



PRO 35 ➤

RECIPROCATING COMPRESSOR OPERATION MANUAL AND PARTS LIST

NOTE

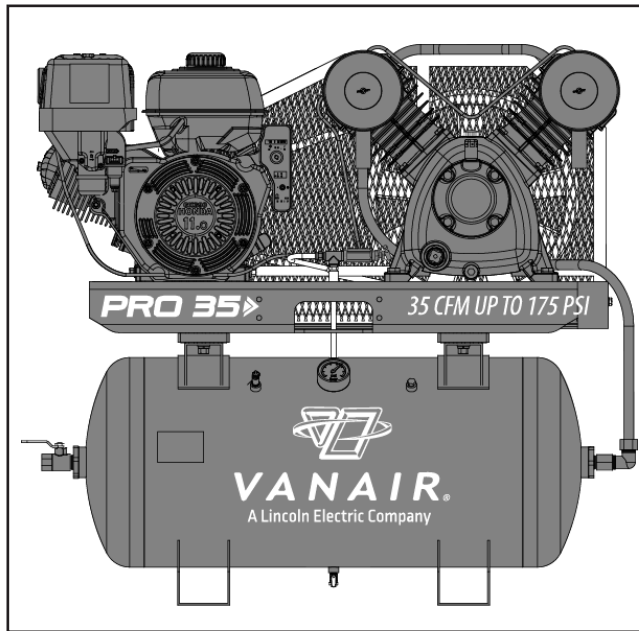
This publication contains the latest information available at the time of preparation. Every effort has been made to ensure accuracy.

Vanair®, a Lincoln Electric Company, reserves the right to make design change modifications or improvements without prior notification.

NOTE

Use only Vanair® Reciprocating 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!

**KEEP THE MANUAL
WITH THE VEHICLE**



Read this manual before installing, operating or servicing this equipment.

Failure to comply with the operation and maintenance instructions in this manual will VOID THE EQUIPMENT WARRANTY.

NOTE

Making unauthorized modifications to the system components WILL VOID THE WARRANTY!
Always inform Vanair®, before beginning any changes to the PRO 35.

Vanair®, a Lincoln Electric Company

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

vanair.com



VANAIR®
A Lincoln Electric Company

P/N: 090161-OP_r2

Effective Date:
September - 2026

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(844) VAN - SERV

SERVICE@VANAIR.COM

PARTS@VANAIR.COM

**10896 W. 300 N.
MICHIGAN CITY, IN 46360**

(800) 526-8817

VANAIR.COM

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VANAIR® VANTAGE WARRANTY

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

LIMITED WARRANTY—Subject to the expressed terms and conditions set forth below, Vanair®, a Lincoln Electric Company ("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
 - Solenoids
 - Clutches
 - Running Gear/Trailers
 - Compressor/Hydraulic Coolers, including Fan and Radiator Core

This Limited Warranty shall not apply to:

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

5. Equipment installed by non-authorized or third party personnel. Vanair® products are intended for purchase and use by commercial/industrial users and persons trained and experienced in the use and maintenance of industrial equipment.

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

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

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

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

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



WARRANTY AND CLAIMS

Warrantied Vanair® Parts

Owners of Vanair® equipment must follow this process for repair or replacement of warrantied items. Do not return items without prior authorization from the Vanair® Warranty Administrator.

Procedure:

Customers needing assistance in troubleshooting a system and/or returning parts, please follow the steps below:

1. Locate the machine's serial number(s).
2. Make a list of the symptoms/condition/malfunctions noticed along with any applicable temperature and pressure readings, and also the number of operational hours if available.
3. Note that the above information is required on the Return Material Authorization Form; necessary for warranty processing if the warranty claim is deemed valid by the service case review.
4. Contact the Vanair® Service Department by phone (1-844-VANSERV or 1-219-879-5100) to speak with a Service Technician.
5. 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.
6. If the unit cannot be returned to service, and Vanair® determines this matter is a warranty issue, the Service Technician will provide a case number for the unit. The Warranty Department will then 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.
7. Warranty Claims are solicited via a case number provided by the Vanair® Service Department. Blank Warranty Claim forms can be found on the Vanair® website under the Resources section.

! IMPORTANT !

If the part is not returned by the customer to the Vanair® Service Department within 30 days, the RMA becomes void and any claims will be denied.

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.

The RMA number must appear on the outside of the package where it can be seen before being returned.

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SECTION 1: SAFETY

1.1 GENERAL INFORMATION

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

1.2 INTERNATIONAL WARNING SYMBOL



The international warning symbol (shown above) 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 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.

1.3.1 DANGERS

DANGER

Identifies actions or conditions which will cause death, severe injury, or equipment damage or destructive malfunctions.

- 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

WARNING

Identifies actions or conditions which may cause death, severe injury, or equipment damage or destructive malfunctions.

- **DO NOT** use this compressor as a breathing air source. Vanair® 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** 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, (after the system has blown down, by opening a service valve) which will vent all pressure to the atmosphere. After that, remove any remaining residual pressure by slowly opening the fill cap.
- Remove all electrical power.

NOTE

Slowly remove fill cap to vent compressor sump pressure.

- **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, corrosive fumes, or other damaging substance can be ingested by the compressor intakes.
- Keep arms, hands, hair and all 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.
- **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 hydraulic 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.

CAUTION

Identifies actions or conditions which will or can cause injuries, equipment damage or malfunctions.

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.

NOTE

Additional information (or existing information) which should be brought to the attention of operators/maintainers affecting operation, maintenance, or warranty requirements.

1.3.4 NOTES

Note boxes are usually listed to convey and give focus to a distinct piece of information, which is not directly related to a safety issue, but is necessary to understand machine function and operation. Special note referrals in the manual may be contained in a box titled with an **IMPORTANT** banner, as shown below, and may also contain the **WARNING** symbol, should the information be linked to a safety issue:

! IMPORTANT !

Additional, CRUCIAL information (or existing information) which should be brought to the attention of operators/maintainers affecting operation, maintenance, or warranty requirements.

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 7.2, Decal Identification/ Locations**, are located near a component which is subject to respect in terms of safety precautions. Always heed the information on the safety decals.



WARNING

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

1.5 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 permitted. For additional information, consult the container label of the fluid in question.

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Installation Best Practices

Tank-Mounted Configurations

- Use the **TLPI-6 trunk line** for all tank-mounted installations. Available in increments of 4 feet lengths (6, 10, 14, 18, 22 and 26), [TLPI-6 through TLPI-22].
- Install the **air hose** from the TLPI trunk line between the **air tank** and the **remote-control panel**.

Skid-Mounted Configurations

- Use **EP274799 trunk line (No-Air version)** for all skid-mounted installations.
- Install a **1/2 in (#8) stainless steel discharge hose** between the **compressor discharge outlet** and the **air tank. Vanair (290581)**
 - Reciprocating compressors generate elevated discharge temperatures, exceeding **400°F**. A high-temperature-rated hose is required to ensure safe and reliable operation.

Air Tank Signal Line Requirements

- The air tank must be equipped with a **5/16 in. push-lock fitting** to accommodate the pilot valve signal line.
- Use **5/16 in (poly tubing)** for the signal line connection.
- This signal line transmits **air tank pressure** to the machine's control system, allowing compressor operation and unloading functions to respond appropriately to tank pressure conditions.

Notes

- Verify that all fittings, hoses, and tubing are rated for the intended operating pressure and temperature.
- Ensure all connections are securely installed and leak-free prior to starting the system.
- Route hoses and tubing to prevent abrasion, excessive heat exposure, or mechanical damage during operation.

Please incorporate with the following Installation Instructions:

SECTION 2: SPECIFICATIONS

2.1 GENERAL INTRODUCTION

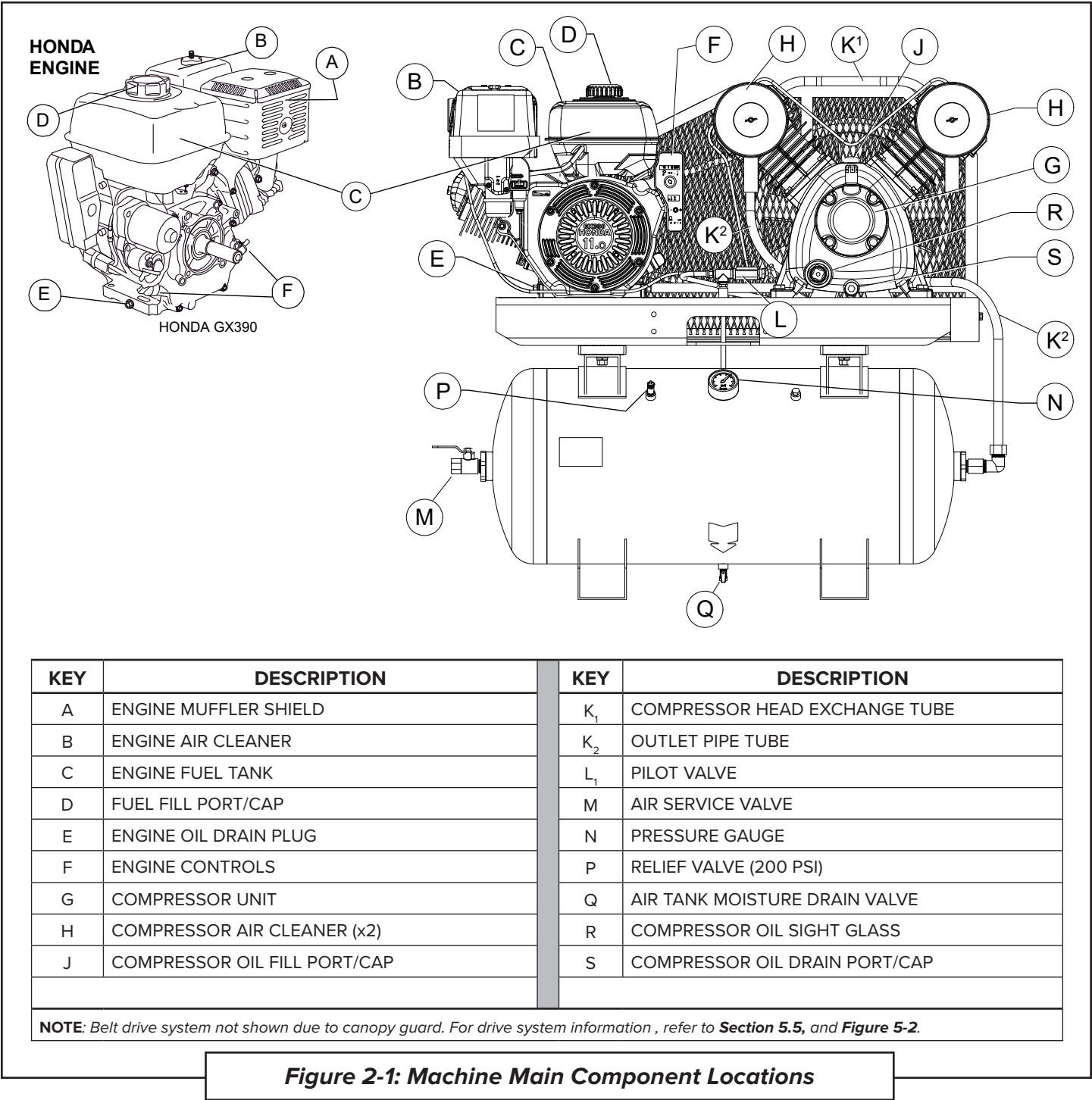
The tables and figures in this section list the specifications (including operational, output and dimensional) of the overall machine. Contact the Vanair® Service Department if additional specifications are needed that cannot be found in this manual. Refer to **Figure 2-1** for general machine component locations.

TABLE 2A: SPECIFICATIONS	
SYSTEM INFORMATION	SPECIFICATION
	ENGINE - HONDA® GX390
Engine:	11.7 HP, Gasoline ^{II}
Engine Oil Capacity:	1.16 Quarts 10W-30
Fuel Consumption:	1.5 GPH @ 3600 RPM Full Engine Load
Fuel Tank Capacity:	1.6 Gallons (6.4 Quarts) Fuel
Fuel Type:	87 Octane or Higher Unleaded Gasoline ^{II}
Operating Temperature Limits:	-55°F to 110°F
COMPRESSOR	
Compressor Type:	Reciprocating, single-stage
Air Compressor Capacity:	35 CFM @ 100 PSIG
Pilot Valve:	Factory Setting 150-175 PSI
Compressor Air Filters (Qty- 2):	Pleated Paper, Dry-Type
Oil Type/Capacity:	Vanguard™ Reciprocating Oil: Service: 1 Quart IV
Air Tank Capacity:	30 Gallon Tank
Tank Pressure Rating:	200 PSI
Safety Relief Valve Setting:	200 PSI
Electrical System:	12 VDC
Cooling System:	Air-cooled
Instrument Gauges:	Pressure Gauge
Adjustable Air Pressure Control Settings:	Cut-in Pressure: 150 PSI/Cut-out Pressure: 175 PSI (Factory Preset); 175 PSI (Maximum Cut-out)
Air Service Outlet:	3/4" NPT Ball Valve (tank-mount version)
<i>II For in-depth specifications and requirements regarding the Honda GX390 engine, refer to the Engine Operation Manual.</i>	
<i>III Ethanol blended fuels, such as E85, are prohibited for use with this engine. DO NOT use ethanol-based fuels.</i>	
<i>IV Always use the sight glass level to verify oil fill; for system oil change, run compressor momentarily to distribute oil, then check level again. Do not overfill compressor.</i>	

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TABLE 2B: WEIGHTS AND DIMENSIONS

PART NO.	DESCRIPTION/BUILD MODEL TYPE	UNIT WEIGHT (lbs.)	SHIPPING WEIGHT (lbs.)	MOUNTING PATTERN	OVERALL DIMENSIONS (in.)
051935	PRO35HMC HONDA 11HP 30 GAL TANK	460	480	20" x 14" WITH 1 11/16" x 1/2" SLOTS	45L x 19W x 43H
051956	PRO35HMC HONDA 11HP SKID PLATFORM	345	375	20" x 9" WITH 1 11/16" x 1/2" SLOTS	45L x 19W x 23H



SECTION 3: INSTALLATION

WARNING

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

CAUTION

Engine idle speed may need to be adjusted, even on a brand new unit, to compensate for differences in altitude. Please consult the engine manual.

! IMPORTANT !

Note that improperly-mounted equipment may have the potential to cause harm, and possibly cause damage or undue stress on the equipment.

DISCLAIMER

DO NOT install in any enclosed space without first contacting Vanair®.

NOTE

Although much of the information given in this installation section is comprehensive, these guidelines should be considered as referential material only, due to the diverse possibilities of the end user's vehicle make, model and year, and the unit model specifications.

NOTE

Install electrical components (circuit breakers, pressure switches, toggle switches, etc.) in locations where exposure to water or moisture will be most minimized.

NOTE

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

CAUTION

Always check the oil level and quality before start-up. Do not add or change oil while the unit is running. Use only Vanair® reciprocating oil.

NOTE

Always use Vanair® reciprocating oil (P/N 271856-1QT [two quarts needed]).

! IMPORTANT !

Ethanol blended fuels, such as E85, are prohibited for use with the engine. DO NOT use ethanol-based fuels. Consult Section 2 of this manual, and the Engine Operation Manual for acceptable fuel specifications.

3.1 MOUNTING THE MACHINE

Refer to **Figure 3-1**. Once all of the factors listed in **Section 3.3** have been considered, and the machine placement location has been resolved, the machine must be fully unpacked from its crate mounting.

3.2 GENERAL INSTRUCTIONS

Proper care, maintenance and lubrication ensures longevity. The compressor should always be level for proper lubrication. Do not over tighten foot bolts, as excessive vibration may occur. Use only in a clean, dry, and well-ventilated area.

The compressor has heat dissipation fins for proper cooling. Keep the fins and other parts that collect dust clean. Do not place rags or other materials on top of the compressor, as this obstructs cooling and can be a fire hazard.

3.3 GENERAL OVERVIEW OF INSTALLATION

Refer to **Figure 3-3** or **Figure 3-4** (at the end of this chapter) for the proper installation measurement specifications.

3.4 BREAK-IN PROCEDURE

There are no break-in requirements for this model.

3.5 BEFORE OPERATING THE COMPRESSOR

- 1. Ensure all nuts and bolts are tightened.
- 2. Ensure that the quantity of oil is correct.
- 3. If the intake filters are dirty, clean or replace.
- 4. Check entire unit for damage.
- 5. Check compressor and engine oil level; fill or add if necessary.
- 6. Ensure gas tank is filled.
- 7. Read entire engine manual.

3.6 BATTERY CONNECTION INSTRUCTIONS

For electric start engines only. Refer to *Figure 3-1* and the following procedure.

- 1. The positive (+) red battery cable is connected to the starter solenoid’s terminal [C].
- 2. The negative (-) black battery cable [E] is connected from the negative (-) terminal of the battery to an engine ground connection (mounting bolt, frame bolt, etc.).

- 3. Connect the other end of the positive (+) red battery cable to the battery positive (+) terminal.
- 4. Connect the other end of the negative (-) black battery cable to the battery negative (-) terminal.

WARNING

A battery can explode and cause serious injury if the correct procedure is not followed!

NOTE

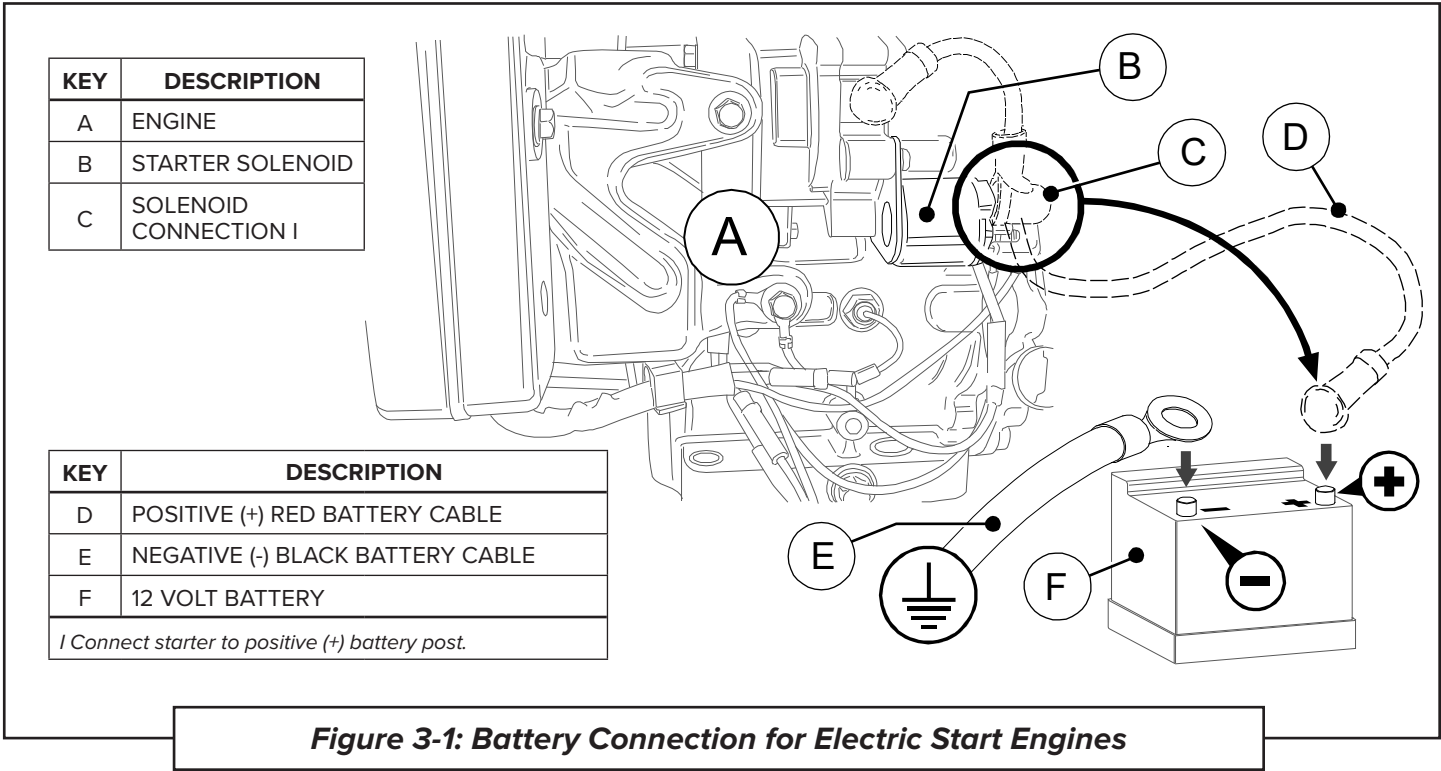
Make sure to follow instructions carefully to avoid a short and possible damage to the starter solenoid and/or battery.

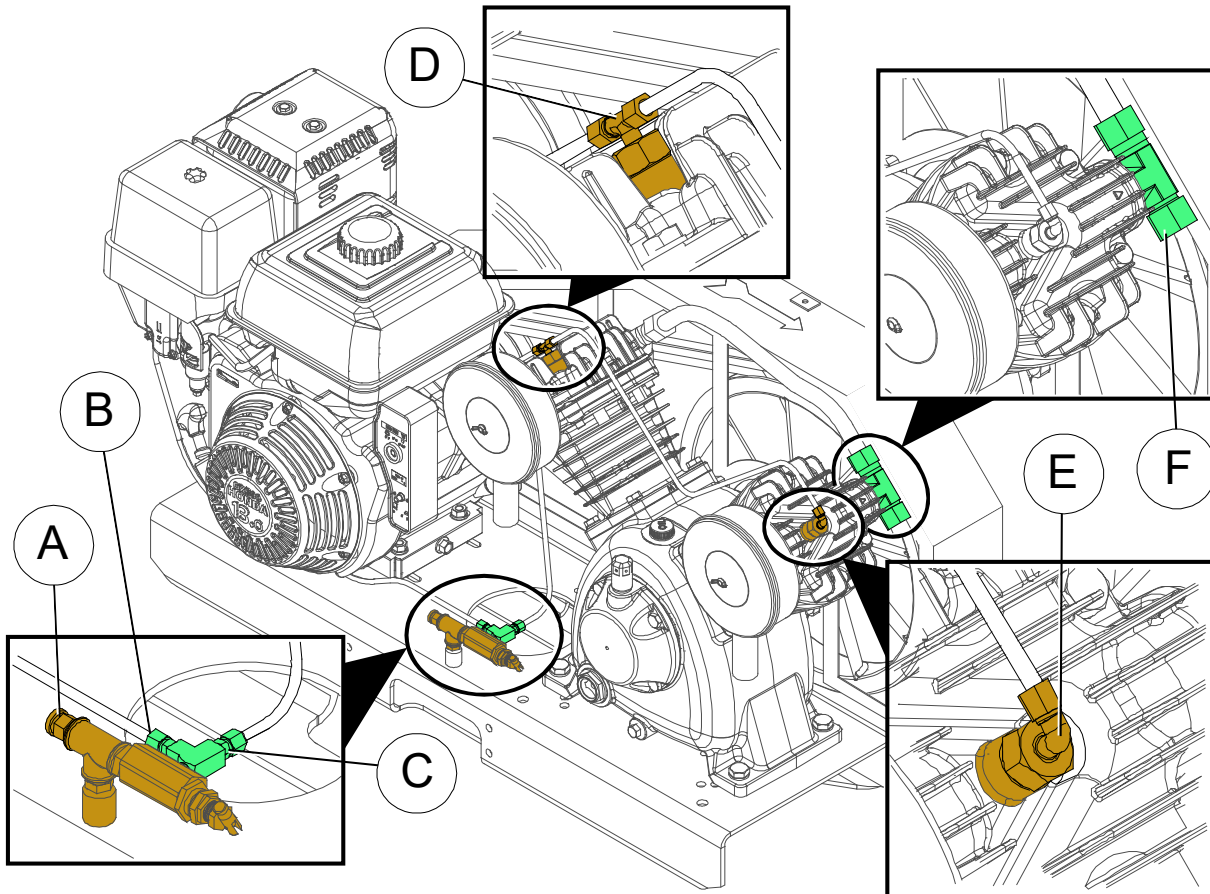
NOTE

Once connections are completed, coat the termal connections, including the cable ends, with dielectric grease for insulation and weather protection.

3.7 CONNECTING THE AIR SUPPLY (SKID UNITS ONLY)

Refer to *Figure 3-2* for service air discharge port location. Connect the service valve. Connect the air discharge line to the 3/4" JIC male connector.





KEY	DESCRIPTION	KEY	DESCRIPTION
A	FROM AIR RESERVOIR TANK (ART) ^I	D	HEAD UNLOADER
B	TO ENGINE THROTTLE CONTROL	E	HEAD UNLOADER
C	TO HEAD UNLOADER "D"	F	CUSTOMER CONNECTION FOR SERVICE AIR ^{II}

^I Pilot pressure to be plumbed directly from air tank reservoir (ART) on the downstream side of any check valve that is between the compressor and air reservoir tank. Pilot pressure to come directly from air reservoir tank. Pilot pressure must be plumbed in after any check valve that is between the compressor and air tank reservoir.

^{II} Customer connection: 3/4" 37° male JIC fitting.

Figure 3-2: Additional Plumbing

3.8 AIR RESERVOIR TANK INSTALLATION (SKID UNITS ONLY)

The Vanair® PRO 35 air compression system will require the additional installation of an air tank/receiver, to be incorporated downstream of the unit's service air output. This tank will serve as a reservoir for accumulated air pressure, allowing for constant pressure availability for direct service needs. Vanair® recommends the following criteria when determining the design of the receiver tank installation:

3.8.1 TANK SPECIFICATIONS

- 30 gallon minimum capacity (recommended).
- ASME-rated and compliant to applicable standards (200 PSIG minimum).
- Supplied with factory-set relief valve.
- Supplied with moisture drain.

WARNING

Ensure that the air discharge hose is properly rated for high temperature.

PRO 35 Reciprocating Air Compressor

3.8.2 CONNECTION HOISING AND SERVICE VALVE SPECIFICATIONS

- Hose must be flexible; steel-braided reinforcement.
- Rated for high temperature (450°F minimum).
- Pressure-rated for 200 PSIG (minimum).

3.8.3 MOUNTING SPECIFICATIONS

- If air tank is to be permanently mounted, Vanair® recommends a mounting with no less than four (4) mounting/securing points.
- Tank mounted level.
- Service air out port of tank readily accessible, or piped/hosed for such availability.
- Drain is readily available, or piped/hosed for such availability.
- Tank drain function must have auto-drain, petcock, or valve that allows for tank to be purged of moisture while tank is pressurized/system is running.

The above listed features should serve as a minimum checklist of what to include when installing the reservoir portion of the compression system. However, if additional assistance is needed for designing the air tank-side of the service out operation, consult the Vanair® Service Department.

3.9 STARTING THE ENGINE

1. Move the operation lever to the ON position. If engine is cold, move choke lever to the CLOSED position. If engine is warm, leave choke lever in OPEN position.
2. Turn engine switch to ON position.
3. Pull starter grip lightly until you feel resistance, then pull briskly. Return starter grip gently - engine should start. If not, repeat process.
4. Once the engine starts running, slowly move the choke lever to the OPEN position.

With the engine running properly, the compressor fills the air receiver with compressed air. When maximum pressure (set by the pilot valve control) is reached, the engine and compressor will slow down to idle speed and will return to full RPM when the cut-in pressure is reached. The unit will continue to cycle automatically until turned off.

WARNING

Extra care should be taken to avoid personal injuries with automatically controlled compressors.

DISCLAIMER

If machine package is to be mounted within a confined space such as beneath a canopy, the area must be determined to allow for adequate air flow to take place for cooling purposes. Consult Vanair® factory for assistance in ensuring adequate air flow before mounting the machine.

PRO 35 Reciprocating Air Compressor

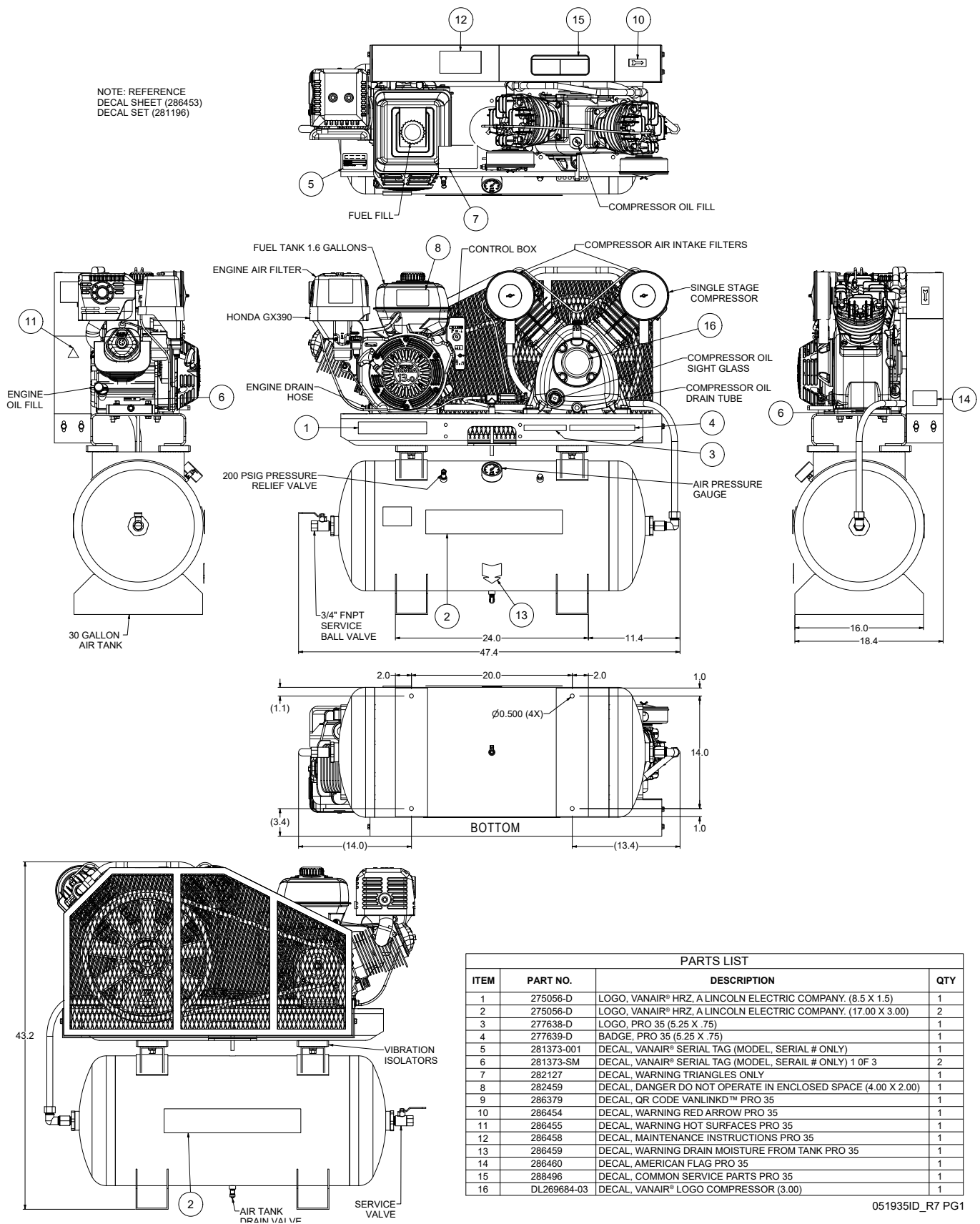
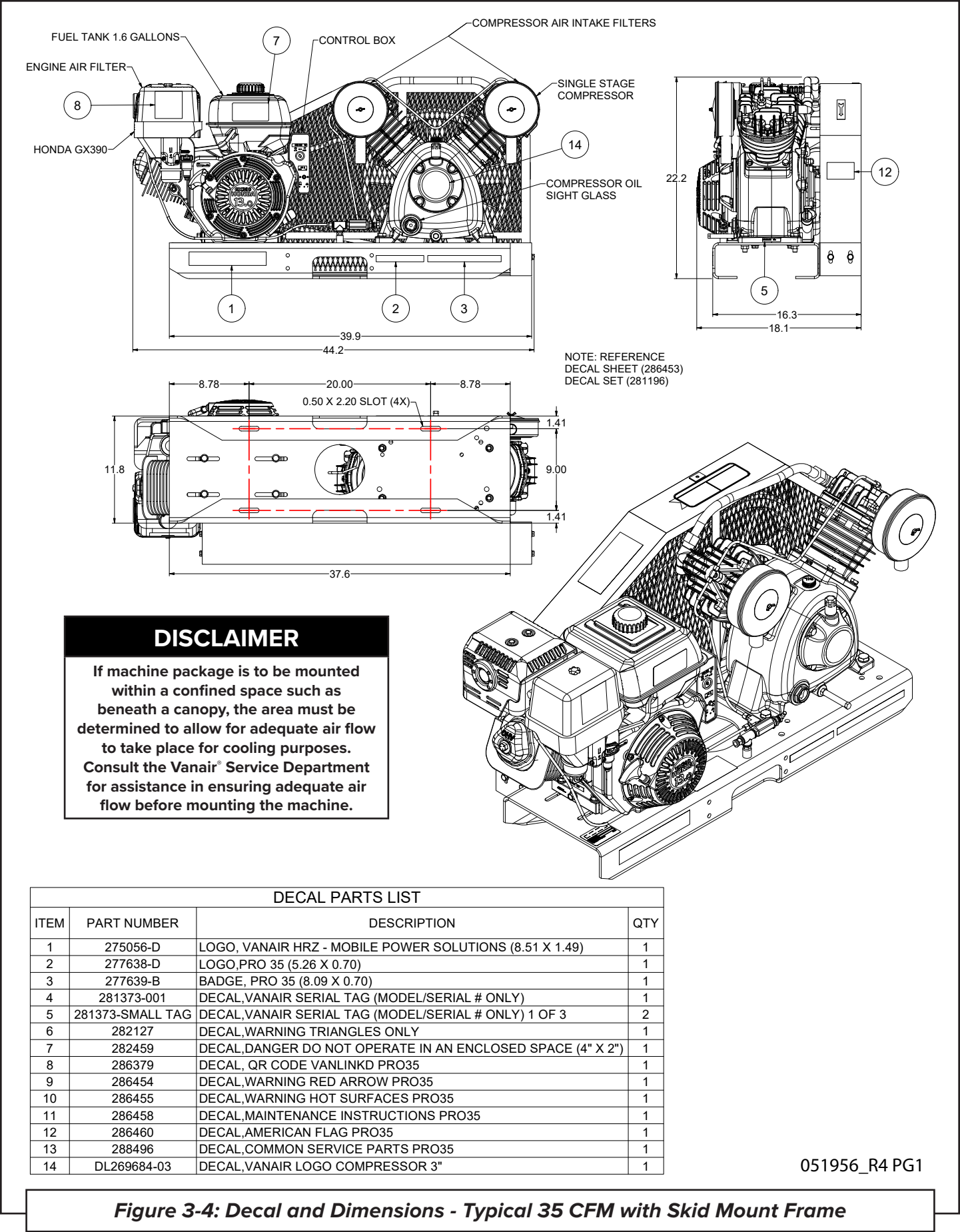


Figure 3-3: Decal and Dimensions - Typical 35 CFM with 30 Gallon Tank

PRO 35 Reciprocating Air Compressor



SECTION 4: OPERATION

4.1 GENERAL INSTRUCTIONS

The PRO 35 has a comprehensive array of controls and indicators for each function of the system. Understanding the correct operation of the system will help you to understand and recognize when the system is operating optimally. The information in the Operation Section will help the operator to recognize and interpret the readings, which will call for service or indicate the beginning of a malfunction.

! IMPORTANT !



Before starting the PRO 35 machine, read this section thoroughly and familiarize yourself with the controls and indicators, including their purpose, location and use.

WARNING

Whether operating or performing service on the PRO 35, always follow all applicable safety recommendations as outlined in *Section 1: Safety* of this manual.

CAUTION

Engine idle speed may need to be adjusted, even on a brand new unit, to compensate for differences in altitude.

Please consult the engine manual.

WARNING

Oil and moisture residue must be drained from the air receiver daily or after each use.

Accumulations of oil residue in the receiver can be ignited by embers of carbon created by the heat of compression causing an explosion, damage to property and injury to personnel.

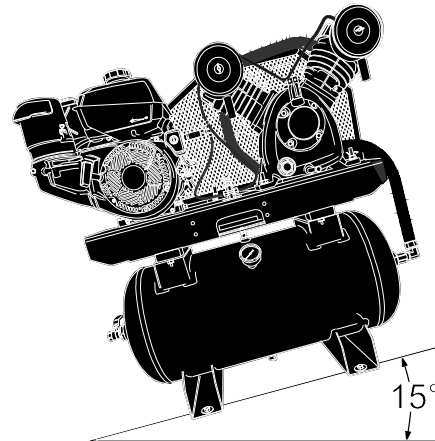
WARNING

Do not open a manual tank drain valve on any air tank containing more than 30 PSIG of air pressure!

4.2 OPERATING THE COMPRESSOR

1. Ensure all nuts and bolts are tightened.
2. Ensure that the quantity of oil is correct.
3. If the intake filters are dirty, clean or replace. Check entire unit for damage.
4. Check compressor and engine oil level; fill or add if necessary.
5. Ensure gas tank is filled.
6. Read entire engine manual.

! IMPORTANT !



All machine package maximum operation angles of tilt are fifteen degrees (15°).

CAUTION

Always check the oil level and quality before startup. **DO NOT** add or change the oil while the unit is running. Use only Vanair® reciprocating oil.

NOTE

Always use Vanair® reciprocating oil (P/N 271856-1QT [two quarts needed]). Mixing oil types will **VOID THE WARRANTY!**

! IMPORTANT !

Do NOT use E85 Gasoline

CAUTION

Compressors and engines generate heat and create hot surfaces. Use caution when operating and servicing equipment. Some surfaces and components may be hot.

4.3 ENGINE START-UP AND SHUTDOWN

4.3.1 ENGINE START-UP

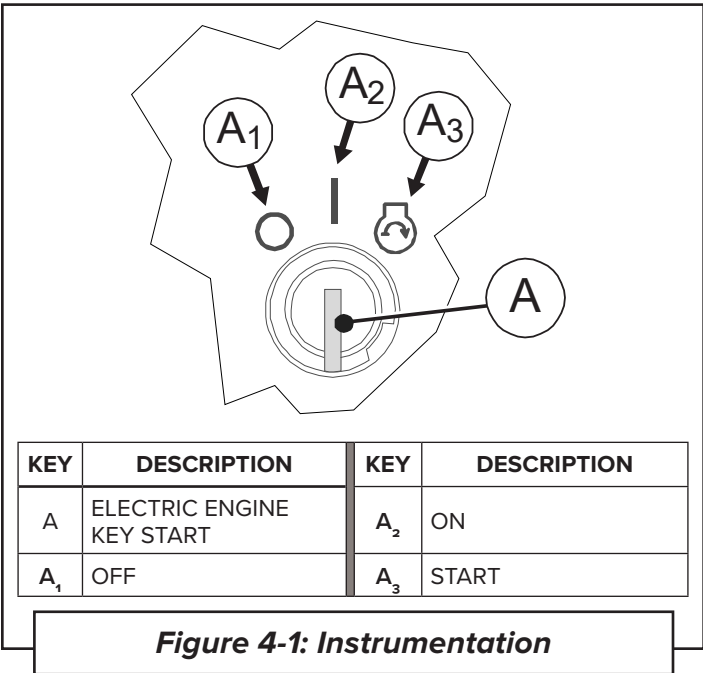
Refer to *Figure 4-1* and the following procedure.

1. Turn the engine control switch from the OFF position to the ON position.
2. Continue turning control switch to the START position.
3. Once the engine starts running, slowly move the choke lever to the OPEN position.
4. Let engine run at idle for 3-5 minutes to allow for warm up sequence.

NOTE

Air compressor will start automatically with machine start-up.

4.3.2 ENGINE SHUTDOWN



Consult *Figure 4-1*. To shut the engine off at any time, turn the Engine Control Switch to the OFF position. However, this method is best reserved for emergency shutdown situations only.

4.4 ENGINE THROTTLE CONTROL FUNCTION

Consult *Table 4A: Engine Throttle Control Function Conditions* to understand how the engine speed relates to the demand(s) of the machine system’s output functions.

4.4.1 START PROCEDURE

Refer to *Figure 4-2* and the following procedure:

1. Release any remaining tank pressure by slowly opening the manual drain valve.
2. Turn on the engine gasoline supply.
3. Put the choke in the “ON” position.
4. Close the service valve and put unloader lever in the “unload” position.
5. Start the engine, release the choke, and allow the engine to warm up for two to three minutes.
6. Return the unloader lever to the “load” position as shown below for the manual head unloader.

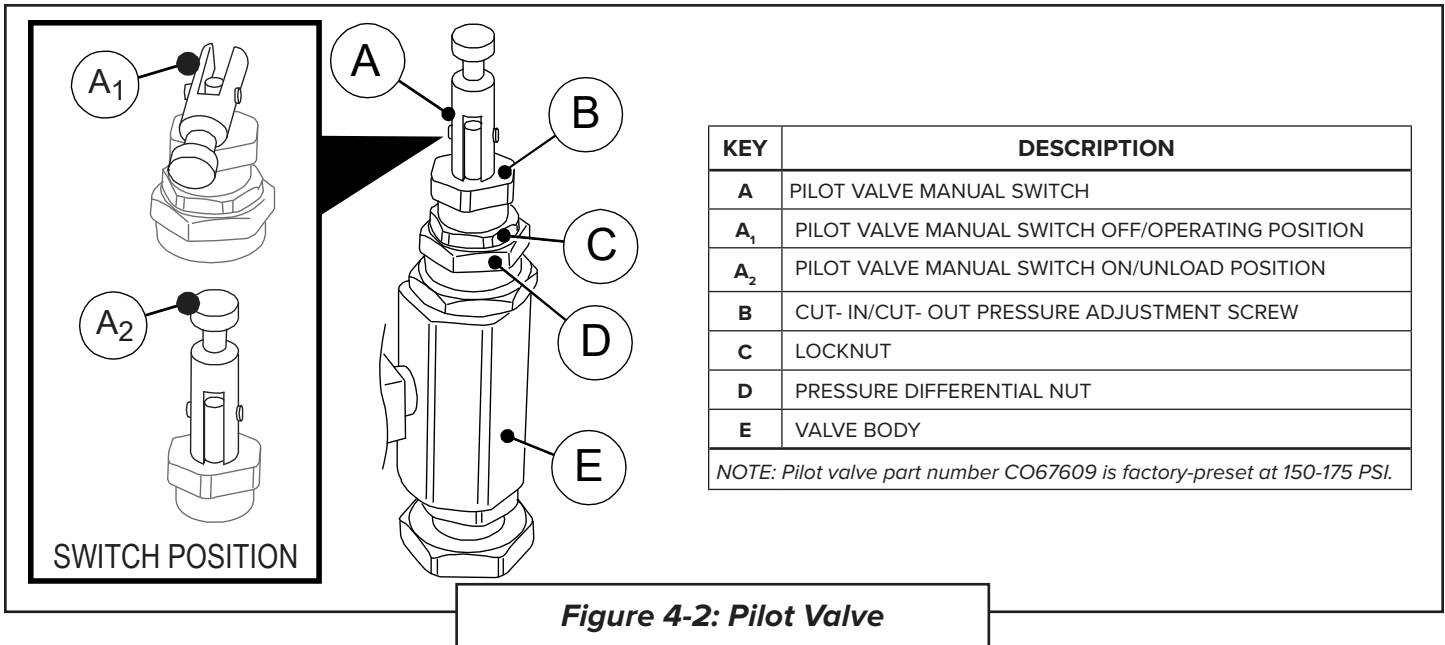
4.5 OPERATING THE AIR COMPRESSOR

The air compressor on the PRO 35 is a continuous-run compressor. This means that the compressor continues to turn at all times, even when it is not building pressure in the air storage tank. There is **NO DUTY CYCLE** for this unit. The compressor is controlled by a pilot valve that provides an air pressure signal to the compressor head unloader valves.

When the air tank pressure builds to **175 PSI**, a spring loaded valve in the pilot valve opens, providing an air pressure signal to the head unloader valves of the compressor. This causes the air in the compressor to vent to the atmosphere.

When the air tank pressure falls below **150 PSI**, the pilot valve will close, stopping the air signal to the unload valves, allowing the compressor to start pumping air to the tank.

A lever on the top of the pilot valve will allow the operator to manually stop the compression



of air by the compressor during initial engine start-up or if operation does not require the use of compressed air (**Figure 4-2**). Since the head unloader valves require air pressure to operate, there must be a minimum of **10 PSI** in the air tank to allow the valves to operate properly.

When purchasing air tools or planning a project, the rated capacity of the compressor (**30 CFM @ 100 PSI**) will need to be taken into consideration. Check the desired power tool manufacturer's specifications to ensure that the tool capacity is within range of the compressor's operating scope.

TABLE 4A: ENGINE THROTTLE CONTROL FUNCTION CONDITIONS

Air Pressure	Engine Speed Condition Result
Tank Pressure Below (<) 150 PSI or Set Pressure I	Engine runs at full throttle.
Tank Pressure Above (>) 150 PSI or Set Pressure I	Engine runs at idle speed (2000 RPM), ready for application.

I Factory set pressure: 150 PSI = ON, 175 PSI = OFF

WARNING

DO NOT operate gasoline engine units in an enclosed area.

NOTE

Turn the gasoline supply off before shutting down the compressor.

NOTE

The leading cause of component failure of the air control system is moisture. Air tanks must be drained daily as a minimum to eliminate condensation.

NOTE

The following instructions are for a tank-mounted model. However, even though the air tank used with a skid-mounted model may vary in design, the tank drain should be relatively easy to locate, somewhere along the underside of the tank.

! IMPORTANT !

A tank subjected to freezing temperatures may contain ice. Store the compressor in a heated area before attempting to drain moisture from the tank.

NOTE

Vanair® recommends that the air tank be inspected yearly for rust and worn spots internally. Refer to federal, state or provincial, or local codes for mandatory air tank maintenance information.

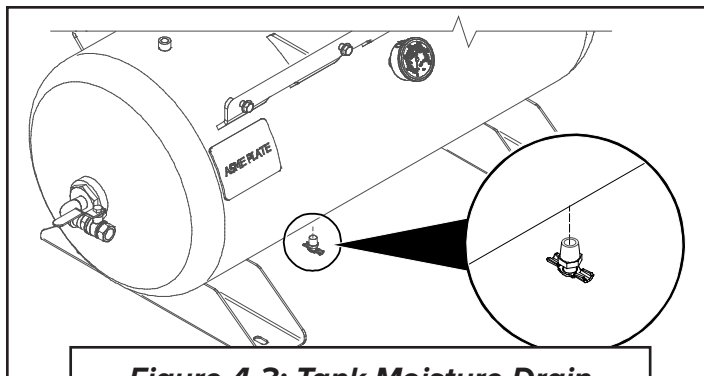


Figure 4-3: Tank Moisture Drain

4.6 DRAINING THE AIR TANK

Refer to **Figure 4-3** and the following procedure:

1. Disconnect the spark plug cable from the spark plug.
2. Reduce the air pressure in the tank to **30 PSIG** by opening the service valve carefully and slowly.
3. Slowly open the drain valve and allow the collected moisture to drain from the tank.
4. Once the moisture has been completely drained, close the drain valve.

4.7 EXTREME CONDITION OPERATION

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 5.3, Maintenance Schedule Table**.

Become familiar with the alternative operation procedures given in this section before operating the PRO 35 in any type of extreme ambient conditions.

4.7.1 COLD WEATHER OPERATION

Additional care should be taken under consideration when operating the package in extreme cold weather environments or ambient temperatures.

Run machine with no load at idle speed to warm up the machine. Refer to **Figure 4-2, [A2]**.

4.7.2 ENGINE OPERATION

The standard recommendation of 10W-30 engine oil is suitable for temperatures down to -5°F. If temperatures are consistently below 30°F, it is recommended that 5W-30 oil be used. If temperatures are below -25°F, a high-performance, fully synthetic oil, such as AMSOIL 5W-30 should be used, which is suitable to temperatures of -55°F.

In below zero temperatures, a fuel line de-icer product may need to be used.

Drain the moisture from the tank when it is warm from extended operation.

4.7.3 HIGH TEMPERATURE OPERATION

The standard recommendation of 10W-30 engine oil is suitable for operation in temperatures up to 110°F.

Extra care should be taken to keep the engine and air compressor clean and to not restrict the air flow around the unit.

4.7.4 HIGH ALTITUDE OPERATION

Engine horsepower will decrease by 3.5% for every 1,000 ft. increase in altitude. At high altitude overall unit performance will deteriorate, and care will need to be taken not to overload the engine by using more than one function of the unit at a time.

NOTE

Ethanol blended fuels, such as E85, are prohibited for use with the engine. DO NOT use ethanol-based fuels. Consult Section 2 of this manual, and the Engine Owner's Manual for acceptable fuel specifications.

NOTE

For additional information on engine operation, consult the Engine Owner's Manual.

SECTION 5: MAINTENANCE

5.1 GENERAL

Before performing any maintenance or adjustments to your air compressor, the following safety precautions should be taken:

1. Turn the engine OFF; remove the key.
2. Drain air receiver and air lines of any air pressure.

DANGER

DO NOT install in any enclosed space without first contacting Vanair®.

WARNING

Before performing maintenance or repair operations on the compressor, ensure that all power has been removed and been locked out to prevent accidental activation.

DO NOT assume that because the compressor is in a STOPPED condition that power has been removed.

WARNING

DO NOT touch electrical wires, wire harnesses, terminals, or other components when power is applied to the compressor unit.

WARNING

DO NOT use tools, hoses, or equipment that have maximum ratings below that of this compressor.

WARNING

REMOVE power when performing maintenance or repair actions.

WARNING

Keep metal tools, and other conductive objects away from live electrical components.

WARNING

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.

NOTE

Keep the equipment clean when performing maintenance or service actions. Cover openings to prevent contamination.

NOTE

Wear appropriate protective (eye and hearing protection) equipment and clothing when operating or maintaining this equipment. **DO NOT** wear jewelry, loose clothing; and long hair should be restrained with headband or safety hat.

5.2 FILLING COMPRESSOR OIL

Refer to **Table 5A: Maintenance Schedule and Procedure Table**, key #2, to determine proper oil level of the sight glass. Should oil need to be added, follow the instructions below:

1. Ensure that the machine is situated on a level surface when determining a proper oil level check.
2. Remove the oil filler plug [A].
3. Slowly pour the proper oil into the pump crankcase.

! IMPORTANT !

Although the optimum oil level is at the middle of the sight glass, do not over fill the oil over 3/4 of the sight glass; if the level is at or below 1/4 of the sight glass, add the proper amount.

5.3 ENGINE LUBRICATION

Check Engine Operation Manual for lubrication and maintenance requirements.

5.4 OIL CHANGE

Initial oil change is due at 100 hours.

1. Remove the oil drain plug. Allow oil to drain completely from unit.
2. Replace the oil drain plug.
3. Refill with the recommended oil to the proper level.

TABLE 5A: MAINTENANCE SCHEDULE AND PROCEDURE TABLE

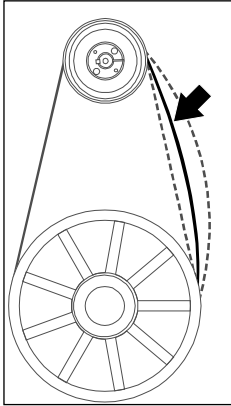
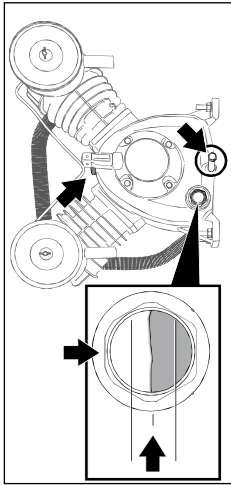
TABLE 5B: ROUTINE REPLACEMENT KIT ORDER INFORMATION [†]				
KEY NO.	DESCRIPTION	PART NO.	QTY	KEY NO.
1	Kit, Engine 100 Hour Service	KIT1291	1	3
2	Kit, Engine 200 Hour Service	KIT1119	1	4
[†] If working in dusty or dirty conditions, reduce the recommended time intervals between servicing by half for engine and compressor oil replacement, and engine and compressor filter servicing. ^{††} For detailed kit content descriptions refer to Section 7, Table 7A . Also Refer to Section 7, Table 7A for full replacement parts listing, including separate components, non-routine items, and options.				
PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.				
KEY	TASK DESCRIPTION	BREAK-IN PERIOD	MAINTENANCE SCHEDULE	ACTION TO TAKE
	WARNING Before performing maintenance: Shut down machine, relieve all system pressure and lock out all power, as per the Safety Section of this manual. For lock-out/tag-out disconnect the positive (+) battery cable. IMPORTANT The routine scheduled maintenance tasks listed here are for the compressor unit only. Consult the Engine Operation Manual for additional routine tasks for the engine.	First 20 Hours of Operation After 8 Hours or Daily After 50 Hours or Weekly Every 100 Hours or Monthly Every 300 Hours or Quarterly		
1	Check belts' tension (initial check)	■		PROCEDURE: Observe the lag in the drive belts when the machine is at rest. Proper belt position should have a slight bow to the tension, as shown in the figure [▲]. Should the belts need adjustment or replacement, refer to Section 5.6, Installing New Belts, and Figure 5-2. 
2	Check compressor oil level	■		REFERENCE: - Compressor Oil Level Sight Glass [▼] - Compressor Oil Fill Port [▲] - Compressor Oil Drain Port [▲] - Compressor Oil Level [▲] [‡] [‡] Ideal oil level is at the half-way point (middle) of the sight glass. However, Do not fill over the 3/4 full mark, and add oil if the level is below the 1/4 mark of the glass. PROCEDURE: With the machine situated on a level service, observe the level of the oil in the sight glass [▲]. Should the level be too low (below 1/4 full), add oil. DO NOT over fill the compressor (beyond 3/4 capacity/level of the sight glass). DO NOT mix oil types. 
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TABLE 5A: MAINTENANCE SCHEDULE AND PROCEDURE TABLE

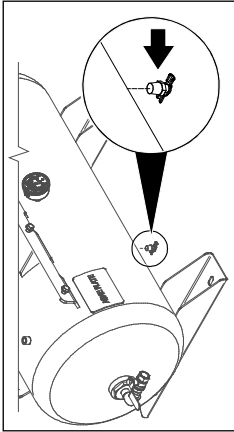
TABLE 5B: ROUTINE REPLACEMENT KIT ORDER INFORMATION ^I									
KEY NO.	DESCRIPTION	PART NO.	QTY	KEY NO.	DESCRIPTION	PART NO.	QTY		
1	Kit, Engine 100 Hour Service	KIT1291	1	3	Motor oil (10W-30/qt.	274439	2		
2	Kit, Engine 200 Hour Service	KIT1119	1	4	Vanguard™ Reciprocating Compressor Oil	271856-1GAL	1		
^I If working in dusty or dirty conditions, reduce the recommended time intervals between servicing by half for engine and compressor oil replacement, and engine and compressor filter servicing.									
^{II} For detailed kit content descriptions refer to Section 7, Table 7A . Also Refer to Section 7, Table 7A for full replacement parts listing, including separate components, non-routine items, and options.									
PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.									
KEY		TASK DESCRIPTION		ACTION TO TAKE					
3	Drain condensate moisture from air tank after each use	■							 REFERENCE: • Air Tank Condensate Drain [➡] PROCEDURE: Drain the moisture from the tank when it is warm from extended operation. Refer to Section 4.6, Draining The Air Tank, for further information.
4	Check for unusual noise or vibration	■							PROCEDURE: Determine if the noise is internal or external; ensure that all loose joints, fittings and/or fastenings are tight. Consult the Troubleshooting Section in this manual, and the Engine Operation Manual.
5	Ensure all nuts and bolts are tightened	■							PROCEDURE: Loose nuts and bolts may cause stress and vibration of the machine. Check that all nuts and bolts are tight, and tighten when appropriate.
6	Clean dust/foreign matter from cylinder heads, motor, fan blades intercooler and air receiver	■							PROCEDURE: Wipe with a clean cloth; do not use flammable solvents. Use extra care when cleaning the intercoolers; do not bend the cooling fins.
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TABLE 5A: MAINTENANCE SCHEDULE AND PROCEDURE TABLE

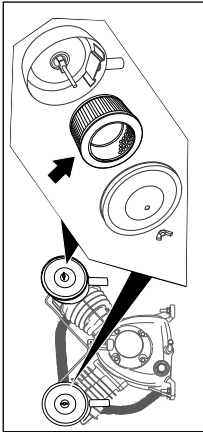
TABLE 5B: ROUTINE REPLACEMENT KIT ORDER INFORMATION ⁱ				
KEY NO.	DESCRIPTION	PART NO.	QTY	KEY NO.
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2	Kit, Engine 200 Hour Service	KIT1119	1	4
ⁱ If working in dusty or dirty conditions, reduce the recommended time intervals between servicing by half for engine and compressor oil replacement, and engine and compressor filter servicing. ⁱⁱ For detailed kit content descriptions refer to Section 7, Table 7A . Also Refer to Section 7, Table 7A for full replacement parts listing, including separate components, non-routine items, and options.				
PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.				
ACTION TO TAKE				
WARNING Before performing maintenance: Shut down machine, relieve all system pressure and lock out all power, as per the Safety Section of this manual. For lock-out/tag-out disconnect the positive (+) battery cable. IMPORTANT The routine scheduled maintenance tasks listed here are for the compressor unit only. Consult the Engine Operation Manual for additional routine tasks for the engine.	MAINTENANCE SCHEDULE Hourly or Calendar Period - whichever comes first ⁱ	After 8 Hours or Daily	■	REFERENCE: • Compressor Air Filter Element (x 2) [▲] PROCEDURE: Remove the wingnut from the air filter housing, and pull the cover outward and away from the housing body. Pull the filter out and check for excessive dirt, holes. If element contains excessive dirt accumulation, or tears or holes in the filter fabric, replace the filter. If filter is being replaced, replace BOTH filters at the same time, regardless of the condition of the second filter.
		After 50 Hours or Weekly	■	
		Every 100 Hours or Monthly		
		Every 300 Hours or Quarterly		
KEY TASK DESCRIPTION	BREAK-IN PERIOD First 20 Hours of Operation			PROCEDURE: Inspect the area around the unit for oil spots, etc., that would indicate the presence of a leak. Check for any loose connections and tighten. If a part leak is evident, replace the part.
			■	
KEY TASK DESCRIPTION	BREAK-IN PERIOD First 20 Hours of Operation			PROCEDURE: Observe the lag in the drive belts when the machine is at rest. Proper belt position should have a slight bow to the tension, as shown in the figure [▲]. Should the belts need adjustment or replacement, refer to Section 5.6, Installing New Belts , and Figure 5-2 .

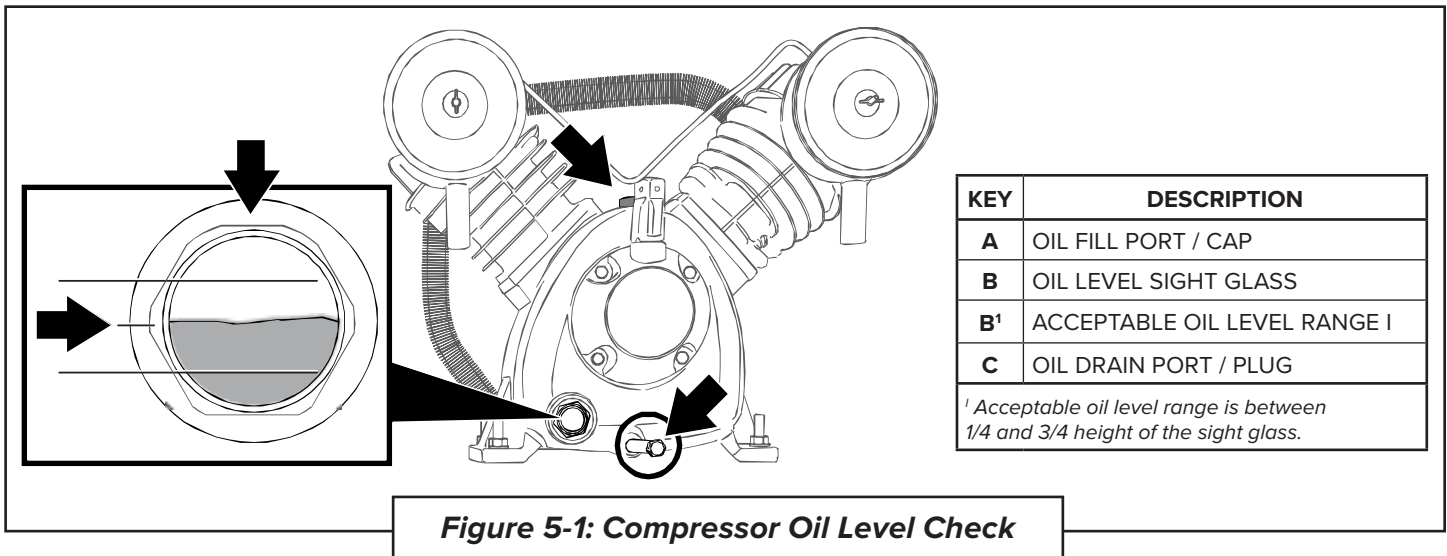
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TABLE 5A: MAINTENANCE SCHEDULE AND PROCEDURE TABLE

TABLE 5B: ROUTINE REPLACEMENT KIT ORDER INFORMATION [†]				
KEY NO.	DESCRIPTION	PART NO.	QTY	KEY NO.
1	Kit, Engine 100 Hour Service	KIT1291	1	3
2	Kit, Engine 200 Hour Service	KIT1119	1	4
[†] If working in dusty or dirty conditions, reduce the recommended time intervals between servicing by half for engine and compressor oil replacement, and engine and compressor filter servicing. ^{††} For detailed kit content descriptions refer to Section 7, Table 7A . Also Refer to Section 7, Table 7A for full replacement parts listing, including separate components, non-routine items, and options.				
PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.				
KEY	TASK DESCRIPTION	BREAK-IN PERIOD	MAINTENANCE SCHEDULE	ACTION TO TAKE
WARNING Before performing maintenance: Shut down machine, relieve all system pressure and lock out all power, as per the Safety Section of this manual. For lock-out/tag-out disconnect the positive (+) battery cable.				
IMPORTANT The routine scheduled maintenance tasks listed here are for the compressor unit only. Consult the Engine Operation Manual for additional routine tasks for the engine.				
11	Inspect and change air filters if necessary	First 20 Hours of Operation	After 8 Hours or Daily After 50 Hours or Weekly Every 100 Hours or Monthly Every 300 Hours or Quarterly	REFERENCE: • Compressor Air Filter Element (x 2) [▲] PROCEDURE: Remove the wingnut from the air filter housing, and pull the cover outward and away from the housing body. Pull the filter out and check for excessive dirt, holes. If element contains excessive dirt accumulation, or tears or holes in the filter fabric, replace the filter. If filter is being replaced, replace BOTH filters at the same time, regardless of the condition of the second filter. Clean or clear as needed.
12	Inspect air receiver for corrosion or other damage		■	
13	Change compressor oil		■	REFERENCE: • Compressor Oil Level Sight Glass [▼] • Compressor Oil Fill Port [▲] • Compressor Oil Drain Port [▲] • Compressor Oil Level [▲] [‡] [‡] Ideal oil level is at the half-way point (middle) of the sight glass. However, Do not fill over the 3/4 full mark, and add oil if the level is below the 1/4 mark of the glass. PROCEDURE: With the machine situated on a level service, observe the level of the oil in the sight glass [▲]. Should the level be too low (below 1/4 full), add oil. DO NOT over fill the compressor (beyond 3/4 capacity/level of the sight glass). DO NOT mix oil types.

TABLE 5A: MAINTENANCE SCHEDULE AND PROCEDURE TABLE

TABLE 5A: MAINTENANCE SCHEDULE AND PROCEDURE TABLE											TABLE 5B: ROUTINE REPLACEMENT KIT ORDER INFORMATION ^I					
KEY	TASK DESCRIPTION	BREAK-IN PERIOD	MAINTENANCE SCHEDULE				KEY NO.	QTY	PART NO.	QTY	DESCRIPTION	PART NO.	QTY			
			Hourly or Calendar Period - whichever comes first ^I	After 8 Hours or Daily	After 50 Hours or Weekly	Every 100 Hours or Monthly								Every 300 Hours or Quarterly		
14	Replace air filter (more often if compressor is used near paint spraying, or in dusty environments)	First 20 Hours of Operation						1	KIT1291	1	Motor oil (10W-30/qt.	274439	2			
														2	KIT1119	1
											^I If working in dusty or dirty conditions, reduce the recommended time intervals between servicing by half for engine and compressor oil replacement, and engine and compressor filter servicing.					
											^{II} For detailed kit content descriptions refer to Section 7, Table 7A . Also Refer to Section 7, Table 7A for full replacement parts listing, including separate components, non-routine items, and options.					
											PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.					
											ACTION TO TAKE					
											 REFERENCE: Compressor Air Filter Element (x 2) [▲] PROCEDURE: Remove the wingnut from the air filter housing, and pull the cover outward and away from the housing body. Pull the filter out and check for excessive dirt, holes. If element contains excessive dirt accumulation, or tears or holes in the filter fabric, replace the filter. If filter is being replaced, replace BOTH filters at the same time, regardless of the condition of the second filter.					



5.5 CHECKING BELT TENSION

Adjust belt(s) so that when pressure is applied at the center, there is approximately 1/2" slack. (Refer to **Figure 5-2: Belt Tension**).

If the belt is installed too tightly, the engine might be overloaded. This will cause the engine to overheat. If the belt is installed too loosely, it will slip and excessive wear and vibration will occur.

5.6 INSTALLING NEW BELTS

IMPORTANT

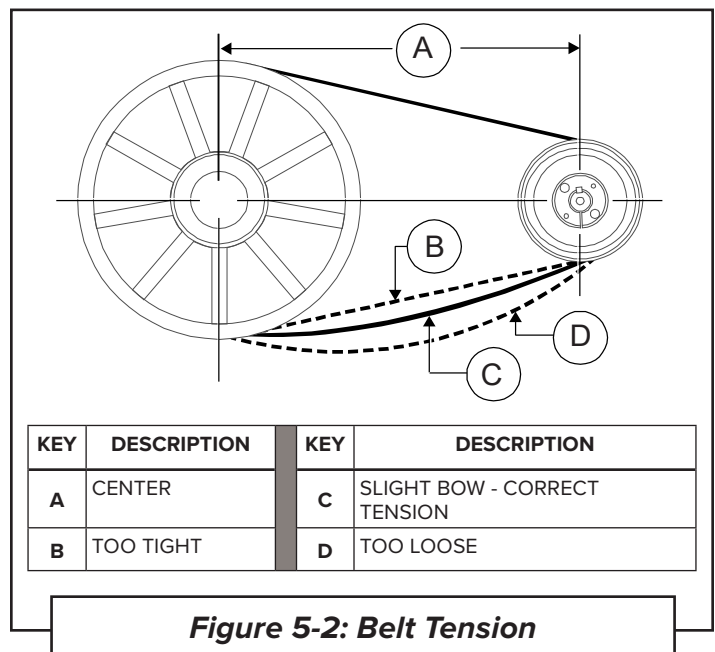
When one belt needs to be replaced, replace both V-belts at the same time, regardless of the second belt's condition.

IMPORTANT

Frontal alignment should not be necessary during belt replacement. However, if the alignment should become skewed so that it hampers operation, consult the Vanair® Service Department.

1. Turn engine OFF; remove key.
2. Remove belt guard.
3. Loosen motor bolts and slide motor toward compressor head just enough to allow old belt to be removed.
4. Install proper replacement belt.

5. Slide motor away from compressor head to provide recommended tension as shown in **Figure 5-2**.
6. Align belt, using a straight edge ruler against pulley's edge.
7. Fasten motor bolts.
8. Ensure motor and compressor pulleys are secure.
9. Reinstall belt guard and reconnect power supply.
10. Belt tension should be checked after 20 hours of operation. Check tension monthly thereafter.



5.7 DAILY MAINTENANCE

IMPORTANT

The routine scheduled maintenance tasks listed here are for the compressor unit only. Consult the Engine Operation Manual for additional routine tasks for the engine.

1. Check the oil level.

CAUTION

DO NOT mix oil types, weights, or brands. Mixing oil types can cause equipment damage or failure.

2. Drain condensation from air receiver after each use.
3. Check for any unusual noise or vibration.
4. Be sure all nuts and bolts are tightened.

NOTE

When using compressed air to clean the components, the nozzle pressure should not exceed 15 PSIG.

5.8 WEEKLY MAINTENANCE

1. Turn OFF power. Clean dust and foreign matter from cylinder head, motor, fan blades intercooler and air receiver.
2. Check air filter; replace if necessary.
3. Worn filters should be replaced.
4. Check V-belts for wear.
5. Inspect unit for leaks.
6. Tighten joins if leaks are observed.
7. Check belt tensions (after initial check at first 20 hours).

5.9 MONTHLY MAINTENANCE

1. Check that compressor pulley and motor sheave are aligned and securely fastened.
2. Inspect and change air filters, if necessary.

5.10 QUARTERLY OR 300 HOURS MAINTENANCE (WHICHEVER COMES FIRST)

1. Inspect the air receiver for corrosion or other damage.

SECTION 6: TROUBLESHOOTING

6.1 GENERAL INFORMATION

The information contained in this section has been compiled from years' worth of information gathered from the field. It 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.

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: (800) 526-8817
Phone: (219) 879-5100
Service: (844) VAN-SERV
(844) 826-7378

NOTE

When contacting the Vanair® Service Department, please have machine serial number on hand to quickly expedite service. See **Figure 6-1** for machine serial plate location.

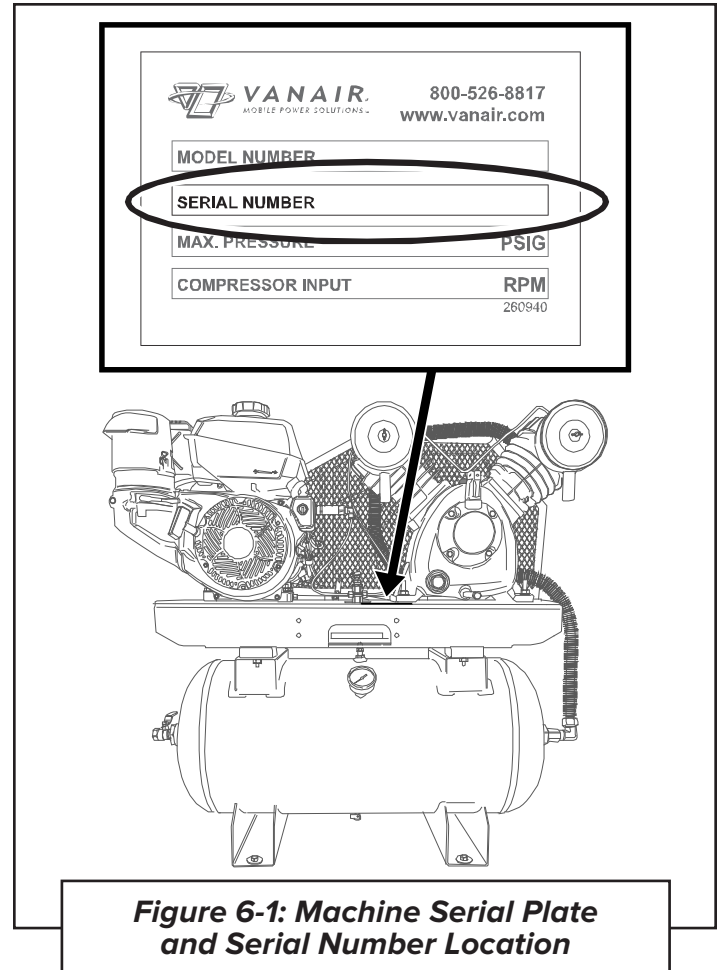


Figure 6-1: Machine Serial Plate and Serial Number Location

WARNING

DO NOT operate any of the PRO 35 functions 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 to prevent accidental application.

WARNING

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.

PRO 35 Reciprocating Air Compressor

TABLE 6A: TROUBLESHOOTING GUIDE

MALFUNCTION/FAULT	POSSIBLE CAUSE	CORRECTIVE ACTION
Compressor will not start	Please refer to Manufacturer's manual (included)	Please refer to engine manual (included)
Low pressure	Safety valve leaks	Replace safety valve
	Drain cock open	Close drain cock
	Loose tubes or fittings	Tighten fittings
	Dirty or plugged air filter	Clean or replace, as necessary
	Defective unloader valve	Replace unloader valve
Compressor overheats	Clogged inlet filter	Clean or replace, as necessary
	Dirty compressor, head, cylinder, or intercooler	Clean with compressed air
	Operating pressure too high	Reduce operating pressure
	Low oil or incorrect oil being used	Drain and replace
	Compressor cycle is too long; proper duty cycle is 50-60% on Stop/Start operation and 75-80% on continuous operation	Allow for longer rest between cycles
Compressor loads and unloads or stops and starts excessively	Leaks in air system	Replace worn components as necessary
	Worn or loose drive belts	Tighten V-belts or replace
	Pilot valve or pressure switch differential adjusted too close	Make necessary adjustments
	Defective compressor valves	Replace valves
	Compressor too small for intended use	
Insufficient output Low discharge pressure	Clogged inlet filter	Clean or replace, as necessary
	Leaks in air lines, air valves, fittings, etc.	Replace worn components as necessary
	Drive belts slipping	Tension V-belts
	Drain valve left open	Close drain valve
	Defective pressure gauge	Replace pressure gauge
	Compressor incorrectly sized	
	Leaking head gasket	Replace head gasket
	Dirty or plugged inter cooler tubes	Remove and clean inter cooler tubes
	Unloader pilot or pressure switch adjusted too low, or defective	Make necessary adjustments
	Worn or defective compressor valves	Replace worn parts
	Worn piston, worn out rings	Replace worn parts
	Restrictive check valve	Clean check valve and replace if necessary
Motor stalls	Compressor over pressure	Clogged fuel filter; replace filter
	Faulty fuel pump (if applicable)	Replace pump
	Worn or faulty spark plug	Replace spark plug

Continued on next page

TABLE 6A: TROUBLESHOOTING GUIDE

MALFUNCTION/FAULT	POSSIBLE CAUSE	CORRECTIVE ACTION
Water in crankcase Oil Breaking up Oil gets dirty Rusty valves or cylinder	Cycle too short; compressor does not operate long enough to vaporize condensed moisture during compression	Allow for a longer operating cycle
	Inlet filter not protected against weather	Provide adequate protection against extreme weather conditions
	System pressure leaking back through check valve when compressor is stopped	Check / replace check valve if necessary
	Wrong oil being used	Drain and replace with proper oil
Excessive vibration	Loose compressor or engine mounts	Tighten components
	Wrong oil being used	Drain and replace with proper oil
	Loose flywheel, drive pulley or drive belts	Tighten loose components and check belts
	Worn rods, wrist pin or main bearings	Check and replace worn parts
Compressor knocks	Compressor valves loose or broken	Check and replace worn or broken valves
	Inspect check valve; it may knock at low pressures	Remove and clean check valve
	Worn rods, wrist pin or main bearings	Check and replace worn parts
Compressor uses too much oil	Clogged inlet filter	Clean inlet filter or replace if necessary
	Wrong oil being used; wrong viscosity	Drain and replace oil
	Oil level too high	Fill compressor with oil to proper level
	Crankcase breather valve malfunction	Replace crankcase breather
	Compressor runs unloaded too long	Increase load or stop compressor when not needed (check for air/leaks)
	Worn piston rings	Replace piston rings
	Piston rings not seated	See instruction below [‡]
Compressor over pressure	Faulty unloader	Replace
	Leak in control system	Check control lines; replace as necessary
	Defective or improper installation of valves	Replace or reinstall

[‡] Allow 100 hours of normal operation for new rings to seat. Drain oil and refill with non-detergent ISO 68 oil or other approved oils

SECTION 7: 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®, a Lincoln Electric Company

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

vanair.com

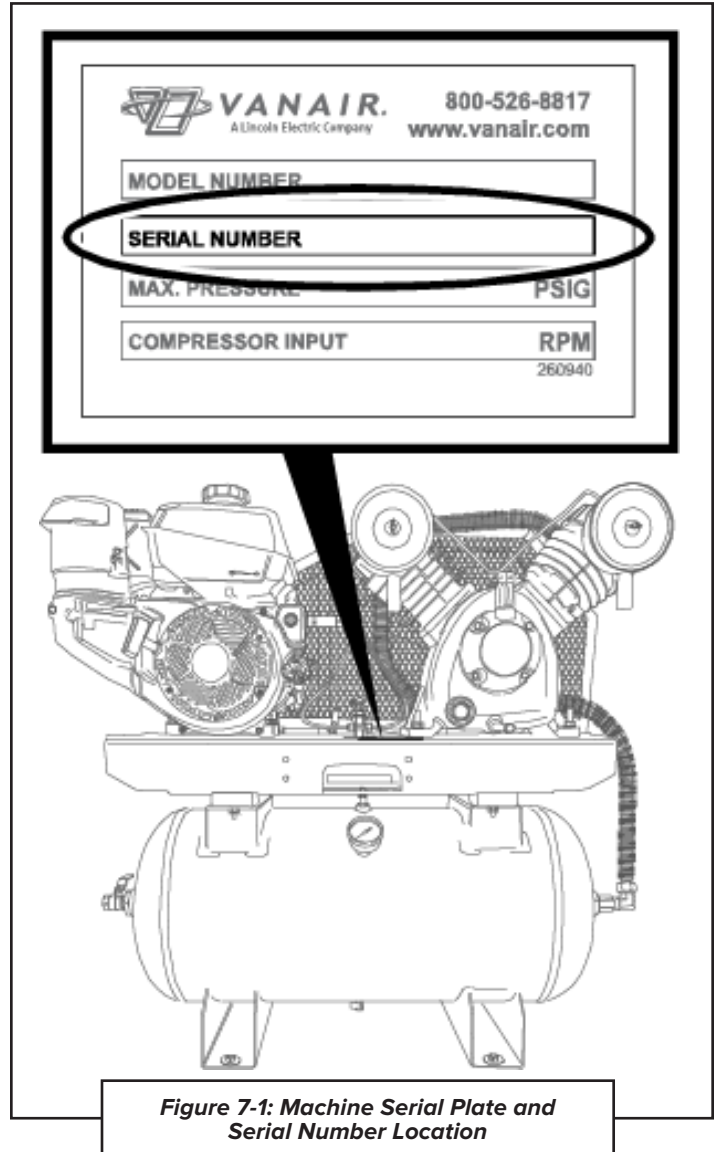


Figure 7-1: Machine Serial Plate and Serial Number Location

PRO 35 Reciprocating Air Compressor

TABLE 7A: RECOMMENDED SPARE PARTS LIST

KEY NO.	DESCRIPTION	PART ORDER NO.	QTY	KEY NO.	DESCRIPTION	PART ORDER NO.	QTY
ROUTINE/SCHEDULED MAINTENANCE SERVICE KITS AND ITEMS							
1	KIT, SERVICE COMPRESSOR ⁱ	KIT1441	1	3	KIT, HONDA® ENGINE SERVICE ⁱⁱⁱ	KIT1447	1
2	OIL, VANAIR® RECIPROCATING COMPRESSOR (quart container)	271856-1QT	2				
ADDITIONAL KITS AND PARTS							
5	KIT, COMPRESSOR CONNECTING ROD	KIT1436	1	10	TUBE, COMPRESSOR HEAD EXCHANGE PRO35M	280728-043	1
6	KIT, COMPRESSOR VALVE PLATE ASSEMBLY	KIT1437	2	11	TUBE, DISCHARGE	280741	1
7	VALVE, PILOT 150-175 PSI 1/4 NPT	CO67609	1	12	VALVE, RELIEF 1/4 NPT MALE 200 PSI	264232	1
8	KIT, COMPRESSOR AIR INTAKE FILTER ASSEMBLY	KIT1438	2	13	HOSE, ASSY PRO35 SKID MOUNT DISCHARGE HIGH TEMP	281126	1
9	TUBING, NYLON 4MM X 6MM BLACK	280739	1				
PLEASE NOTE: WHEN ORDERING PARTS, MACHINE SERIAL NUMBER.							
ROUTINE KIT CONTENTS							

ⁱ Compressor Service Kit no. KIT1441		
Description	Vanair® P/N	QTY
Vanair® Reciprocating Compressor Oil	271856-1QT	2
Compressor Air Filter Element PRO35M *	280728-040	2
* Always replace both air filter elements at the same time, regardless of the condition of the second filter.		

ⁱⁱⁱ Honda® GX270/GX390 Engine Service Kit no. KIT1447		
Description	VANAIR® P/N	QTY
Spark Plug, Honda® NGK	272316	1
Filter, Air Element Honda®	272317	1
Filter, Air Pre-element (Honda®)	272318	1
Oil, Motor Honda® 10W-30	276041	1

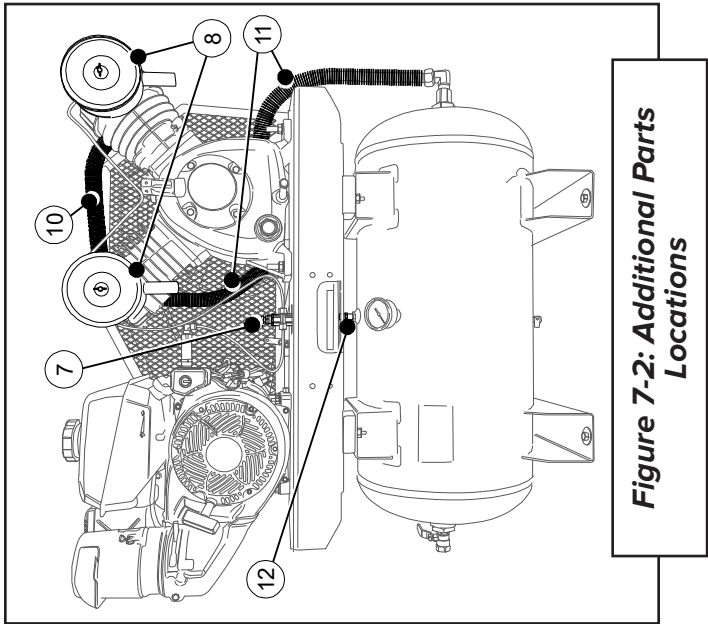


Figure 7-2: Additional Parts Locations

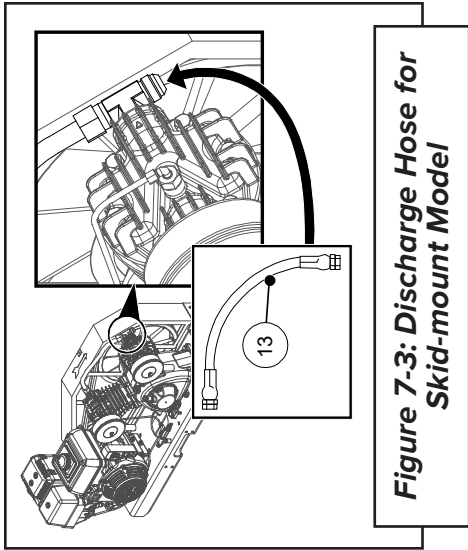


Figure 7-3: Discharge Hose for Skid-mount Model

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.

IMPORTANT

Table 7A's listings contain 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 pro-offered as a comprehensive guide to replacement parts, damage may occur to the machine beyond the scope of this listing.

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

NOTES

PRO 35 Reciprocating Air Compressor

PRO 35

TANK-MOUNT

SKID-MOUNT

VANAIR®
A Lincoln Electric Company

35 CFM up to 175 PSI

WARNING
DRAIN MOISTURE FROM
TANK DAILY
PREVENT
TANK
CORROSION

VAN AIR®
A Lincoln Electric Company

⚠ WARNING

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

MAINTENANCE INSTRUCTIONS

CAUTION ALWAYS TURN OFF POWER BEFORE SERVICING

The following basic maintenance will ensure long trouble free operation. For complete instructions refer to the manufacturer's operating manual.

DAILY	WEEKLY	MONTHLY	EVERY 3 MONTHS
1. Craps: Call rolled before each use. 2. Drain the air receiver of condensate. 3. Craps: For air lines.	1. Remove air from alignment and clean or replace as required. 2. Check belt tension and adjust if necessary. 3. Verify cut-out/in pressure for correct operation.	1. Inspect (clean or replace as required). - NOTE: Ensure air receiver is empty for the operation. 2. Manually test safety valve.	1. Change oil. 2. Tighten all fasteners. 3. Check cylinder head tight to crank torque (see expanding torque). 4. Check (replace as required) (check gaskets) valve train or damaged.

⚠ WARNING

Failure to read and understand all instructions before operating compressor may result in personal injury and/or property damage.

Safety Precautions

Warning: Unit operates automatically. Disconnect unit from power source prior to servicing. Do not touch any of the electrical wiring and areas only. Inspect compressor components and accessories for looseness, damage and excessive wear. Repair/replace defective items before using. Wear eye and hearing protection. Never allow children or visitors in work area.

 **Flammable /
Combustible Precautions**

Before spraying liquids or abrasive media ensure work area is properly ventilated. Use an approved mask/respirator and protective clothing. Avoid spraying flammable material near open flame or ignition sources. Locate unit at least 20 feet away from spraying area and all other flammable materials. Do not smoke when spraying flammable materials.

Pressure Precautions

Always adjust pressure regulator to conform to the requirements of the air tool being used. Never exceed the maximum pressure of the tool. Never remove or adjust the safety valve. Do not attempt to repair worn or damaged tank.

Electric Shock Precautions

During installation, follow local and national electrical codes. Before servicing, disconnect compressor from power source. Unit must be grounded. Do not use with extension cord or grounding adapters to prevent electric shock, power loss or severe motor damage. Have all wiring performed by a licensed electrician. Improper wiring may result in overheating, short circuiting or explosion.

VAN AIR®
A Lincoln Electric Company

WORK NUMBER

MODEL NUMBER

SERIAL NUMBER

MAX PRESSURE		PSIG
1	2	3

1100 JOURNAL OF CLIMATE

	RPM
COMPRESSOR INPUT	

2100027

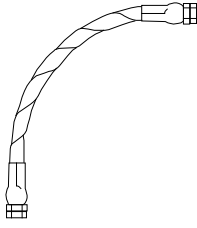
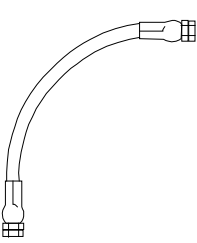
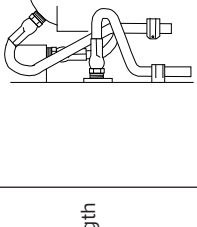
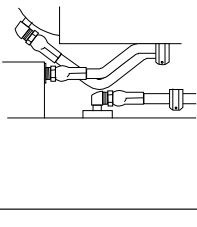
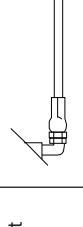
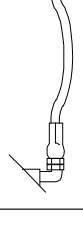
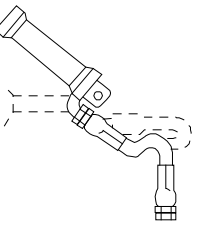
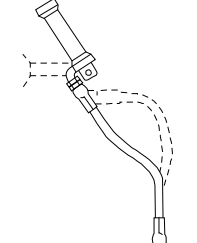
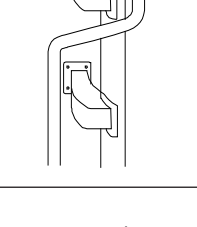
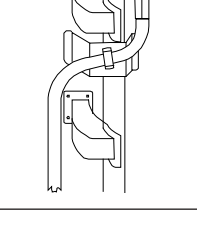
PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.

TABLE 7B: DECALS - IDENTIFICATION AND LOCATIONS

ITEM	DESCRIPTION	PART NUMBER	QTY
1	DECAL, PRO 35 LOGO	277638-D	1
2	DECAL, PRO 35 BADGE	277639-B	1
3	DECAL, LOGO, VANAIR® HORIZONTAL	275038-D	1
4	DECAL, LOGO, VANAIR® STACK	275039-D	1
5	DECAL, WARNING DRAIN TANK DAILY	1	1
6	DECAL, DIRECTION OF ROTATION	1	1
7	DECAL, WARNING PRECAUTIONS	1	1
8	DECAL, MAINTENANCE INSTRUCTIONS	1	1
9	DECAL, WARNING VARIOUS	1	1
10	PLATE, MACHINE SERIAL NUMBER	1	1
11	TAG, WARNING HOT SURFACE	1	1

1 For decal reorder number, consult the Vanair® Parts Department.

TABLE 7C: HOSE INSTALLATION GUIDE

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



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A Lincoln Electric Company

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Michigan City, IN 46360

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