



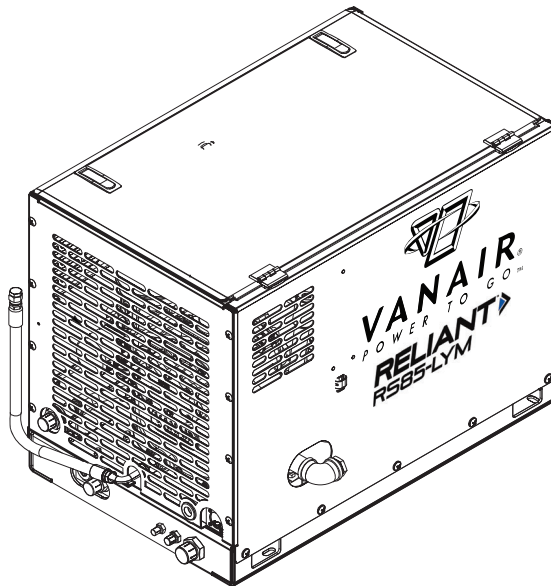
VANAIR®

A Lincoln Electric Company

RELIANT™ **RS85-LYM**

**60-85 CFM HYDRAULIC-DRIVEN
ROTARY SCREW AIR COMPRESSOR**

Manual No. 090207-OP_r01



USER GUIDE

OPERATION MANUAL AND SERVICE PARTS LIST KEEP THE MANUAL WITH THE VEHICLE

NOTE: 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.

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.

Making unauthorized modification to the system components WILL VOID THE WARRANTY! Always contact Vanair® before making any changes to the Reliant™ RS85-LYM.

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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.



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Warranty Claims Procedure

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.

All of the field information including the case number, serial number and description of the work performed is required.

IMPORTANT NOTES:

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.

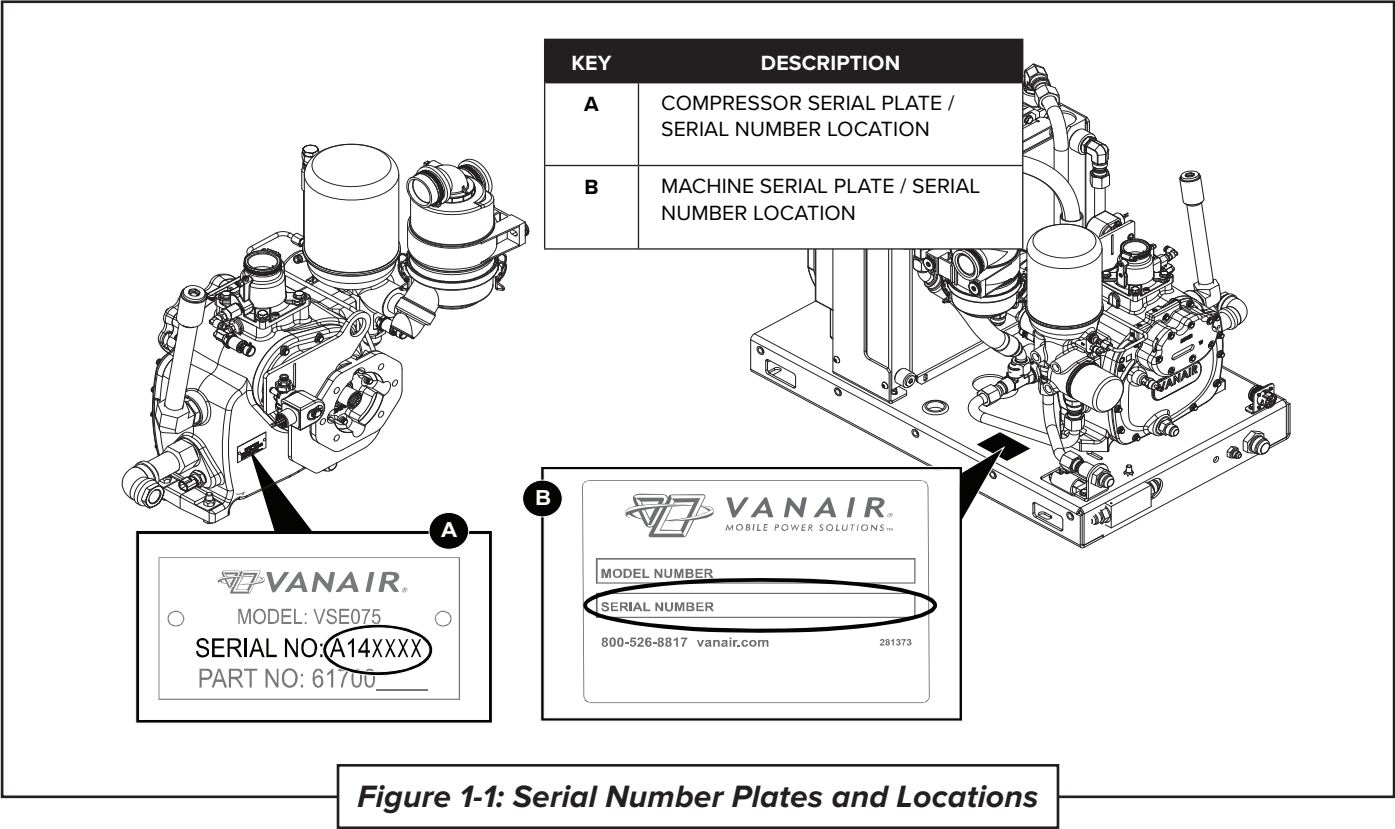


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SECTION 1: Safety

1.1 GENERAL INFORMATION

The products provided by Vanair®, are designed and manufactured for safe operation and maintenance, but ultimately, it is the responsibility of the operators and maintenance personnel to use this equipment safely. Part of that responsibility is to read and be familiar with the contents of this manual before operation or performing maintenance actions.

NOTICE

This manual provides the information required to design a hydraulic supply system. It defines the provided connections and hydraulic flow requirements. The design, build, and maintenance of this system is the responsibility of the customer.

Vanair® recommends procuring the services of a qualified professional hydraulic system designer/provider to define the hydraulic drive system to power this Vanair® machine.

1.2 SUMMARY OF DANGERS, WARNINGS, CAUTIONS, AND NOTICES

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

1.2.1. DANGERS

DANGER

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

1. Keep tools or other conductive objects away from live electrical parts.
2. **NEVER** touch electrical wires or components while the machine is operating. They can be sources of electric shock.
3. **DO NOT** use flammable solvents or cleaners for cleaning the compressor or its parts.

1.2.2. WARNINGS

WARNING

Identifies actions or conditions which, if not avoided, could cause death or severe bodily injury.

1. **DO NOT EVER** use air from this compressor as a source of breathable air.
2. Vanair® disclaims any and all liabilities for damages, due to fatalities, or personal injury resulting from the use of a Vanair® compressor to supply breathable air.
3. **DO NOT** perform any modifications to this equipment without prior factory approval.
4. **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.
5. Install a lock-out tag to identify the equipment as inoperable to others until it can be repaired or replaced.
6. **DO NOT** operate the compressor with any safety bypass, safety systems disabled or rendered inoperative.
7. **DO NOT** operate this equipment while you are under the influence of alcohol, drugs, or medications that may have any affect on your physical capabilities or judgment.
8. **DO NOT** operate the equipment while you are feeling ill.
9. **DO NOT** operate the compressor with any guards removed or damaged, or with other safety devices disabled.
10. **DO NOT** operate the compressor in enclosed or confined spaces where ventilation is restricted or closed-off as overheating may occur.
11. **DO NOT** attempt to service the equipment while it is operating!

1.2.3. CAUTIONS

CAUTION

Identifies actions or conditions which may cause minor or moderate injury, or damage to the equipment.

1. Before performing maintenance or replacing parts, remove all electric power. Relieve the entire system pressure. After the system has blown down, use the service valve to vent all pressure to the atmosphere. After that, remove any residual pressure by slowly opening the fill cap.

1.2.4. NOTICES

NOTICE

Emphasizes important information that may be helpful, crucial, or required by the user to operate the equipment properly.

1. Slowly remove the fill cap to vent the compressor sump pressure.
2. **DO NOT** use the compressor for unintended purposes. High pressure is capable of causing serious - even fatal injuries.
3. **DO NOT** operate the compressor outside of its specific pressure and speed ratings. (See **Section 2: Specifications** or refer to the equipment data plate.)
4. **DO NOT** operate the compressor in areas where flammable, toxic, or corrosive fumes or other harmful substances can be ingested by the compressor's intakes.
5. **DO NOT** wear loose jewelry (e.g. bracelets, necklaces, etc.), unbuttoned cuffs, ties, or loose-fitting clothing when you are working near rotating or moving parts.
6. **ALWAYS** confine long, loose hair when working near rotating or moving parts. Also remove long necklaces, bracelets, lanyards, etc. while operating this equipment.
7. **DO NOT** use tools, hoses, or equipment that have maximum ratings below that of this compressor.
8. **ALWAYS** wear proper PPE (personal protective equipment) required for the type of work being performed or for the equipment being used: such as gloves, work shoes, eye and hearing protection. Never substitute proper hearing protection with earphones or headphones used for listening to audio music or radio programs. These are not a valid substitute for proper, professional hearing protection and may additionally cause distraction.
9. 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.
10. Keep metal tools, and other conductive objects away from live electrical components.
11. Before performing maintenance or repair operations on the compressor, ensure that all power has been removed and has been locked out to prevent accidental application.
12. **DO NOT** assume that because the compressor is in a STOPPED condition that hydraulic power has been removed.
13. Use this compressor only to compress atmospheric air. Any use of this equipment as a booster pump and/or to compress any other gaseous or aerosol substance will void the warranty due to improper use. It can also lead to damage or injuries.
14. Install, operate, and maintain this equipment in full compliance with all applicable OSHA, federal, state, local codes, standards, and MSHA regulations when equipment is used in mining operations.
15. When lifting objects, be aware of proper lifting techniques to avoid injury.
16. **ALWAYS** read and follow safety related precautions found on containers of hazardous substances.

SECTION 2: Specifications

2.1 GENERAL INTRODUCTION

The tables 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: Reliant™ RS85-LYM Main Component Locations* for general machine component locations. For additional measurement specifications, refer to the full identification assembly drawing *Figure 3-4: Dimension Drawing*.

Table 2-A: Bolt and Torque Specifications

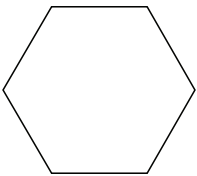
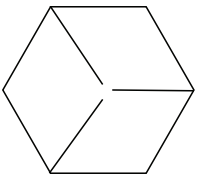
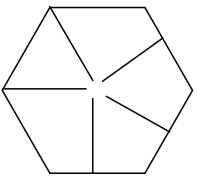
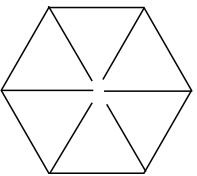
										SOCKET HEAD CAP SCREW	
SAE Bolt Grade:		2		5		7		8		Socket	
I.D. Marks:		No markings		3 lines		5 lines		6 lines		Allen head	
Material:		Low carbon		Medium-carbon, tempered		Medium-carbon, quenched & tempered		Medium-carbon, quenched & tempered		High-carbon, quenched & tempered	
Tensile Strength (minimum):		74,000 PSI		120,000 PSI		133,000 PSI		150,000 PSI		160,000 PSI	
Bolt Diameter (Inches)	Threads/Inch	Dry	Oiled	Dry	Oiled	Dry	Oiled	Dry	Oiled	Dry	Oiled
1/4	20	4	3	8	6	10	8	12	9	14	11
5/16	18	9	7	17	13	21	16	25	18	29	23
3/8	16	16	12	30	23	40	30	45	35	49	39
7/16	14	24	17	50	35	60	45	70	55	76	61
1/2	13	38	31	75	55	95	70	110	80	113	90
NOTE: All torque ratings are in units of ft-lbs.											

Table 2-B: Reliant™ RS85-LYM Specifications

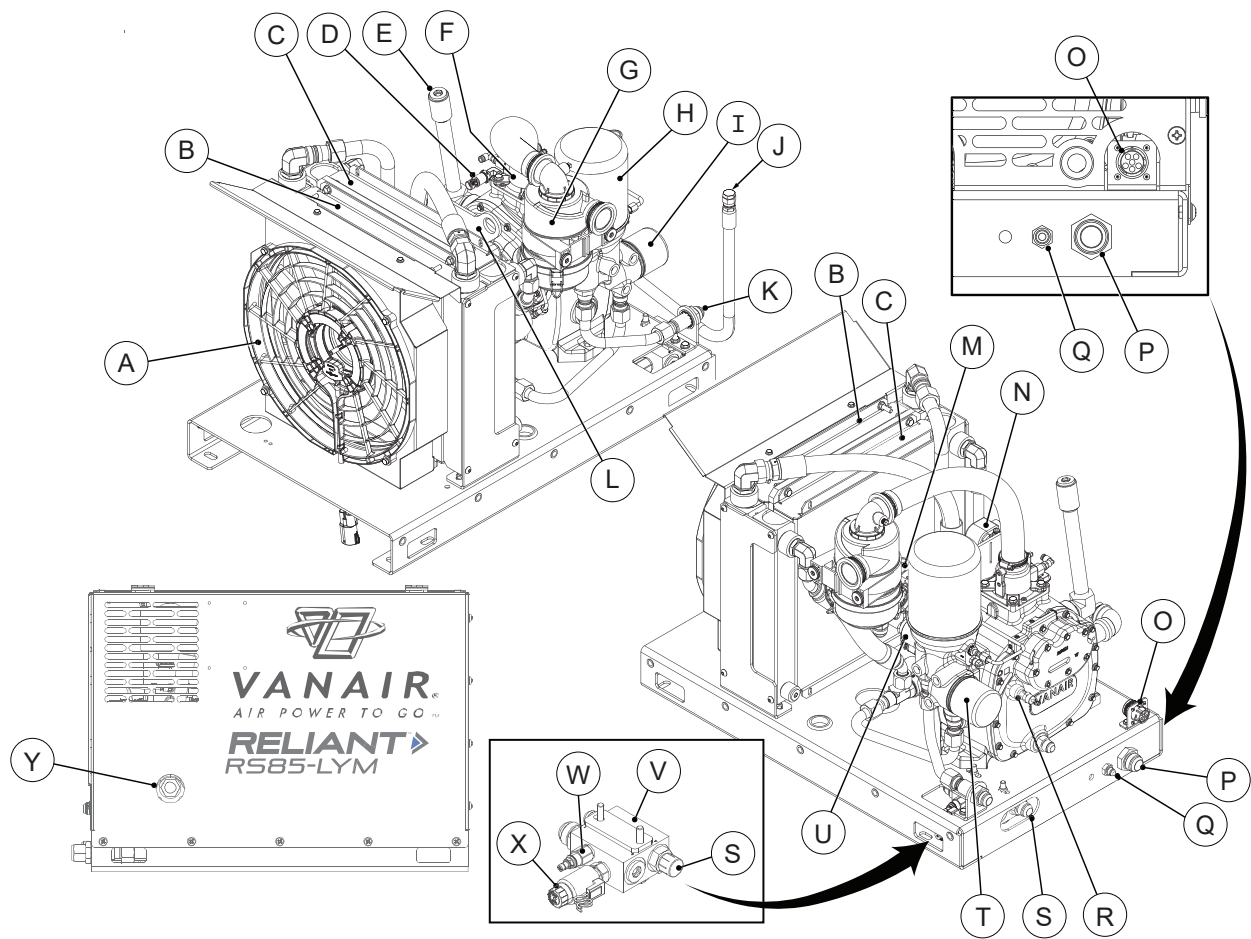
Capacity (CFM)	80	80	85	85
Air Pressure (PSI)	100	150	100	125
Compressor (RPM)	2650	2650	2850	2850
Hydraulic Flow (GPM) ¹	18.5	18.8	19.7	19.9
Hydraulic Pressure (PSI) ¹	2800	3075	2800	2950

¹ Ratings are approximate and are based on 120°F (48.9°C) hydraulic fluid temperature utilizing ISO 32 oil. Add 400 PSI minimum to hydraulic requirements for hydraulic system continuous pressure ratings. Consult Vanair® for specific details.

NOTE: 85 CFM @ 150 PSI systems may require additional cooling.

HYDRAULIC SYSTEM REQUIREMENTS: All hydraulic ratings and pressures are at the machine and do not take into account the pressure drops of individual hydraulic systems. These pressure drops need to be taken into account and added to the rating of the hydraulic pump and components. Vanair® highly recommends consulting a hydraulic supply expert for specifying the correct hydraulic pump size and type, oil reservoir size, hydraulic cooler, hydraulic pressure relief, and other hydraulic supply components for your application. Please take into consideration the following: The hydraulic flow and pressure requirements of the air compressor, the continuous hydraulic load when the compressor is running, the duty cycle and ambient operating temperatures, and any other hydraulic equipment that may share the same hydraulic supply system (Vanair® recommends a dedicated pump and hydraulic circuit.)

GENERAL SYSTEM INFORMATION		SPECIFICATION	
RATINGS			
Maximum compressor oil temperature:	240°F		
Maximum hydraulic oil temperature:	150°F		
COMPRESSOR			
Type:	Encapsulated, Oil-injected, Rotary Screw		
Compressor oil sump capacity:	5 qts (4.7L)		
Compressor overheating protection:	Shut Down at 240°F		
Air inlet system:	Dry-type, Two Stage Filter		
Drive coupling:	Internal Spline		
Hydraulic motor:	Gear Type		
PACKAGE			
Main frame:	Formed Steel with Bolt-down Provision		
Electrical supply:	24V		
Electrical connections:	6-pin Deutsch		
Supply connections (customer hook-up): (Load sense for closed center)	Hydraulic: OIL IN - 3/4 in, 37° JIC; OIL OUT - 1 in, 37° JIC; CASE DRAIN - 3/8 in, 37° JIC	Electrical: High Temp Shutdown; 24VDC Positive and Ground	
Temperature Range: (optional LED electronic display)	-4-150°F (-20-65.5°C)		
Enclosure:	Aluminum with Service Access		
Cooler:	Hydraulic Oil Cooler/Radiator Core - Electric Fan		
Dimensions ² :	37.45” L x 21.23” W x 24.69” H		
Weight (dry):	285 lbs		
² Measurements do not include additional service space requirements needed to allow for cooling circulation and to perform machine maintenance. Refer to Figure 3-1: Machine Clearances for these additional space requirements.			



KEY	DESCRIPTION	KEY	DESCRIPTION	KEY	DESCRIPTION
A	COOLER FAN ASSEMBLY	J	COMPRESSOR OIL DRAIN TUBE/CAP	S	HYDRAULIC SUPPLY (IN)
B	HYDRAULIC COOLER ASSEMBLY	K	SERVICE AIR DISCHARGE	T	COMPRESSOR OIL FILTER
C	COMPRESSOR COOLER ASSEMBLY	L	LIFTING BAIL	U	MINIMUM PRESSURE VALVE
D	BLOWDOWN VALVE	M	HYDRAULIC MOTOR	V	CONTROL MANIFOLD - OPEN CENTER
E	COMPRESSOR OIL FILL PORT 1	N	VALVE SOLENOID	W	PRESSURE RELIEF
F	AIR INLET VALVE	O	ELECTRICAL (DEUTSCH) CONNECTION	X	SOLENOID / FLOW REGULATOR
G	COMPRESSOR AIR FILTER HOUSING	P	HYDRAULIC RETURN	Y	COMPRESSOR SIGHT GLASS/ CANOPY ACCESS
H	COMPRESSOR AIR/OIL COALESCER	Q	CASE DRAIN		
I	COMPRESSOR OIL FILTER	R	RELIEF VALVE (200 PSI)		

¹ I DO NOT top off compressor oil at the fill port! Running the compressor with a flooded oil chamber will damage the unit. Use the sight glass [Y] to determine the proper oil level: Oil level is optimum at approximately the half-way mark of the sight glass. Refer to **Table 5-A: Routine Replacement Kit Order Information** for oil fill information.

NOTE: For fuse locations, refer to **7.13 WIRING DIAGRAM**.

Figure 2-1: Reliant™ RS85-LYM Main Component Locations

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SECTION 3: Installation

3.1 GENERAL INSTRUCTIONS

This section provides general guidance for locating and preparing the Vanair® Reliant™ RS85-LYM compressor package for operation. Each installation is unique and can be affected by location, ventilation, and other factors such as electrical and hydraulic power supply availability and location.

Be aware of toxic exhaust gases in the work environment when operating equipment, or vehicles powered by internal combustion engines.

DANGER

DO NOT OPERATE IN AN ENCLOSED SPACE.

Running any combustion engine in an enclosed space 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 can ignite surrounding materials resulting in fire and/or explosion which may cause injury, death and equipment damage.

WARNING

Before performing maintenance or repairs, always make sure that all power has been removed and locked out to prevent accidental starting.

DO NOT assume when the compressor is in a STOPPED condition that the power is removed.

WARNING

Minimum clearance distances from the machine are required for safe and proper machine operation and maintenance. This applies to installation location and machine operation location.

WARNING

Install, operate, and maintain this equipment in full compliance with all applicable OSHA, other federal, state, and local codes, standards, and regulations. Also comply with MSHA standards when used in mining operations.

NOTICE

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

3.2 DETERMINING THE MOUNTING LOCATION

When determining the location to mount the Reliant™ RS85-LYM unit, the following criteria must be taken into consideration.

- The location must allow for the machine dimensions (*Figure 3-4*), and additional space requirement for minimum cooling, access and maintenance.
- The mounting surface must be level and able to accommodate the (4) four mounting bolts of the base frame.

NOTICE

The mounting hole pattern for the bolts and dimensions can be found on the specific machine dimensions drawing (*Figure 3-4*) in this section.

- Choose a mounting surface that is capable of supporting the unit's weight of 285 lbs (129.3 kg).
- The external instrumentation display must be easily visible to the operator.

For most installations, it is recommended to mount the compressor on the driver's side of the vehicle. The unit should be situated in such a manner that the fan (rear) and intake side (front) are not obstructed.

CAUTION

DO NOT place the compressor in any location where exhaust fumes, dust or debris are being drawn into the intake.

3.3 HYDRAULIC SYSTEM OVERVIEW

NOTICE

This manual provides the information required to design a hydraulic supply system. It defines the provided connections and hydraulic flow requirements. The design, build and maintenance of this system is the responsibility of the customer.

Vanair® recommends procuring the services of a qualified professional hydraulic system designer/provider to define the hydraulic drive system to power this Vanair® machine.

NOTICE

The information in this manual is in regard to a fixed displacement pump. For systems utilizing a variable displacement pump, consult a qualified hydraulic system specialist.

If the compressor is being installed on a truck that already has a functioning hydraulic system, check the specifications for that system to ensure that it meets minimum requirements.

3.3.1. VENTILATION REQUIREMENTS

The variables involved with installing the hydraulic pump system make it impossible to recommend detailed specifics, as each customer is potentially different in regard to vehicle type, customer needs, etc. The following information is therefore given not as absolute instruction, but as a guideline based on good practice.

NOTICE

The equipment package must have a proper ventilation system installed. Operation of the hydraulic system will generate an amount of heat that will damage system components.

Machine placement will play an important factor in providing adequate and consistent cooling air for the system operation. In this regard, there are two types of mounting locations to consider, open mounting and enclosed mounting. (Figure 3-1)

Open-mounting: refers to machine placement location on the service body, where the machine is directly exposed to the environment.

Enclosed mounting: refers to machine placement within an enclosure located on the service body.

Open-mounting provides for the best cooling situation, allowing for maximum unrestricted air flow to interact with the heat displacement components. The mounted unit must have minimum unobstructed clearances on all sides of the machine.

Table 3-A: Machine Clearances Key

KEY	DESCRIPTION
A	ROOF PANEL CLEARANCE RADIUS: 20" (minimum)
B1	ROOF PANEL CLEARANCE RADIUS: 20" (minimum)
B2	LATERAL (AIR-OUT SIDE) WIDTH: 8-10" (minimum)
C	LATERAL LENGTH SIDES: 6" (minimum)
D	COOLING AIR FLOW DIRECTION THROUGH UNIT

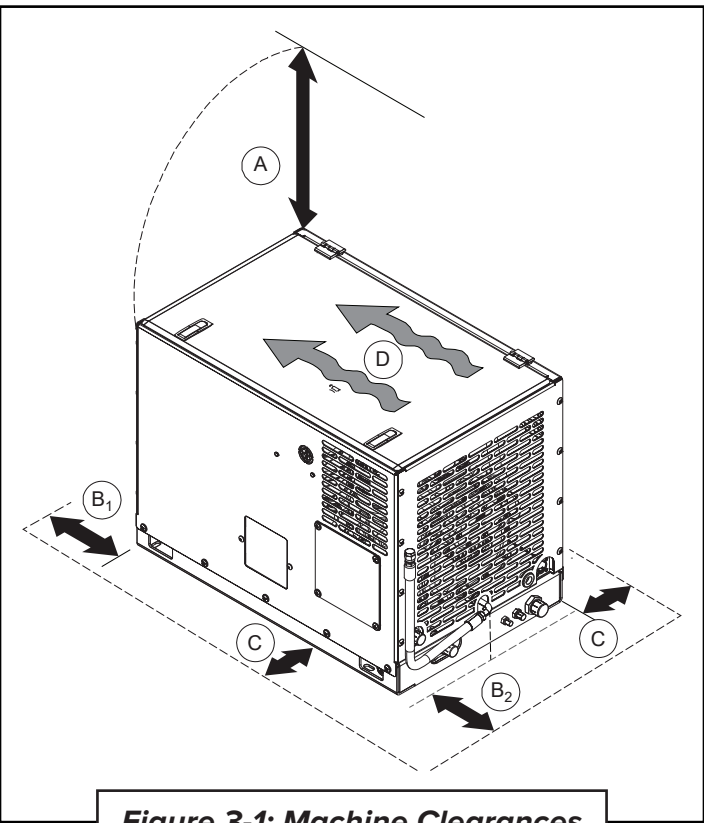
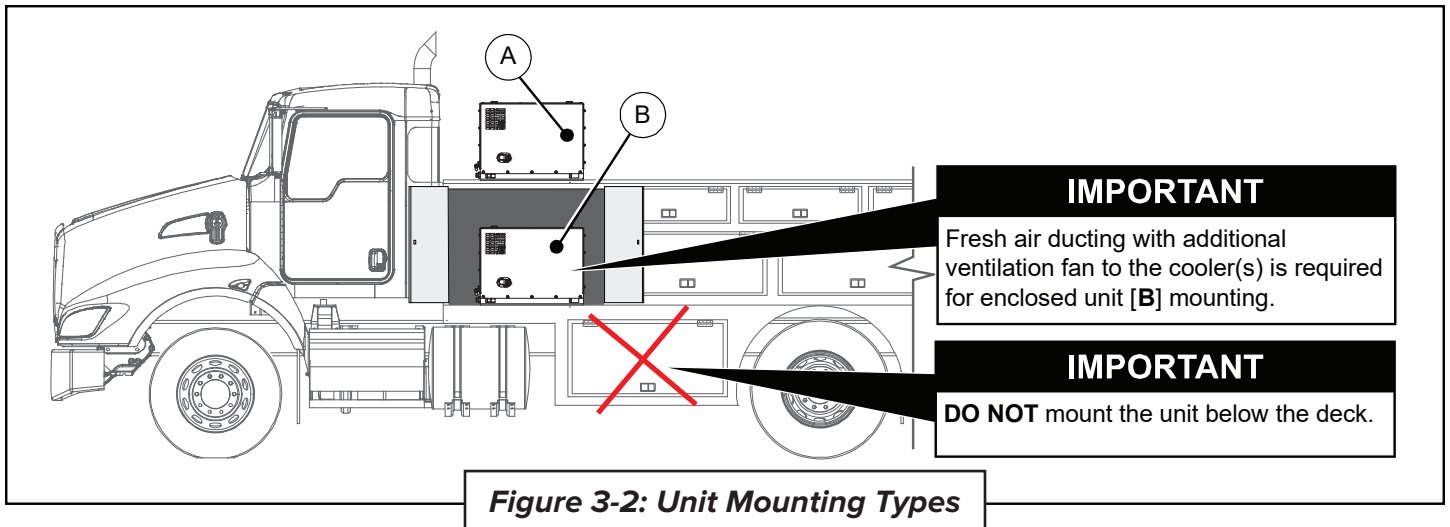


Figure 3-1: Machine Clearances

The unit must have the minimum unobstructed clearance given in Figure 3-1, on all sides of the machine for operation.



Although enclosed mounted units provide a degree of shelter and security. This type of machine location is not recommended, due to its limiting effect on air flow needed to cool an operating system. Should this mounting type be preferred, then provision should be made to maximize the machine's exposure to air (e.g. a pull out mounting platform; removable enclosure walls, etc.)

For enclosed mounting, it is recommended to install a safety switch on the access door that allows for compressor operation only when the door is open.

Ideal ventilation regardless of the type of mounting installation of the unit, needs to provide adequate, unrestricted air flow through the unit. Additionally, the cooler must be exposed to, or provided with (ducted) cool ambient air and an exhaust fan with the enclosed space to displace the heated air.

3.4 INSTALLATION

3.4.1. MACHINE LOCATION

It is vital to locate the machine so that there is no restriction of cooling air through the enclosure. **(Refer to Figure 3-4)** Cooling air enters the enclosure at the right end when facing the lid/ roof latches side of the machine, passes through the cooler and exits through vents in the other end.

NOTICE

DO NOT mount the unit below the vehicle deck. The Reliant™ RS85-LYM must be mounted above deck. (See Figure 3-1)

3.4.2. CLEARANCES

Refer to **Figure 3-1**. Ensure that adequate surrounding clearance spaces given in the figure exit around the machine to allow for adequate cooling ventilation through the canopy shroud, for unobstructed service and maintenance access, and to make sure there is a clear view of the control panel.

3.4.3. MOUNTING

Mounting surface or support should be sturdy enough to easily support the full weight of the machine 285 lbs (129.3 kg) and should be level during normal operation. Mounting holes are located in the frame footing for four (4) 1/2 in hold down bolts. (See **Figure 3-4** for dimensions.)

3.4.4. SERVICE CONNECTIONS

Refer to **Figure 3-4**. Service connections are conveniently grouped at the lower rear section.

3.4.5. ELECTRICAL CONNECTIONS

This system is offered with a 24VDC circuit. Refer to **Table 3-B** and **Section 7.13 Wiring Diagram**.

Table 3-B: Circuit Wire Information to Unit

PIN	WIRE GAUGE	FUNCTION
Pin A	14 ga.	Machine Activation Circuit Switch
Pin B	10 ga.	Constant Positive Battery Voltage
Pin C	12 ga.	System Ground
Pin D	14 ga.	Auxiliary Circuit Output Signal
Pin E	14 ga.	Heater Ground
Pin F	12 ga.	Heater Pad Positive Switched
6-pin		Positive Voltage

NOTE: Wire gauges shown are minimum size for lengths less than 20'

3.4.6. HYDRAULIC SUPPLY CIRCUIT

It is recommended that the compressor unit possesses a separate pump/flow/return hydraulic circuit to other hydraulic equipment. This is to prevent the possibility of pressure/flow drops that may occur if other hydraulically-powered equipment is activated during compressor operation, which may in turn cause the compressor to stall out. Alternatively, use of a diverter valve will permit hydraulics to power different equipment selectively.

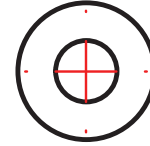
NOTICE

This manual provides the information required to design a hydraulic supply system. It defines the provided connections and hydraulic flow requirements. The design, build, and maintenance of this system is the responsibility of the customer.

Vanair® recommends procuring the services of a qualified professional hydraulic system designer/provider to define the hydraulic drive system to power this Vanair® machine.

3.4.7. ROUTING

Refer to **Section 7.12**. Ensure that 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 chaffing, corrosion, and consequential loss due to down time.



HYDRAULIC SYSTEM REQUIREMENTS

IMPORTANT

It is highly recommended that a hydraulic supply expert be consulted to specify the correct hydraulic pump size and type, oil reservoir size, hydraulic oil, hydraulic cooler, hydraulic pressure relief, and other hydraulic supply components for your application.

Please take into consideration the following:

- ° The hydraulic flow and pressure requirements of the air compressor.
- ° Keep in mind that when the compressor is running there is a continuous hydraulic load.
- ° The duty cycle and ambient operating temperatures.
- ° Other hydraulic equipment which may share the same hydraulic supply system (It is recommended that a dedicated pump and hydraulic circuit be used).
- ° Hydraulic system oil cooling requirement.

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Figure 3-3: Hydraulic Compressor Info Tag

Before installation, look for this hydraulic compressor information tag. It contains important information regarding the planning and installation of the Reliant™ RS85-LYM compressor.

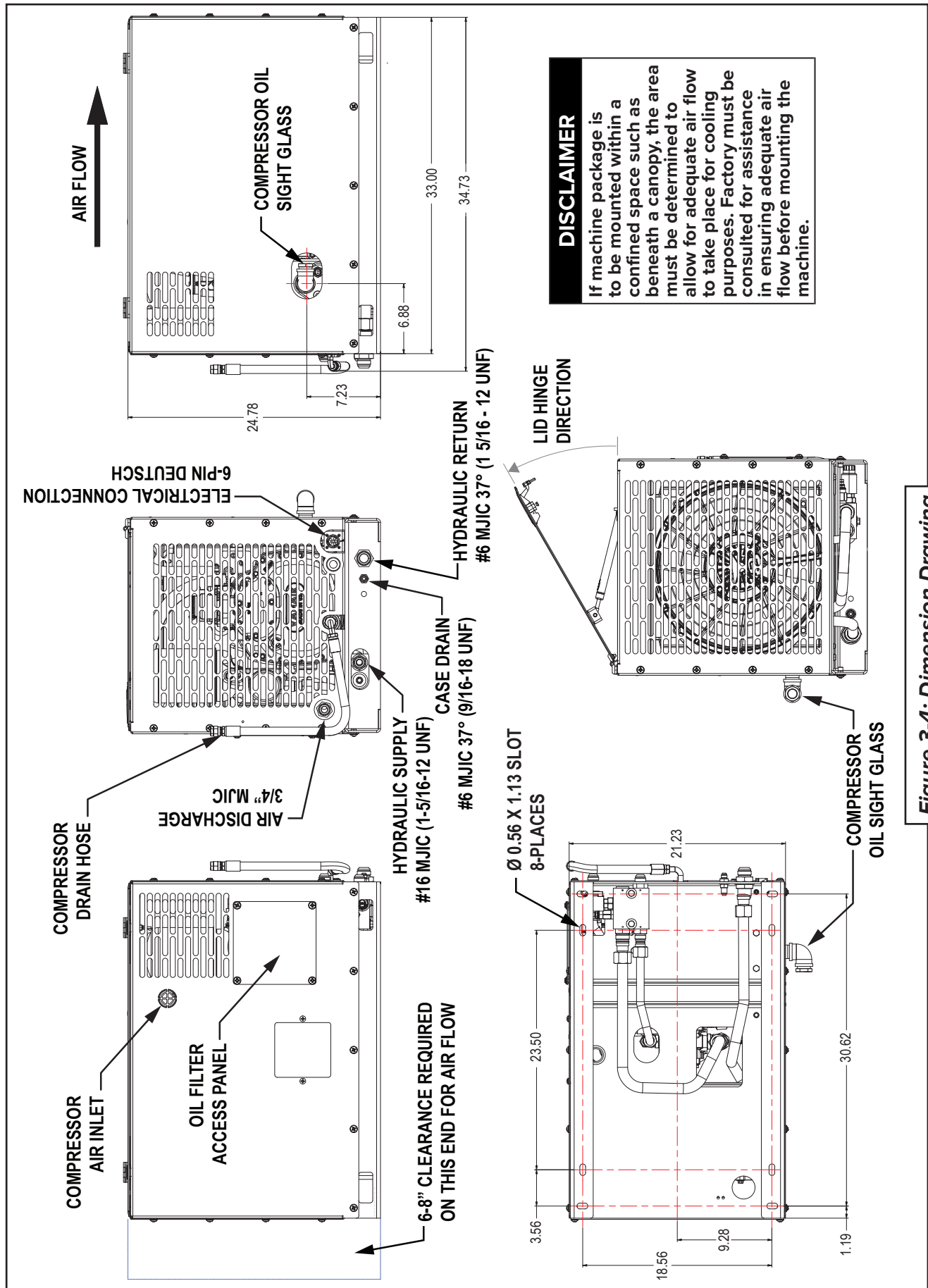


Figure 3-4: Dimension Drawing

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. Factory must be consulted for assistance in ensuring adequate air flow before mounting the machine.

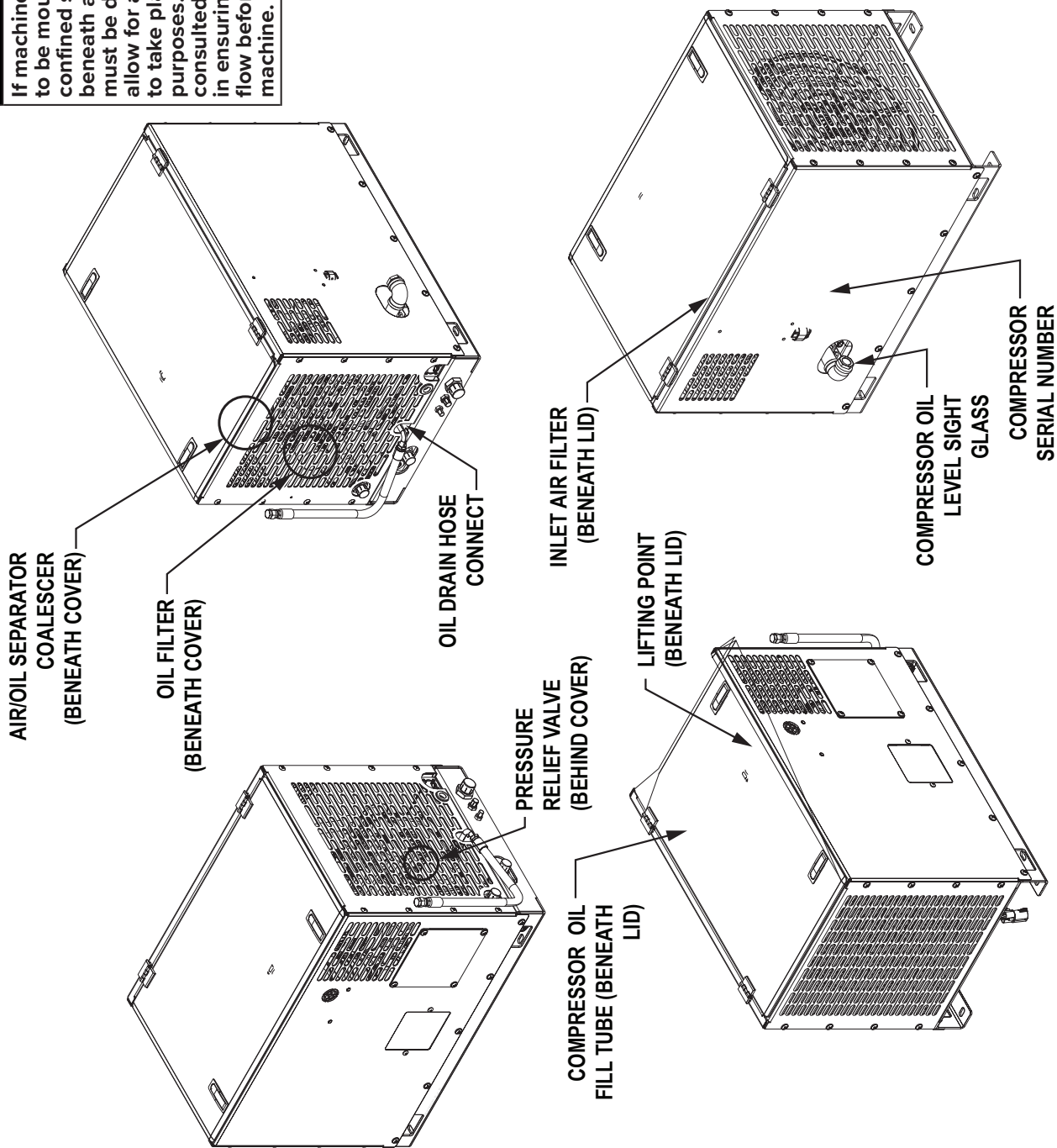


Figure 3-5: Location Drawing

SECTION 4: Operation

4.1 GENERAL INFORMATION

WARNING

Before starting, performing maintenance, or replacing parts, relieve the entire system of pressure. After the machine has blown down, open a service valve to vent all pressure to the atmosphere.

To ensure that any remaining residual system pressure is relieved, slowly remove the fill cap, which will vent any residual pressure to the atmosphere.

The Reliant™ RS85-LYM compressor has a comprehensive array of controls and indicators (See *Figure 1-1* and *Figure 1-2*). Understanding the correct operation of the system will help you to understand and recognize when it is operating optimally. The information in this Operating Section will help the operator to recognize and interpret the readings, which will call for service or indicate the beginning of a malfunction.

NOTICE

Before starting the Vanair® Reliant™ RS85-LYM, read this section thoroughly and familiarize yourself with the controls and indicators, their purpose, location and use.

4.2 MACHINE OPERATION PROCEDURES

4.2.1. INITIAL START-UP PROCEDURE: PRE-CHECKS

Following are step-by-step instructions for the initial start-up of the RS85-LYM hydraulic system:

- 1. Ensure the compressor is positioned on a level surface so that the proper amount of oil can be added or drained as needed..
- 2. Unit should be bolted down.

WARNING

Do not rely on air service or hydraulic hoses to hold the module in position.

Table 4-A: Purpose of Controls

CONTROL OR INDICATOR	PURPOSE
Discharge Air Pressure (Pressure Gauge)	Continuously monitors service line discharge air pressure. Will activate shutdown if over-pressure occurs.
Discharge Air Temperature (Temperature Gauge)	Continuously monitors oil discharge temperature. Will activate shutdown if over-temperature occurs.
Hour Meter Gauge (Operation Hours)	Indicates accumulated hours of operation for planning and logging service schedules.
Oil Fill/Level Plug	To check/fill compressor oil level.
Minimum Pressure Check Valve	Maintains minimum operating pressure and prevents back flow when unloaded/shutdown.
Pressure Regulator	Controls operating pressure.
Inlet Solenoid Valve	Opens/closes inlet valve in response to pressure regulator.
Air Inlet Valve	Opens/closes in response to air demand and acts as check valve upon unload/shutdown to prevent oil blow back into air filter.
Hydraulic Pressure Relief Valve	Relieves hydraulic pressure to return line in event of hydraulic over-pressure condition.
Hydraulic Solenoid Valve	Responds to ON/OFF switch to direct flow to compressor motor or to return line.
Air Pressure Relief Valve	Opens sump pressure to atmosphere in case of air over-pressure condition.
IFM Controller	Digital unit capable of allowing full operational control of machine functions from a centralized panel and navigation system.

- Ensure all hose connections are tight and wiring connections are correct and secure.
- Check compressor oil level. Add or drain oil as necessary to accomplish the recommended compressor oil level.

NOTICE

The compressor oil level check and fill procedure is found in Table 5A.

WARNING

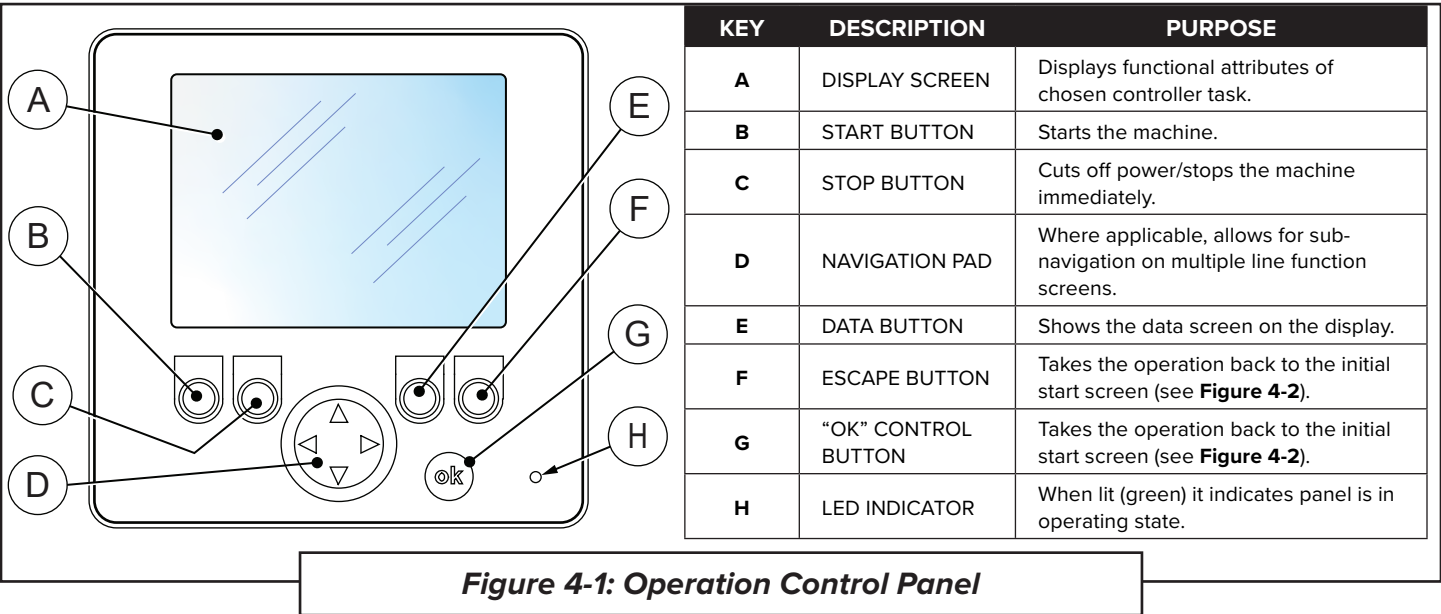
Wear personal protective equipment (PPE) such as gloves, work boots, eye and hearing protection as required for the task at hand.

WARNING

DO NOT remove caps, plugs and/or other components when compressor is running or pressurized. Stop compressor and depressurize system. Relieve the entire system pressure by opening the service valve, which will vent all the pressure to the atmosphere.

- Ensure hydraulic oil to pump inlet and prime if needed.
- Ensure service valve on compressor is closed. Engage hydraulic system (PTO or hydraulic supply) and allow hydraulic oil to circulate back to tank. When solenoid is activated, oil should quickly circulate to the hydraulic motor on the compressor and start producing air.

- Check for any leaks.
- Refer to **Figure 4-1 and 4-2**. Press the “START” button on the controller, and wait for the Main Screen. (Default is the Pressure Screen.) Check pressure and temperature screens. Pressure may need adjustment to achieve desired operating pressure. Refer to Section 5, **Table 5A: ROUTINE MAINTENANCE SCHEDULE**.
- Partly open service valve to load compressor and allow system to warm up. Monitor temperature. Temperature should be between 180-220°F (82-104°C); approximately 100°F over ambient temperature.
- NOTE:** May be higher with high ambient conditions.
- Cycle compressor on/off with service valve to ensure operation is working.
- Close service valve.
- Disengage hydraulic system.
- Allow all air to vent to atmosphere. Check compressor oil level and top off if necessary. Inspect for and correct any leaks; tighten



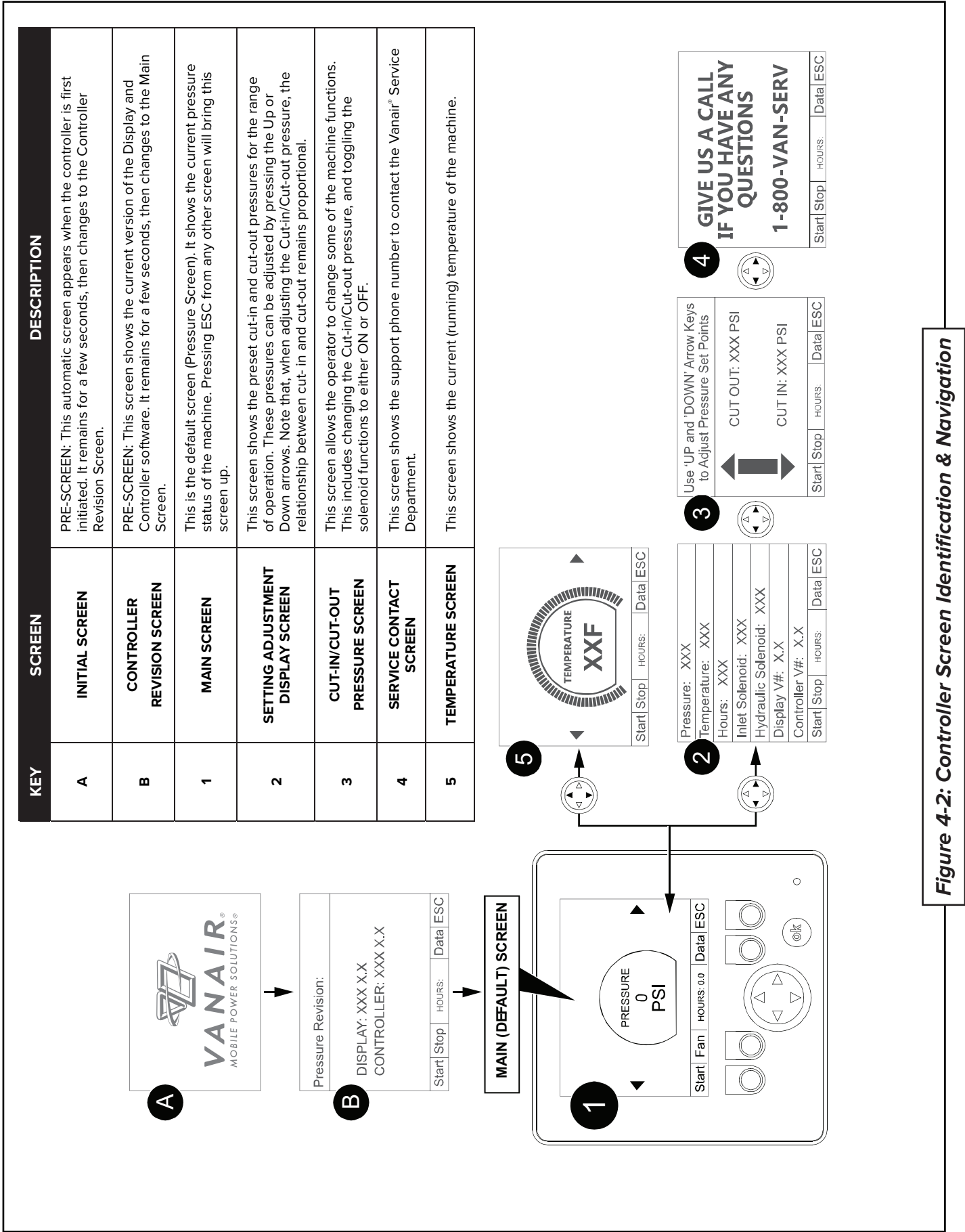


Figure 4-2: Controller Screen Identification & Navigation

any loose fittings.

4.2.2. OPERATING CONDITIONS

1. Operate only in well-ventilated areas.
2. Ensure there are no obstructions of cooling air intakes and outlets around the machine.

NOTICE

Be sure to leave sufficient room around the machine for cooling air circulation during operation (refer to Figure 3-1 for minimum clearance dimensions).

Heated air exiting the machine must be allowed to vent away from the air intake.

3. Do not leave anything on top of the machine. Machine will become hot during use and cooling air must not be restricted.
4. Operate machine with the top cover closed.
5. Refer to specifications for operating parameters.

4.2.3. ROUTINE START-UP PROCEDURE

NOTICE

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

1. Ensure the compressor is positioned on a level surface so that the oil level can be read accurately and correct amount of oil can be added, if required.
2. Close the air service valve.
3. Engage the hydraulic system (PTO or hydraulic supply). This will activate the compressor.
4. Allow machine to warm up for several minutes before operating.

4.2.4. HIGH MOISTURE CONDITION: EMULSIFICATION

A serious condition may occur in operating environments that contain high levels of moisture, where condensation can occur within the rotary screw air compressor 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.

Consult **Section 4.2.4, 4.2.5, and Table 4-A** for preventative and corrective actions necessary for high moisture ambient environment operation.

If the condition persists, contact Vanair® Service Department **(844) VAN-SERV**.

4.2.5. PREVENTION OF EMULSIFICATION

1. Start the machine normally.
2. Do not immediately engage service air when full load is reached. Allow the system to warm up to 180°F (82.2°C). This initial warm-up period allows the moisture within the system to vaporize.
3. After temperature reaches 180°F (82.2°C), open the service valve and discharge air for approximately ten (10) minutes to purge this vaporized moisture from the system.

4.2.6. ROUTINE SHUTDOWN PROCEDURE

NOTICE

Do not stop the compressor suddenly! Stop the compressor after approximately five (5) minutes of unloaded idling.

1. Close the service valve.
2. Allow compressor system to unload and cool down for about five (5) minutes.
3. Shut off hydraulic power supply.

4.2.7. INFREQUENT USE

In some installations the compressor may not be used regularly. To ensure the compressor is maintained in working order, the compressor should be started and run at least once per month. Follow the procedure outlined in **Section 4.2.3** 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. When the machine is scheduled to be idle for an extended period of time, consult **Section 5.4.3. Long Term Storage** for more details.

4.2.8. 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 intervals stated for normal conditions as shown in *Table 5-B Routine Maintenance Schedule*.

4.2.9. HIGH TEMPERATURE OPERATION

Consult the information in *Table 4-B* for preventative and/or repair measures. Reduce load duty cycle to less than 60% when operating in environments above 104°F (40°C).

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

When operating the machine in high temperature area, precautions should be taken to prevent overheating. At the minimum, all vents, including air passage ways around the vents, should be kept free of dirt and debris.

Table 4-B: High Temperature Operation

SYMPTOM	CAUSE	PREVENTATIVE/CORRECTIVE ACTION
Overheating/high compartment temperatures	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.	• Extra care should be taken to keep the engine and air compressor clean and to not restrict the air flow around the unit. • At the minimum, all coolers, including air passage ways around the coolers, should be free of debris and dirt. The fan is designed to run continuously to assure a constant flow of cooling air. • If high ambient overheating occurs, reduce the duty cycle. The operator should be aware that high temperatures can influence compressor performance, which can directly effect some machine function capacity outputs.

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SECTION 5: Maintenance

5.1 GENERAL INFORMATION

A good maintenance program is the key to long compressor life. This section contains a program that, when adhered to, should keep the compressor in top operating condition. However, it should be understood that the intervals suggested in the following schedule are for normal operation in a good, clean environment. More frequent inspections, oil and filter changes should be anticipated when operating the equipment under more harsh and dirty environments, including those that are dusty, high ambient temperatures, and extended light load conditions.

NOTICE

It is important to keep in mind that operating the compressor package in a severe environment may require more frequent service intervals than prescribed in the periodic maintenance schedule.

Before starting the compressor system, inspect the machine package for any suspect condition that may cause a safety hazard or hamper operation. Replace damaged components with genuine Vanair® replacement parts.

WARNING

DO NOT remove caps, plugs and/or other components when compressor is running or pressurized. Stop compressor and depressurize system. Relieve the entire system pressure by opening the service valve, which will vent all the pressure to the atmosphere.

WARNING

DO NOT work on any electrical components unless the battery is disconnected.

WARNING

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

WARNING

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

CAUTION

Compressors and drive motors generate heat during normal use. Use caution when operating or servicing the compressor system. Some surfaces and components may be hot.

CAUTION

Use only original Vanair® equipment filters. Other filters may not have the correct pressure rating and may use a different thread.

5.2 MACHINE MAINTENANCE SCHEDULE

A routine maintenance schedule based on time and/or hours logged, is given in *Table 5-B*. The intervals are determined from the machine's use under typical operating conditions. However the operator must be aware that operating conditions may vary depending on such things as specific customer requirements, environmental temperatures, and cleanliness of the surrounding work area. With this in mind, the specifications given in *Table 5-B* should be used as a guideline instead of a fixed agenda. A safe approach to routine maintenance would be to perform routine maintenance tasks more frequently when under harsher conditions.

NOTICE

It is important that the compressor oil be of the recommended type and that it is inspected and replaced together with the oil and air filters, in accordance with this manual.

DO NOT mix oils of different types.

Using replacement parts other than genuine Vanair® replacement parts will VOID the Warranty.

Vanair® provides a routine maintenance parts list in **Table 7-B: Routine Replacement Kit Order Information**. Should a non-routine part need replacement or servicing, use the parts diagram drawings to locate the exact part and part number in question. Our parts and service departments are ready to assist in identifying and/or replacing non-routine parts.



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5.3 REPLACEMENT PARTS

Replacement parts should be purchased through your local Vanair® representative or dealer where the machine was purchased. If for any reason, parts are not available in this manner they may be purchased directly from the Vanair® Service Department.

NOTICE

When ordering new replacement parts, consult **Section 7.1: Parts Ordering Information** and **Table 7-A: Recommended Spare Parts List**.

NOTICE

If additional spare parts are being stored for future use, be certain that they are stored in proper containers that allow for protection against contamination and kept in a clean area of moderate temperature. For information on storing the machine for extended periods of non-use, consult **Section 5.4.4: Long Term Storage**.

5.4 PARTS REPLACEMENT AND ADJUSTMENT PROCEDURES

Most routine maintenance assistance can be found in the appropriate “Action to Take” column given for a specific routine maintenance item. This section is mainly concerned with non-routine maintenance items and procedures. For assistance with any maintenance procedure needed that is not covered in this manual, please contact the Vanair® Service Department.

DANGER

Adjustments should be made with the compressor switched OFF, since electrical terminals inside the pressure regulator will be exposed.

WARNING

Before performing maintenance: Shut down the machine, relieve all system pressure, allow system to cool down, and lock out all power in accordance with the **Section 1: Safety**.

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

CAUTION

BE AWARE THAT THE RELIANT™ RS85-LYM SYSTEM CAN BE STARTED REMOTELY

5.4.1. SERVICING THE FUSES AND RELAY

The fuse can be found within the harness line, and the relay is mounted on the unit weight-bearing plate. Vanair® recommends using a fuse removal tool, although pliers can suffice when removing the fuses. Please refer to **Section 7.13: WIRING DIAGRAM** for fuse identification.

NOTICE

If the compressor oil has water contamination, it may be necessary to change the oil and filter more frequently than the interval in **Table 5-B**.

If the system is operated in a dirty or dusty environment, it is recommended you check the air filter element weekly.

5.4.2. SAFETY SHUTDOWN SYSTEMS

Protection for over-pressure and/or over-temperature is provided. If either condition should occur, the solenoid valve should activate to divert hydraulic fluid back to the tank and the compressor will stop.

ON DIGITAL PANEL:

- Will show a reset button function to press and hold.

ON GAUGE PANEL:

- The fault reset on the instrument panel will pop out and stay out until reset.

NOTICE

If the fault button is tripped, investigate the reason why it tripped before resetting it.

WARNING

NEVER FORCE the reset button back into position if it keeps tripping, or bypass it in any way in order to allow for machine operation.

A tripped reset button indicates a problem that needs to be addressed and resolved before operation can continue.

5.4.3. PRESSURE RELIEF VALVE

Refer to **Figure 2-1: Reliant™ RS85-LYM Main Component Locations**, callout [R] for relief valve location. Although the pressure relief valve has a reset ring at the cap, DO NOT test the pressure relief valve by pulling the ring. To ensure that all the system is fully depressurized, once the system is unloaded, slowly release, then remove fill cap to vent any remaining sump pressure.

5.4.4. LONG TERM STORAGE

Parts can wear out over time. Regardless of the degree of use. If storing the Reliant™ RS85-LYM unit for long periods of time, depressurize the air tank. Use a tarp or plastic to place over the top of the unit to prevent the accumulation of dust and debris, but leave the bottom open for air circulation. Whenever possible, store in a sheltered area to minimize exposure to the elements.

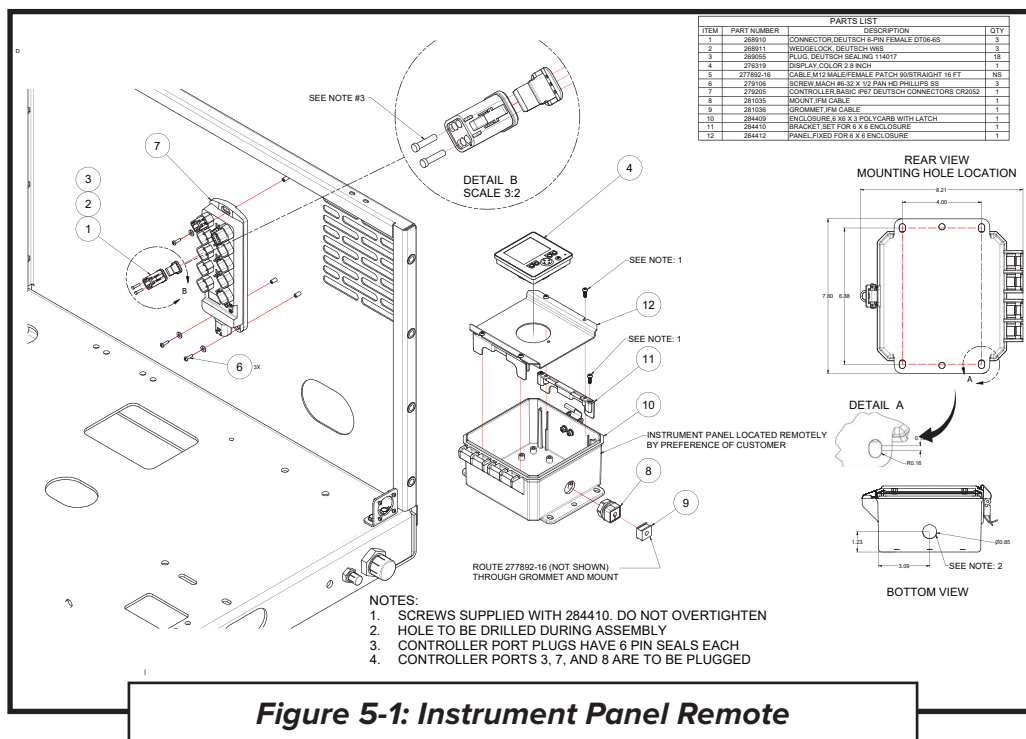


Figure 5-1: Instrument Panel Remote

WARNING

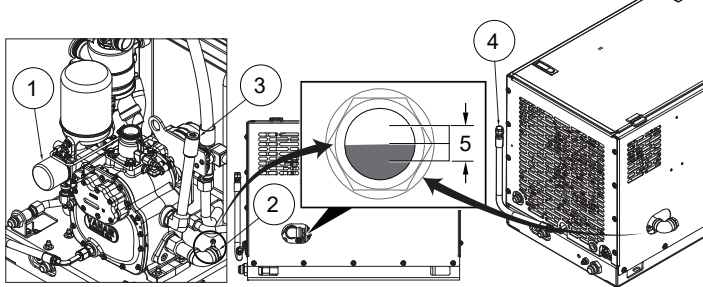
Before performing maintenance: Shut down machine, relieve all system pressure and lock out all power, as per **Section 1: Safety**.

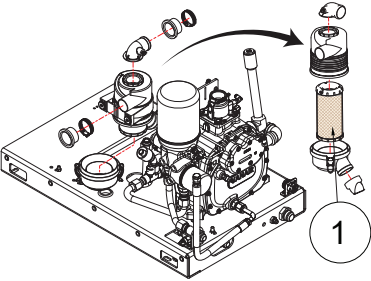
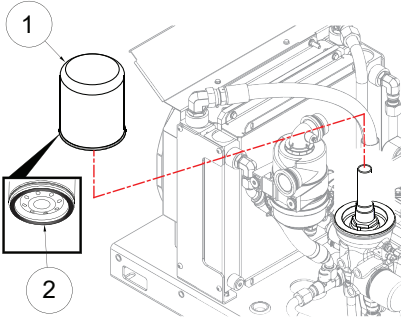
Clearly tag the start-up instrumentation to protect against accidental start-ups during maintenance.

Table 5-A: Routine Replacement Kit Order Information

KEY	DESCRIPTION	PART NO.	QTY
1	Initial 50 Hour Maintenance Kit (oil filter, Vanguard™ replacement oil [two gallons])	KIT1212	1
2	500 Hour Maintenance Kit (oil filter, air filter, separator element, Vanguard™ replacement oil [two gallons])	KIT1540	1
3	Vanguard™ Compressor Oil (one gallon replacement)	264626-1GAL	1
4	Compressor Dual-Stage Air Filter Element Replacement	276688-002	1
5	Compressor Oil Filter Element Replacement	266801	1
6	Compressor Separator Element Replacement	273080	1
NOTE: Refer to Table 7-A for full replacement parts listing, including non-routine items, and options.			
PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.			

Table 5-B: Routine Maintenance Schedule

CAUTION					ACTION
If working in dusty or dirty conditions, reduce the recommended time intervals between servicing by half for compressor oil replacement and compressor filter servicing.		After 8 Hours or Daily	After Initial 50 Hours	After 500 Hours or Annually	
KEY	DESCRIPTION	INTERVALS			ACTION
1	Before starting, check compressor oil level.	■	■	■	 1. Oil Filter 2. Compressor Sight Glass 3. Oil Fill Port 4. Oil Drain Tube 5. Acceptable Oil Level
2	Check for any leaks or loose bolts.	■	■	■	Tighten if necessary.
3	After starting, check pressure gauge for correct operating pressure.	■	■	■	Refer to Section 2: Specifications for proper operation pressure.

4	Check for leaks.	■	■	■	Visually note any leaks or evidence of leaks around the compressor unit and hose connections. Tighten any loose connection point where needed. Repair or replace any damaged part. WARNING When tightening hoses or fittings make sure unit is shut off. WARNING High pressure leaks can cause serious injuries! Never use hands or body parts to check for leaks!
5	Change oil and filter element.		■	■	Refer to Key #1 for oil fill replacement. Oil capacity is approximately five [5] quarts for machine. PART REPLACEMENT: Order Initial 50 Hours Kit (includes oil filter and two gallons of Vanguard replacement compressor oil) no. KIT1212, or refer to Table 5-A for individual order parts. Always replace the oil and oil filter element at the same change interval. For full service assistance, also refer to Key #1 and Key #5 in this table. PROCEDURE: Order Vanguard™ Compressor Oil no. 264626-1GAL (available in one gallon container). Ensure vehicle is situated on a level surface before checking oil level. Add oil if necessary. Proper oil level is between 1/4 to 3/4 range of the sight glass (5); ALWAYS use the sight glass to determine oil level of compressor. DO NOT OVERFILL, DO NOT TOP OFF OIL AT OIL FILL PORT. Replace oil fill cap and tighten after proper filling is completed. Oil capacity is approximately five [5] quarts for machine.
6	Inspect intake air filter.		■	■	 REFERENCE: Compressor Dual-Stage Air Filter Element (1) PART REPLACEMENT: Order Air Filter Element Replacement no. 276688-002. PROCEDURE: Unfasten latches on filter base. Lift the air filter housing from the base. Inspect the internal filter element for pinholes or tears (Note: that this is easier when a light is used to illuminate the filter surface from the inside). Inspect top and bottom of element for any damage or wear. Replace the element if damage or wear is evident, even if the inspection occurs before the recommended replacement interval. Replace cover and secure latches.
7	Replace separator element.			■	 REFERENCE: - Separator Filter Element (1) - Filter Element Seal Ring (2) PART REPLACEMENT: Order 500 Hour Maintenance Kit no. KIT1540 (includes oil filter, separator filter and two gallons of Vanguard™ replacement compressor oil), or refer to Table 5-A for individual order part(s). For full service assistance, also refer to Key #1 and Key #5 in this Table.
8	Inspect exterior of front-mounted oil cooler.			■	Clean if necessary.

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SECTION 6: Troubleshooting

6.1 GENERAL INFORMATION

The information contained in this section has been compiled from field report data and factory experience. It contains symptoms and usual causes for the most common types of problems that may occur. However, DO NOT assume that these are the only problems that can occur. All available data should be systematically analyzed before undertaking any repairs or component replacement procedures.

A detailed 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. Always remember to:

- Check for loose wiring.
- Check for damaged hoses and tubes.
- Check for parts damaged by heat or an electrical short circuit, usually noticeable by discoloration or a burnt color.

For any questions consult your nearest Vanair® representative or the Vanair® Service Department.

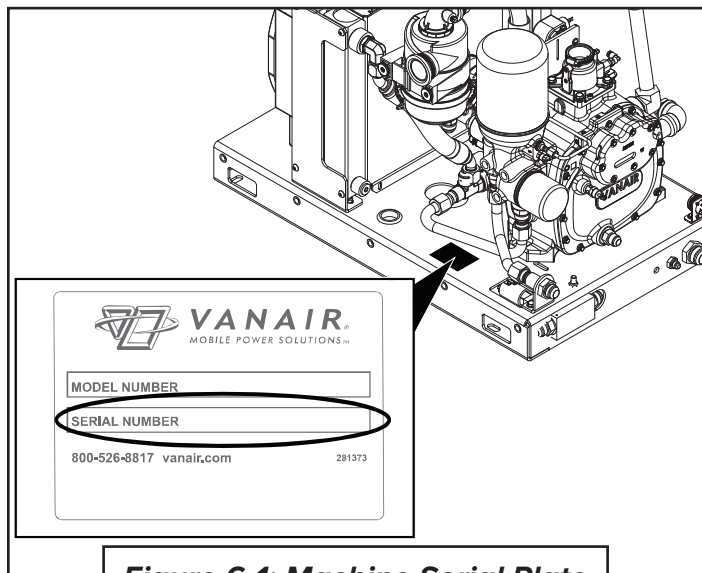


Figure 6-1: Machine Serial Plate

WARNING

DO NOT operate the compressor, or any of its systems, if there is a known unsafe condition. Disable the equipment by disconnecting it from the system's power supply.

BE AWARE THAT THE RELIANT™ RS85-LYM SYSTEM CAN BE STARTED REMOTELY

Install a lock-out tag for others to identify the equipment as inoperable to prevent accidental use of unsafe systems.

WARNING

Before starting, performing maintenance, or replacing parts, relieve the entire system of pressure. After the machine has blown down, open a service valve to vent all pressure to the atmosphere.

To ensure that any remaining residual system pressure is relieved, slowly remove the fill cap, which will vent any residual pressure to the atmosphere.



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Table 6-A: TROUBLESHOOTING GUIDE - MACHINE OPERATION

MALFUNCTION/FAULT	POSSIBLE CAUSE	CORRECTIVE ACTION
Compressor will not build up pressure	Air demand is too great.	Check service lines for leaks or open valves. Too much air demand.
	Dirty air filter.	Check the filter and clean or change element if required.
	Defective pressure transducer.	Replace pressure transducer.
	Motor does not turn.	Check hydraulic flow and pressure and adjust if necessary.
	Service valve wide open.	Close service valve.
	Solenoid valve stuck.	Replace solenoid valve.
	Inlet valve stuck.	Free or replace inlet valve. Order rebuild kit if necessary.
	Leak in air line.	Check air line connections or damage to air line. Fix or replace.
Compressor over pressures	Defective pressure transducer.	Replace pressure transducer; Contact factory service department.
	Inlet valve stuck open.	Free or replace valve.
	Solenoid valve not energized or faulty.	Check for power. Replace if necessary.
	Plugged coalescer.	Replace coalescer.
Insufficient air delivery/ Air demand too great	Plugged air filter.	Replace air filter.
	Plugged coalescer.	Replace coalescer element.
	Motor speed too low.	Check hydraulic flow and pressure and adjust if necessary.
	Inlet valve stuck.	Free or replace inlet valve. Order rebuild kit if necessary.
	Minimum pressure/check valve malfunctioning.	Rebuild or replace check valve.
Oil carryover	Oil level too high.	Drain to proper level.
	Plugged oil scavenge line.	Contact the Vanair® Service Department.
	Discharge pressure too low.	Check minimum pressure valve and adjust. Replace if necessary.
	Defective coalescer.	Replace coalescer element.
	Overspeed.	Adjust hydraulic flow to maintain compressor RPM speed.
Compressor overheating	Restricted cooling air flow.	Reposition machine to assure proper air flow. Clean/clear cooler fins.
	Fan not operating.	Check ground connection and ensure proper connection.
		Check circuit breaker.
		Check for electrical short in wires.
		Check fan motor.
	Plugged oil filter.	Replace oil filter.
	Contaminated cooler core.	Remove and clean cooler core. Consult Vanair® Service Department for recommended flushing procedure.
	Pressure set too high.	Contact Vanair® Service Department.
	Unit running too fast.	Check hydraulic flow and pressure and adjust if necessary.
	Faulty thermal valve.	Replace thermal valve.
Compressor fails to start	No power.	Check fuse/breaker/relays; Check for loose/broken wires.
	Defective hydraulic system.	Check GPM's and pressure to machine.
	Faulty hydraulic motor.	Check for 12V (If present and GPM's correct, replace.)
	Faulty hydraulic solenoid.	Check for proper GPM at inlet of motor
System retains pressure after shutdown	Solenoid valve stuck.	Should be no power to solenoid valve.
	Faulty blowdown valve.	Replace blowdown valve.
	Leak back from air line.	Check minimum pressure valve for leaks.

Continued on next page

Table 6-A: TROUBLESHOOTING GUIDE - MACHINE OPERATION

MALFUNCTION/FAULT	POSSIBLE CAUSE	CORRECTIVE ACTION
Compressor stalls	Insufficient hydraulic system pressure flow. This can occur if another hydraulically activated component is used off same pump system. Activating the secondary component may drop hydraulic supply system pressure/flow and leave insufficient for compressor.	NOTE: Even a momentary drop in supply hydraulic supply pressure/flow may initiate compressor blowdown to commence. Check setting on supply pressure system relief valve. Check to ensure adequate pressure/flow. Check if other systems are activated off same supply.
	Pressure relief valve set too low.	Contact factory service department.
	Faulty relief valve.	Remove and check seals or fit new valve cartridge.
	Air pressure set too high for hydraulic system.	Adjust pressure setting to reduce air pressure.
	Leak in solenoid valve cartridge (directional flow control valve) on manifold.	Remove and check seals or fit new valve cartridge.
	Check over-pressure or over-temperature.	Adjust if necessary.

Table 6-B: TROUBLESHOOTING GUIDE - HYDRAULIC DRIVE SYSTEM

MALFUNCTION/FAULT	POSSIBLE CAUSE	CORRECTIVE ACTION
EXCESSIVE NOISE		
Motor is too noisy	Coupling is misaligned.	Align unit and check condition of seals, bearings and coupling.
	Motor and/or coupling is/are worn or damaged.	Regard any or all of the following: Tighten leaking connections; fill reservoir to proper level (with rare exception all return lines should be below fluid level in reservoir); bleed air from system; replace pump shaft seal (and shaft if worn at seal journal).
Relief valve too noisy	Valve setting is set too low or too close to another valve setting.	Install pressure gauge and adjust to correct pressure.
	Worn poppet and/or seat.	Overhaul or replace poppet and/or seat.
EXCESSIVE HEAT		
Motor is heated	Fluid is heated.	Refer to information under "Fluid is heated" heading below.
	Relief or unloading valve is set too high.	Install pressure gauge and adjust to correct pressure (keep at least 200 PSI difference between valve settings).
	Motor is worn or damaged.	Overhaul or replace motor.
Relief valve is heated	Fluid is heated.	Refer to information under "Fluid is heated" heading below.
	Valve is set incorrectly.	Install pressure gauge and adjust to correct pressure (keep at least 200 PSI difference between valve settings).
	Valve is worn or damaged.	Rebuild or replace valve.
Fluid is heated	System pressure is too high.	Install pressure gauge and adjust to correct pressure (keep at least 200 PSI difference between valve settings).
	Fluid is fouled or quantity too low.	Change filters and also system fluid if improper viscosity; fill reservoir to proper level.
	Fluid viscosity is not correct.	Change filters and also system fluid if improper viscosity; fill reservoir to proper level.
	Fluid cooling system is faulty.	Clean cooler and/or cooler strainer; replace cooler control valve; repair or replace cooler.
	Pump, valve, motor, cylinder or other component is/are worn.	Overhaul or replace item as noted.
<i>Continued on next page</i>		

Table 6-B: TROUBLESHOOTING GUIDE - HYDRAULIC DRIVE SYSTEM

MALFUNCTION/FAULT	POSSIBLE CAUSE	CORRECTIVE ACTION
INCORRECT FLOW CONDITION		
No existing flow at motor	Motor not receiving fluid.	Regard any or all of the following: Replace dirty filters; clean clogged inlet line; clean or replace reservoir breather vent; fill reservoir to proper level; overhaul or replace supercharge pump.
	Entire flow passing over relief valve.	Adjust as necessary.
	Pump is damaged.	Check for damaged pump or pump drive. Replace as necessary, and align coupling.
	Pump is assembled improperly.	Overhaul or replace pump.
Flow is low	Flow control is set too low (Closed Center System [CCS]).	Adjust as necessary.
	Relief valve is set too low.	Adjust as necessary.
	Partial flow passing over relief.	Adjust as necessary.
	External leak in the system exists.	Locate and tighten leaking connections.
	Pump drive motor RPM is incorrect.	Replace with correct unit.
	Pump, valve, motor is/are worn.	Overhaul or replace item as noted.
Flow is excessive	Flow control is set too high (Closed Center System [CCS]).	Adjust as necessary.
	Pump drive motor RPM is incorrect.	Replace with correct unit. Adjust vehicle RPM.
	Replacement pump is not properly sized.	Replace with correct unit.
INCORRECT PRESSURE CONDITION		
Pressure is absent	No flow.	Refer to information in the "No Existing Flow" column under INCORRECT FLOW CONDITION in this guide.
Pressure is low	Pressure relief path is present.	Refer to information in the "No Existing Flow" and the "Flow is Low" columns under INCORRECT FLOW CONDITION in this guide.
	Pressure relief valve is set too low.	Adjust pressure relief valve. Rebuild or replace if necessary.
	Pressure relief valve is damaged or inoperable.	Rebuild or replace pressure valve.
	Pump or motor is damaged or inoperable.	Overhaul or replace as necessary.
Pressure is erratic	Air is present in fluid.	Tighten leaking connections, fill reservoir to proper level, and bleed air from system.
	Relief valve is worn or inoperable.	Rebuild or replace valve.
	Fluid is contaminated.	Check system fluid and filters; replace if necessary.
	Pump or motor is worn.	Overhaul or replace as necessary.
Pressure is excessive	Pressure relief valve out of adjustment.	Adjust; Rebuild or replace if necessary.
<i>Continued on next page</i>		

Table 6-B: TROUBLESHOOTING GUIDE - HYDRAULIC DRIVE SYSTEM

MALFUNCTION/FAULT	POSSIBLE CAUSE	CORRECTIVE ACTION
FAULTY OPERATION		
Hydraulic flow is present but motor does not rotate	Mechanically bound.	Locate the bind, and repair.
	Command signal solenoid is absent.	Contact the Vanair® Service Department.
	Solenoid valve is inoperative.	Replace valve.
	Motor is worn or damaged.	Overhaul or replace motor.
Hydraulic flow is present but motor rotates slowly	Low system flow.	Refer to information under INCORRECT FLOW CONDITION in this guide.
	Viscosity of fluid too high.	Fluid may be too cold; allow system to warm up.
		Fluid may be fouled; change system fluid to correct viscosity fluid.
	Relief valve is out of adjustment or malfunctioning.	Adjust, repair or replace.
	Solenoid valve sticks.	Repair or replace.
Hydraulic motor moves erratically	Pressure is erratic.	Refer to information under INCORRECT PRESSURE in this guide.
	Air is present in fluid.	Refer to information under EXCESSIVE NOISE in this guide.
	Command signal is erratic.	Repair command console or connection wire(s).
	Relief valve is out of adjustment or malfunctioning.	Adjust, repair or replace.
	Solenoid valve sticks.	Clean and adjust; replace if necessary. Check system fluid and filters; replace if necessary.
	Cylinder or motor is worn or damaged.	Overhaul or replace cylinder or motor.
Hydraulic motor rotates excessively	Flow is excessive.	Refer to information under INCORRECT FLOW CONDITION in this guide.

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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: Machine Serial Plate** for location of machine package serial plate. Consult **Table 7A: Recommended Spare Parts List** on the next page for a listing of replacement parts.

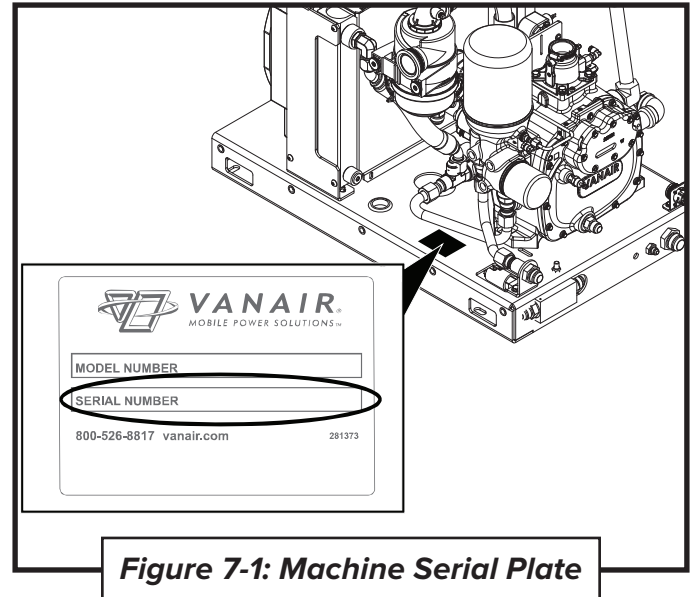


Figure 7-1: Machine Serial Plate



10896 West 300 North
Michigan City, IN 46360

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

vanair.com

NOTICE

If spare parts are being stored for future use, ensure they are stored in proper containers that allow for protection against contamination. Store parts in a clean area with the temperature maintained within 40°F - 85°F (4°C - 29°C). For information on storing the machine package for periods of non-use, consult **5.4.3. Long Term Storage.**

Table 7-A: Recommended Spare Parts List

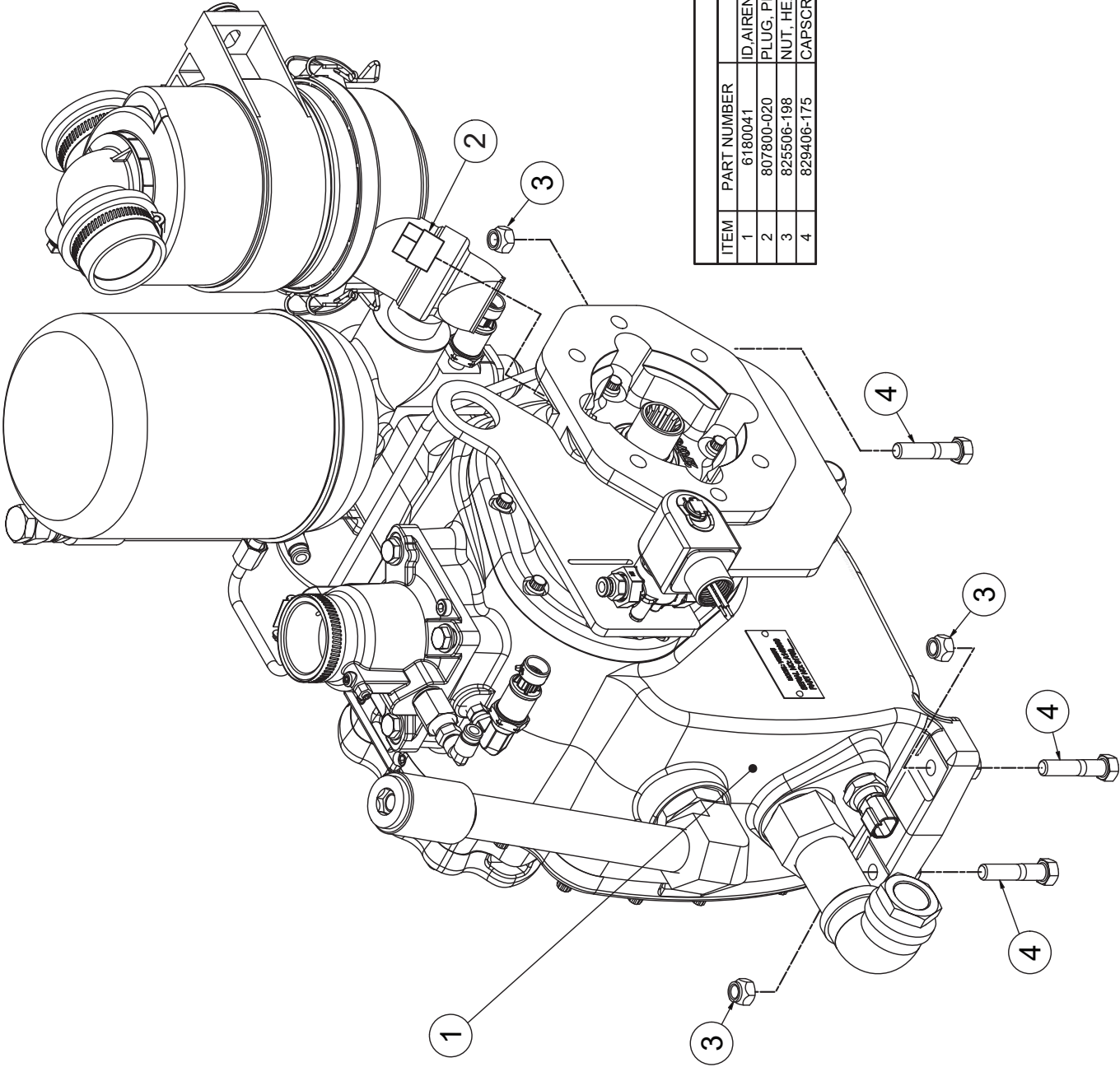
KEY NO.	DESCRIPTION	PART ORDER NO.	QTY
ROUTINE/SCHEDULED MAINTENANCE ITEMS			
1	Oil, Compressor Vanair® Vanguard™ (gallon) ¹	264626-1GAL	1
2	Compressor Air Filter Element Replacement	276688-002	1
3	Element, Air/Oil Spin-on Separator	273080	1
4	Compressor Oil Filter Element Replacement	266801	1
MAINTENANCE SERVICE KITS			
5	Kit, 500 Hour Maintenance (compressor) ²	KIT1540	1
6	Kit, Initial 50 Hour Maintenance (compressor) ³	KIT1212	1
7	Kit, Air Inlet Replacement	273396	1
8	Kit, Minimum Pressure / Discharge Check Valve (rebuild)	271079	1
9	Kit, Compressor Shaft Seal	KIT1259	1
10	N/A	-	1
INDIVIDUAL MAINTENANCE ITEMS			
11	Fuse, 3A	279689	1
12	Fuse, Jcase 10/20A (for 24V machines)	279300	1
13	Fuse, 10A (red) ⁶	EL41538	1
14	Relay, NO/NC Weatherproof 20A (24V)	265182	1
15	Valve, Thermal Replacement (Compressor)	273480	1
16	Valve, Thermal Replacement bypass (Hydraulic System)	274255	1
NOTES			
¹ Compressor oil capacity at oil change is approximately five (5) U.S. quarts. Oil is sold in gallon containers. DO NOT top off or overfill; refer to Key #1 in Table 5-A: Routine Maintenance Schedule for information.		⁴ For compressor shaft seal replacement kit please contact the Vanair® Service Department.	
² 500 Hour Maintenance Kit (no. KIT1540) consists of: Vanair® Vanguard™ Premium Rotary Screw Compressor Oil no. 264626-1GAL (note quantity of two [2] gallons); air filter replacement no. 276688-002; oil filter replacement element no. 266801 and separator element no. 273080.		⁵ Tube and Hose Kit replacement parts do not include any hose and/or tube component for the hydraulic-side (tank assembly) of the drive system, as these parts are acquired during system installation. Refer to Section 7.11 for hose routing assistance.	
³ Initial 50 Hour Maintenance Kit (no. KIT1212) consists of: Vanair® Vanguard™ Premium Rotary Screw Compressor Oil no. 264626-1GAL (two [2] gallons); and oil filter replacement element no. 266801.		⁶ Some standard components, such as fuses, may be obtained quicker and more economically from local sources such as an auto supply store, etc.	
PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.			

NOTICE

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

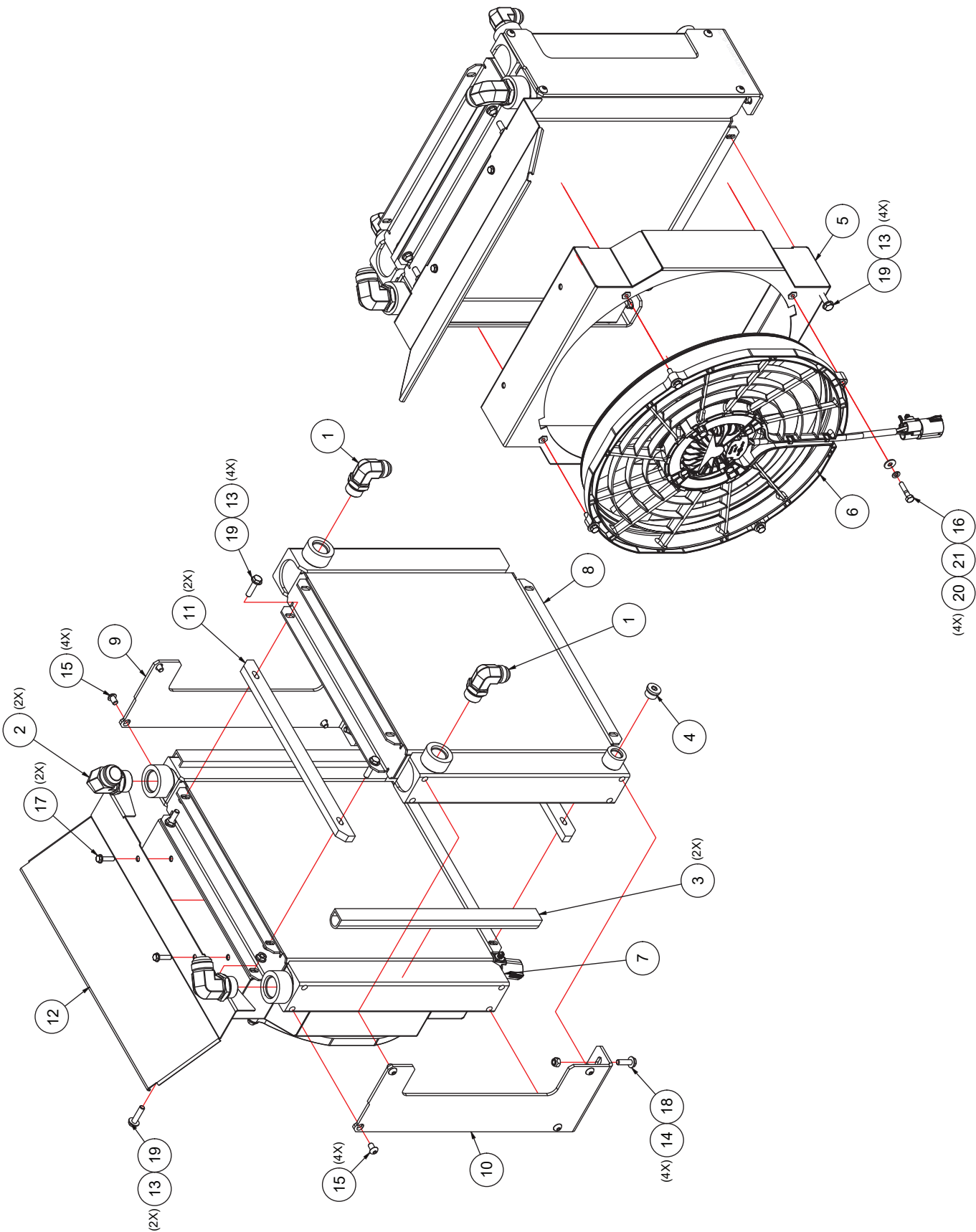
Should any part of the compressor package that is not listed in **Table 7-A** become damaged or inoperable, use **Section 7** to best locate and identify the damaged part(s).

7.2 COMPRESSOR AND PARTS ASSEMBLY

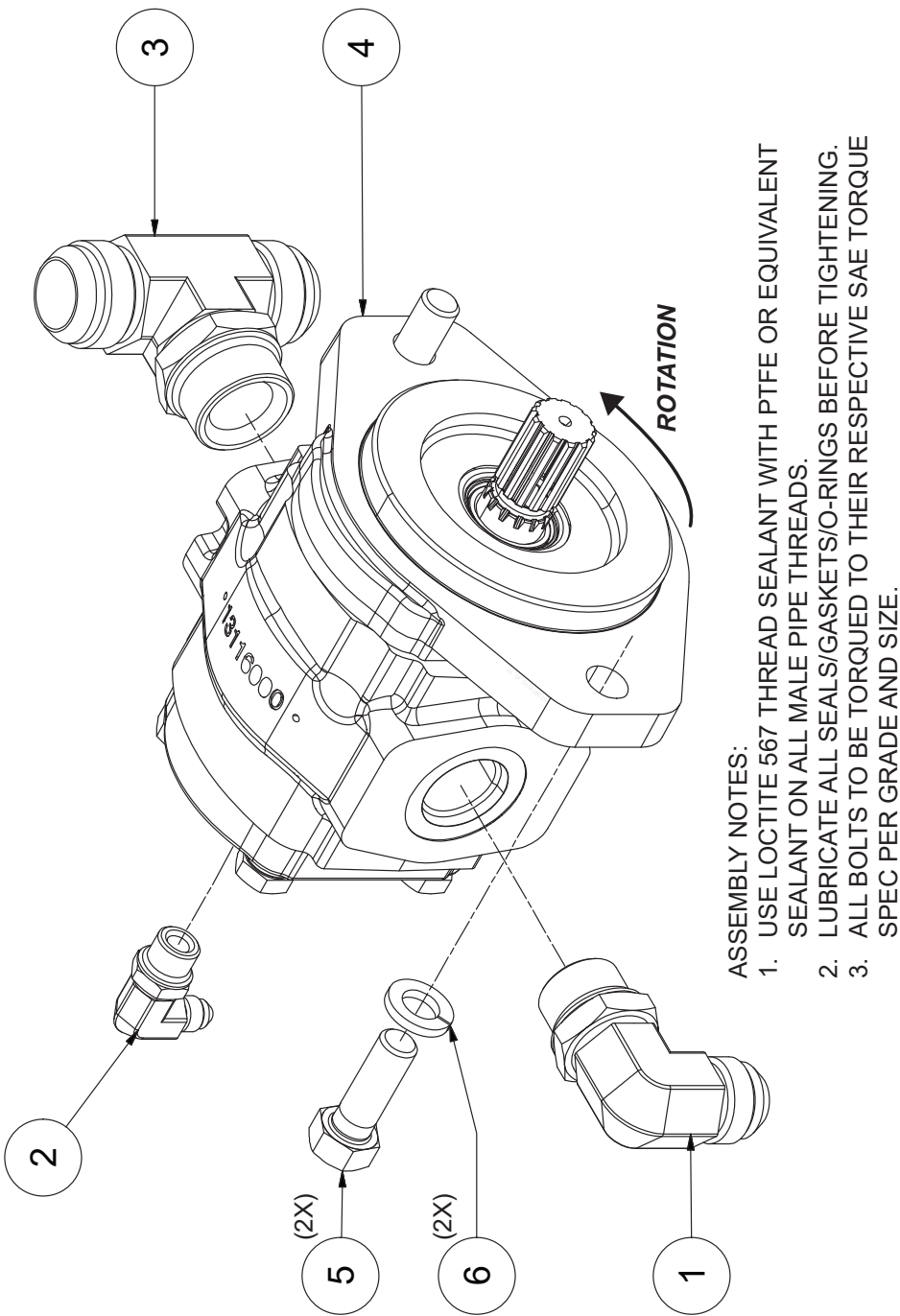


PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	6180041	ID,AIREND & ATT, VRS-E85 ALPNGDSP347 LESS YLW MTL	1
2	807800-020	PLUG, PIPE 1/2	1
3	825506-198	NUT, HEX LOCKING 3/8-16	3
4	829406-175	CAPSCREW, HEX GR 8 3/8-16 x 1 3/4	3

7.3 COOLING SYSTEM - COMPRESSOR AND HYDRAULICS

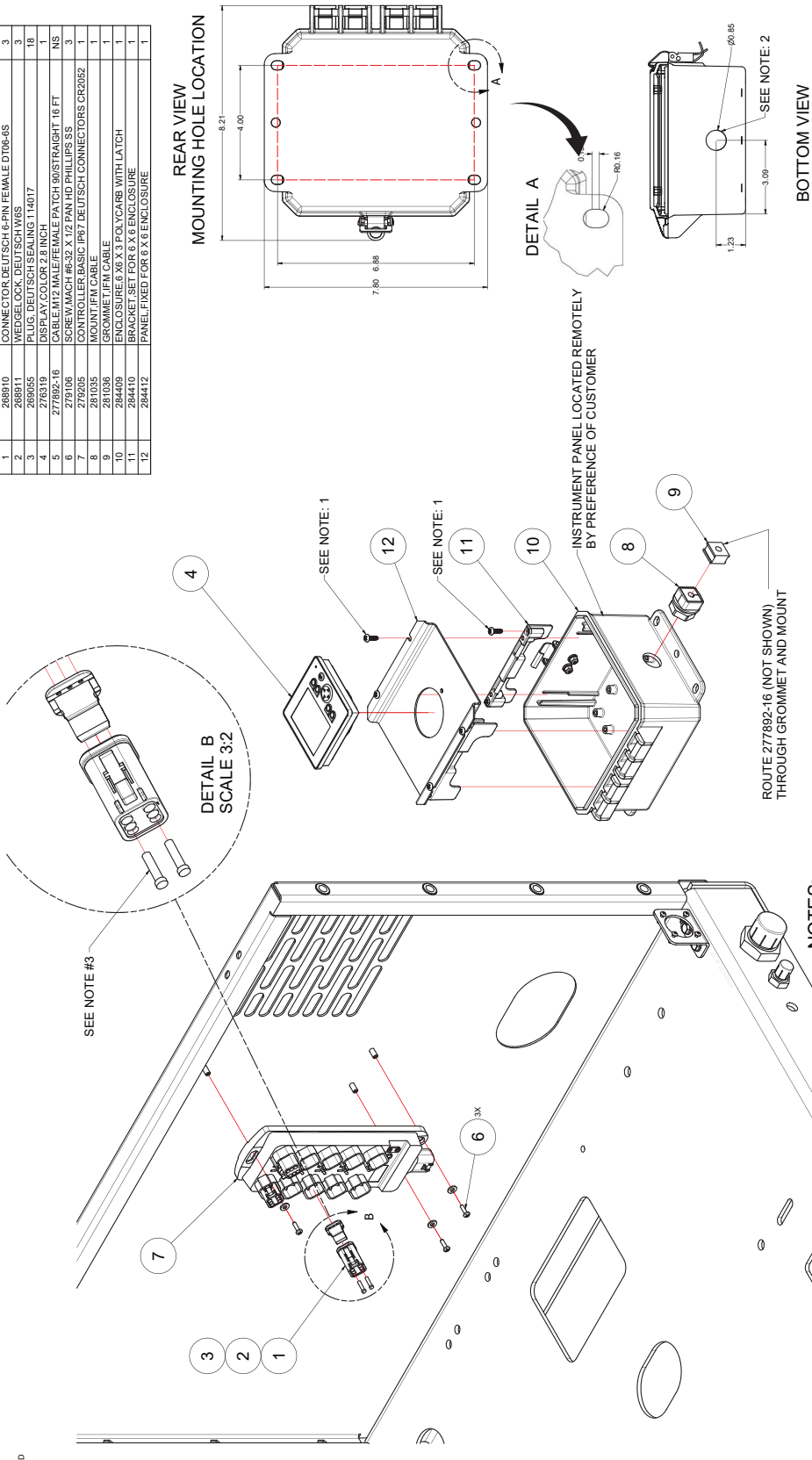


7.4 MOTOR AND DRIVE PARTS - QUIET VERSION



ITEM	DESCRIPTION	PART NUMBER	QTY
1	ELBOW, 90 DEG #12 MJIC x #12 MSAE	260403-107	1
2	ELBOW, 90 DEG #4 MJIC x #6 MSAE	260403-122	1
3	TEE, JIC/JIC/SAE #16	263749-007	1
4	MOTOR, HYD CASAPPA PHM20.25 13 TOOTH SPLINE	276735	1
5	CAP SCREW, HEX GR8 1/2-13 x 1.5	829408-150	2
6	WASHER, LOCK 1/2	838508-125	2

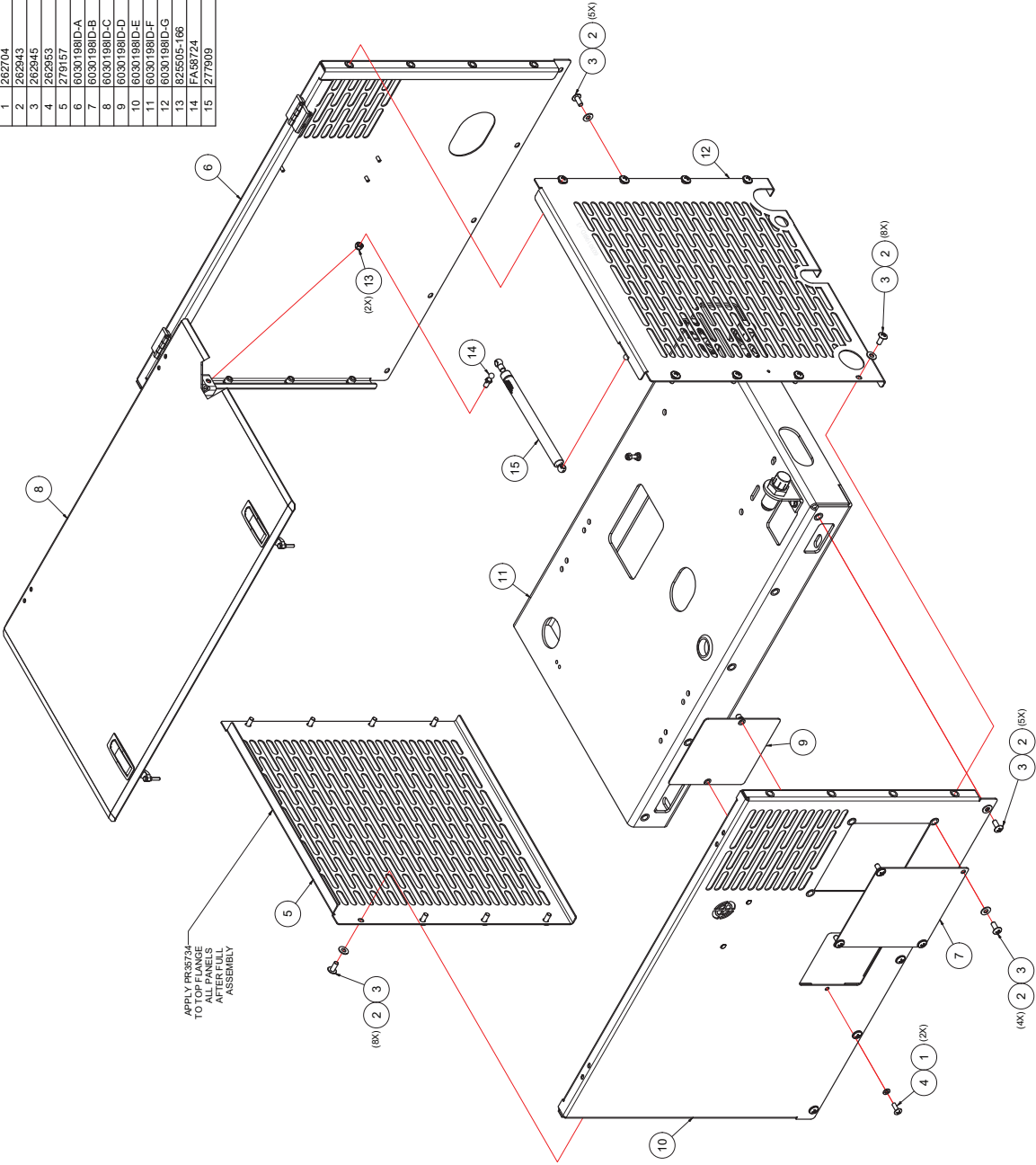
PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	288910	CONNECTOR, DEUTSCH 6-PIN FEMALE DT06-48	3
2	288911	RED LOCK, DEUTSCH WWS	3
3	288912	GREEN LOCK, DEUTSCH WWS	3
4	276319	DISPLAY COLOR 2.1 INCH	1
5	277892-16	CABLE M12 MALE/FEMALE PATCH 90° STRAIGHT 16 FT	NS
6	279106	SCREW MACH #6-32 X 1/2 PAN HD PHILLIPS SS	3
7	279205	CONTROLLER BASIC IIR67 DEUTSCH CONNECTORS CR2052	1
8	281035	MOUNT I/FM CABLE	1
9	281036	GROMMET I/FM CABLE	1
10	284409	ENCLOSURE 6 X 6 X 3 POLYCARB WITH LATCH	1
11	284410	BRACKET SET FOR 6 X 6 ENCLOSURE	1
12	284412	PANEL FIXED FOR 6 X 6 ENCLOSURE	1



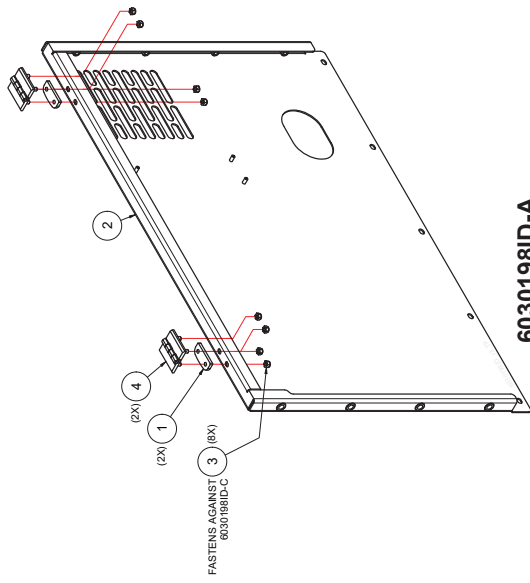
- NOTES:
1. SCREWS SUPPLIED WITH 284410. DO NOT OVERTIGHTEN
 2. HOLE TO BE DRILLED DURING ASSEMBLY
 3. CONTROLLER PORT PLUGS HAVE 6 PIN SEALS EACH
 4. CONTROLLER PORTS 3, 7, AND 8 ARE TO BE PLUGGED

7.6 FRAME AND CANOPY

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY ALL
1	262704	WASHER, NYLON FLAT 1/4	2
2	262943	WASHER, NYLON 5/16-18	30
3	262945	SCREW, TRUSS HD 5/16-18X3/4 SS	30
4	262953	SCREW, TRUSS HD 1/4-20X3/4	2
5	279157	PANEL, COOLER SIDE RS85 LW	1
6	6030198ID-A	PANEL, FRONT SIDE	1
7	6030198ID-B	DOOR ACCESS	1
8	6030198ID-C	PANEL, ROOF RELIANT RS85-85	1
9	6030198ID-D	DOOR ACCESS	1
10	6030198ID-E	PANEL, BACK SIDE RS85-LW	1
11	6030198ID-F	ID FRAME NEW ABOVE DECK HYD DRIVE	1
12	6030198ID-G	PANEL, COMPRESSOR SIDE RS85-LW	1
13	825505-166	NUT, HEX LOCKING 5/16-18	1
14	FA58724	STUD, BALL, .390IA X .55LG.	1
15	277909	GAS SPRING, 6 STROKE, 10#	1

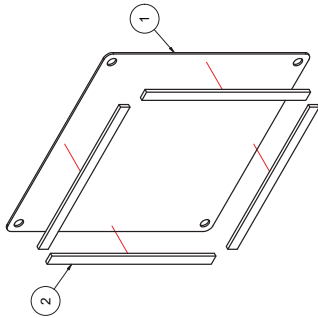


7.7 CANOPY PARTS



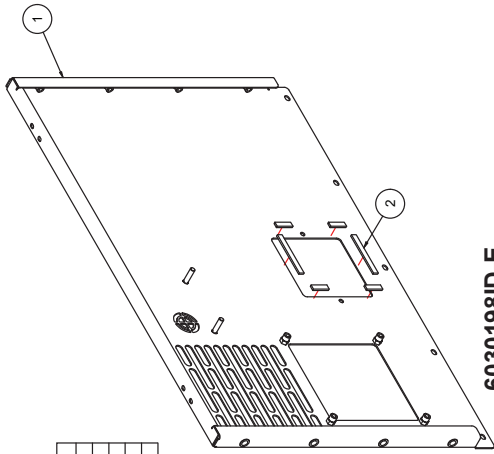
6030198ID-A

PARTS LIST		
ITEM	PART NUMBER	DESCRIPTION
1	279032	SPACER HINGE 277866
2	279561	PANEL FRONT REMOTE DISPLAY WITH IP67 I/O
3	FA55272	NUT, LOCK, M6 X 1.0 PITCH
4	HA88014	HINGE, 2" X 2", BLACK
		QTY
		2
		1
		8
		2



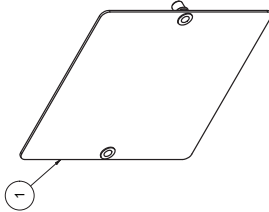
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PARTS LIST		
ITEM	PART NUMBER	DESCRIPTION
1	278769	COVER, ACCESS RS85 LW
2	PR35734	TAPE, VINYL FOAM 4508 1/8x3/8 BLACK
		QTY
		1
		2.25 FT



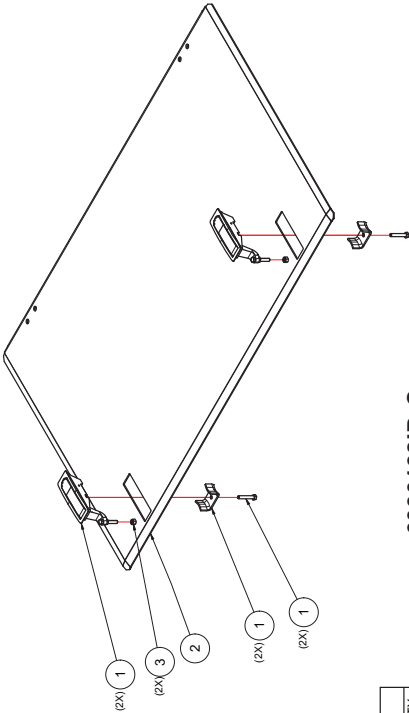
6030198ID-E

PARTS LIST		
ITEM	PART NUMBER	DESCRIPTION
1	280466	PANEL BACK SIDE RS85 MINE APP
2	PR35734	TAPE, VINYL FOAM 4508 1/8x3/8 BLACK
		QTY
		1
		6



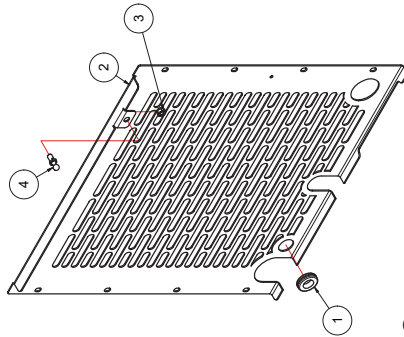
6030198ID-D

PARTS LIST		
ITEM	PART NUMBER	DESCRIPTION
1	279529	PANEL GAUGE RS85-LW BLANK
		QTY
		1



6030198ID-C

PARTS LIST		
ITEM	PART NUMBER	DESCRIPTION
1	267124	LATCH, SENTRY PANEL
2	279183	PANEL, ROOF RS85 LW
3	825905-080	NUT, HEX METRIC 5mm x 0.8
		QTY
		2
		1
		2



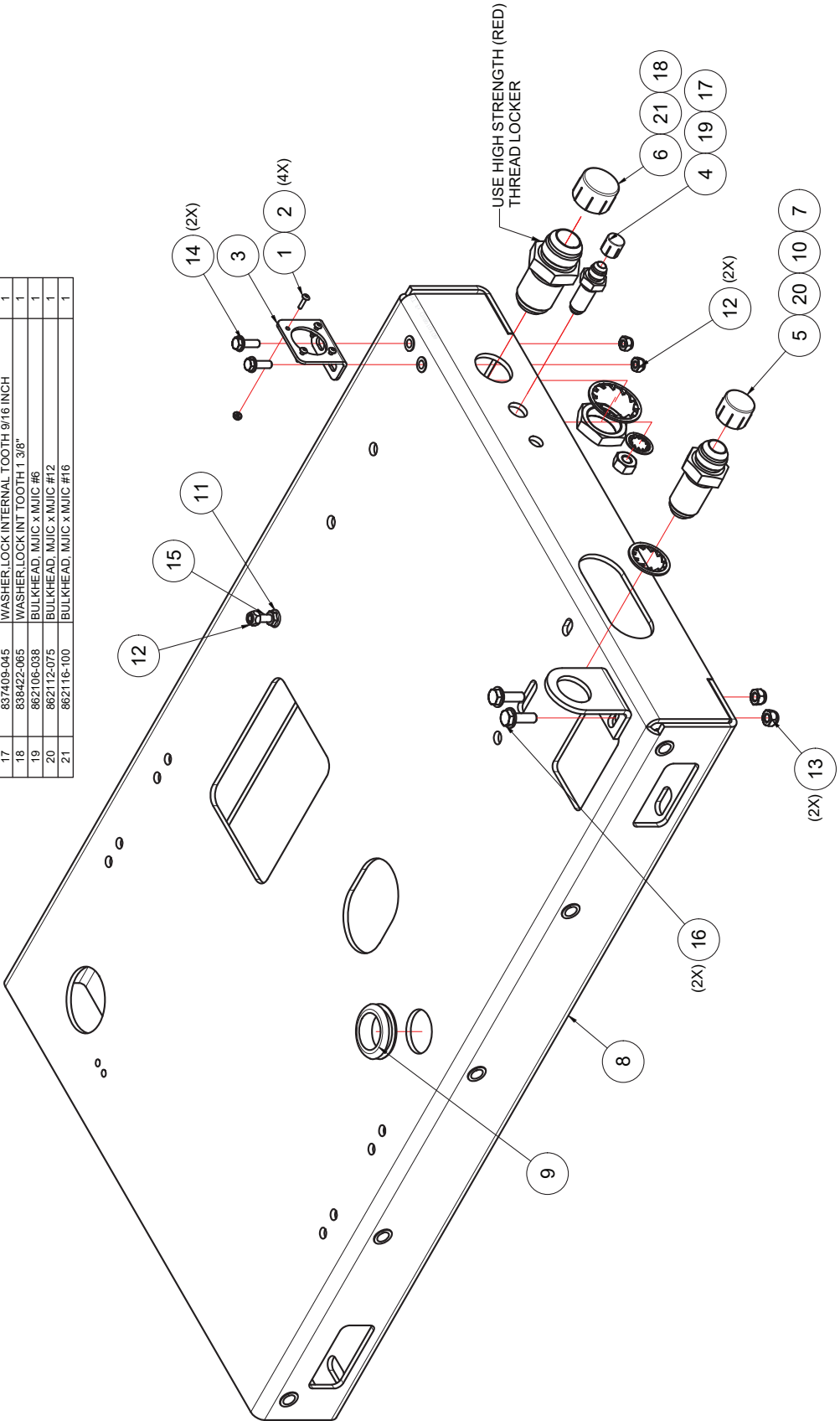
6030198ID-G

PARTS LIST		
ITEM	PART NUMBER	DESCRIPTION
1	275077	GROMMET RUBBER, 7/8ID X 1.06GD X 1.38OD
2	280340	PANEL COMPRESSOR SIDE RS85 MINE
3	825905-166	NUT, HEX LOCKING 5/16-18
4	FA68724	STUD, BALL, .390ID X .55LG.
		QTY
		1
		1
		1
		1

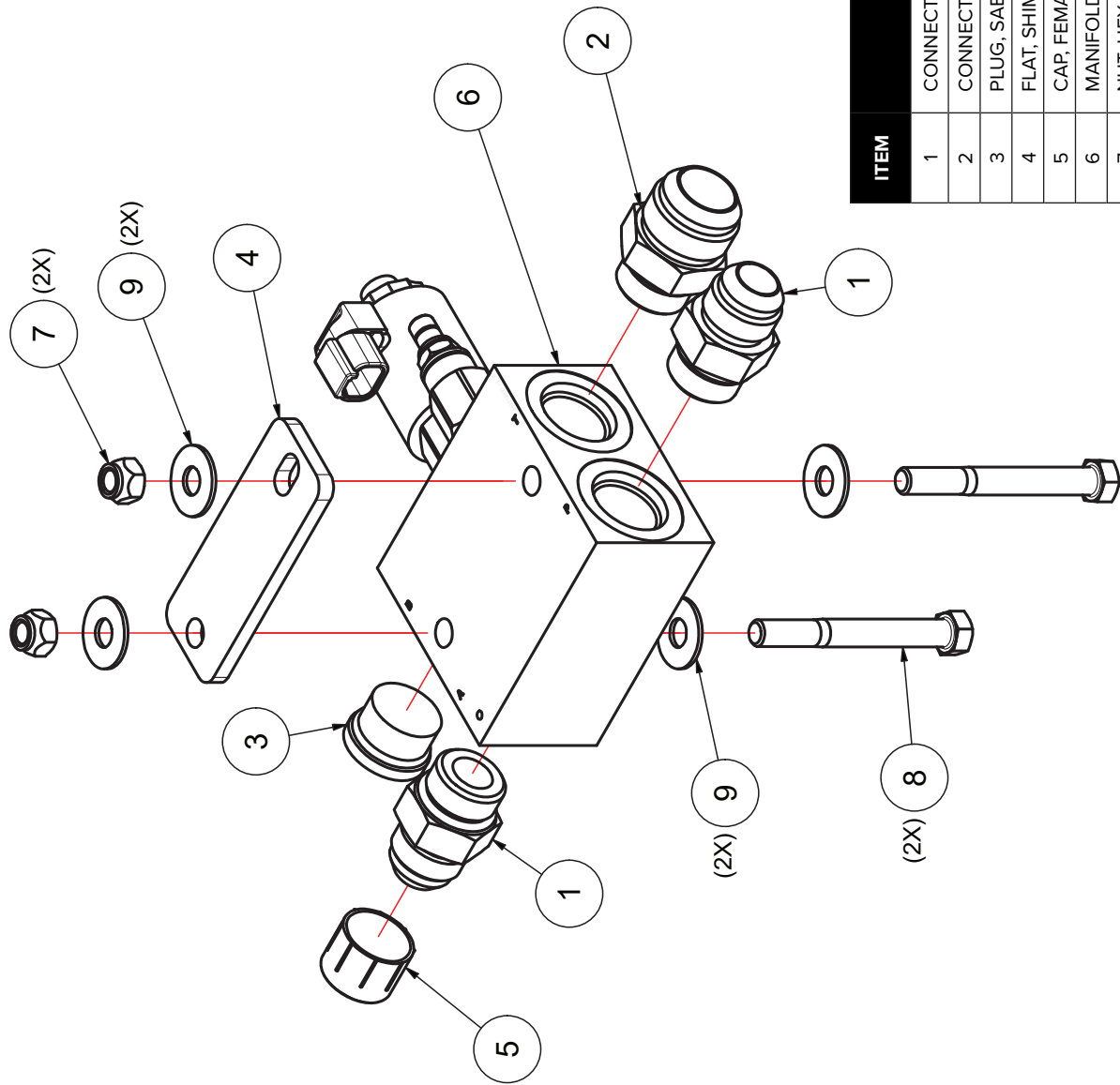
7.8 FRAME PARTS

6030198ID-F

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	271839	SCREW, TRUSS #4-40 X 1/2	4
2	271840	NUT, HEX LOCKING #4-40 UNC	4
3	278370	BRACKET, 6 PIN CONNECTOR	1
4	279109-002	CAP FEMALE JIC SHIPPING #6 9/16-18	1
5	279109-005	CAP FEMALE JIC SHIPPING #12 1 1/16-12	1
6	279109-006	CAP FEMALE JIC SHIPPING #16 1 5/16-12	1
7	279306	BRACKET, AIR DISCHARGE RC40 RS85LW	1
8	279531	FRAME RS85-LW	1
9	280462	GROMMET, RUBBER 1 1/4ID X 1 7/8OD X 1/4	1
10	288463	WASHER, M27 INTERNAL TOOTH LOCK	1
11	825304-236	NUT, HEX FLANGE 1/4-20	1
12	825504-145	NUT, HEX LOCKING 1/4-20	3
13	825505-166	NUT, HEX LOCKING 5/16-18	2
14	829704-075	SCREW, SER WASH 1/4-20 x 0.75	2
15	829704-100	SCREW, SER WASH 1/4-20 x 1	1
16	829705-100	SCREW, SER WASH 5/16-18 x 1	2
17	837409-045	WASHER, LOCK INTERNAL TOOTH 9/16 INCH	1
18	838422-065	WASHER, LOCK INT TOOTH 1 3/8"	1
19	862106-038	BULKHEAD, MJIC x MJIC #6	1
20	862112-075	BULKHEAD, MJIC x MJIC #12	1
21	862116-100	BULKHEAD, MJIC x MJIC #16	1

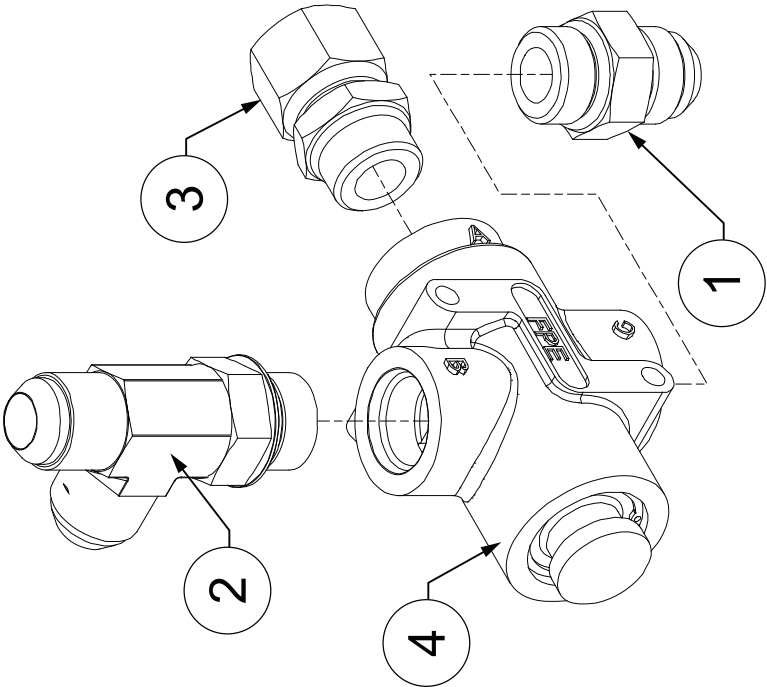


7.9 CONTROL MANIFOLD - OPEN CENTER



ITEM	DESCRIPTION	PART NUMBER	QTY
1	CONNECTOR, #12 MSAE x #12 MJIC	260387-112	2
2	CONNECTOR, #12 MSAE x #16 MJIC	260387-113	1
3	PLUG, SAE O-RING HOLLOW HEX #12	268081-008	1
4	FLAT, SHIM HYDRAULIC MANIFOLD AL	278797	1
5	CAP, FEMALE JIC SHIPPING #12 1-1/16-12	279109-005	1
6	MANIFOLD, HYDRAULIC SOFT SHIFT 24V O.C.	286686	1
7	NUT, HEX LOCKING 3/8-16	825506-198	2
8	CAP SCREW, HEX GR8 3/8-16 x 3.25	829406-325	2
9	WASHER, FLAT 3/8	838206-071	4

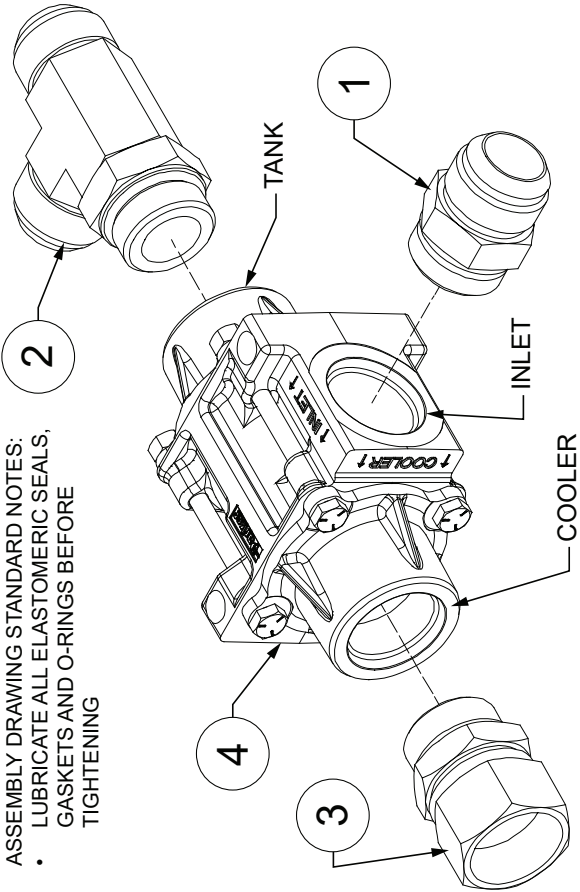
7:10 THERMAL CONTROL



ITEM	DESCRIPTION	PART NUMBER	QTY
1	CONNECTOR, #12 MSAE x #12 MJIC	260387-112	1
2	TEE, 37 MJIC, 37MJIC. O-RING RUN 3/4	268591	1
3	ADAPTER, 3/4 FJIC SWIVEL X #12 MSAE	270440-013	1
4	VALVE, THERMAL 180 DEGREE ALUM BODY 3/4" SAE FPE	273480	1
PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.			

7:11 HYDRAULIC THERMAL CONTROL

ASSEMBLY DRAWING STANDARD NOTES:
• LUBRICATE ALL ELASTOMERIC SEALS, GASKETS AND O-RINGS BEFORE TIGHTENING



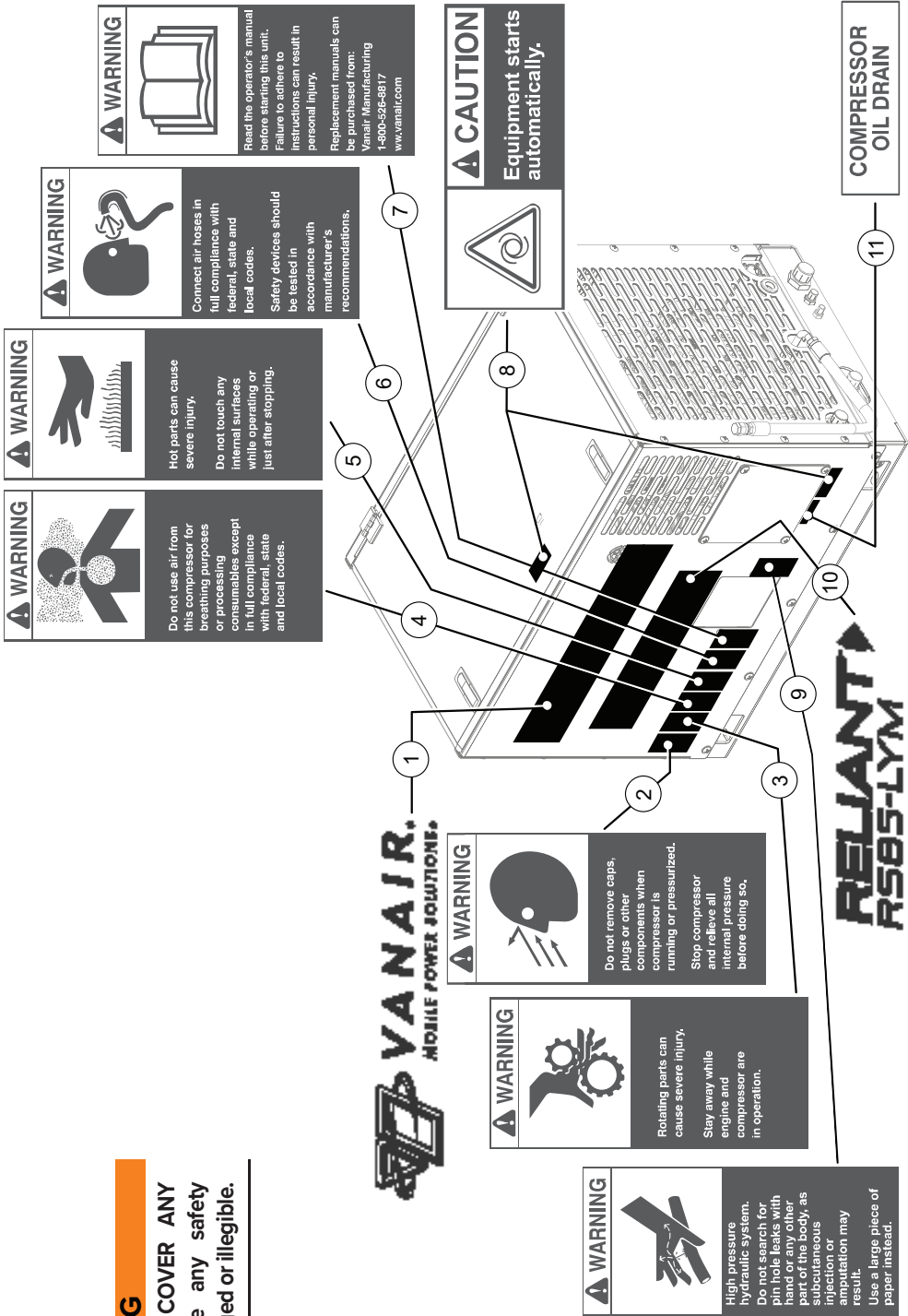
ITEM	DESCRIPTION	PART NUMBER	QTY
1	CONNECTOR, #16 MSAE x #16 MJIC	260387-101	1
2	TEE, RUN #16 M SAE x #16 MJIC	269792-008	1
3	ADAPTER, #16 FJIC SWIVEL x #16 MSAE O-RING	270440-016	1
4	VALVE, THERMAL BYPASS 1" SAE 50PSI 100 DEG	274255	1
PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.			

7.12 DECAL LOCATIONS (PART 1 OF 2)

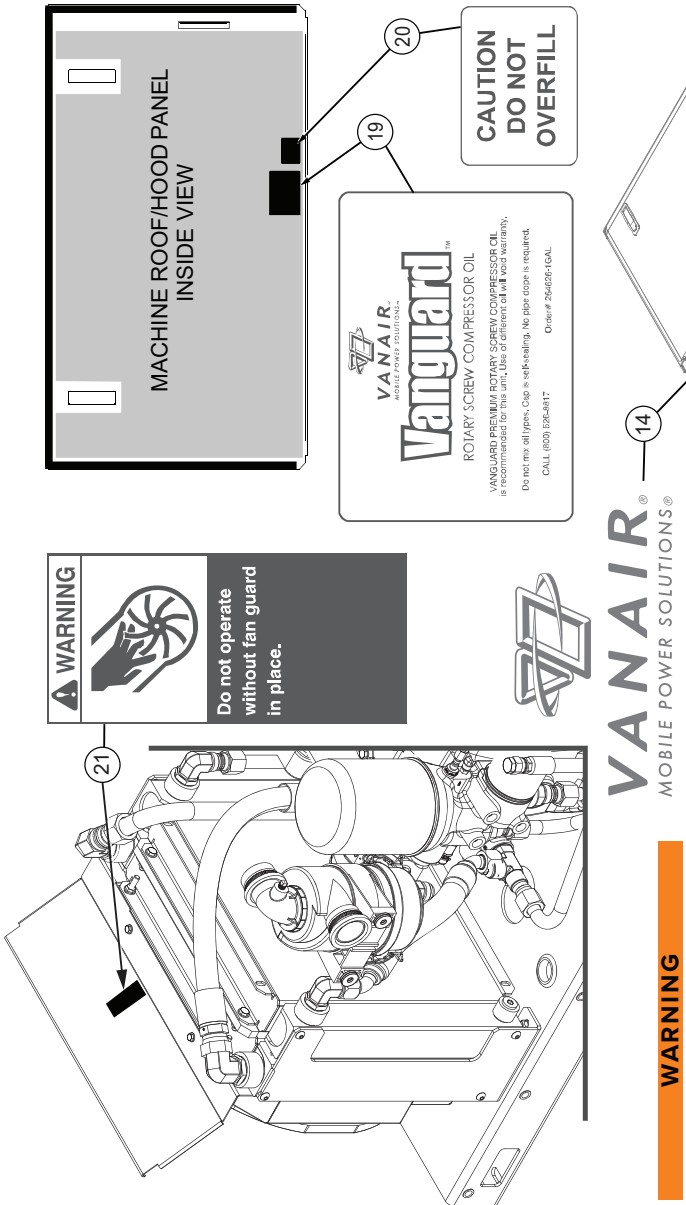
ITEM	DESCRIPTION	PART NUMBER	QTY	ITEM	DESCRIPTION	PART NUMBER	QTY
1	VANAIR HRZ PTG	275056-C	2	7	DECAL, READ MANUAL	272424	1
2	DECL, CAP & PLUG RMVL	264378	1	8	DECAL, CAUTION AUTO STRT	272041	3
3	DECAL ROTATING PARTS	264374	1	9	DECAL, HIGH PRES HYD SYS	264380	1
4	DECAL, BREATHING AIR	261886	1	10	DECAL, RELIANT RS85-LYM	286760	2
5	DECAL, HOT PARTS	264372	1	11	DECAL, CMPRSR OIL DRAIN	275054	1
6	DECAL, AIR HOSE	261885	1				
NOTE: All decals on this page included with decal assembly sheet no. 264416 , unless noted.							

WARNING

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



7.13 DECAL LOCATIONS (PART 2 OF 2)

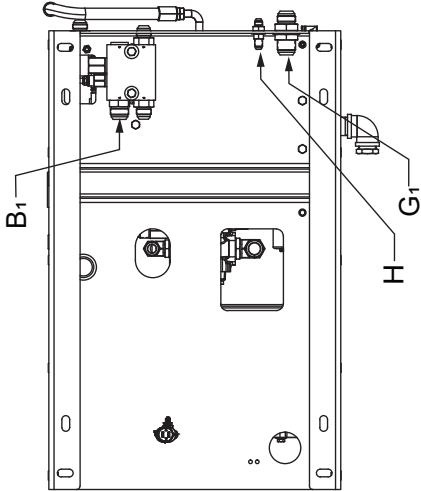
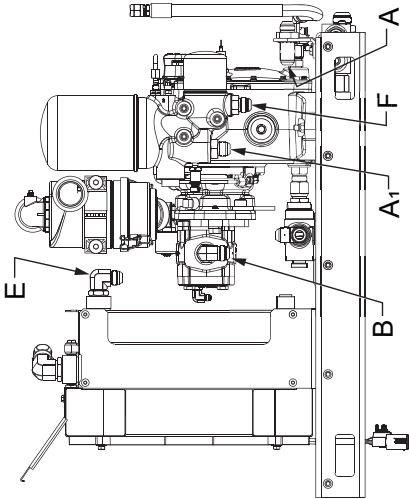
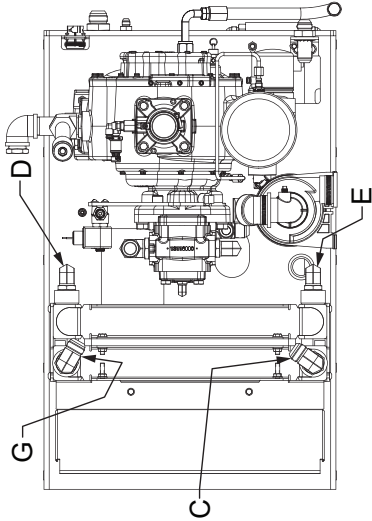


WARNING

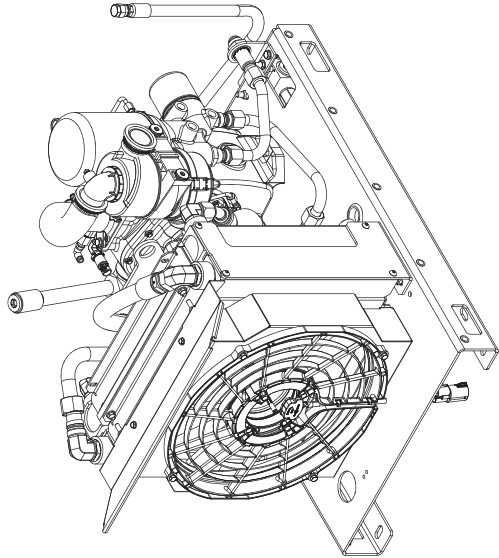
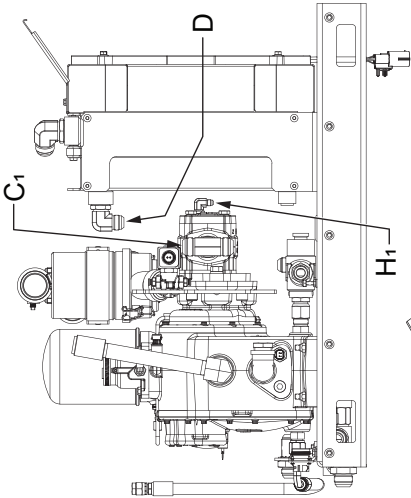
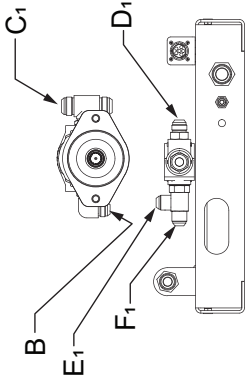
DO NOT REMOVE OR COVER ANY SAFETY DECAL. Replace any safety decal that becomes damaged or illegible.

ITEM	DESCRIPTION	PART NUMBER	QTY	ITEM	DESCRIPTION	PART NUMBER	QTY
10	DECAL, RELIANT RS85-LYM	286760	2	16	DECAL, CASE DRAIN	276941 ²	1
11	DECAL, CMPSR OIL DRAIN	275054 ²	1	17	DECAL, HYD RETURN	275972 ²	1
12	DECAL, AIR DISCHARGE	275973 ²	1	18	DECAL, 24V DC	275975 ²	1
13	DECAL, HYD SUPPLY	275971 ²	1	19	DECAL, VANGUARD COMPRESSOR OIL	272501 ²	1
14	DECAL, VANAIR STACKED ¹	275039-C	1	20	DECAL, CAUTION, DO NOT OVERFILL	275981 ²	1
45	DECAL, LOAD SENSE³ (NOT USED)	269642-³	4	21	DECAL, FAN GUARD	264383 ²	1
NOTE: Voltage decal will be 24V, for this machine build configuration.				³ This decal is only used on closed center machine build configuration.			
² This decal is included with decal assembly sheet no. 264416.				(TBD - new part, To Be Determined)			
PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER							

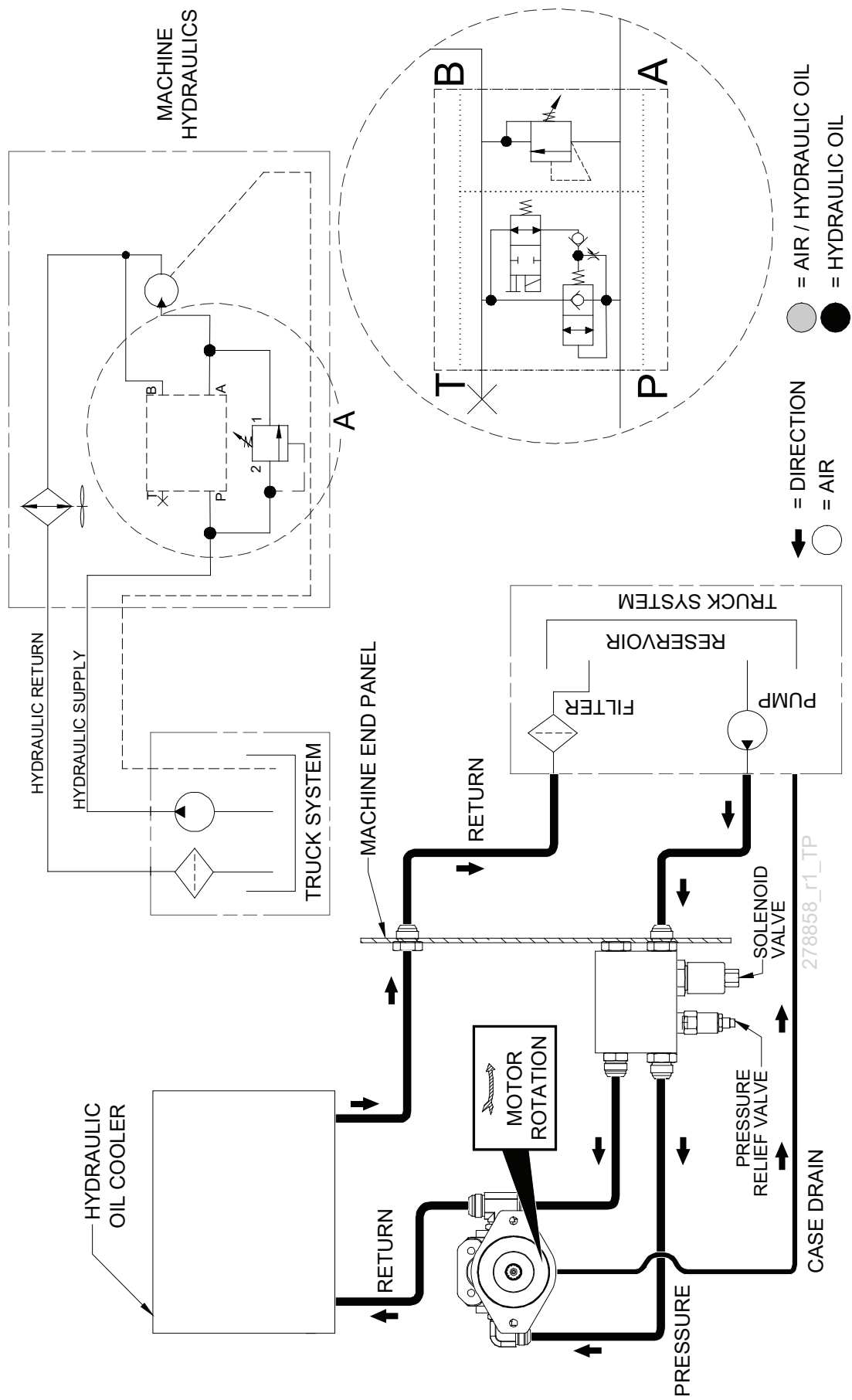
7.14 HOSE AND TUBE ROUTING - RELIANT™ RS85-LYM



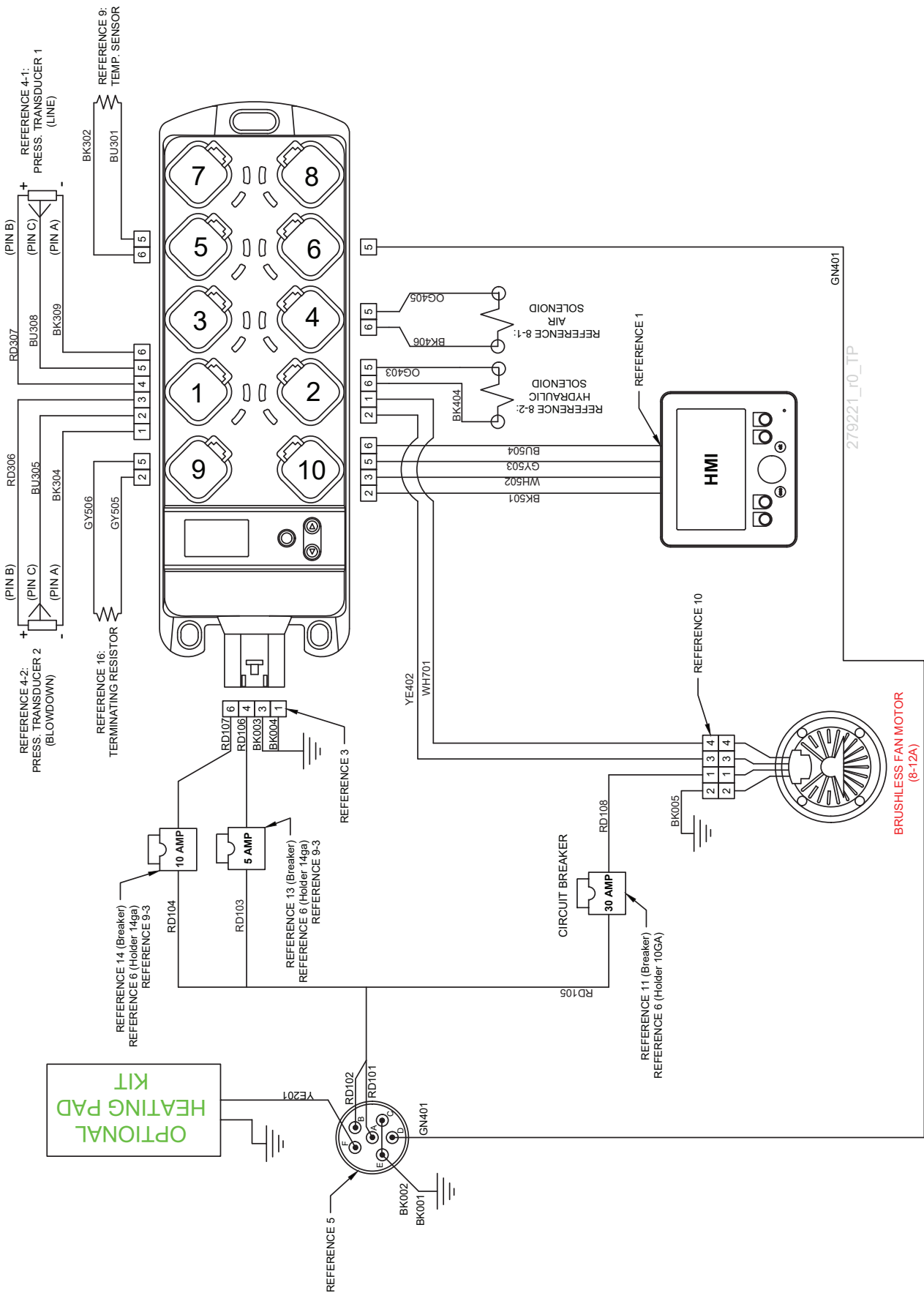
HOSE AND TUBE ROUTING INSTRUCTIONS					
ITEM	PART NUMBER	DESCRIPTION	QTY	START	EN
1	278829	TUBE, CMPR TO SVC AIR OUTLET 3/4 IN RS85 LW	1	A	A ₁
2	278832	TUBE, HYD CLSD CTR MNFD TO MOTOR 3/4 IN RS85 LW	1	B	B ₁
3	279164	HOSE, HYDR MTR OUT TO COOLER 1 IN RS85 LW	1	C	C ₁
4	279161	TUBE, CMPR THRLM VLV TO COOLER 3/4 IN RS85 LW	1	D	D ₁
5	279162	TUBE, CMPR COOLER OUT TO THRLM VLV 3/4 IN RS85 LW	1	E	E ₁
6	279163	TUBE, CMPR THRLM VLV TO FILTER 3/4 IN RS85 LW	1	F	F ₁
7	279165	TUBE, HYDR COOLER TO RTN BULKHEAD 1 IN RS85 LW	1	G	G ₁
8	279092	HOSE, HYDRAULIC MOTOR CASE DRAIN 1/4 IN RS85 LW	1	H	H ₁



7.15 SCHEMATIC - HYDRAULIC FLOW, OPEN CENTER WITH CASE DRAIN



7.16 WIRING DIAGRAM



7.17 HOSE INSTALLATION GUIDE

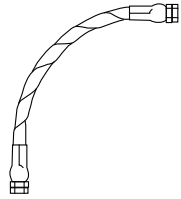
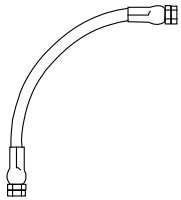
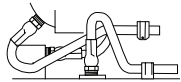
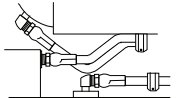
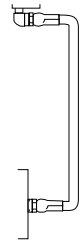
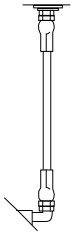
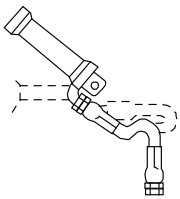
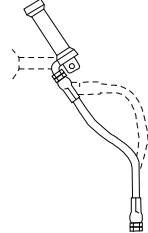
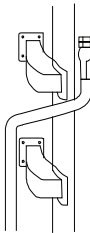
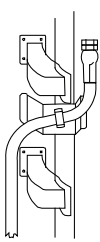
HOSE LAYOUT CONSIDERATION	WRONG	RIGHT	HOSE LAYOUT CONSIDERATION	WRONG	RIGHT
1. Hose is weakened when installed in twisted position. Pressure in twisted hose tends to loosen fitting connections. Design so that machine motion produces bending rather than twisting.			4. Use elbows or other adapters as necessary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

Table 7-B: Routine Replacement Kit Order Information

[illegible]

NOTES:

[illegible]

NOTES:



VANAIR®

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