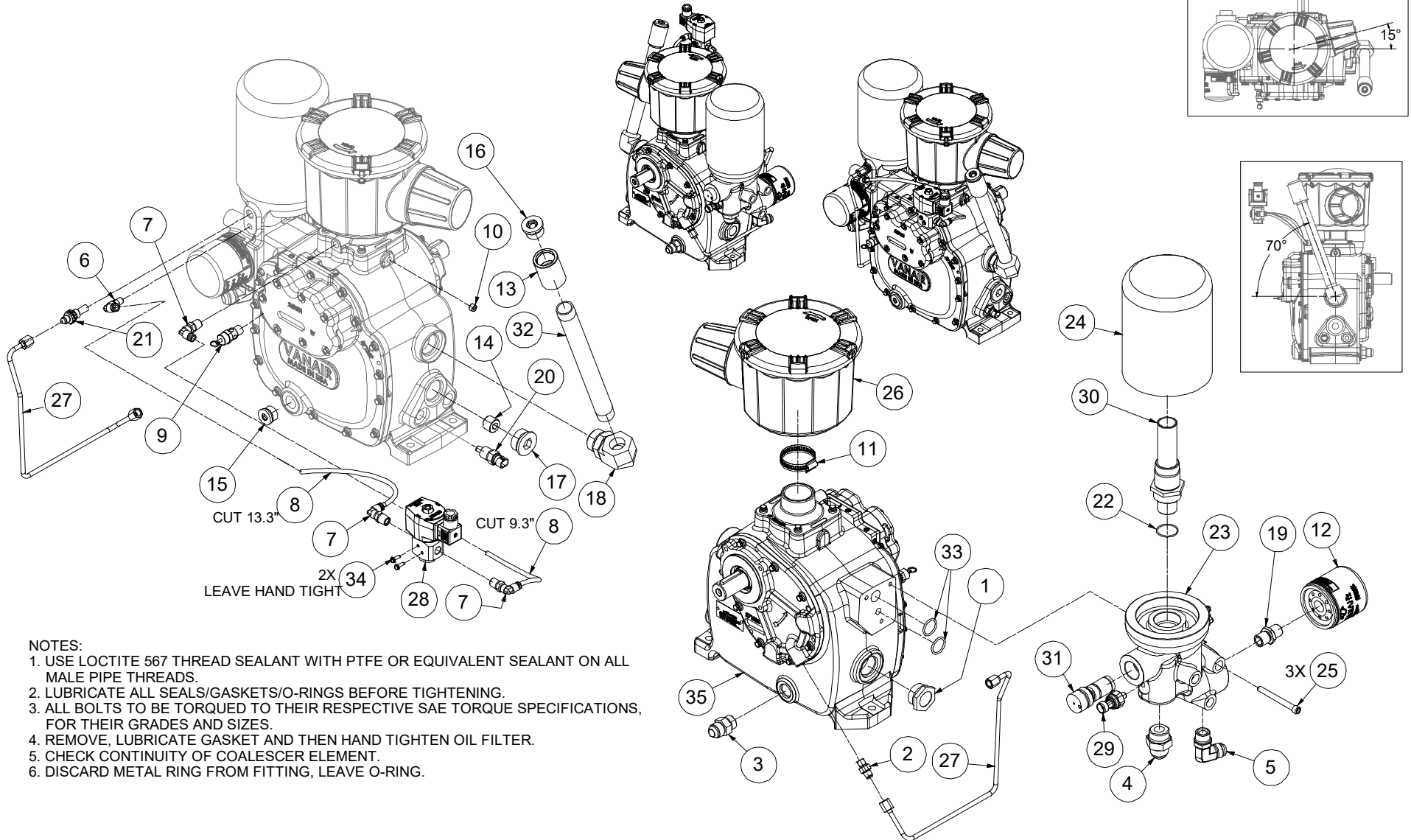


## NOTES:

1. USE LOCTITE 567 THREAD SEALANT WITH PTFE OR EQUIVALENT SEALANT ON ALL MALE PIPE THREADS.
2. LUBRICATE ALL SEALS/GASKETS/O-RINGS BEFORE TIGHTENING.
3. ALL BOLTS TO BE TORQUED TO THEIR RESPECTIVE SAE TORQUE SPECIFICATIONS, FOR THEIR GRADES AND SIZES.
4. REMOVE, LUBRICATE GASKET AND THEN HAND TIGHTEN OIL FILTER.
5. CHECK CONTINUITY OF COALESCE ELEMENT.
6. DISCARD METAL RING FROM FITTING, LEAVE O-RING.

## 7.2 COMPRESSOR AND PARTS - WITH TYPE-A AIR FILTER

| ITEM                                                              | DESCRIPTION                               | PART NUMBER | QTY   | ITEM | DESCRIPTION                                         | PART NUMBER | QTY |
|-------------------------------------------------------------------|-------------------------------------------|-------------|-------|------|-----------------------------------------------------|-------------|-----|
| 1                                                                 | SIGHTGLASS, O-RING TMBD 1 5/16"           | 250097-610  | 1     | 20   | ELBOW, 90 DEG #16 MSAE x 3/4 FNPT                   | 269071-009  | 1   |
| 2                                                                 | CONNECTOR, O-RING 1/4 SAE x 1/4 JIC       | 260387-103  | 1     | 21   | CONNECTOR,OIL FILTER VANAIR ENCAPS                  | 270037      | 1   |
| 3                                                                 | CONNECTOR, O-RING 5/8 x 5/8 JIC           | 260387-109  | 1     | 22   | THERMISTOR, TEMP 3/8" DELPHI                        | 270916      | 1   |
| 4                                                                 | CONNECTOR, O-RING 1-3/16 x 3/4 JIC PARKER | 260387-143  | 1     | 23   | ORIFICE, STRAINER 0.030 #6 MSAE X #4 MJIC           | 271054      | 1   |
| 5                                                                 | ELBOW, 90 DEG #10 MJIC x #10 MSAE         | 260403-106  | 1     | 24   | VALVE, INLET 85/150 ADHD 12V                        | 271701      | 1   |
| 6                                                                 | ELBOW, 1/4T x 1/8P PUSH-ON                | 261309      | 1     | 25   | O-RING, VITON 1/16 DIA X 1.176 ID                   | 272689      | 1   |
| 7                                                                 | ELBOW, 90 deg. PUSH ON 1/4T x 1/4P        | 261310      | 1     | 26   | MANIFOLD, AIR/OIL VMI80                             | 272920      | 1   |
| 8                                                                 | TUBING, PLASTIC 1/4 WHITE                 | 261322      | 15.7" | 27   | SEPARATOR, AIR/OIL SPIN ON                          | 273080      | 1   |
| 9                                                                 | ADAPTER, FEMALE PIPE x BSPP 1/4           | 263748-004  | 1     | 28   | CAPSCREW, HX SOC 5/16-18 X 3                        | 273239      | 3   |
| 10                                                                | VALVE, RELIEF 200 PSI 1/4 NPT MALE        | 264232      | 1     | 29   | TUBE, ASSY SCAVENGER LINE                           | 281502      | 1   |
| 11                                                                | PLUG, PIPE 1/8 NPT HOLLOW HEX             | 265065      | 1     | 30   | TRANSDUCER, PRESSURE 1/8NPT 200PSI 5V               | 282860      | 1   |
| 12                                                                | FILTER, AIR UNDERHOOD                     | 265546      | 1     | 31   | ADAPTER, AIR/OIL SEPARATOR M42 X M39                | 282989      | 1   |
| 13                                                                | CLAMP, HOSE #28                           | 265560      | 1     | 32   | BUSHING BRASS ADAPTER 1/2 NPT MALE X 3/8 NPT FEMALE | 283457      | 1   |
| 14                                                                | FILTER, OIL 6" TANK                       | 266801      | 1     | 33   | VALVE, MIN PRESS INTERNAL PARTS GV3                 | 283477      | 1   |
| 15                                                                | ADAPTER, 3/4 NPT TO 1 1/16 SAE O-RING     | 267483      | 1     | 34   | NIPPLE, PIPE GALV 3/4 x 10                          | 823112-100  | 1   |
| 16                                                                | PLUG, PIPE 1/2" NPT HOLLOW HEX            | 267942      | 1     | 35   | O-RING, VITON 1.130 O.D x 0.924 I.D x 0.103 (#119)  | 826502-119  | 2   |
| 17                                                                | PLUG, SAE O-RING HOLLOW HEX #10           | 268081-007  | 1     | 36   | SCREW, SER WASH 5/16-18 x 1                         | 829705-100  | 4   |
| 18                                                                | PLUG, SAE O-RING HOLLOW HEX #12           | 268081-008  | 1     | 37   | ID, AIREND ASSY VSE075 ALDDSS000 EXT INLET          | 6170029ID   | 1   |
| 19                                                                | PLUG, SAE O-RING HOLLOW HEX #16           | 268081-010  | 1     |      |                                                     |             |     |
| PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER. |                                           |             |       |      |                                                     |             |     |

**7.3 COMPRESSOR AND PARTS - WITH TYPE-B AIR FILTER****NOTES:**

1. USE LOCTITE 567 THREAD SEALANT WITH PTFE OR EQUIVALENT SEALANT ON ALL MALE PIPE THREADS.
2. LUBRICATE ALL SEALS/GASKETS/O-RINGS BEFORE TIGHTENING.
3. ALL BOLTS TO BE TORQUED TO THEIR RESPECTIVE SAE TORQUE SPECIFICATIONS, FOR THEIR GRADES AND SIZES.
4. REMOVE, LUBRICATE GASKET AND THEN HAND TIGHTEN OIL FILTER.
5. CHECK CONTINUITY OF COALESCER ELEMENT.
6. DISCARD METAL RING FROM FITTING, LEAVE O-RING.

6180049ID\_r1

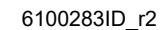
090195-OP\_r0 (JANUARY-2022)

 VANAIR MANUFACTURING, INC.  
 (844) VAN-SERV • www.vanair.com

### 7.3 COMPRESSOR AND PARTS - WITH TYPE-B AIR FILTER

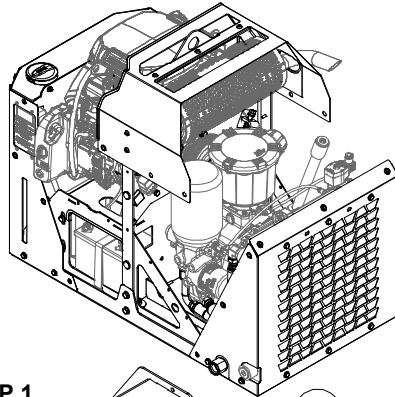
| ITEM | DESCRIPTION                           | PART NUMBER | QTY | ITEM | DESCRIPTION                                      | PART NUMBER | QTY |
|------|---------------------------------------|-------------|-----|------|--------------------------------------------------|-------------|-----|
| 1    | SIGHTGLASS, O-RING TMBD 1 5/16"       | 250097-610  | 1   | 19   | CONNECTOR, OIL FILTER VANAIR ENCAPS              | 270037      | 1   |
| 2    | CONNECTOR, O-RING 1/4 SAE x 1/4 JIC   | 260387-103  | 1   | 20   | THERMISTOR, TEMP 3/8" DELPHI                     | 270916      | 1   |
| 3    | CONNECTOR, O-RING 5/8 x 5/8 JIC       | 260387-109  | 1   | 21   | ORIFICE, STRAINER 0.030 #6 MSAE X #4 MJIC        | 271054      | 1   |
| 4    | CONNECTOR, O-RING 1-3/16 x 3/4 JIC    | 260387-143  | 1   | 22   | O-RING, VITON 1/16 DIA X 1.176 ID                | 272689      | 1   |
| 5    | ELBOW, 90 DEG #10 MJIC x #10 MSAE     | 260403-106  | 1   | 23   | MANIFOLD, AIR/OIL VMI80                          | 272920      | 1   |
| 6    | ELBOW, 1/4T x 1/8P PUSH-ON            | 261309      | 1   | 24   | SEPARATOR, AIR/OIL SPIN ON                       | 273080      | 1   |
| 7    | ELBOW, 90 deg. PUSH ON 1/4T x 1/4P    | 261310      | 3   | 25   | CAPSCREW, HX SOC 5/16-18 X 3                     | 273239      | 3   |
| 8    | TUBING, PLASTIC 1/4 WHITE             | 261322      | 2   | 26   | FILTER, AIR INTAKE                               | 281414      | 1   |
| 9    | VALVE, RELIEF 200 PSI 1/4 NPT MALE    | 264232      | 1   | 27   | TUBE, ASSY SCAVENGER LINE                        | 281502      | 1   |
| 10   | PLUG, PIPE 1/8 NPT HOLLOW HEX         | 265065      | 1   | 28   | SOLENOID, 2 WAY NO 1/4"-18 NPT 12V               | 282710      | 1   |
| 11   | CLAMP, HOSE #28                       | 265560      | 1   | 29   | TRANSDUCER, PRESSURE 1/8NPT 200PSI 5V            | 282860      | 1   |
| 12   | FILTER, OIL 6" TANK                   | 266801      | 1   | 30   | ADAPTER, AIR/OIL SEPARATOR M42 X M39             | 282989      | 1   |
| 13   | ADAPTER, 3/4 NPT TO 1 1/16 SAE O-RING | 267483      | 1   | 31   | VALVE, MIN PRESS INTERNAL PARTS GV3              | 283477      | 1   |
| 14   | PLUG, PIPE 1/2" NPT HOLLOW HEX        | 267942      | 1   | 32   | NIPPLE, PIPE GALV 3/4 x 10                       | 823112-100  | 1   |
| 15   | PLUG, SAE O-RING HOLLOW HEX #10       | 268081-007  | 1   | 33   | O-RING, VTN 1.130 O.D x 0.924 I.D x 0.103 (#119) | 826502-119  | 2   |
| 16   | PLUG, SAE O-RING HOLLOW HEX #12       | 268081-008  | 1   | 34   | SCREW, SER WASH #8-32 x 0.5                      | 829701-050  | 2   |
| 17   | PLUG, SAE O-RING HOLLOW HEX #16       | 268081-010  | 1   | 35   | AIREND ASSY, VSE075DDSS000 INLET VLV             | 6170017     | 1   |
| 18   | ELBOW, 90 DEG #16 MSAE x 3/4 FNPT     | 269071-009  | 1   |      |                                                  |             |     |

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

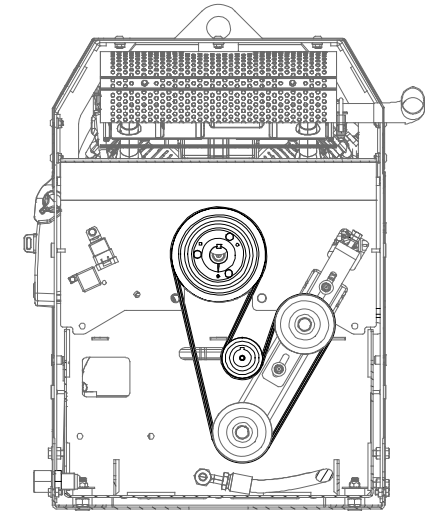
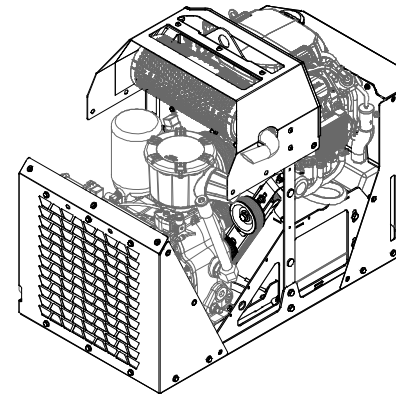




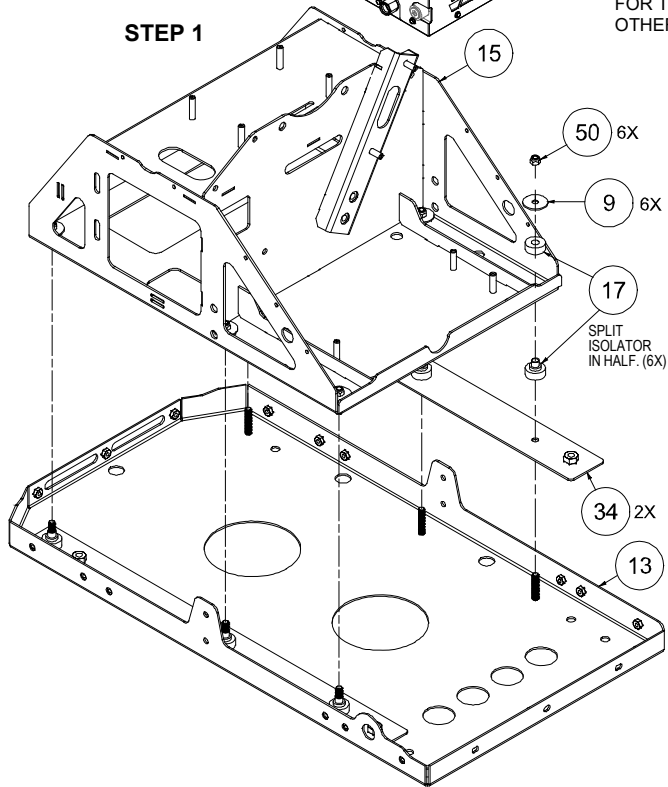
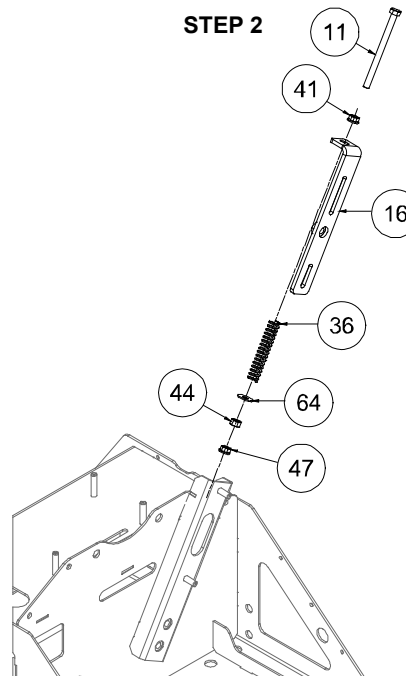
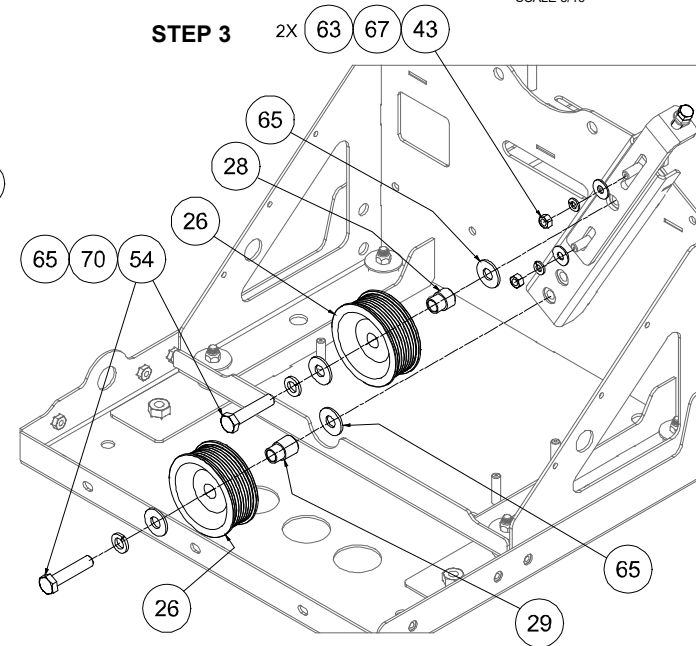
| 7.4 ENGINE AND DRIVE PARTS                                        |                                       |               |      |
|-------------------------------------------------------------------|---------------------------------------|---------------|------|
| ITEM                                                              | DESCRIPTION                           | PART NUMBER   | QTY  |
| 1                                                                 | LAMP, EXHAUST 1 1/2                   | 262906-150    | 1    |
| 2                                                                 | ENGINE, GAS HONDA IGX800 25HP EFI ETB | 281452        | 1    |
| 3                                                                 | MUFFLER, HONDA IGX800                 | 281453        | 1    |
| 4                                                                 | BRACKET, HONDA CONTROLLER             | 281524        | 1    |
| 5                                                                 | CAPSCREW, M7-1.0 x 16mm               | 282032        | 2    |
| 6                                                                 | HOSE, ENGINE OIL DRAIN 20MM IGX800    | 282054        | 1    |
| 7                                                                 | TUBE, EXHAUST TIP GV3                 | 282400        | 1    |
| 8                                                                 | NUT, M7-1.0                           | 282478        | 2    |
| 9                                                                 | WASHER, LOCK 5/16                     | 838505-078    | 2    |
| 10                                                                | WASHER, LOCK METRIC M7                | 838807-160    | 2    |
| 11                                                                | OIL, MOTOR 10W-30                     | 844300-001    | 2 qt |
| 12                                                                | GASKET, ENGINE EXHAUST HONDA IGX800   | <sup>I</sup>  | 2    |
| 13                                                                | M8-1.25 STUD (LONG)                   | <sup>II</sup> | 1    |
| 14                                                                | M8-1.25 STUD (SHORT)                  | <sup>II</sup> | 1    |
| 15                                                                | M8-1.25 FLANGE NUT                    | <sup>II</sup> | 6    |
| 16                                                                | M8-1.25 FLANGE SCREW                  | <sup>II</sup> | 2    |
| 17                                                                | M8-1.25 STUD                          | <sup>II</sup> | 4    |
| <sup>I</sup> Supplied with engine.                                |                                       |               |      |
| <sup>II</sup> Supplied with muffler.                              |                                       |               |      |
| PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER. |                                       |               |      |

**7.5 FRAME AND DRIVE - 1 OF 4**

- NOTE:**
1. REFERENCED SUBASSEMBLIES SHOWN AS:  
EXAMPLE - 2A, 6B, 4D.
  2. USE LOCTITE 567 THREAD SEALANT WITH  
PTFE OR EQUIVALENT SEALANT ON ALL  
MALE PIPE THREADS.
  3. ALL BOLTS TO BE TORQUED TO THEIR  
RESPECTIVE SAE TORQUE SPECIFICATIONS,  
FOR THEIR GRADES AND SIZES, UNLESS  
OTHERWISE SPECIFIED.



**BELT VIEW**  
SCALE 5/16

**STEP 1****STEP 2****STEP 3**

6030209ID\_r3\_1of4

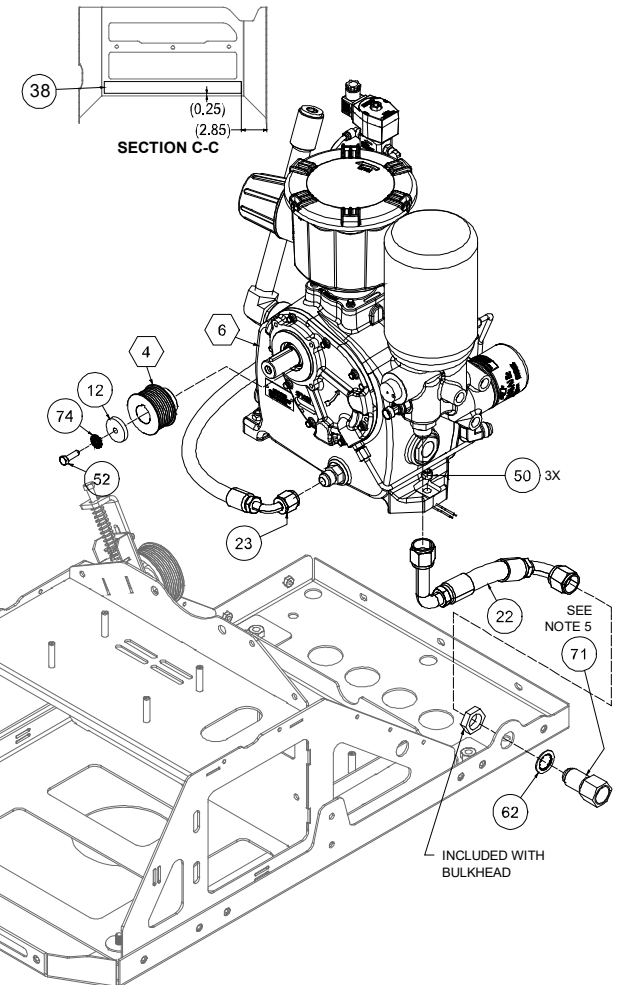
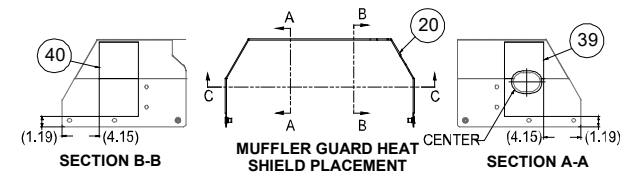
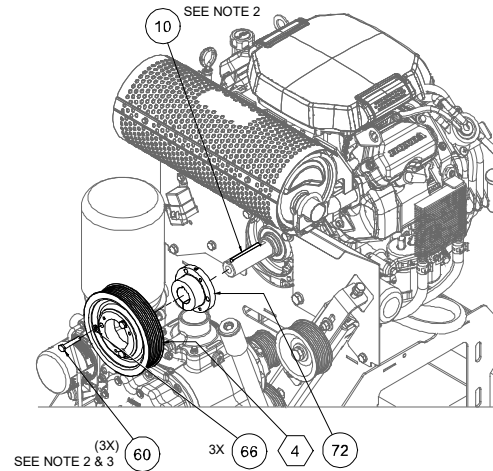
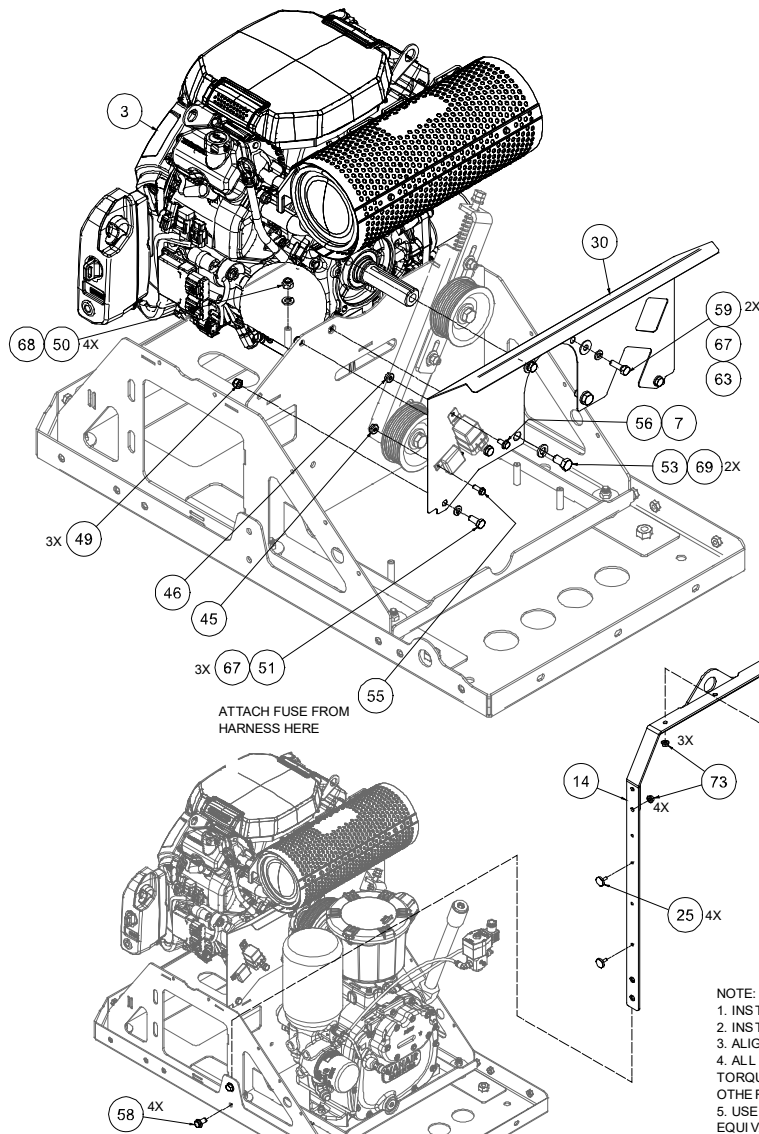
**7.5 FRAME AND DRIVE - 1 OF 4**

| ITEM | DESCRIPTION                                   | PART #     | QTY  | ITEM | DESCRIPTION                                                 | PART #     | QTY    | ITEM | DESCRIPTION                       | PART #     | QTY     |
|------|-----------------------------------------------|------------|------|------|-------------------------------------------------------------|------------|--------|------|-----------------------------------|------------|---------|
| 1    | COOLING SYSTEM GV3                            | 6020279    | 1    | 29   | BUSHING, SHLDR ADPTR 1.00" IN L                             | 282408     | 1      | 54   | CAPSCREW, HX GR5 1/2-13 x 2.25    | 829108-225 | 2       |
| 3    | ENGINE & PARTS IGX800                         | 6100283    | 1    | 30   | BAFFLE, ENGINE AIR OUT                                      | 282430     | 1      | 55   | SCREW, SER WASH #12-24 x 0.625    | 829703-062 | 1       |
| 5    | FUEL TANK ASSY GV3                            | 6140041    | 1    | 31   | BAFFLE, ENGINE AIR IN                                       | 282431     | 1      | 56   | SCREW, SER WASH 1/4-20 x 0.5      | 829704-050 | 4       |
| 7    | RELAY, NO/NC WTHRPF w/ RSTR                   | 260246     | 1    | 32   | BOLT, FLANGE 5/16-18 X 5/8 BLK ZNC                          | 282480-062 | 12     | 57   | SCREW, SER WASH 3/8-16 x 0.625    | 829706-062 | 4       |
| 8    | TRIM-LOK, 1/8 GROOVE                          | 261228     | 3 ft | 33   | BOLT, FLANGE 5/16-18 X 1 BLK ZNC                            | 282480-100 | 9      | 58   | SCREW, SER WASH 3/8-16 x 0.75     | 829706-075 | 4       |
| 9    | WASHER, SNUBBING RUBBER MOUNT                 | 265332     | 6    | 34   | PLATE, FRAME MOUNTING                                       | 282799     | 2      | 59   | CAPSCREW, HX GR8 5/16-24 x 1      | 829805-100 | 2       |
| 10   | KEY, SQUARE 1/4 x 1/4 x 2 1/2                 | 267639     | 1    | 35   | TRIM, SIDE BULB W/VINYL GRIP FITS 0.0625 EDGE, 0.375 HEIGHT | 282861     | 1      | 60   | SCREW, MACHINE 1/4-20 x 1 1/2     | 830104-150 | 3       |
| 11   | BOLT, TAP 3/8-16 UNC-2B x 5.50 LG GR8 FL THRD | 278133     | 1    | 36   | SPRING, BELT TENSIONER                                      | 282927     | 1      | 61   | SCREW, ROUND HD 10-24 X 5/8       | 831602-062 | 4       |
| 12   | RETAINER, SHEAVE GAS VIPER                    | 281163     | 1    | 37   | CAP, GAS FILL NECK                                          | 282962     | 1      | 62   | WASHER, INTRNL TOOTH 3/4 IN       | 837412-055 | 1       |
| 13   | FRAME, BASE GV3                               | 281460     | 1    | 38   | HEAT SHIELD, TOP MUFFLER GUARD                              | 283010-01  | 1      | 63   | WASHER, FLAT 5/16                 | 838205-071 | 4       |
| 14   | BAIL, LIFT GV3                                | 281461     | 1    | 39   | HEAT SHLD, MFFLR GRD EXHST SIDE                             | 283010-02  | 1      | 64   | WASHER, FLAT 3/8                  | 838206-071 | 1       |
| 15   | SUPT, SUB-STRUCTURE GV3                       | 281564     | 1    | 40   | HEAT SHIELD, MUFFLER GUARD                                  | 283010-03  | 1      | 65   | WASHER, FLAT 1/2                  | 838208-112 | 4       |
| 16   | BRACKET, TENSIONER SLIDE                      | 281685     | 1    | 41   | NUT, 3/8-16 NONSRRTD FLNG GR 5                              | 283149-616 | 1      | 66   | WASHER, LOCK 1/4                  | 838504-062 | 3       |
| 17   | MOUNT, RUBBER 280# AXIAL WHITE                | 281720     | 6    | 42   | TRIM, TOP BULB W/VINYL GRIP FITS 0.0625 EDGE, 0.375 HT      | 283353     | 9.3 in | 67   | WASHER, LOCK 5/16                 | 838505-078 | 7       |
| 18   | PANEL, ENGINE SIDE                            | 281840     | 1    | 43   | NUT, HEX 5/16-18                                            | 825205-273 | 2      | 68   | WASHER, LOCK 3/8                  | 838506-094 | 4       |
| 19   | PANEL, COOLER GUARD/SUPT GV3                  | 281847     | 1    | 44   | NUT, HEX 3/8-16 YELLOW ZINC                                 | 825206-337 | 1      | 69   | WASHER, LOCK 7/16                 | 838507-109 | 2       |
| 20   | PANEL, ENGINE MUFFLER SHIELD GV3              | 281869     | 1    | 45   | NUT, HEX FLANGE #12-24                                      | 825303-236 | 1      | 70   | WASHER, LOCK 1/2                  | 838508-125 | 2       |
| 21   | PANEL, FUEL FILL SUPT GV3                     | 281902     | 1    | 46   | NUT, HEX FLANGE 1/4-20                                      | 825304-236 | 4      | 71   | BULKHEAD, 3/4 FNPT x #12 MJIC     | 862012-075 | 1       |
| 22   | HOSE, AIR DISCHARGE GV3                       | 281927     | 1    | 47   | NUT, HEX FLANGE 3/8-16                                      | 825306-347 | 1      | 72   | BUSHING, SDS, QD, 1 1/8 DIA       | DR85785Z   | 1       |
| 23   | HOSE, COMPRESSOR OIL COOLER HOT GV3           | 281929     | 1    | 48   | NUT, HEX LOCKING #10-24                                     | 825502-083 | 4      | 73   | NUT, HEX FLANGE 5/16-18           | FA26142    | 7       |
| 24   | HOSE, COMPRESSOR OIL COOLER COLD GV3          | 281930     | 1    | 49   | NUT, HEX LOCKING 5/16-18                                    | 825505-166 | 3      | 74   | WASHER, 3/8ID X 13/16OD NORD-LOCK | FA49463    | 1       |
| 25   | BUMPER, SHEET METAL BLACK                     | 282074     | 4    | 50   | NUT, HEX LOCKING 3/8-16                                     | 825506-198 | 13     | 75   | GASKET, SEAL AND TRIM             | PR35734    | 47.3 in |
| 26   | SHEAVE, DRIVE K SECTION 8 GROOVE 3.54 OD      | 282269     | 2    | 51   | CAPSCREW, HEX GR5 5/16-18 x 0.75                            | 829105-075 | 3      | 76   | TRIM-LOK, 1/4 GROOVE              | PR274358   | 9.3 in  |
| 27   | SCREW, 5/16"-18 X 5/8 BTN HD SCKT BLK ZNC     | 282274-063 | 7    | 52   | CAPSCREW, HEX GR5 5/16-18 x 1                               | 829105-100 | 1      |      |                                   |            |         |
| 28   | BUSHING, SHOULDER ADAPTER 0.75" IN L          | 282407     | 1    | 53   | CAPSCREW, HEX GR5 7/16-14 x 0.75                            | 829107-075 | 2      |      |                                   |            |         |

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

| I ELECTRICAL OPTIONS |                           |         |     | II PULLEY/BELT OPTIONS |                             |             |         |     | III COMPRESSOR OPTIONS |                                                 |         |     |
|----------------------|---------------------------|---------|-----|------------------------|-----------------------------|-------------|---------|-----|------------------------|-------------------------------------------------|---------|-----|
| ITEM #               | DESCRIPTION               | PART #  | QTY | ITEM #                 | DESCRIPTION                 | MACHINE CFM | PART #  | QTY | ITEM #                 | DESCRIPTION                                     | PART #  | QTY |
| 2A                   | ELCTRCL SYS, GV3          | 6060342 | 1   | 4A                     | DRIVE, ENG & CMPR PARTS GV3 | 80/100      | 6100308 | 1   | 6A                     | AIREND & ATT, VSE075DDSS000 INLET VLV VIPER SOL | 6180049 | 1   |
| 2B                   | ELCTRCL SYS, GV3 CLD WTHR | 6060387 | 1   | 4B                     | DRIVE, ENG & CMPR PARTS GV3 | 70/125      | 6100309 | 1   | 6B                     | AIREND & ATT, VSE075ALDDSS000 EXT INLET VLV GV3 | 6180066 | 1   |
|                      |                           |         |     | 4C                     | DRIVE, ENG & CMPR PARTS GV3 | 60/150      | 6100311 | 1   |                        |                                                 |         |     |
|                      |                           |         |     | 4E                     | DRIVE, ENG & CMPR PARTS GV3 | 55/175      | 6100312 | 1   |                        |                                                 |         |     |

## 7.5 FRAME AND DRIVE - 2 OF 4



NOTE:

1. INSTALL COMPRESSOR BEFORE ENGINE.
2. INSTALL COMPRESSOR SHIELD BEFORE MOUNTING.
3. ALIGN COMPRESSOR TO IDLERS.
4. ALL BOLTS TO BE TORQUED TO THEIR RESPECTIVE SAE TORQUE SPEC FOR ITS GRADE AND SIZE UNLESS OTHERWISE SPECIFIED.
5. USE LOCTITE 567 THREAD SEALANT WITH PTFE OR EQUIVALENT SEALANT ON ALL MALE PIPE THREADS.

**7.5 FRAME AND DRIVE - 2 OF 4**

| ITEM | DESCRIPTION                                   | PART #     | QTY  | ITEM | DESCRIPTION                                                 | PART #     | QTY    | ITEM | DESCRIPTION                         | PART #     | QTY     |
|------|-----------------------------------------------|------------|------|------|-------------------------------------------------------------|------------|--------|------|-------------------------------------|------------|---------|
| 1    | COOLING SYSTEM GV3                            | 6020279    | 1    | 29   | BUSHING, SHLDR ADPTR 1.00" IN L                             | 282408     | 1      | 54   | CAPSCREW, HX GR5 1/2-13 x 2.25      | 829108-225 | 2       |
| 3    | ENGINE & PARTS IGX800                         | 6100283    | 1    | 30   | BAFFLE, ENGINE AIR OUT                                      | 282430     | 1      | 55   | SCREW, SER WASH #12-24 x 0.625      | 829703-062 | 1       |
| 5    | FUEL TANK ASSY GV3                            | 6140041    | 1    | 31   | BAFFLE, ENGINE AIR IN                                       | 282431     | 1      | 56   | SCREW, SER WASH 1/4-20 x 0.5        | 829704-050 | 4       |
| 7    | RELAY, NO/NC WTHRPF w/ RSTR                   | 260246     | 1    | 32   | BOLT, FLANGE 5/16-18 X 5/8 BLK ZNC                          | 282480-062 | 12     | 57   | SCREW, SER WASH 3/8-16 x 0.625      | 829706-062 | 4       |
| 8    | TRIM-LOK, 1/8 GROOVE                          | 261228     | 3 ft | 33   | BOLT, FLANGE 5/16-18 X 1 BLK ZNC                            | 282480-100 | 9      | 58   | SCREW, SER WASH 3/8-16 x 0.75       | 829706-075 | 4       |
| 9    | WASHER, SNUBBING RUBBER MOUNT                 | 265332     | 6    | 34   | PLATE, FRAME MOUNTING                                       | 282799     | 2      | 59   | CAPSCREW, HX GR8 5/16-24 x 1        | 829805-100 | 2       |
| 10   | KEY, SQUARE 1/4 x 1/4 x 2 1/2                 | 267639     | 1    | 35   | TRIM, SIDE BULB W/VINYL GRIP FITS 0.0625 EDGE, 0.375 HEIGHT | 282861     | 1      | 60   | SCREW, MACHINE 1/4-20 x 1 1/2       | 830104-150 | 3       |
| 11   | BOLT, TAP 3/8-16 UNC-2B x 5.50 LG GR8 FL THRD | 278133     | 1    | 36   | SPRING, BELT TENSIONER                                      | 282927     | 1      | 61   | SCREW, ROUND HD 10-24 X 5/8         | 831602-062 | 4       |
| 12   | RETAINER, SHEAVE GAS VIPER                    | 281163     | 1    | 37   | CAP, GAS FILL NECK                                          | 282962     | 1      | 62   | WASHER, INTRNL TOOTH 3/4 IN         | 837412-055 | 1       |
| 13   | FRAME, BASE GV3                               | 281460     | 1    | 38   | HEAT SHIELD, TOP MUFFLER GUARD                              | 283010-01  | 1      | 63   | WASHER, FLAT 5/16                   | 838205-071 | 4       |
| 14   | BAIL, LIFT GV3                                | 281461     | 1    | 39   | HEAT SHLD, MFFLR GRD EXHST SIDE                             | 283010-02  | 1      | 64   | WASHER, FLAT 3/8                    | 838206-071 | 1       |
| 15   | SUPT, SUB-STRUCTURE GV3                       | 281564     | 1    | 40   | HEAT SHIELD, MUFFLER GUARD                                  | 283010-03  | 1      | 65   | WASHER, FLAT 1/2                    | 838208-112 | 4       |
| 16   | BRACKET, TENSIONER SLIDE                      | 281685     | 1    | 41   | NUT, 3/8-16 NONSRRTD FLNG GR 5                              | 283149-616 | 1      | 66   | WASHER, LOCK 1/4                    | 838504-062 | 3       |
| 17   | MOUNT, RUBBER 280# AXIAL WHITE                | 281720     | 6    | 42   | TRIM, TOP BULB W/VINYL GRIP FITS 0.0625 EDGE, 0.375 HT      | 283353     | 9.3 in | 67   | WASHER, LOCK 5/16                   | 838505-078 | 7       |
| 18   | PANEL, ENGINE SIDE                            | 281840     | 1    | 43   | NUT, HEX 5/16-18                                            | 825205-273 | 2      | 68   | WASHER, LOCK 3/8                    | 838506-094 | 4       |
| 19   | PANEL, COOLER GUARD/SUPT GV3                  | 281847     | 1    | 44   | NUT, HEX 3/8-16 YELLOW ZINC                                 | 825206-337 | 1      | 69   | WASHER, LOCK 7/16                   | 838507-109 | 2       |
| 20   | PANEL, ENGINE MUFFLER SHIELD GV3              | 281869     | 1    | 45   | NUT, HEX FLANGE #12-24                                      | 825303-236 | 1      | 70   | WASHER, LOCK 1/2                    | 838508-125 | 2       |
| 21   | PANEL, FUEL FILL SUPT GV3                     | 281902     | 1    | 46   | NUT, HEX FLANGE 1/4-20                                      | 825304-236 | 4      | 71   | BULKHEAD, 3/4 FNPT x #12 MJIC       | 862012-075 | 1       |
| 22   | HOSE, AIR DISCHARGE GV3                       | 281927     | 1    | 47   | NUT, HEX FLANGE 3/8-16                                      | 825306-347 | 1      | 72   | BUSHING, SDS, QD, 1 1/8 DIA         | DR85785Z   | 1       |
| 23   | HOSE, COMPRESSOR OIL COOLER HOT GV3           | 281929     | 1    | 48   | NUT, HEX LOCKING #10-24                                     | 825502-083 | 4      | 73   | NUT, HEX FLANGE 5/16-18             | FA26142    | 7       |
| 24   | HOSE, COMPRESSOR OIL COOLER COLD GV3          | 281930     | 1    | 49   | NUT, HEX LOCKING 5/16-18                                    | 825505-166 | 3      | 74   | WASHER, 3/8 ID X 13/16 OD NORD-LOCK | FA49463    | 1       |
| 25   | BUMPER, SHEET METAL BLACK                     | 282074     | 4    | 50   | NUT, HEX LOCKING 3/8-16                                     | 825506-198 | 13     | 75   | GASKET, SEAL AND TRIM               | PR35734    | 47.3 in |
| 26   | SHEAVE, DRIVE K SECTION 8 GROOVE 3.54 OD      | 282269     | 2    | 51   | CAPSCREW, HEX GR5 5/16-18 x 0.75                            | 829105-075 | 3      | 76   | TRIM-LOK, 1/4 GROOVE                | PR274358   | 9.3 in  |
| 27   | SCREW, 5/16"-18 X 5/8 BTN HD SCKT BLK ZNC     | 282274-063 | 7    | 52   | CAPSCREW, HEX GR5 5/16-18 x 1                               | 829105-100 | 1      |      |                                     |            |         |
| 28   | BUSHING, SHOULDER ADAPTER 0.75" IN L          | 282407     | 1    | 53   | CAPSCREW, HEX GR5 7/16-14 x 0.75                            | 829107-075 | 2      |      |                                     |            |         |

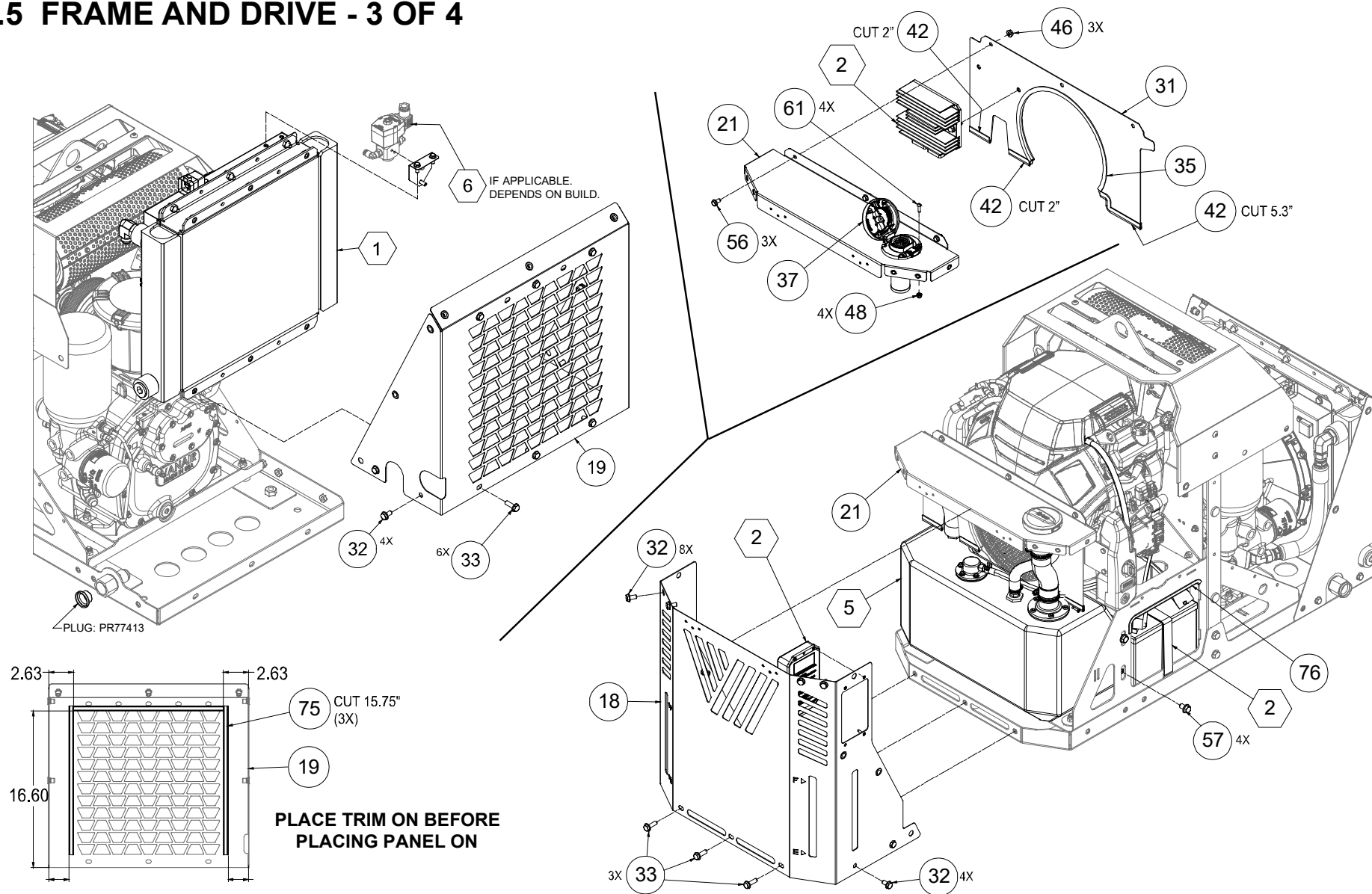
**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.**

| I ELECTRICAL OPTIONS |                           |         |     |
|----------------------|---------------------------|---------|-----|
| ITEM #               | DESCRIPTION               | PART #  | QTY |
| 2A                   | ELCTRCL SYS, GV3          | 6060342 | 1   |
| 2B                   | ELCTRCL SYS, GV3 CLD WTHR | 6060387 | 1   |

| II PULLEY/BELT OPTIONS |                             |             |         |     |
|------------------------|-----------------------------|-------------|---------|-----|
| ITEM #                 | DESCRIPTION                 | MACHINE CFM | PART #  | QTY |
| 4A                     | DRIVE, ENG & CMPR PARTS GV3 | 80/100      | 6100308 | 1   |
| 4B                     | DRIVE, ENG & CMPR PARTS GV3 | 70/125      | 6100309 | 1   |
| 4C                     | DRIVE, ENG & CMPR PARTS GV3 | 60/150      | 6100311 | 1   |
| 4E                     | DRIVE, ENG & CMPR PARTS GV3 | 55/175      | 6100312 | 1   |

| III COMPRESSOR OPTIONS |                                                 |         |     |
|------------------------|-------------------------------------------------|---------|-----|
| ITEM #                 | DESCRIPTION                                     | PART #  | QTY |
| 6A                     | AIREND & ATT, VSE075DDSS000 INLET VLV VIPER SOL | 6180049 | 1   |
| 6B                     | AIREND & ATT, VSE075ALDSS000 EXT INLET VLV GV3  | 6180066 | 1   |

## 7.5 FRAME AND DRIVE - 3 OF 4



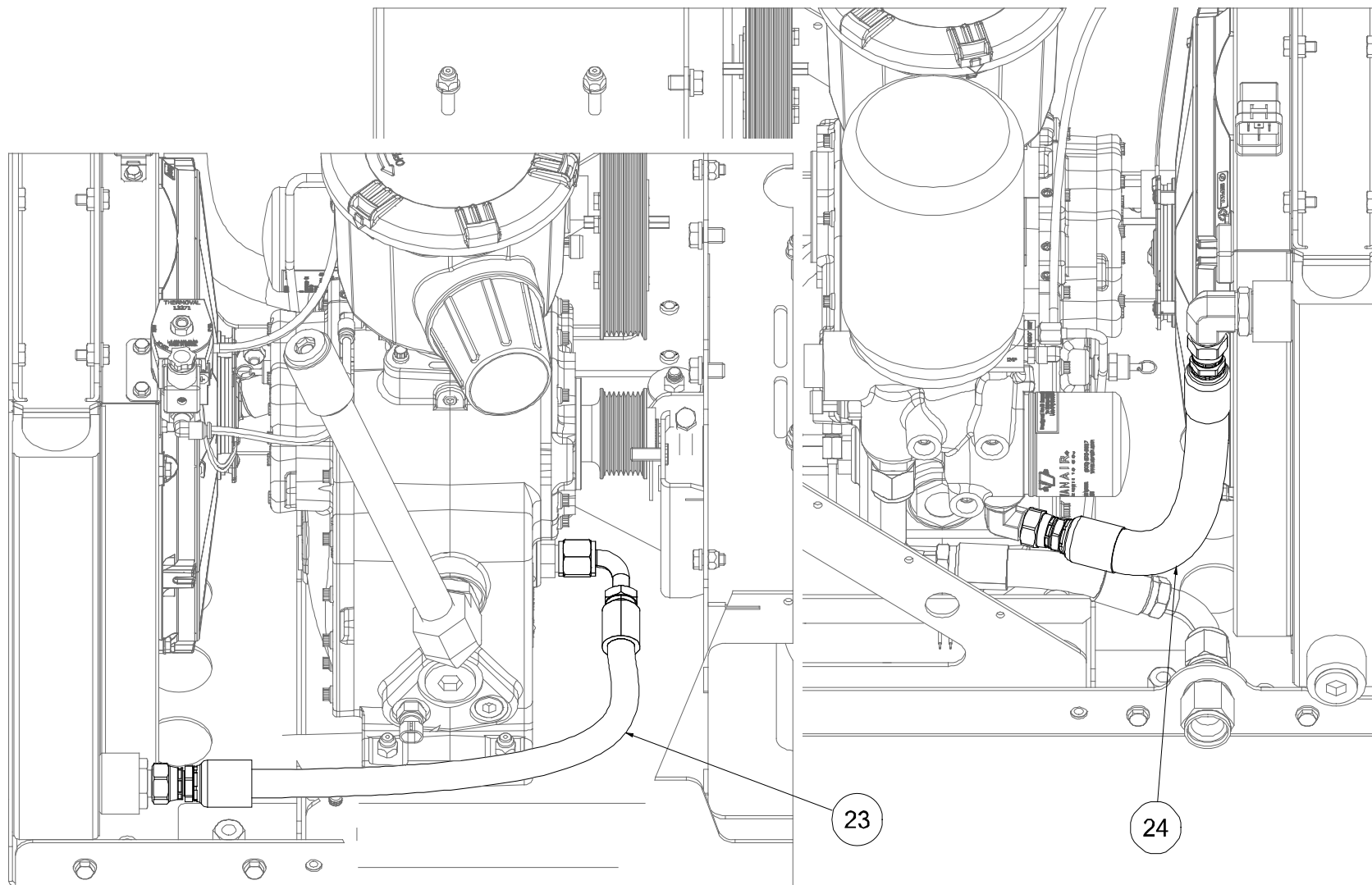
**7.5 FRAME AND DRIVE - 3 OF 4**

| ITEM | DESCRIPTION                                   | PART #     | QTY  | ITEM | DESCRIPTION                                                 | PART #     | QTY    | ITEM | DESCRIPTION                       | PART #     | QTY     |
|------|-----------------------------------------------|------------|------|------|-------------------------------------------------------------|------------|--------|------|-----------------------------------|------------|---------|
| 1    | COOLING SYSTEM GV3                            | 6020279    | 1    | 29   | BUSHING, SHLDR ADPTR 1.00" IN L                             | 282408     | 1      | 54   | CAPSCREW, HX GR5 1/2-13 x 2.25    | 829108-225 | 2       |
| 3    | ENGINE & PARTS IGX800                         | 6100283    | 1    | 30   | BAFFLE, ENGINE AIR OUT                                      | 282430     | 1      | 55   | SCREW, SER WASH #12-24 x 0.625    | 829703-062 | 1       |
| 5    | FUEL TANK ASSY GV3                            | 6140041    | 1    | 31   | BAFFLE, ENGINE AIR IN                                       | 282431     | 1      | 56   | SCREW, SER WASH 1/4-20 x 0.5      | 829704-050 | 4       |
| 7    | RELAY, NO/NC WTHRPF w/ RSTR                   | 260246     | 1    | 32   | BOLT, FLANGE 5/16-18 X 5/8 BLK ZNC                          | 282480-062 | 12     | 57   | SCREW, SER WASH 3/8-16 x 0.625    | 829706-062 | 4       |
| 8    | TRIM-LOK, 1/8 GROOVE                          | 261228     | 3 ft | 33   | BOLT, FLANGE 5/16-18 X 1 BLK ZNC                            | 282480-100 | 9      | 58   | SCREW, SER WASH 3/8-16 x 0.75     | 829706-075 | 4       |
| 9    | WASHER, SNUBBING RUBBER MOUNT                 | 265332     | 6    | 34   | PLATE, FRAME MOUNTING                                       | 282799     | 2      | 59   | CAPSCREW, HX GR8 5/16-24 x 1      | 829805-100 | 2       |
| 10   | KEY, SQUARE 1/4 x 1/4 x 2 1/2                 | 267639     | 1    | 35   | TRIM, SIDE BULB W/VINYL GRIP FITS 0.0625 EDGE, 0.375 HEIGHT | 282861     | 1      | 60   | SCREW, MACHINE 1/4-20 x 1 1/2     | 830104-150 | 3       |
| 11   | BOLT, TAP 3/8-16 UNC-2B x 5.50 LG GR8 FL THRD | 278133     | 1    | 36   | SPRING, BELT TENSIONER                                      | 282927     | 1      | 61   | SCREW, ROUND HD 10-24 X 5/8       | 831602-062 | 4       |
| 12   | RETAINER, SHEAVE GAS VIPER                    | 281163     | 1    | 37   | CAP, GAS FILL NECK                                          | 282962     | 1      | 62   | WASHER, INTRNL TOOTH 3/4 IN       | 837412-055 | 1       |
| 13   | FRAME, BASE GV3                               | 281460     | 1    | 38   | HEAT SHIELD, TOP MUFFLER GUARD                              | 283010-01  | 1      | 63   | WASHER, FLAT 5/16                 | 838205-071 | 4       |
| 14   | BAIL, LIFT GV3                                | 281461     | 1    | 39   | HEAT SHLD, MFFLR GRD EXHST SIDE                             | 283010-02  | 1      | 64   | WASHER, FLAT 3/8                  | 838206-071 | 1       |
| 15   | SUPT, SUB-STRUCTURE GV3                       | 281564     | 1    | 40   | HEAT SHIELD, MUFFLER GUARD                                  | 283010-03  | 1      | 65   | WASHER, FLAT 1/2                  | 838208-112 | 4       |
| 16   | BRACKET, TENSIONER SLIDE                      | 281685     | 1    | 41   | NUT, 3/8-16 NONSRRTD FLNG GR 5                              | 283149-616 | 1      | 66   | WASHER, LOCK 1/4                  | 838504-062 | 3       |
| 17   | MOUNT, RUBBER 280# AXIAL WHITE                | 281720     | 6    | 42   | TRIM, TOP BULB W/VINYL GRIP FITS 0.0625 EDGE, 0.375 HT      | 283353     | 9.3 in | 67   | WASHER, LOCK 5/16                 | 838505-078 | 7       |
| 18   | PANEL, ENGINE SIDE                            | 281840     | 1    | 43   | NUT, HEX 5/16-18                                            | 825205-273 | 2      | 68   | WASHER, LOCK 3/8                  | 838506-094 | 4       |
| 19   | PANEL, COOLER GUARD/SUPT GV3                  | 281847     | 1    | 44   | NUT, HEX 3/8-16 YELLOW ZINC                                 | 825206-337 | 1      | 69   | WASHER, LOCK 7/16                 | 838507-109 | 2       |
| 20   | PANEL, ENGINE MUFFLER SHIELD GV3              | 281869     | 1    | 45   | NUT, HEX FLANGE #12-24                                      | 825303-236 | 1      | 70   | WASHER, LOCK 1/2                  | 838508-125 | 2       |
| 21   | PANEL, FUEL FILL SUPT GV3                     | 281902     | 1    | 46   | NUT, HEX FLANGE 1/4-20                                      | 825304-236 | 4      | 71   | BULKHEAD, 3/4 FNPT x #12 MJIC     | 862012-075 | 1       |
| 22   | HOSE, AIR DISCHARGE GV3                       | 281927     | 1    | 47   | NUT, HEX FLANGE 3/8-16                                      | 825306-347 | 1      | 72   | BUSHING, SDS, QD, 1 1/8 DIA       | DR85785Z   | 1       |
| 23   | HOSE, COMPRESSOR OIL COOLER HOT GV3           | 281929     | 1    | 48   | NUT, HEX LOCKING #10-24                                     | 825502-083 | 4      | 73   | NUT, HEX FLANGE 5/16-18           | FA26142    | 7       |
| 24   | HOSE, COMPRESSOR OIL COOLER COLD GV3          | 281930     | 1    | 49   | NUT, HEX LOCKING 5/16-18                                    | 825505-166 | 3      | 74   | WASHER, 3/8ID X 13/16OD NORD-LOCK | FA49463    | 1       |
| 25   | BUMPER, SHEET METAL BLACK                     | 282074     | 4    | 50   | NUT, HEX LOCKING 3/8-16                                     | 825506-198 | 13     | 75   | GASKET, SEAL AND TRIM             | PR35734    | 47.3 in |
| 26   | SHEAVE, DRIVE K SECTION 8 GROOVE 3.54 OD      | 282269     | 2    | 51   | CAPSCREW, HEX GR5 5/16-18 x 0.75                            | 829105-075 | 3      | 76   | TRIM-LOK, 1/4 GROOVE              | PR274358   | 9.3 in  |
| 27   | SCREW, 5/16"-18 X 5/8 BTN HD SCKT BLK ZNC     | 282274-063 | 7    | 52   | CAPSCREW, HEX GR5 5/16-18 x 1                               | 829105-100 | 1      |      |                                   |            |         |
| 28   | BUSHING, SHOULDER ADAPTER 0.75" IN L          | 282407     | 1    | 53   | CAPSCREW, HEX GR5 7/16-14 x 0.75                            | 829107-075 | 2      |      |                                   |            |         |

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

| <b><sup>I</sup> ELECTRICAL OPTIONS</b> |                           |         |     | <b><sup>II</sup> PULLEY/BELT OPTIONS</b> |                             |             |         |     | <b><sup>III</sup> COMPRESSOR OPTIONS</b> |                                                 |         |     |
|----------------------------------------|---------------------------|---------|-----|------------------------------------------|-----------------------------|-------------|---------|-----|------------------------------------------|-------------------------------------------------|---------|-----|
| ITEM #                                 | DESCRIPTION               | PART #  | QTY | ITEM #                                   | DESCRIPTION                 | MACHINE CFM | PART #  | QTY | ITEM #                                   | DESCRIPTION                                     | PART #  | QTY |
| 2A                                     | ELCTRCL SYS, GV3          | 6060342 | 1   | 4A                                       | DRIVE, ENG & CMPR PARTS GV3 | 80/100      | 6100308 | 1   | 6A                                       | AIREND & ATT, VSE075DDSS000 INLET VLV VIPER SOL | 6180049 | 1   |
| 2B                                     | ELCTRCL SYS, GV3 CLD WTHR | 6060387 | 1   | 4B                                       | DRIVE, ENG & CMPR PARTS GV3 | 70/125      | 6100309 | 1   | 6B                                       | AIREND & ATT, VSE075ALDSS000 EXT INLET VLV GV3  | 6180066 | 1   |
|                                        |                           |         |     | 4C                                       | DRIVE, ENG & CMPR PARTS GV3 | 60/150      | 6100311 | 1   |                                          |                                                 |         |     |
|                                        |                           |         |     | 4E                                       | DRIVE, ENG & CMPR PARTS GV3 | 55/175      | 6100312 | 1   |                                          |                                                 |         |     |

## 7.5 FRAME AND DRIVE - 4 OF 4





**7.5 FRAME AND DRIVE - 4 OF 4**

| ITEM | DESCRIPTION                                   | PART #     | QTY  | ITEM | DESCRIPTION                                                 | PART #     | QTY    | ITEM | DESCRIPTION                       | PART #     | QTY     |
|------|-----------------------------------------------|------------|------|------|-------------------------------------------------------------|------------|--------|------|-----------------------------------|------------|---------|
| 1    | COOLING SYSTEM GV3                            | 6020279    | 1    | 29   | BUSHING, SHLDR ADPTR 1.00" IN L                             | 282408     | 1      | 54   | CAPSCREW, HX GR5 1/2-13 x 2.25    | 829108-225 | 2       |
| 3    | ENGINE & PARTS IGX800                         | 6100283    | 1    | 30   | BAFFLE, ENGINE AIR OUT                                      | 282430     | 1      | 55   | SCREW, SER WASH #12-24 x 0.625    | 829703-062 | 1       |
| 5    | FUEL TANK ASSY GV3                            | 6140041    | 1    | 31   | BAFFLE, ENGINE AIR IN                                       | 282431     | 1      | 56   | SCREW, SER WASH 1/4-20 x 0.5      | 829704-050 | 4       |
| 7    | RELAY, NO/NC WTHRPF w/ RSTR                   | 260246     | 1    | 32   | BOLT, FLANGE 5/16-18 X 5/8 BLK ZNC                          | 282480-062 | 12     | 57   | SCREW, SER WASH 3/8-16 x 0.625    | 829706-062 | 4       |
| 8    | TRIM-LOK, 1/8 GROOVE                          | 261228     | 3 ft | 33   | BOLT, FLANGE 5/16-18 X 1 BLK ZNC                            | 282480-100 | 9      | 58   | SCREW, SER WASH 3/8-16 x 0.75     | 829706-075 | 4       |
| 9    | WASHER, SNUBBING RUBBER MOUNT                 | 265332     | 6    | 34   | PLATE, FRAME MOUNTING                                       | 282799     | 2      | 59   | CAPSCREW, HX GR8 5/16-24 x 1      | 829805-100 | 2       |
| 10   | KEY, SQUARE 1/4 x 1/4 x 2 1/2                 | 267639     | 1    | 35   | TRIM, SIDE BULB W/VINYL GRIP FITS 0.0625 EDGE, 0.375 HEIGHT | 282861     | 1      | 60   | SCREW, MACHINE 1/4-20 x 1 1/2     | 830104-150 | 3       |
| 11   | BOLT, TAP 3/8-16 UNC-2B x 5.50 LG GR8 FL THRD | 278133     | 1    | 36   | SPRING, BELT TENSIONER                                      | 282927     | 1      | 61   | SCREW, ROUND HD 10-24 X 5/8       | 831602-062 | 4       |
| 12   | RETAINER, SHEAVE GAS VIPER                    | 281163     | 1    | 37   | CAP, GAS FILL NECK                                          | 282962     | 1      | 62   | WASHER, INTRNL TOOTH 3/4 IN       | 837412-055 | 1       |
| 13   | FRAME, BASE GV3                               | 281460     | 1    | 38   | HEAT SHIELD, TOP MUFFLER GUARD                              | 283010-01  | 1      | 63   | WASHER, FLAT 5/16                 | 838205-071 | 4       |
| 14   | BAIL, LIFT GV3                                | 281461     | 1    | 39   | HEAT SHLD, MFFLR GRD EXHST SIDE                             | 283010-02  | 1      | 64   | WASHER, FLAT 3/8                  | 838206-071 | 1       |
| 15   | SUPT, SUB-STRUCTURE GV3                       | 281564     | 1    | 40   | HEAT SHIELD, MUFFLER GUARD                                  | 283010-03  | 1      | 65   | WASHER, FLAT 1/2                  | 838208-112 | 4       |
| 16   | BRACKET, TENSIONER SLIDE                      | 281685     | 1    | 41   | NUT, 3/8-16 NONSRRTD FLNG GR 5                              | 283149-616 | 1      | 66   | WASHER, LOCK 1/4                  | 838504-062 | 3       |
| 17   | MOUNT, RUBBER 280# AXIAL WHITE                | 281720     | 6    | 42   | TRIM, TOP BULB W/VINYL GRIP FITS 0.0625 EDGE, 0.375 HT      | 283353     | 9.3 in | 67   | WASHER, LOCK 5/16                 | 838505-078 | 7       |
| 18   | PANEL, ENGINE SIDE                            | 281840     | 1    | 43   | NUT, HEX 5/16-18                                            | 825205-273 | 2      | 68   | WASHER, LOCK 3/8                  | 838506-094 | 4       |
| 19   | PANEL, COOLER GUARD/SUPT GV3                  | 281847     | 1    | 44   | NUT, HEX 3/8-16 YELLOW ZINC                                 | 825206-337 | 1      | 69   | WASHER, LOCK 7/16                 | 838507-109 | 2       |
| 20   | PANEL, ENGINE MUFFLER SHIELD GV3              | 281869     | 1    | 45   | NUT, HEX FLANGE #12-24                                      | 825303-236 | 1      | 70   | WASHER, LOCK 1/2                  | 838508-125 | 2       |
| 21   | PANEL, FUEL FILL SUPT GV3                     | 281902     | 1    | 46   | NUT, HEX FLANGE 1/4-20                                      | 825304-236 | 4      | 71   | BULKHEAD, 3/4 FNPT x #12 MJIC     | 862012-075 | 1       |
| 22   | HOSE, AIR DISCHARGE GV3                       | 281927     | 1    | 47   | NUT, HEX FLANGE 3/8-16                                      | 825306-347 | 1      | 72   | BUSHING, SDS, QD, 1 1/8 DIA       | DR85785Z   | 1       |
| 23   | HOSE, COMPRESSOR OIL COOLER HOT GV3           | 281929     | 1    | 48   | NUT, HEX LOCKING #10-24                                     | 825502-083 | 4      | 73   | NUT, HEX FLANGE 5/16-18           | FA26142    | 7       |
| 24   | HOSE, COMPRESSOR OIL COOLER COLD GV3          | 281930     | 1    | 49   | NUT, HEX LOCKING 5/16-18                                    | 825505-166 | 3      | 74   | WASHER, 3/8ID X 13/16OD NORD-LOCK | FA49463    | 1       |
| 25   | BUMPER, SHEET METAL BLACK                     | 282074     | 4    | 50   | NUT, HEX LOCKING 3/8-16                                     | 825506-198 | 13     | 75   | GASKET, SEAL AND TRIM             | PR35734    | 47.3 in |
| 26   | SHEAVE, DRIVE K SECTION 8 GROOVE 3.54 OD      | 282269     | 2    | 51   | CAPSCREW, HEX GR5 5/16-18 x 0.75                            | 829105-075 | 3      | 76   | TRIM-LOK, 1/4 GROOVE              | PR274358   | 9.3 in  |
| 27   | SCREW, 5/16"-18 X 5/8 BTN HD SCKT BLK ZNC     | 282274-063 | 7    | 52   | CAPSCREW, HEX GR5 5/16-18 x 1                               | 829105-100 | 1      |      |                                   |            |         |
| 28   | BUSHING, SHOULDER ADAPTER 0.75" IN L          | 282407     | 1    | 53   | CAPSCREW, HEX GR5 7/16-14 x 0.75                            | 829107-075 | 2      |      |                                   |            |         |

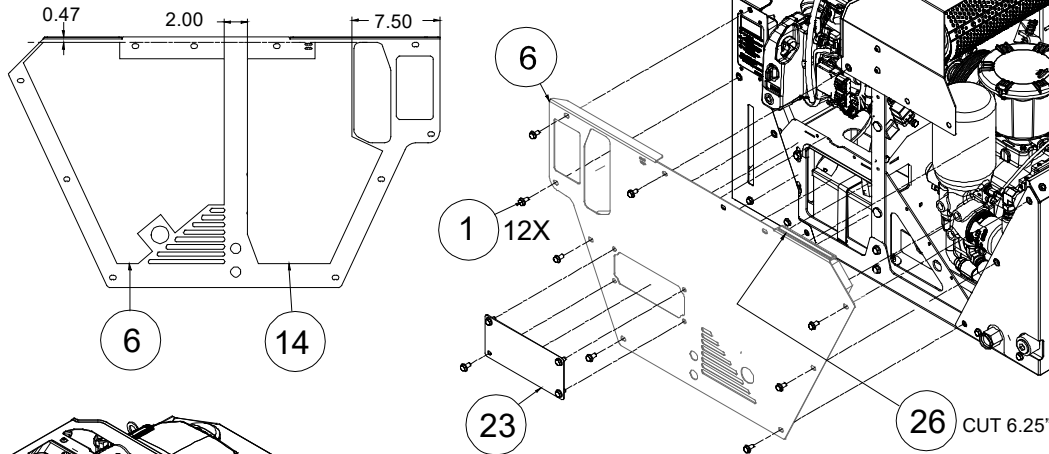
**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.**

| <b>I ELECTRICAL OPTIONS</b> |                           |         |     |
|-----------------------------|---------------------------|---------|-----|
| ITEM #                      | DESCRIPTION               | PART #  | QTY |
| 2A                          | ELCTRCL SYS, GV3          | 6060342 | 1   |
| 2B                          | ELCTRCL SYS, GV3 CLD WTHR | 6060387 | 1   |

| <b>II PULLEY/BELT OPTIONS</b> |                             |             |         |     |
|-------------------------------|-----------------------------|-------------|---------|-----|
| ITEM #                        | DESCRIPTION                 | MACHINE CFM | PART #  | QTY |
| 4A                            | DRIVE, ENG & CMPR PARTS GV3 | 80/100      | 6100308 | 1   |
| 4B                            | DRIVE, ENG & CMPR PARTS GV3 | 70/125      | 6100309 | 1   |
| 4C                            | DRIVE, ENG & CMPR PARTS GV3 | 60/150      | 6100311 | 1   |
| 4E                            | DRIVE, ENG & CMPR PARTS GV3 | 55/175      | 6100312 | 1   |

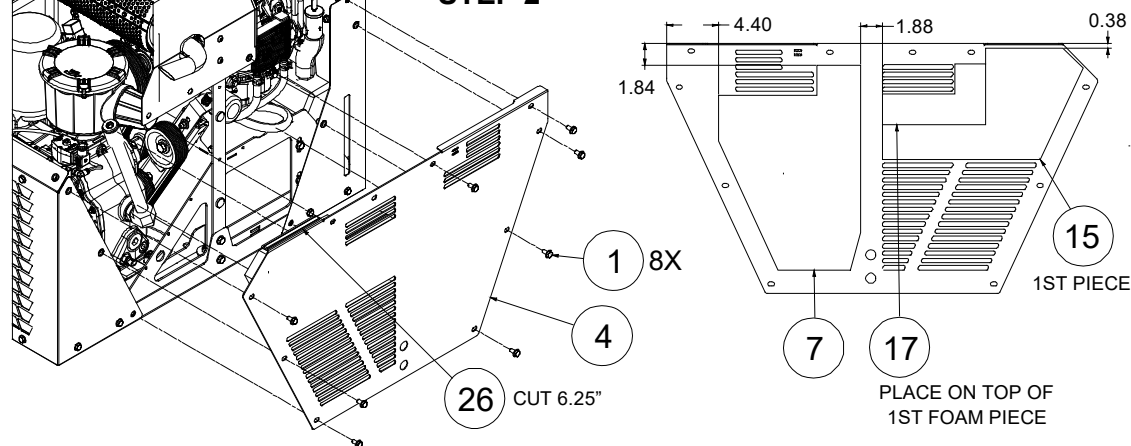
| <b>III COMPRESSOR OPTIONS</b> |                                                 |         |     |
|-------------------------------|-------------------------------------------------|---------|-----|
| ITEM #                        | DESCRIPTION                                     | PART #  | QTY |
| 6A                            | AIREND & ATT, VSE075DDSS000 INLET VLV VIPER SOL | 6180049 | 1   |
| 6B                            | AIREND & ATT, VSE075ALDDSS000 EXT INLET VLV GV3 | 6180066 | 1   |

## 7.6 CANOPY ASSEMBLY - 1 OF 2

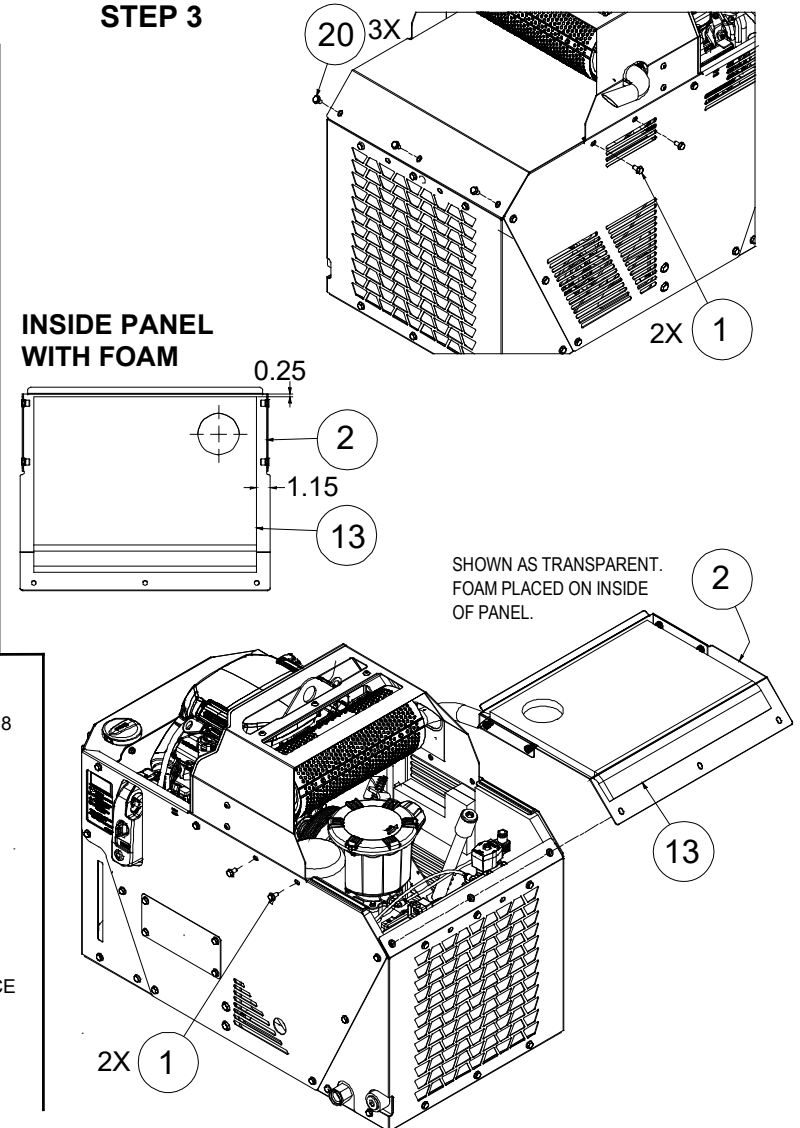
STEP 1  
INSIDE PANEL WITH FOAM

## STEP 2

## INSIDE PANEL WITH FOAM



## STEP 3



## 7.6 CANOPY ASSEMBLY - 1 OF 2

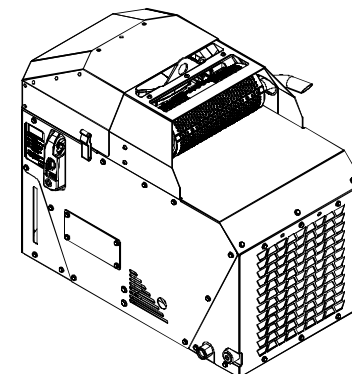
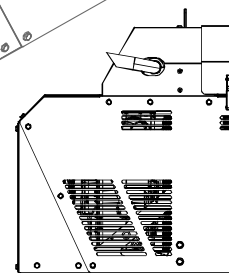
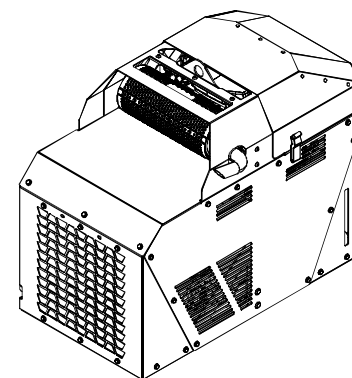
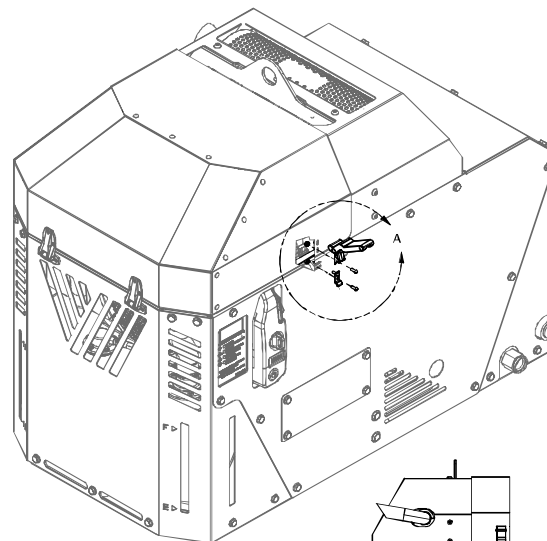
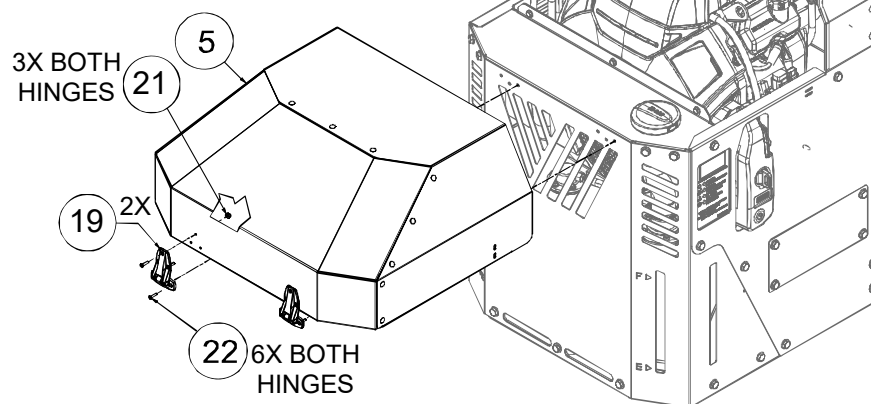
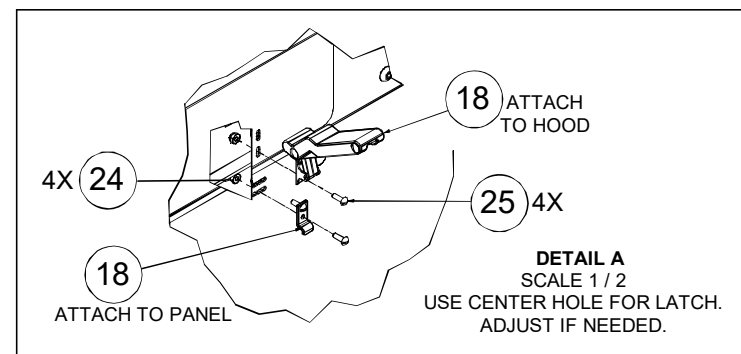
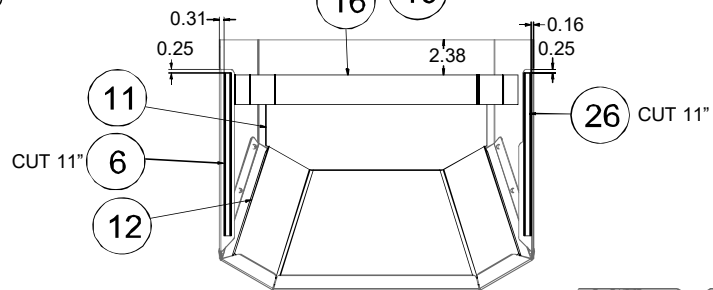
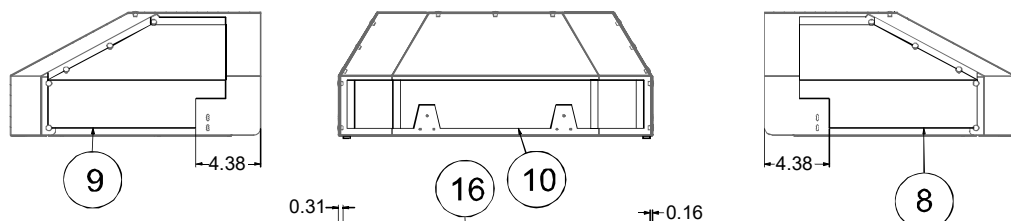
| ITEM | DESCRIPTION                       | PART NUMBER | QTY | ITEM | DESCRIPTION                                              | PART NUMBER | QTY      |
|------|-----------------------------------|-------------|-----|------|----------------------------------------------------------|-------------|----------|
| 1    | BOLT, FLANGE 5/16-18 x .63 SILVER | 278623-063  | 24  | 14   | FOAM, SOUND FRNT LEFT                                    | 281964-10   | 1        |
| 2    | PANEL, TOP ACCESS GV3             | 281854      | 1   | 15   | FOAM, SOUND BACK RIGHT PANEL                             | 281964-11   | 1        |
| 3    | PANEL, FRONT CANOPY               | 281870      | 1   | 16   | FOAM, HOOD AIR BAFFLE                                    | 281964-16   | 1        |
| 4    | PANEL, BACK CANOPY GV3            | 281871      | 1   | 17   | FOAM, COMPRESSOR AIR BAFFLE                              | 281964-17   | 1        |
| 5    | HOOD, STEEL GV3                   | 281893      | 1   | 18   | LATCH, HOOD GV3                                          | 282029      | 2        |
| 6    | FOAM, SOUND FRNT RIGHT PANEL      | 281964-01   | 1   | 19   | HINGE, BLACK PLASTIC                                     | 282053      | 2        |
| 7    | FOAM, SOUND BACK LEFT PANEL       | 281964-02   | 1   | 20   | BOLT, FLANGE 5/16-18 X 5/8 BLK ZINC                      | 282480-062  | 3        |
| 8    | FOAM, SOUND FRT SIDE PANEL HOOD   | 281964-03   | 1   | 21   | NUT, LOCKING #6-32 CLEAR ZINC                            | 282720      | 6        |
| 9    | FOAM, SOUND BACK SIDE PANEL HOOD  | 281964-04   | 1   | 22   | SCREW, MACHINE COUNTERSUNK PHILLIPS #6-32 X 5/8 BLK ZINC | 282721-063  | 12       |
| 10   | FOAM, SOUND LATCH SIDE HOOD       | 281964-05   | 1   | 23   | PANEL, BATTERY ACCESS                                    | 282975      | 1        |
| 11   | FOAM, SOUND TOP SIDE HOOD         | 281964-06   | 1   | 24   | NUT, HEX LOCKING #8-32                                   | 825501-070  | 8        |
| 12   | FOAM, SOUND ANGLED TOP SIDE HOOD  | 281964-07   | 1   | 25   | SCREW, ROUND HD #8-32 x 0.5                              | 831601-050  | 8        |
| 13   | FOAM, SOUND TOP PANEL             | 281964-09   | 1   | 26   | GASKET, SEAL AND TRIM                                    | PR35734     | 34.50 in |

**NOTE:** FOAM PART OF KIT 281964.

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

## 7.6 CANOPY ASSEMBLY - 2 OF 2

PLACE FOAM INSIDE HOOD AS SHOWN



6030221ID\_r1\_2of2

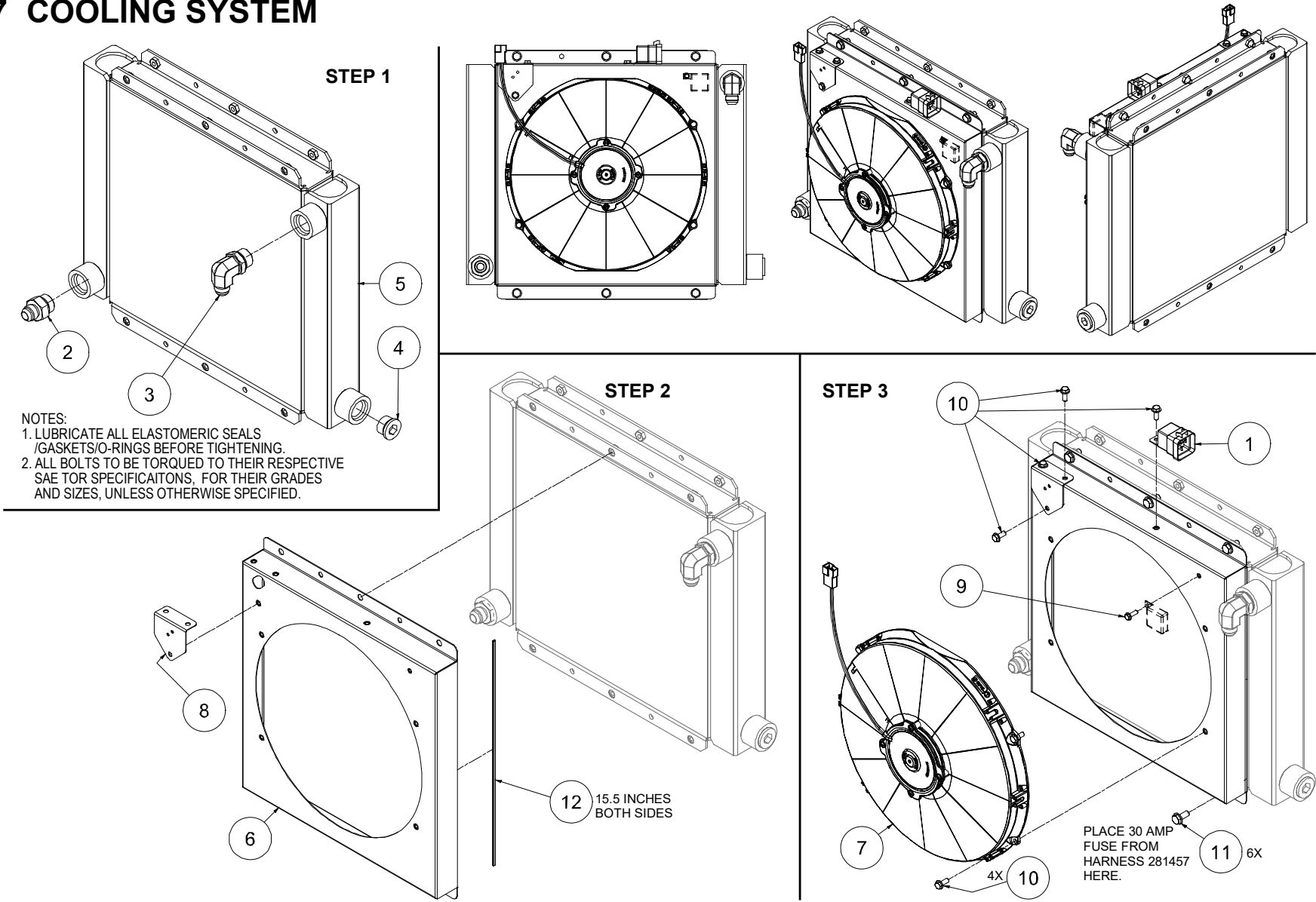
**7.6 CANOPY ASSEMBLY - 2 OF 2**

| ITEM | DESCRIPTION                       | PART NUMBER | QTY | ITEM | DESCRIPTION                                              | PART NUMBER | QTY      |
|------|-----------------------------------|-------------|-----|------|----------------------------------------------------------|-------------|----------|
| 1    | BOLT, FLANGE 5/16-18 x .63 SILVER | 278623-063  | 24  | 14   | FOAM, SOUND FRT LEFT                                     | 281964-10   | 1        |
| 2    | PANEL, TOP ACCESS GV3             | 281854      | 1   | 15   | FOAM, SOUND BACK RIGHT PANEL                             | 281964-11   | 1        |
| 3    | PANEL, FRONT CANOPY               | 281870      | 1   | 16   | FOAM, HOOD AIR BAFFLE                                    | 281964-16   | 1        |
| 4    | PANEL, BACK CANOPY GV3            | 281871      | 1   | 17   | FOAM, COMPRESSOR AIR BAFFLE                              | 281964-17   | 1        |
| 5    | HOOD, STEEL GV3                   | 281893      | 1   | 18   | LATCH, HOOD GV3                                          | 282029      | 2        |
| 6    | FOAM, SOUND FRT RIGHT PANEL       | 281964-01   | 1   | 19   | HINGE, BLACK PLASTIC                                     | 282053      | 2        |
| 7    | FOAM, SOUND BACK LEFT PANEL       | 281964-02   | 1   | 20   | BOLT, FLANGE 5/16-18 X 5/8 BLK ZINC                      | 282480-062  | 3        |
| 8    | FOAM, SOUND FRT SIDE PANEL HOOD   | 281964-03   | 1   | 21   | NUT, LOCKING #6-32 CLEAR ZINC                            | 282720      | 6        |
| 9    | FOAM, SOUND BACK SIDE PANEL HOOD  | 281964-04   | 1   | 22   | SCREW, MACHINE COUNTERSUNK PHILLIPS #6-32 X 5/8 BLK ZINC | 282721-063  | 12       |
| 10   | FOAM, SOUND LATCH SIDE HOOD       | 281964-05   | 1   | 23   | PANEL, BATTERY ACCESS                                    | 282975      | 1        |
| 11   | FOAM, SOUND TOP SIDE HOOD         | 281964-06   | 1   | 24   | NUT, HEX LOCKING #8-32                                   | 825501-070  | 8        |
| 12   | FOAM, SOUND ANGLED TOP SIDE HOOD  | 281964-07   | 1   | 25   | SCREW, ROUND HD #8-32 x 0.5                              | 831601-050  | 8        |
| 13   | FOAM, SOUND TOP PANEL             | 281964-09   | 1   | 26   | GASKET, SEAL AND TRIM                                    | PR35734     | 34.50 in |

**NOTE:** FOAM PART OF KIT 281964.**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.**



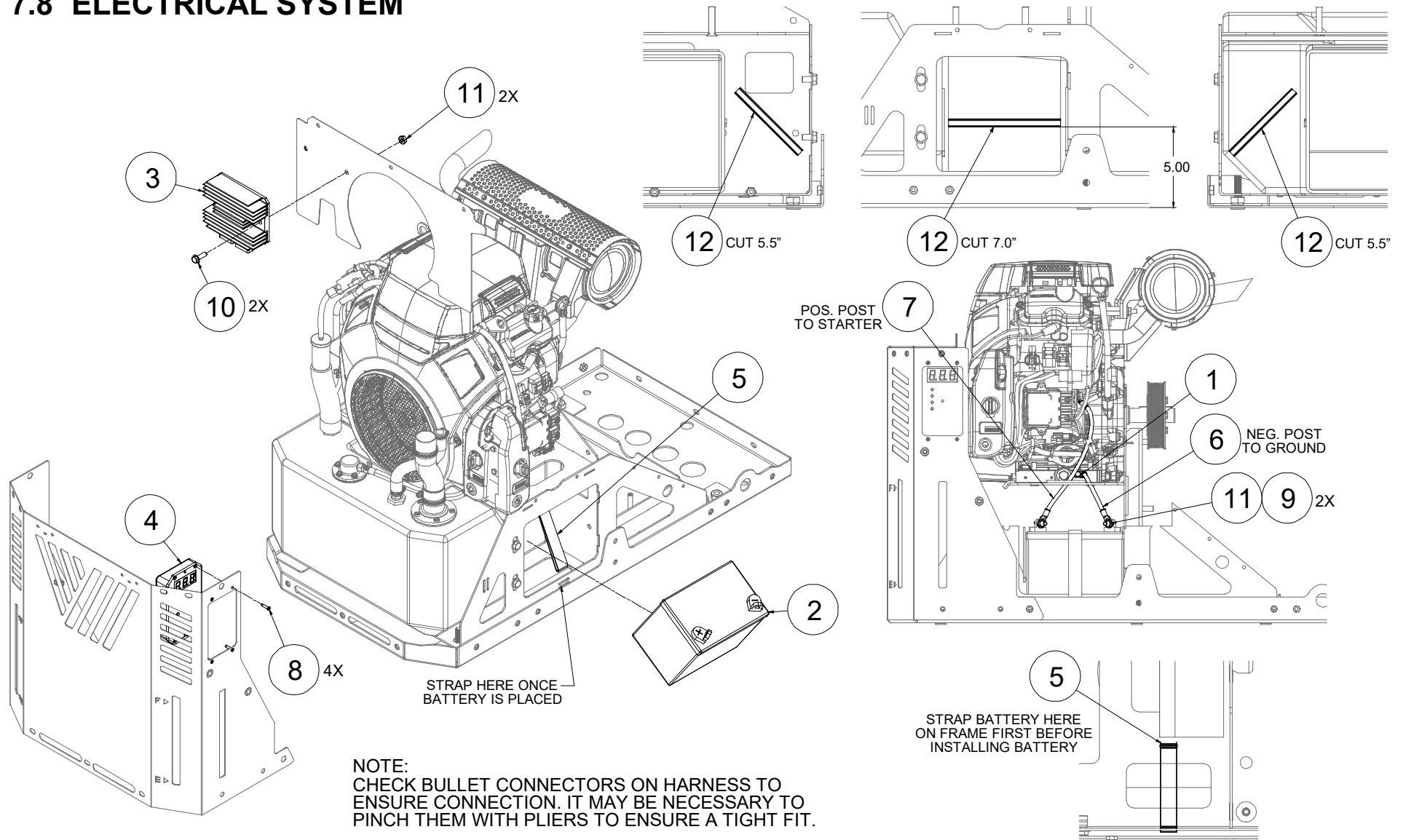
7.7 COOLING SYSTEM





| <b>7.7 COOLING SYSTEM</b>                                                |                                            |                    |            |
|--------------------------------------------------------------------------|--------------------------------------------|--------------------|------------|
| <b>ITEM</b>                                                              | <b>DESCRIPTION</b>                         | <b>PART NUMBER</b> | <b>QTY</b> |
| 1                                                                        | RELAY, NO/NC WEATHERPROOF w/RESISTOR       | 260246             | 1          |
| 2                                                                        | CONNECTOR, #12 MSAE x #10 MJIC             | 260387-110         | 1          |
| 3                                                                        | ELBOW, 90 DEG #10 MJIC x #12 MSAE          | 260403-131         | 1          |
| 4                                                                        | PLUG, SAE O-RING #12                       | 268081-008         | 1          |
| 5                                                                        | COOLER, ASSEMBLY GV3                       | 281527             | 1          |
| 6                                                                        | SHROUD, COOLER VIPER LOW AMP FAN           | 281528             | 1          |
| 7                                                                        | FAN & MOTOR ASSY 13" PUSHER 12V            | 282403             | 1          |
| 8                                                                        | BRACKET, SOLENOID GV3                      | 282866             | 1          |
| 9                                                                        | SCREW, SER WASH #12-24 x 0.625             | 829703-062         | 1          |
| 10                                                                       | SCREW, SER WASH 1/4-20 x 0.625             | 829704-062         | 8          |
| 11                                                                       | SCREW, SER WASH 5/16-18 x 3/4              | 829705-075         | 6          |
| 12                                                                       | TRIM-LOK, 1/32 GROOVE 3/8 LONG VINYL BLACK | PR45785            | 31 in      |
| <b>PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.</b> |                                            |                    |            |

## 7.8 ELECTRICAL SYSTEM



6060342\_r0

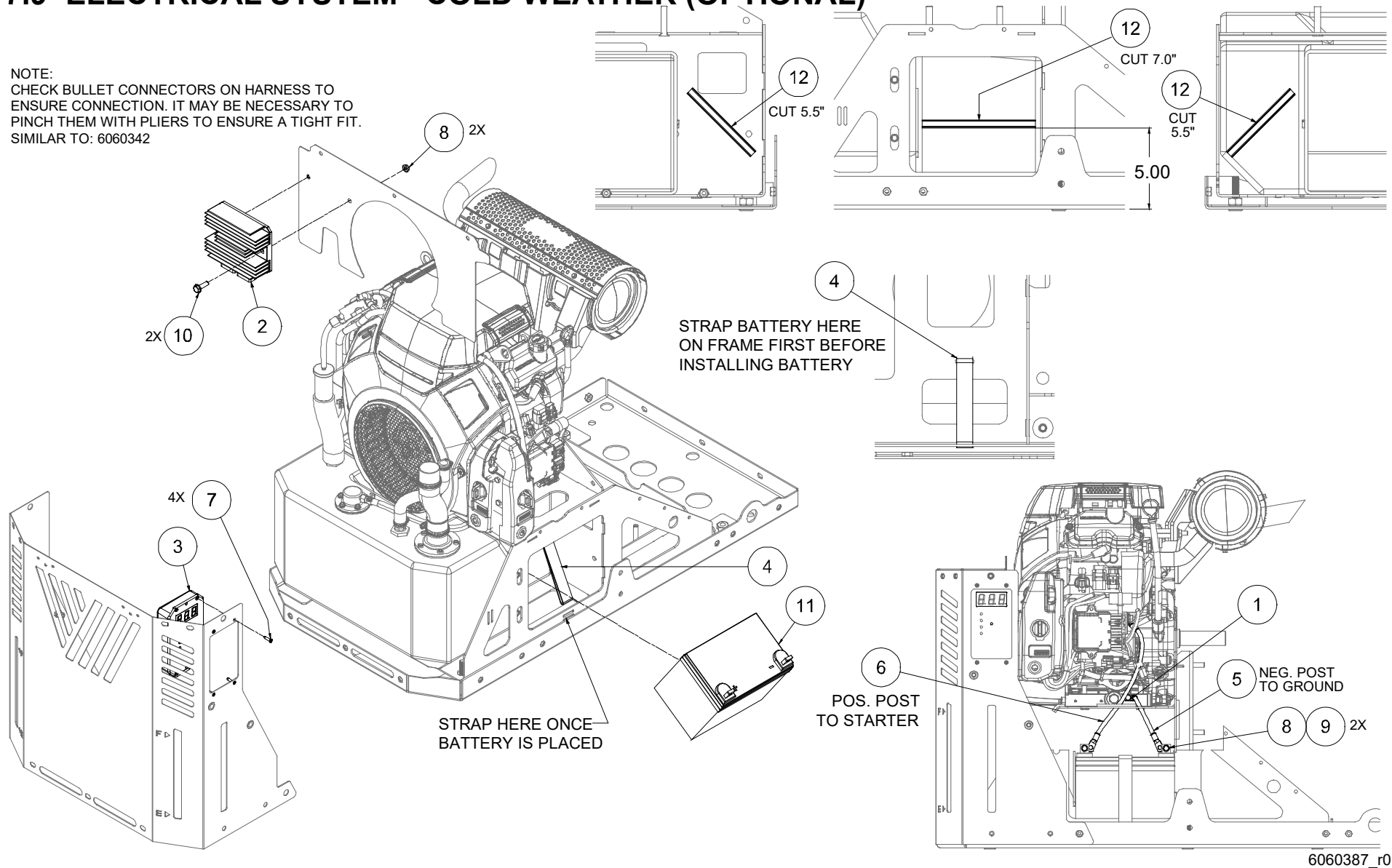




| <b>7.8 ELECTRICAL SYSTEM</b>                                             |                                         |                    |            |
|--------------------------------------------------------------------------|-----------------------------------------|--------------------|------------|
| <b>ITEM</b>                                                              | <b>DESCRIPTION</b>                      | <b>PART NUMBER</b> | <b>QTY</b> |
| 1                                                                        | SCREW, HEX M6-1.0 X 16MM CLEAR ZINC     | 263393-016         | 1          |
| 2                                                                        | BATTERY, 12V GROUP U1LF 350 CCA         | 277481             | 1          |
| 3                                                                        | RECTIFIER, HONDA IGX800                 | 281452-10          | 1          |
| -                                                                        | HARNESS, WIRE GV3                       | 281457             | 1          |
| -                                                                        | WD, GV3                                 | 281458             | 1          |
| 4                                                                        | MODULE, ENGINE AUTO START/STOP          | 281526             | 1          |
| 5                                                                        | STRAP, BATTERY GV3                      | 282035             | 1          |
| 6                                                                        | CABLE, BATTERY NEGATIVE GV3             | 282261             | 1          |
| 7                                                                        | CABLE, BATTERY POSITIVE GV3             | 282262             | 1          |
| 8                                                                        | SCREW, COUNTERSUNK PHILLIPS #8-32 X 3/4 | 282479-075         | 4          |
| 9                                                                        | SCREW, SER WASH 5/16-18 x 1             | 829705-10          | 2          |
| 10                                                                       | SCREW, SER WASH 5/16-18 x 1             | 829705-100         | 2          |
| 11                                                                       | NUT, HEX FLANGE 5/16-18                 | FA26142            | 4          |
| 12                                                                       | GASKET, SEAL AND TRIM                   | PR35734            | 18 IN      |
| <b>PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.</b> |                                         |                    |            |

## 7.9 ELECTRICAL SYSTEM - COLD WEATHER (OPTIONAL)

NOTE:  
CHECK BULLET CONNECTORS ON HARNESS TO  
ENSURE CONNECTION. IT MAY BE NECESSARY TO  
PINCH THEM WITH PLIERS TO ENSURE A TIGHT FIT.  
SIMILAR TO: 6060342

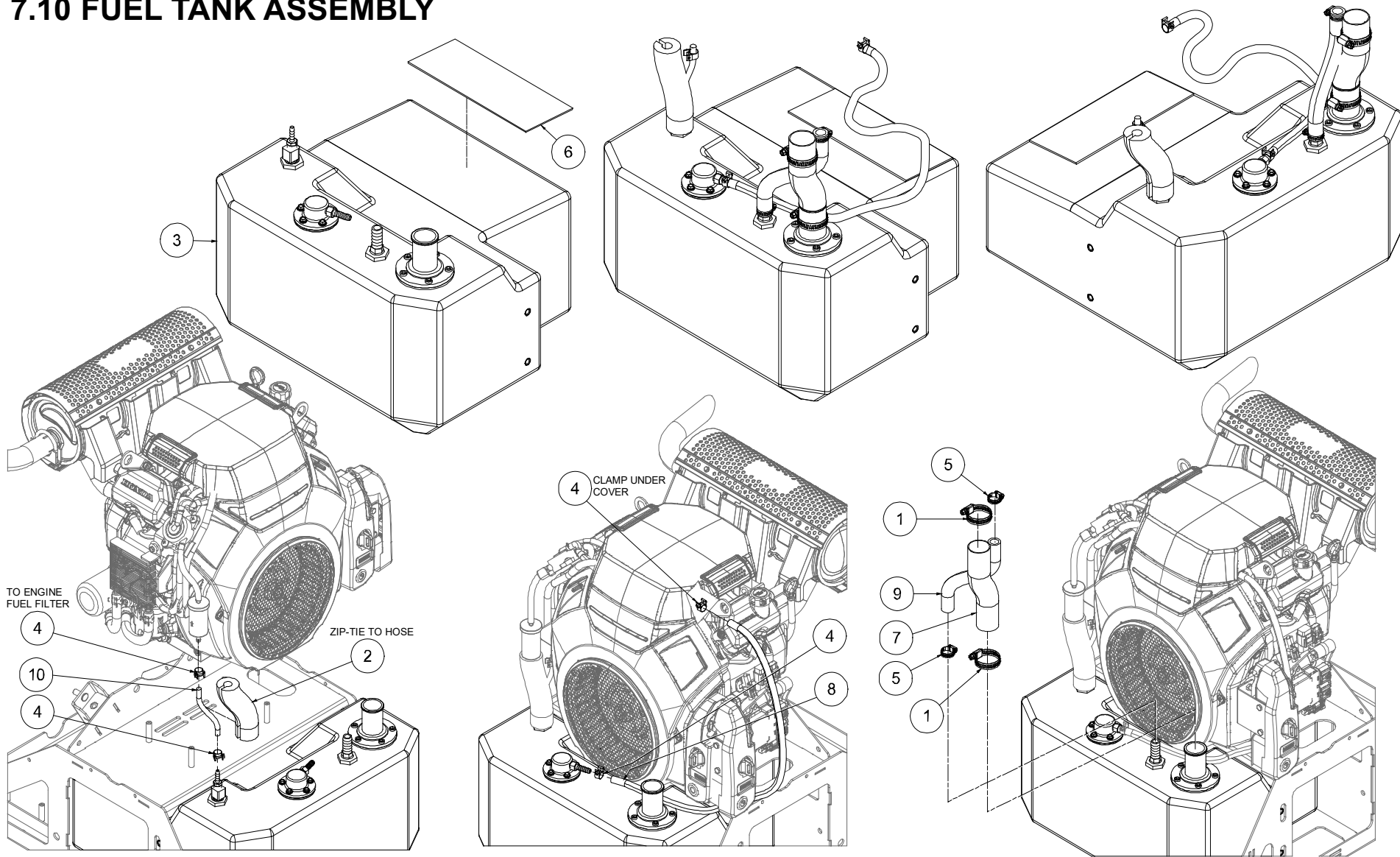


6060387\_r0

| <b>7.9 ELECTRICAL SYSTEM - COLD WEATHER (OPTIONAL)</b>                   |                                         |                    |            |
|--------------------------------------------------------------------------|-----------------------------------------|--------------------|------------|
| <b>ITEM</b>                                                              | <b>DESCRIPTION</b>                      | <b>PART NUMBER</b> | <b>QTY</b> |
| -                                                                        | WD, COLD WEATHER 12V GV3                | 283448             | 1          |
| -                                                                        | WD, GV3                                 | 281458             | 1          |
| -                                                                        | HARNESS, WIRE GV3                       | 281457             | 1          |
| 1                                                                        | SCREW, HEX M6-1.0 X 16MM CLEAR ZINC     | 263393-016         | 1          |
| 2                                                                        | RECTIFIER, HONDA IGX800                 | 281452-10          | 1          |
| 3                                                                        | MODULE, ENGINE AUTO START/STOP          | 281526             | 1          |
| 4                                                                        | STRAP, BATTERY GV3                      | 282035             | 1          |
| 5                                                                        | CABLE, BATTERY NEGATIVE GV3             | 282261             | 1          |
| 6                                                                        | CABLE, BATTERY POSITIVE GV3             | 282262             | 1          |
| 7                                                                        | SCREW, COUNTERSUNK PHILLIPS #8-32 X 3/4 | 282479-075         | 4          |
| 8                                                                        | NUT, HEX FLANGE 1/4-20                  | 825304-236         | 4          |
| 9                                                                        | SCREW, SER WASH 1/4-20 x 1              | 829704-100         | 2          |
| 10                                                                       | SCREW, SER WASH 5/16-18 x 1             | 829705-100         | 2          |
| 11                                                                       | BATTERY, 12 VOLT 35 AMP DEEP            | MA31821            | 1          |
| 12                                                                       | GASKET, SEAL AND TRIM                   | PR35734            | 18 in      |
| <b>PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.</b> |                                         |                    |            |



7.10 FUEL TANK ASSEMBLY





| <b>7.10 FUEL TANK ASSEMBLY</b>                                           |                                  |                    |            |
|--------------------------------------------------------------------------|----------------------------------|--------------------|------------|
| <b>ITEM</b>                                                              | <b>DESCRIPTION</b>               | <b>PART NUMBER</b> | <b>QTY</b> |
| 1                                                                        | CLAMP, HOSE, #24, 1"-2" DIA.     | 270493             | 2          |
| 2                                                                        | INSULATION, PIPE 5/8ID x 1/2THK  | 280339             | 7.25 in    |
| 3                                                                        | TANK, FUEL 11 GAL PLASTIC        | 281383             | 1          |
| 4                                                                        | CLAMP, HOSE #4 (1/4 TO 5/8 DIA.) | 282731             | 4          |
| 5                                                                        | CLAMP, HOSE #8 (3/8 TO 1 DIA.)   | 282732             | 2          |
| 6                                                                        | HEAT SHIELD, FUEL TANK           | 283010-04          | 1          |
| 7                                                                        | HOSE, FUEL FILL 1-1/2" FLEXIBLE  | 283077             | 8.0 in     |
| 8                                                                        | HOSE, FUEL LINE 3/8              | 842315-038         | 28.2 in    |
| 9                                                                        | HOSE, FUEL LINE 5/8 INCH         | 842315-062         | 8.5 in     |
| 10                                                                       | HOSE, FUEL 1/4" SAE 30R9         | TU269439           | 6.0 in     |
| <b>PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.</b> |                                  |                    |            |



## 7.11 DECAL LOCATION/IDENTIFICATION - 1 OF 2

**ADJUSTING AIR COMPRESSOR PRESSURE:**

- While the machine is running or in sleep mode, with the level starting at the bottom position, quickly sweep lever fully up and back down.
- "SET" will appear on the screen and flash the existing pressure set-point. The pressure may now be adjusted in 5 PSI increments using the lever.
- Once adjusted to desired pressure, let go of lever, setting will automatically apply after three seconds.

**ADJUSTING AUTO START/STOP TIME:**

- With the machine off, turn the key to the "ON" position (do not Crank/Start).
- Auto Stop time is now adjustable using the lever. The screen will display "A" followed by the number of minutes that Auto Stop will occur ("A 0" = Auto Start/Stop OFF).

283126\_RXX


**VANAIR**  
MOBILE POWER SOLUTIONS™

MODEL NUMBER

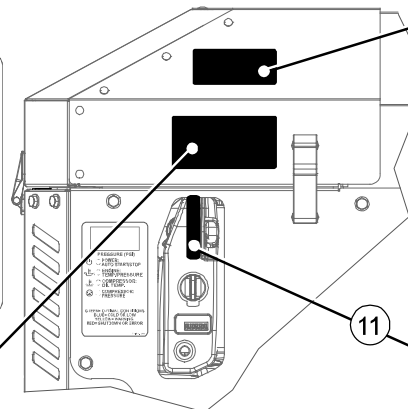
SERIAL NUMBER XX-XXXXXXX

800-526-8817 www.vanair.com

281373



9



11





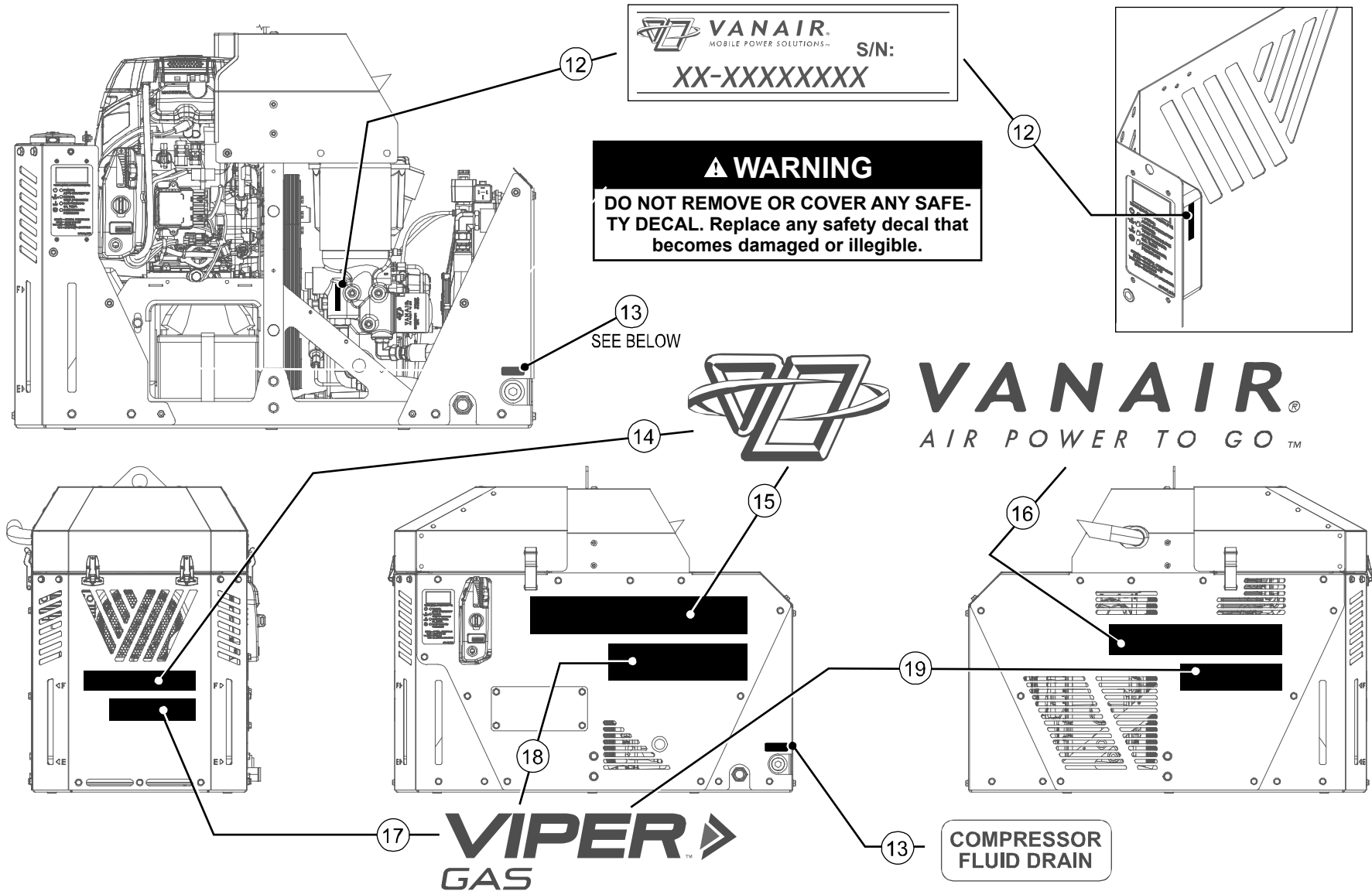
| <b>7.11 DECAL LOCATION/IDENTIFICATION - 1 OF 2</b>                       |                                                             |                        |            |                       |                         |
|--------------------------------------------------------------------------|-------------------------------------------------------------|------------------------|------------|-----------------------|-------------------------|
| <b>ITEM</b>                                                              | <b>DESCRIPTION</b>                                          | <b>PART<br/>NUMBER</b> | <b>QTY</b> | <b>SET<br/>281699</b> | <b>SHEET<br/>281700</b> |
| 1                                                                        | DECAL, INST. AUTO-START/STOP & PRESSURE ADJUSTMENT          | 283126                 | 1          |                       |                         |
| 2                                                                        | DECAL, VANAIR SERIAL TAG (MODEL/SERIAL # ONLY)              | 281373                 | 1          |                       |                         |
| 3                                                                        | DECAL, VANAIR ADDRESS                                       | 265605                 | 1          |                       | X                       |
| 4                                                                        | DECAL, NO E85 GAS CAP LOGO                                  | DL270183               | 1          |                       | X                       |
| 5                                                                        | DECAL, WARNING HOT TRIANGLE 2.0"                            | 281046                 | 3          |                       | X                       |
| 6                                                                        | DECAL, EXPLOSIVE FUEL                                       | 264377                 | 1          |                       | X                       |
| 7                                                                        | DECAL, WARNING FUEL FILL - GAS ONLY                         | 281813                 | 1          |                       | X                       |
| 8                                                                        | DECAL, WARNING ELECTRIC TAMPER                              | 271510                 | 1          |                       | X                       |
| 9                                                                        | DECAL, WARNING TRIANGLES ONLY                               | 282127                 | 1          |                       | X                       |
| 10                                                                       | DECAL, DANGER DO NOT OPERATE IN AN ENCLOSED SPACE (4" X 2") | 282459                 | 1          |                       | X                       |
| 11                                                                       | DECAL, AUTO START STOP HONDA                                | 281525                 | 1          |                       |                         |
| <b>PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.</b> |                                                             |                        |            |                       |                         |

**⚠ WARNING**

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



7.11 DECAL LOCATION/IDENTIFICATION - 2 OF 2







| <b>7.11 DECAL LOCATION/IDENTIFICATION - 2 OF 2</b>                       |                                                       |                        |            |                       |                         |
|--------------------------------------------------------------------------|-------------------------------------------------------|------------------------|------------|-----------------------|-------------------------|
| <b>ITEM</b>                                                              | <b>DESCRIPTION</b>                                    | <b>PART<br/>NUMBER</b> | <b>QTY</b> | <b>SET<br/>281699</b> | <b>SHEET<br/>281700</b> |
| 12                                                                       | DECAL, VANAIR SERIAL TAG (MODEL/SERIAL # ONLY) 1 OF 3 | 281373                 | 3          |                       |                         |
| 13                                                                       | DECAL, COMPRESSOR FLUID DRAIN                         | 275054                 | 1          |                       | X                       |
| 14                                                                       | LOGO, VANAIR HRZ - AIR POWER TO GO (11 X 1.9)         | 275038-D               | 1          | X                     |                         |
| 15                                                                       | LOGO, VANAIR HRZ - AIR POWER TO GO (21.3 X 3.7)       | 275038-C               | 1          | X                     |                         |
| 16                                                                       | LOGO, VANAIR HRZ - AIR POWER TO GO (17 X 3)           | 275038-C               | 1          | X                     |                         |
| 17                                                                       | LOGO, VIPER GAS HORIZONTAL (8.5 X 2.2)                | 275037-D               | 1          | X                     |                         |
| 18                                                                       | LOGO, VIPER GAS HORIZONTAL (13.6 X 3.6)               | 275037-A               | 1          | X                     |                         |
| <b>PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.</b> |                                                       |                        |            |                       |                         |

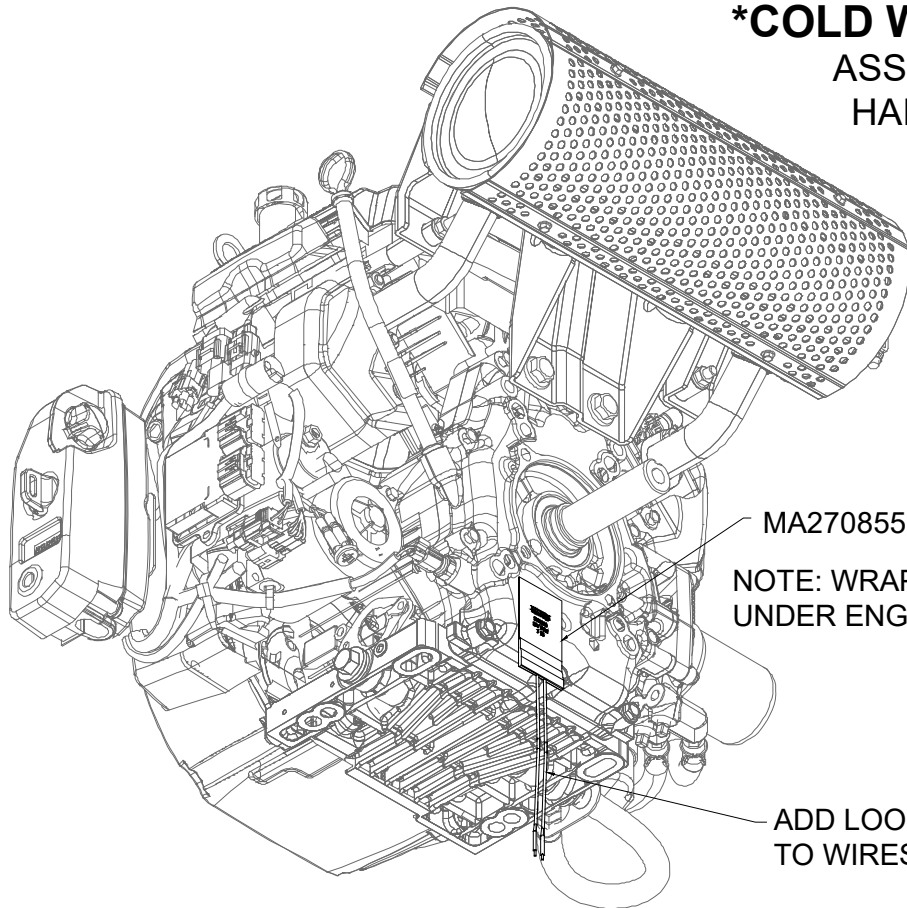
## 7.12 HEATER PADS - DETAIL COLD WEATHER (OPTIONAL)

### **\*COLD WEATHER OPTION\***

ASSEMBLY - 6060387

HARNESS - 283449

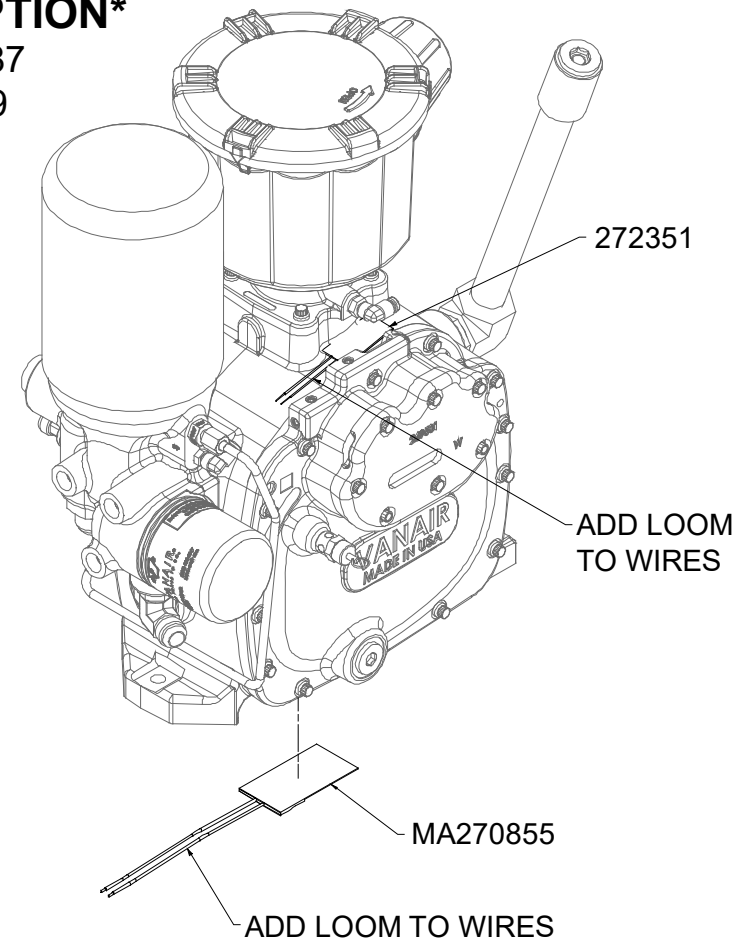
WD - 283448



MA270855

NOTE: WRAP WIRE END  
UNDER ENGINE.

ADD LOOM  
TO WIRES



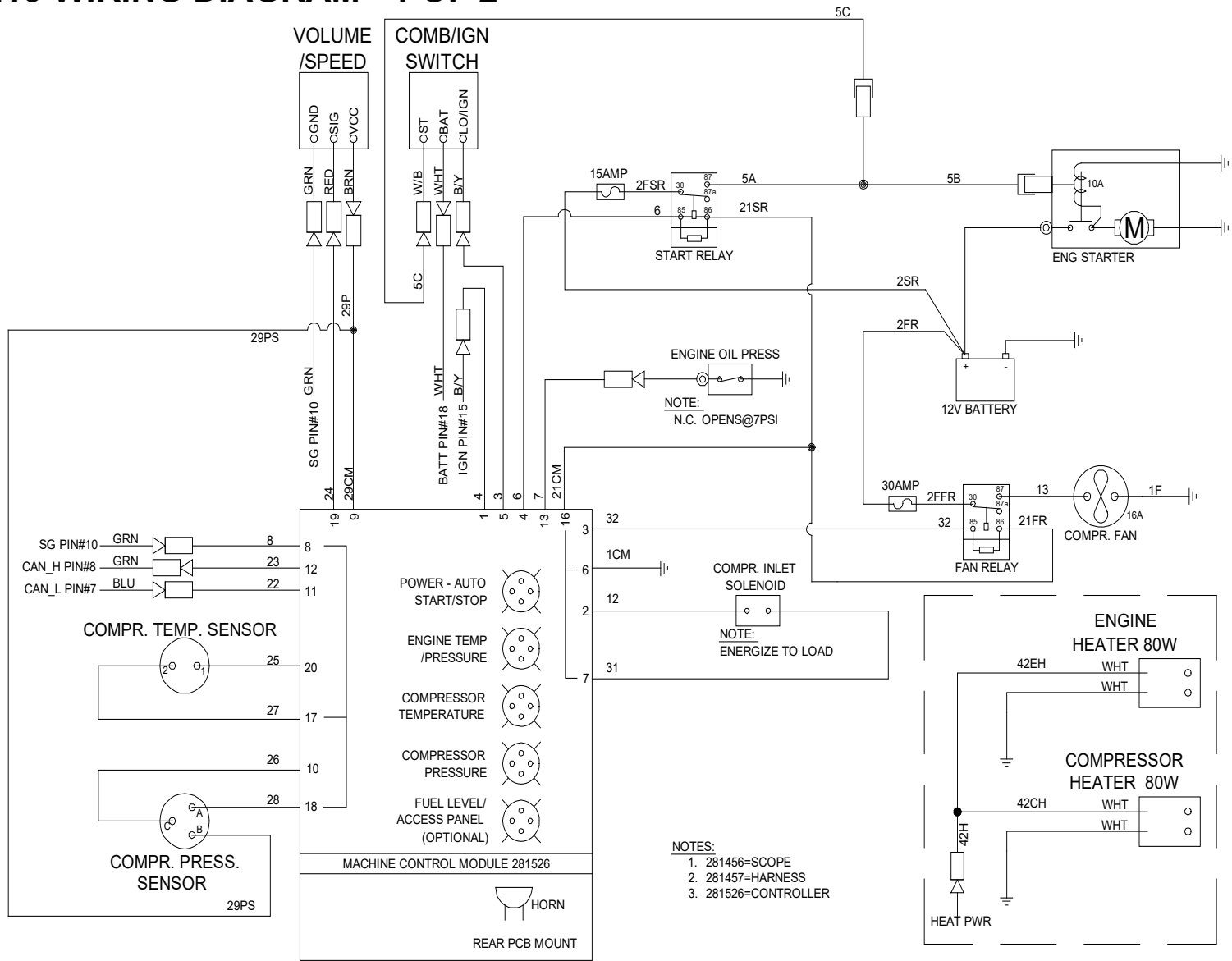
272351

ADD LOOM  
TO WIRES

MA270855

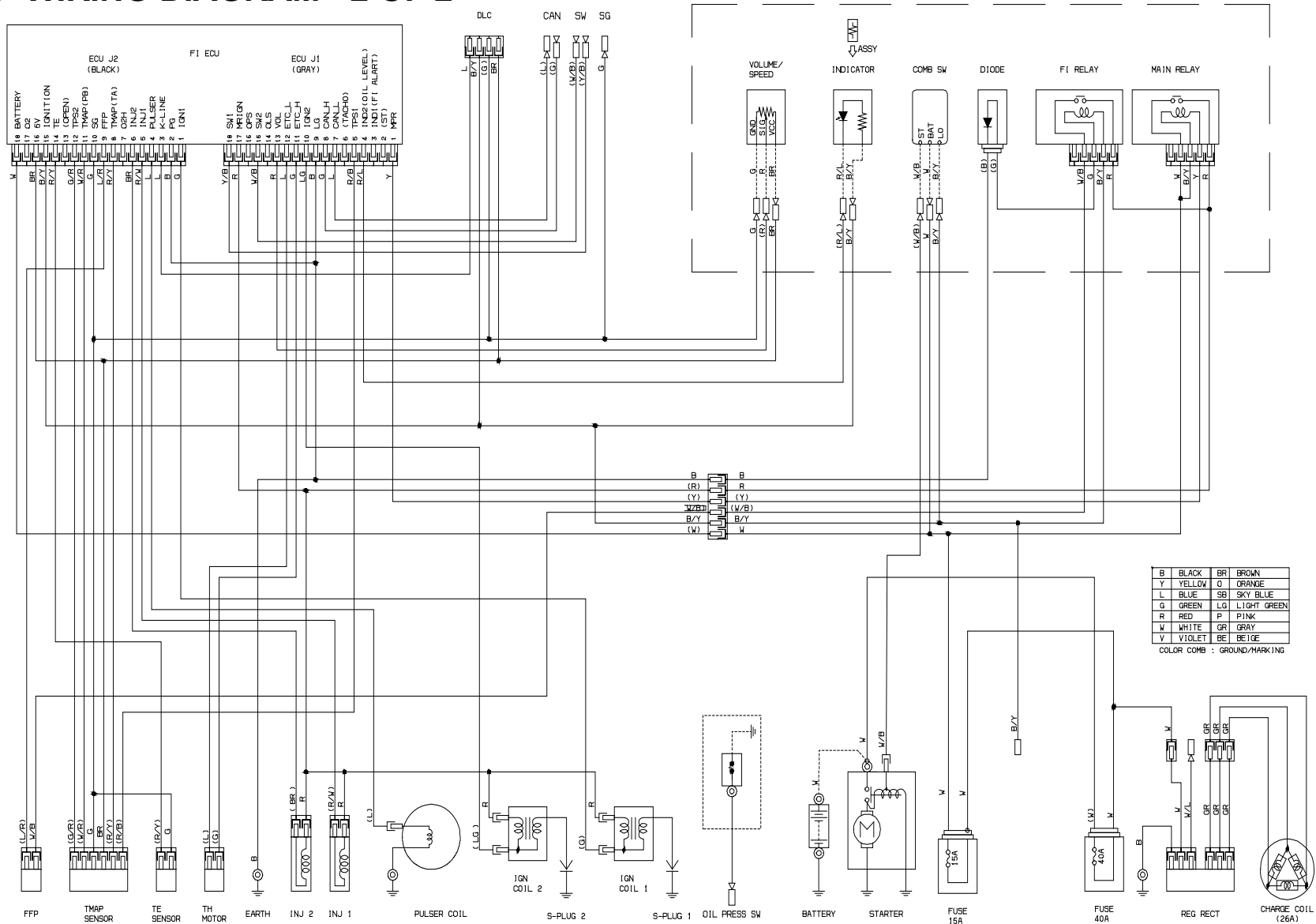
ADD LOOM TO WIRES

7.13 WIRING DIAGRAM - 1 OF 2



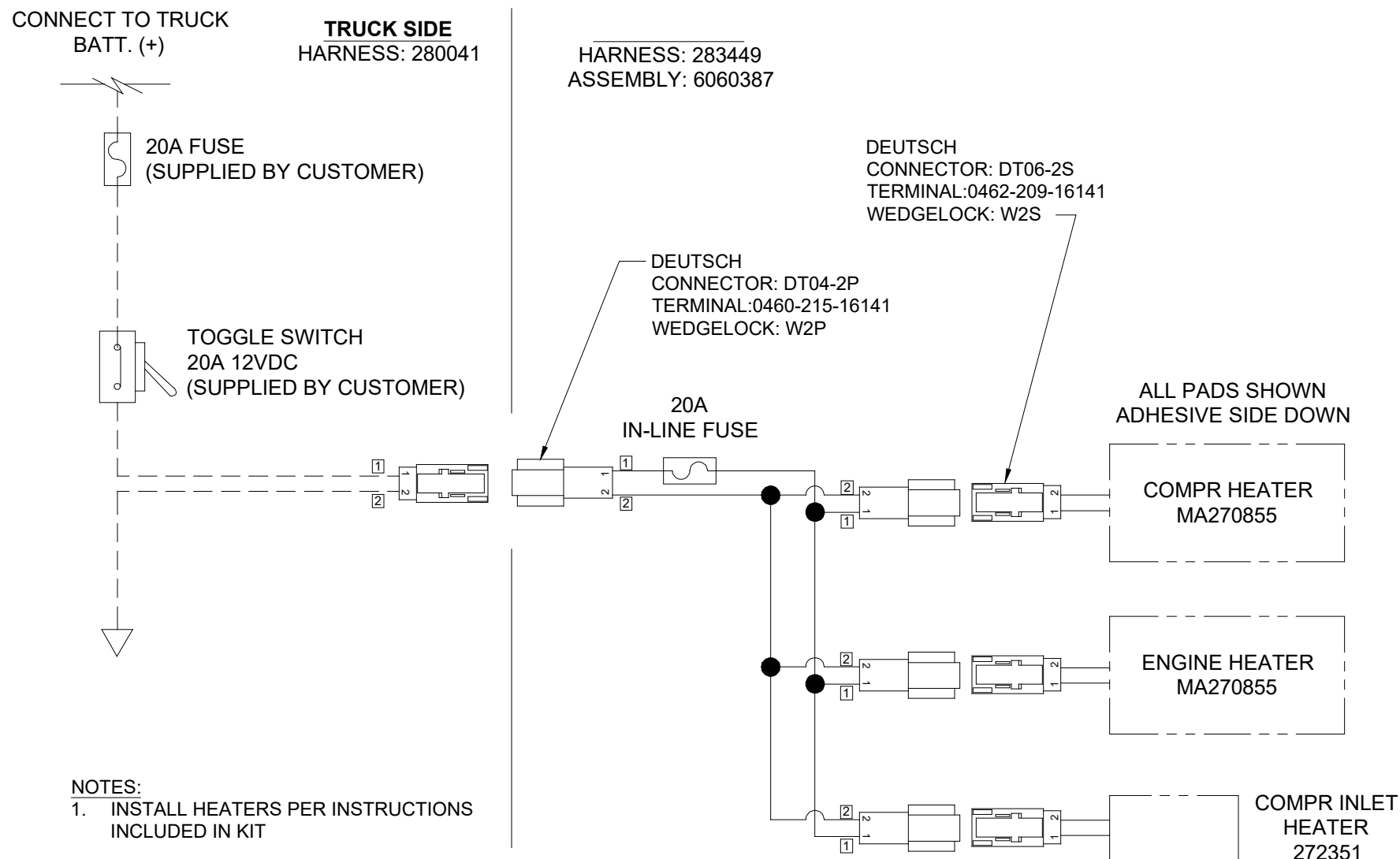


## 7.13 WIRING DIAGRAM - 2 OF 2

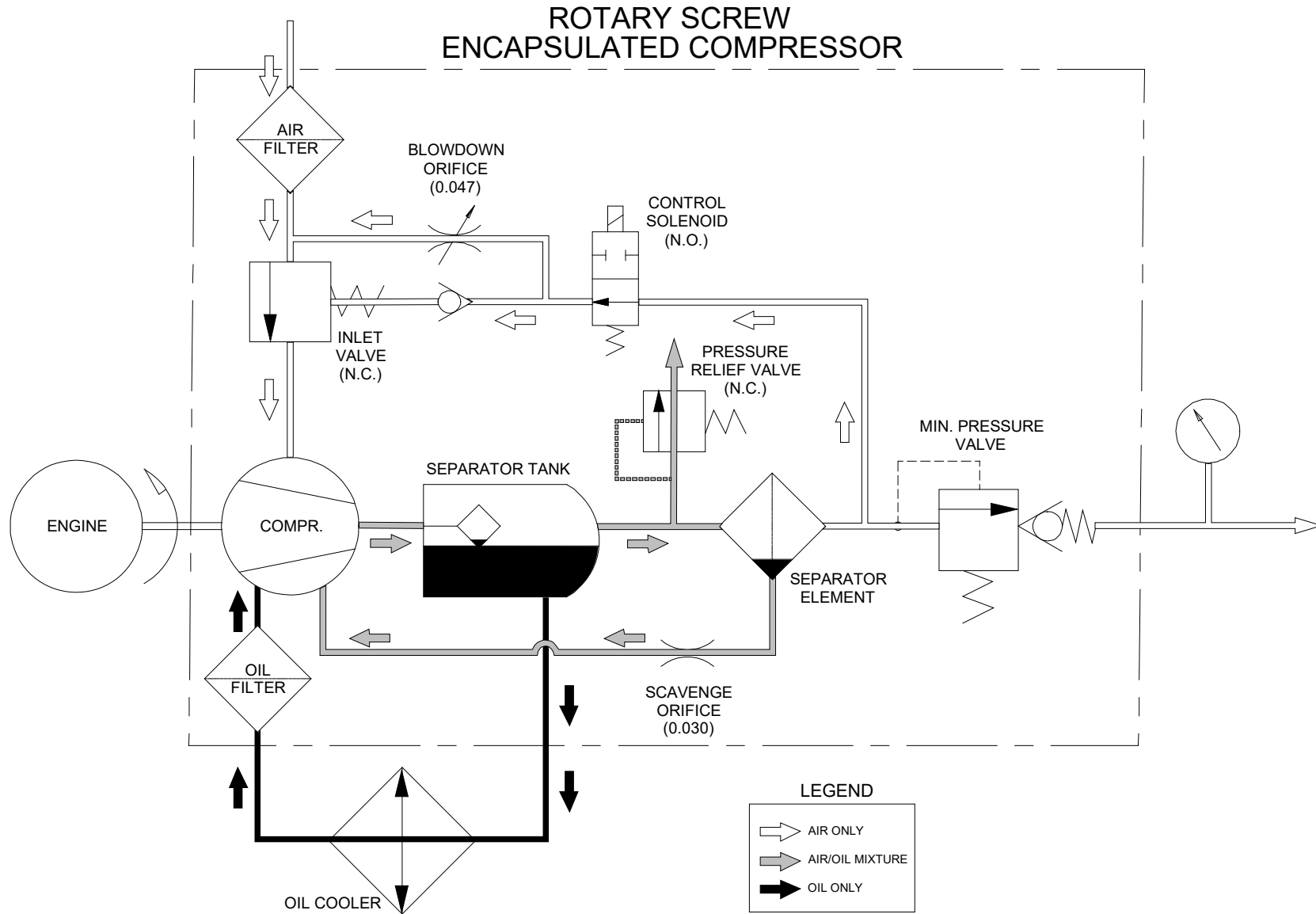


281458\_r0\_2of2

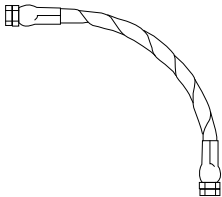
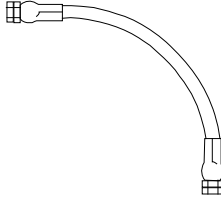
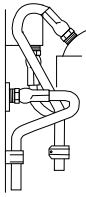
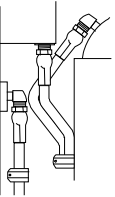
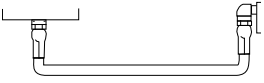
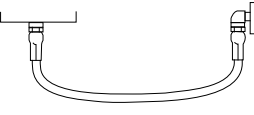
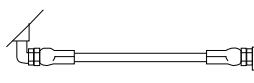
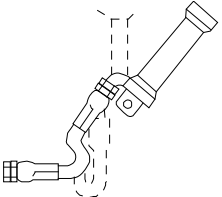
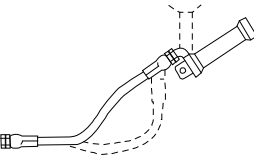
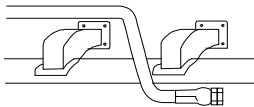
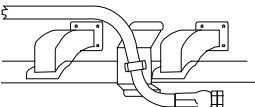
## 7.14 WIRING DIAGRAM - COLD WEATHER 12V (OPTIONAL)



## 7.15 SCHEMATIC FLOW DIAGRAM VSE WITH INLET



## 7.16 HOSE INSTALLATION GUIDE

| HOSE LAYOUT<br>CONSIDERATION                                                                                                                                                               | WRONG                                                                              | RIGHT                                                                               | HOSE LAYOUT<br>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.                                                                                           |  |  |

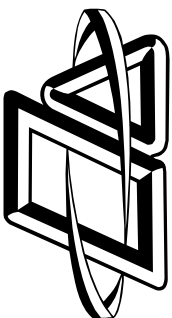


### TABLE 7B: MAINTENANCE TRACKING LOG

[illegible]



**BLANK PAGE**



**VANAIR®**  
P O W E R T O G O™

**Vanair Manufacturing, Inc.**

10896 West 300 North

Michigan City, IN 46360

Telephone (toll free): (800) 526-8817

Service (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](http://www.vanair.com)

|            |            |            |
|------------|------------|------------|
| GV3H-A55   | GV3H-A70W  | GV3H-B60CR |
| GV3H-A55   | GV3H-A70W  | GV3H-B60R  |
| GV3H-A55C  | GV3H-A80   | GV3H-B60W  |
| GV3H-A55CR | GV3H-A80   | GV3H-B60W  |
| GV3H-A55R  | GV3H-A80C  | GV3H-B70   |
| GV3H-A55W  | GV3H-A80CR | GV3H-B70   |
| GV3H-A55W  | GV3H-A80R  | GV3H-B70C  |
| GV3H-A60   | GV3H-A80W  | GV3H-B70CR |
| GV3H-A60   | GV3H-A80W  | GV3H-B70R  |
| GV3H-A60C  | GV3H-B55   | GV3H-B70W  |
| GV3H-A60CR | GV3H-B55   | GV3H-B70W  |
| GV3H-A60R  | GV3H-B55C  | GV3H-B80   |
| GV3H-A60W  | GV3H-B55CR | GV3H-B80   |
| GV3H-A60W  | GV3H-B55R  | GV3H-B80C  |
| GV3H-A70   | GV3H-B55W  | GV3H-B80CR |
| GV3H-A70   | GV3H-B55W  | GV3H-B80R  |
| GV3H-A70C  | GV3H-B60   | GV3H-B80W  |
| GV3H-A70CR | GV3H-B60   | GV3H-B80W  |
| GV3H-A70R  | GV3H-B60C  |            |

Printed in the U.S.A.

Specifications subject to  
change without prior notice

JANUARY 2022