



An Oshkosh Corporation Company

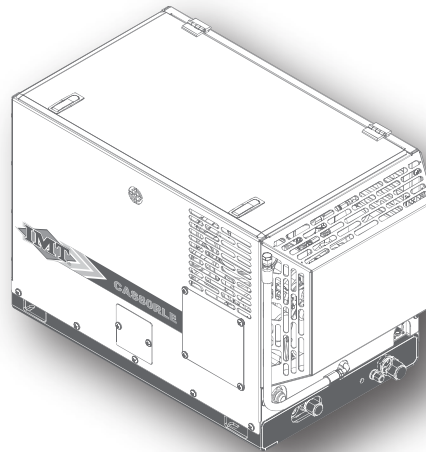
CAS80RL

**60-85 CFM HYDRAULIC-DRIVEN, 12V
CLOSED OR OPEN CIRCULATION,
ROTARY SCREW COMPRESSOR**

NOTE

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

Iowa Mold Tooling Co., Inc. reserves the right to make design change modifications or improvements without prior notification.



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

NOTE

Use only IMT Compressor Oil and Genuine IMT Parts. Inspect and replace damaged or worn components before operation.

Substituting non-IMT oil or non-genuine IMT filter components WILL VOID THE COMPRESSOR WARRANTY!

Iowa Mold Tooling Co., Inc.
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Garner, Iowa 50438



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www.imt.com

NOTE

Making unauthorized modifications to the system components WILL VOID THE WARRANTY!
Always consult with IMT before making any changes to the SYSTEM.

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.

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Making unauthorized modification to the system components WILL VOID THE WARRANTY! Always contact IMT, Inc. before making any changes to the CAS80RL system.

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Warranty & Claims Procedure

WARRANTIED VANAIR PARTS

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

PROCEDURE: 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 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 **Return Material Authorization (RMA)** Form. This form can be obtained via download from the web site, or requested directly from the Vanair® Service Department.

Once a blank RMA form has been obtained, follow the instructions given on the form to fill in the information needed. This form is used for the purpose of requesting a warranty case.

All of the field information (except for the bottom section block fields which includes Disposition of Goods, Notifications and Additional Notes) will be required.

IMPORTANT NOTES:

- RMA's are valid for 30 days once issued. 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. Please reach out to Vanair Warranty Department for any RMAs beyond 30 days.
- Labor Claims - 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.

AIR N ARC®
ALL-IN-ONE POWER SYSTEMS®

RELIANT™ SERIES

POWERFLEX™ SERIES

PRO SERIES

CONTRACTOR SERIES

VIPER™ SERIES

UTILITY MOUNTS

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

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**10896 W. 300 N.
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VANAIR.COM

EFFECTIVE: AUGUST 10, 2020



VANAIR® VANTAGE WARRANTY

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

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

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

Vanair® must be notified in writing within thirty (30) days of any such defect or failure. **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.



VANAIR®
MOBILE POWER SOLUTIONS®

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SECTION 1: Safety

1.1 GENERAL INFORMATION

The products provided by IMT, Inc. are designed and manufactured for safe operation and maintenance. Ultimately, the responsibility for the safe use of this equipment belongs to those using and maintaining the equipment. Part of that responsibility is to read and become familiar with the contents of this manual before attempting to use it or perform maintenance actions.

1.2 DANGERS, WARNINGS, CAUTIONS, AND NOTICES

These boxed inserts are placed throughout this 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, if not avoided, will cause death or severe bodily injury.

- 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.

1.2.2 WARNINGS



WARNING

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

- **DO NOT EVER** use this compressor as a breathing air source. IMT disclaims any and all liabilities for damage or loss due to fatalities, personal injuries resulting from the use of an IMT compressor to supply breathing air.
- **DO NOT** make any modification 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 for 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.

NOTICE

Slowly remove the 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, or corrosive fumes, or other damaging substance can be ingested by the compressor intakes.
- Keep arms, hands, hair and other body parts, and clothing away from fans, drive shafts, and other moving parts.
- **DO NOT** wear jewelry, unbuttoned cuffs, ties, or loose-fitting clothing when you are working near moving/rotating parts.
- **ALWAYS** confine long hair when working near moving/rotating parts.
- **NEVER** operate the equipment while wearing a headset to listen to music or the radio.
- Wear personal protective equipment such as gloves, work shoes, eye and/or 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.

1.2.3 CAUTIONS



CAUTION

Identifies actions or conditions which, if not avoided, could cause minor or moderate bodily injury.

- 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 in-takes.
- 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.

1.2.4 NOTES

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

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
<p>Additional CRUCIAL information (or existing information) which should be brought to the attention of operators, or maintenance personnel, will be marked IMPORTANT.</p>

WARNING
<p style="text-align: center;">DO NOT REMOVE OR COVER ANY SAFETY LABELS</p> <p style="text-align: center;">Replace any safety label that becomes damaged or illegible.</p>

1.3 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 7.19, Decal Locations** are located near a component which is subject to respect in terms of safety precautions. Always heed the information noted on the safety decals.

1.4 DISPOSING OF MACHINE FLUIDS

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

IMT® encourages recycling where available. For additional information, consult the container label of the fluid in question.



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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 IMT® Service Department if additional specifications are needed that cannot be found in this manual.

Refer to **Figures 2-1 and 2-2** for general machine component locations. For additional measurement specifications refer to the full Identification Assembly Drawing (**Figures 3-1 through 3-4**) in **Section 3, Installation**.

TABLE 2A: CAS80RL 60-85 SPECIFICATIONS		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 U.S. Quarts (4.7L)	
Compressor overheating protection	Shut Down at 240° F	
Air inlet system	Dry-type, single stage filter	
Drive coupling	Internal spline	
Hydraulic motor	Gear type	
PACKAGE		
Main frame:	Formed steel with bolt-down provision	
Electrical supply:	12V Standard	
Electrical connections:	6-pin Deutsch	
Supply connections (customer hook-up):	Hydraulic: Oil In 3/4" 37° JIC	
	Hydraulic: Oil Out 1" 37° JIC	
	Hydraulic: Case Drain 3/8" 37° JIC	
	Hydraulic: Load Sense 1/4" 37° JIC	
	Electrical: 12V DC Positive and Ground (Standard)	
	Electrical: High Temp Shutdown	
Temperature range:	-4° F to +150° F	
Enclosure	Aluminum with service access	
Cooler:	Hydraulic Oil Cooler/Radiator Core - Electric Fan	

(Continued on following page.)



PACKAGE (Cont.)	
Supply connections (customer hook-up):	Hydraulic: Oil In 3/4" 37° JIC
	Hydraulic: Oil Out 1" 37° JIC
	Hydraulic: Case Drain 3/8" 37° JIC
	Hydraulic: Load Sense 1/4" 37° JIC (Closed Center Machines Only)
	Electrical: 12V DC Positive and Ground
	Electrical: High Temp Shutdown
Temperature range:	-4° F to +150° F
Enclosure	Aluminum with service access
Cooler:	Hydraulic Oil Cooler/Radiator Core - Electric Fan
Dimensions:	37.45" L x 21.23" W x 24.69" H **
Weight (dry):	285 lbs.
** Measurements do not include additional service space requirements needed to allow for cooling circulation and to perform machine maintenance. Refer to Figure 3-6A of 3-6B in Section 3: Installation for these additional space requirements.	

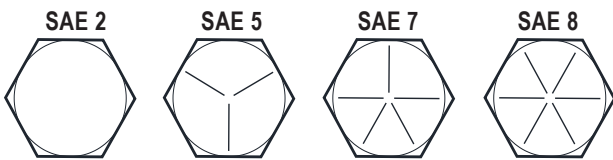
TABLE 2B: PRIME LUBRICANT CHARACTERISTICS	
Viscosity:	178 SUS at 100° F (38° C)
Flashpoint:	457° F (236° C)
Pour Point:	-49° F (-45° C)
Contains:	Rust and Oxidation Inhibitors and Detergents

TABLE 2C: BOLT AND TORQUE SPECIFICATIONS

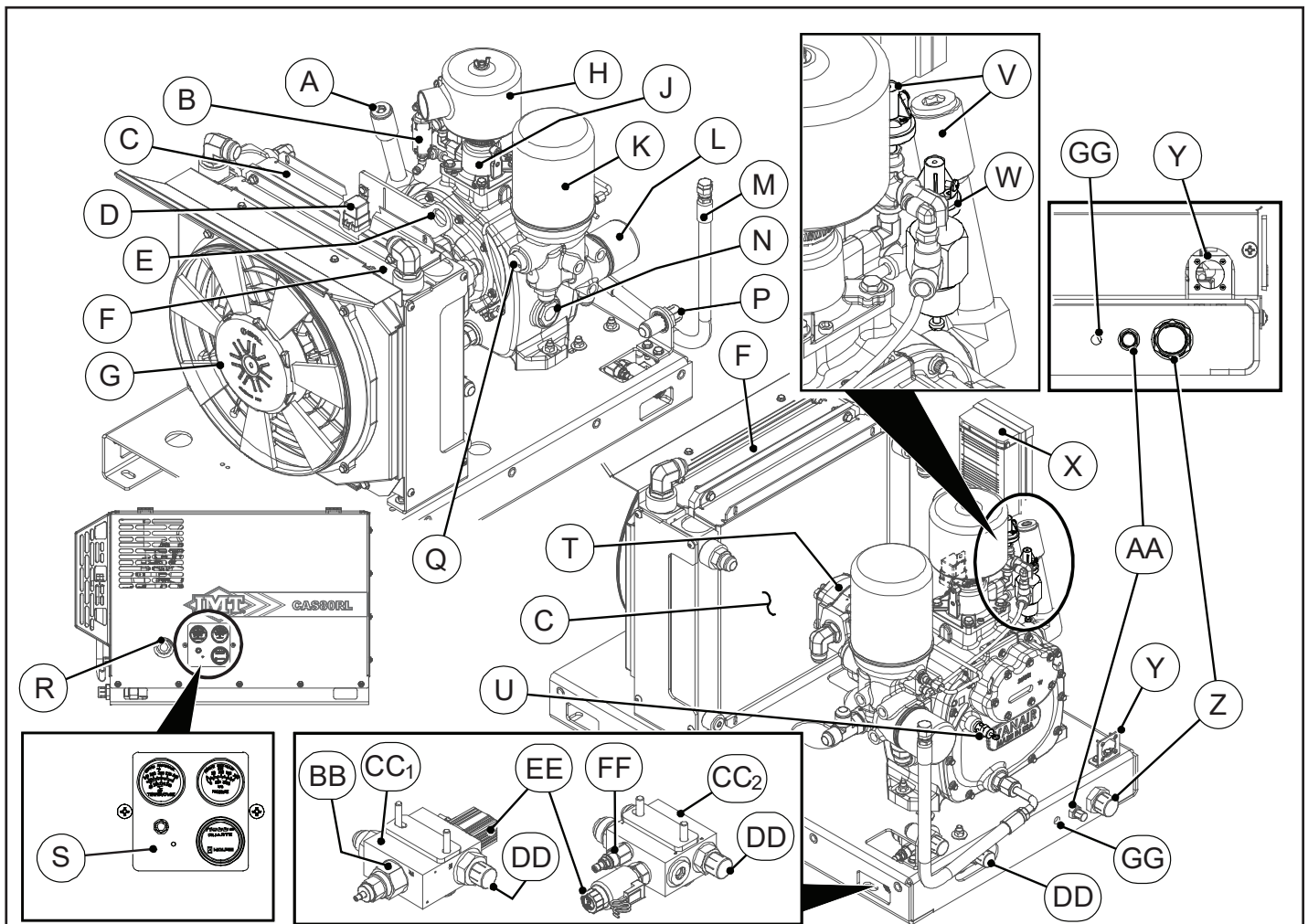
Dimensions (Overall Package)	Length (in)	Width (in)	Height (in)	Weight (lbs) (wet)	Weight (lbs) (dry)
Skid-Mount: ^I	49.4	16.9	21.6	272	251
Dual Tank-Mount: ^{II}	49.3	21.0	27.6	309	288
Tank-Mount (with 30 Gallon Air Tank): ^{III}	49.4	19.4	38.2	396	375

^I Refer to **Figure 3-2** for full dimension drawing, along with additional circulation and service space requirements.

^{II} Refer to **Figure 3-3** for full dimension drawing, along with additional circulation and service space requirements.

^{III} Refer to **Figure 3-4** for full dimension drawing, along with additional circulation and service space requirements.


(Torque in foot-pounds)											
SAE BOLT GRADE		2	2	5	5	7	7	8	8	Socket head cap screw	Socket head cap screw
Bolt Diameter	Threads Per Inch	Dry	Oiled	Dry	Oiled	Dry	Oiled	Dry	Oiled	Dry	Oiled
1/4	20	4	3	8	6	10	8	12	9	14	11
1/4	28	6	4	10	17	12	9	14	10	16	13
5/16	18	9	7	17	13	21	16	25	18	29	23
5/16	24	12	9	19	14	24	18	29	20	33	26
3/8	16	16	12	30	23	40	30	45	35	49	39
3/8	24	22	16	35	25	45	35	50	40	54	44
7/16	14	24	17	50	35	60	45	70	55	76	61
7/16	20	34	26	55	40	70	50	80	60	85	68
1/2	13	38	31	75	55	95	70	110	80	113	90
1/2	20	52	42	90	65	100	80	120	90	126	100
9/16	12	52	42	110	80	135	100	150	110	163	130
9/16	18	71	57	120	90	150	110	170	130	181	144
5/8	11	98	78	150	110	140	140	220	170	230	184
3/4	10	157	121	260	200	320	240	380	280	400	320
3/4	16	180	133	300	220	360	280	420	320	440	350
7/8	9	210	160	430	320	520	400	600	460	640	510
7/8	14	230	177	470	360	580	440	660	500	700	560
1	8	320	240	640	480	800	600	900	680	980	780
1	12	350	265	710	530	860	666	990	740	1060	845



KEY	DESCRIPTION	KEY	DESCRIPTION	KEY	DESCRIPTION
A	COMPRESSOR OIL FILL PORT ^I	M	COMPRESSOR OIL DRAIN TUBE/CAP	Y	ELECTRICAL (DEUTSCH) CONNECTION
B	BLOWDOWN VALVE	N	COMPRESSOR OIL LEVEL SIGHT GLASS	Z	HYDRAULIC RETURN
C	COMPRESSOR COOLER ASSEMBLY	P	SERVICE AIR DISCHARGE	AA	CASE DRAIN
D	RELAY	Q	MINIMUM PRESSURE VALVE	BB	FLOW REGULATOR
E	LIFTING BAIL	R	COMPRESSOR SIGHT GLASS -CANOPY ACCESS	CC ₁	CONTROL MANIFOLD - CLOSED CENTER
F	HYDRAULIC COOLER ASSEMBLY	S	CONTROLS - ANALOG /GAUGES	CC ₂	CONTROL MANIFOLD - OPEN CENTER
G	COOLER FAN ASSEMBLY	T	HYDRAULIC MOTOR	DD	HYDRAULIC SUPPLY (IN)
H	COMPRESSOR AIR FILTER HOUSING	U	RELIEF VALVE (200 PSI)	EE	SOLENOID / FLOW REGULATOR
J	AIR INLET VALVE	V	PRESSURE SWITCH (N.C.; X 2) ^{III}	FF	PRESSURE RELIEF
K	COMPRESSOR AIR/OIL COALESCER	W	PRESSURE REGULATOR ^{III}	GG	LOAD SENSE (Closed Center only)
L	COMPRESSOR OIL FILTER	X	CONTROL MODULE (DIGITAL)		

^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 [R] to determine proper oil level. Oil level is optimum at approximately the half-way mark on the sight glass. Refer to **Table 5A** in **Section 5** for oil information.

^{II} For instrument panel details refer to **Section 4, Operation, Figure 4-1**.

^{III} If applicable to machine design.

NOTE: For fuse locations, refer to **Figure 5-1**.

Figure 2-1: Machine Main Component Locations

SECTION 3: Installation

3.1 GENERAL INSTRUCTIONS

This section provides general guidance for locating and preparing the IMT® CAS80RL 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.

WARNING

Before performing maintenance or repair operations on the compressor, ensure that all power has been removed and locked out to prevent accidental starting. **DO NOT** assume that because the compressor is in a STOPPED condition that power has been removed.

WARNING

Be aware that minimum clearance distances from the machine are required in order for safe and proper machine operation and maintenance. This applies both to installation location, and machine operation location (ergo, operating the machine in an enclosed area, such as a small garage, etc.), where ventilation is restricted or closed off. Do not install in any enclosed space without first contacting IMT.

WARNING

Install, operate, and maintain this equipment in full compliance with all applicable OSHA, other Federal, state, local codes, standards, and regulations.

NOTICE

Although much of the information given in this installation section is detailed, 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.

3.2 DETERMINING THE CAS80RL UNIT MOUNTING LOCATION

When determining the location to mount the CAS80RL unit, the following criteria must be taken into consideration:

- The location must allow for the machine dimensions (*Figure 3-6A or 3-6B*), and additional space requirements for minimum cooling, access and maintenance (*Figure 3-5*).
- The mounting surface must be level and able to accommodate the four [4] mounting bolts of the base frame.

NOTICE

The mounting bolt hole pattern and dimensions data can be found on the specific machine dimension drawing. See (*Figure 3-6A or 3-6B*) in this section.

- The mounting surface must be able to support the units weight (285 lbs).
- 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. **DO NOT** place the compressor in any location where it can intake exhaust fumes, dust or debris.

3.3 HYDRAULIC SYSTEM OVERVIEW

WARNING

Whether installing or performing service on the CAS80RL, Follow all applicable safety recommendations as outlined in Section 1: Safety of this manual.

IMPORTANT

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.

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

IMPORTANT

Contaminated hydraulic fluid may cause malfunction of the hydraulic controls. Hydraulic system hoses must be flushed and cleaned prior to being connected to the unit.

NOTICE

Hydraulic performance will decline at temperatures above 120°F.

NOTICE

The temperature of the hydraulic oil should not exceed 160°F due to the rating of the IMT- supplied hydraulic motor.

NOTICE

IMT recommends a dedicated pump and hydraulic circuit.

Refer to **Figure 3-6** for hydraulic pump system connections. The following criteria should be taken into consideration for the hydraulic system requirements:

The hydraulic flow and pressure requirements of the system.

- A continuous hydraulic load requirement is necessary when compressor is running.
- The duty cycle and ambient operating temperatures.
- Must have a hydraulic case drain port at the tank.
- Other hydraulic equipment which may share that same hydraulic supply system (IMT recommends a dedicated pump and hydraulic circuit).

3.3.1 HYDRAULIC PUMP

The hydraulic pump must be rated for 2,900 PSI consistent operation, and 3,300 PSI for pressure spikes. **IMPORTANT: THE RELIEF VALVE IS SET TO 3,300 PSI. THE PUMP MUST BE RATED FOR THIS RELIEF VALVE SETTING.**

The compressor capacity will depend on hydraulic oil flow.

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.

NOTICE

The values depicted in TABLE 2A: CAS80RL 60-85 Specifications, are referential only: Due to the variable relationship between CFM output and hydraulic flow GPM, adjustments should be tested to achieve the desired CFM output in regard to flow, load and system efficiency.

NOTICE

Hydraulic performance will decline at temperatures above 120°F.

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.

therefore given not as absolute instruction, but as good practice guideline.

Machine placement will play an important factor

IMPORTANT

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

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*).

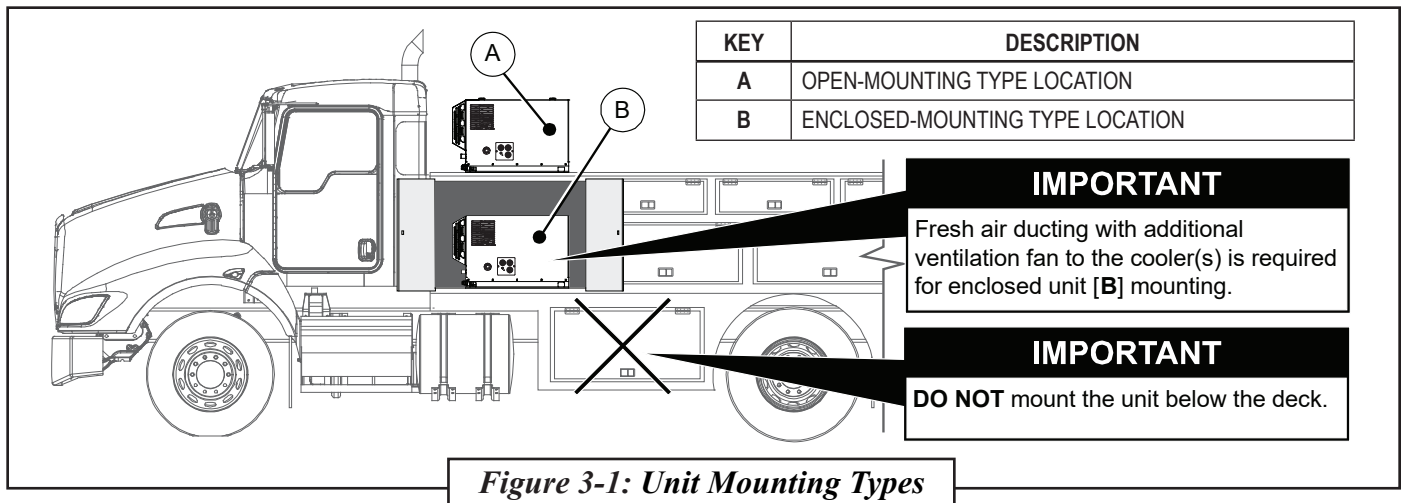
Open-mounting refers to machine placement location on the service body, whereby the machine is directly exposed to the environmental ambient. Enclosed-mounting refers to machine placement location within an enclosure located on the service body.

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. Refer to Figure 3-5 for clearances.

Although enclosed mounted-units provide a degree of shelter and security, this type of machine location is not recommended, due to

3.3.2 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



its limiting effect on the 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 the air (i.e., a pull-out mounting platform; removable enclosure walls, etc.). For enclosed-mountings, it is also recommended to install a safety switch on the access door that allows for compressor operation only when the door is open.

The unit must have the minimum unobstructed clearance given in **Figure 3-5** on all sides of the machine for operation.

Ideal ventilation regardless of the type of

IMPORTANT

DO NOT mount Hydraulic Reservoir in same enclosed space as the machine. Installing enclosed-mounting type without proper cooling air ducted to coolers is NOT RECOMMENDED.

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

3.3.3 HYDRAULIC LINES

The hydraulic hoses must be run to the machine. Verify that hoses are hooked up properly to ensure proper flow. Also, verify that the hoses are laid out properly so that no chafing or kinking of the hoses is possible. Refer to **Section 7.36, Hose Installation Guide**, for assistance with proper hose layout and connecting functions.

3.3.3.1 HYDRAULIC LINE SIZING

WARNING

DO NOT use plastic pipe, or incorrectly rated piping or hose. Incorrectly rated connection material can fail and cause injury or equipment damage.

WARNING

Improperly, or disconnected lines will damage the equipment

Industrial hydraulic system design guidelines generally call for the following maximum fluid velocities, which are then used to select line sizes for any particular GPM:

In regard to a particular hydraulic system GPM, line sizing selection for maximized fluid velocity is matched via industrial hydraulic system guidelines, that include:

- Suction @ 4 ft/sec
- Return @ 10 ft/sec
- Pressure @ 20 ft/sec

In cases where mobile hydraulics are to be added to a pre-built chassis, the above guidelines are not comprehensive due to the following factors:

- Extreme start-up temperature variations
- Long suction line
- Piggy-backing of motor case drain flow onto main return line

Pump failure caused by cavitation of the circulating fluid, and motor seal breakdown due to excess return line pressure, can occur if proper allowances are not taken for the above factors when determining line sizing.

3.3.3.2 SUCTION LINE SIZING

NOTICE

Note that line size refers to the inside diameter of the hose. For cold weather operation below 0°F, the next larger size hoses should be used.

Based on the 4 ft/sec fluid velocity condition, choose a suction hose size from **Table 3A**. Up-size the hose, if necessary.

Hose size recommendations for the CAS80RL

are:

- Return line size: 1" (one inch)
- Pressure line size: 3/4" (0.75 inch)

TABLE 3A: SIZING FOR SUCTION HOSE	
Maximum Operating GPM	Suction Hose Size
8-13	1"
14-15	1-1/4"
16-22	1-1/2"

3.3.3.3 RETURN LINE SIZING

IMPORTANT

Failure to match the correct system return line sizing for the hydraulic system can cause rupture of the hydraulic motor's shaft seal during cold start-ups.

Based on the 10 ft/sec fluid velocity condition, choose a suction hose size from **Table 3B**.

TABLE 3B: RETURN LINE SIZING	
Maximum GPM	Return Line Size
8-14	3/4"
15-22	1"

3.3.3.4 PRESSURE LINE SIZING

Based on the 20 ft/sec fluid velocity condition, choose a suction hose size from **Table 3C**.

TABLE 3C: RETURN LINE SIZING	
Maximum GPM	Pressure Line Size
8-12	1/2"
13-18	5/8"
19-22	3/4"

3.3.3.5 PLUMBING HYDRAULIC CASE DRAIN PORT BACK TO RESERVOIR TANK (CLOSED CENTER)

The case drain port must be run separately and independently to the tank, before operating the motor. The motor port location is shown in **Figure 3-2**. The plumbing for the case drain port should

be at least the same size as the drain port, in order to keep back pressure low in the motor case.

IMPORTANT

Excessive pressure build-up inside the case will blow out the shaft seal. If the case drain is not connected, blocked or incurs pressure above 25 PSI, the shaft seal will fail immediately or within minutes of running, and the entire motor unit will have to be replaced.

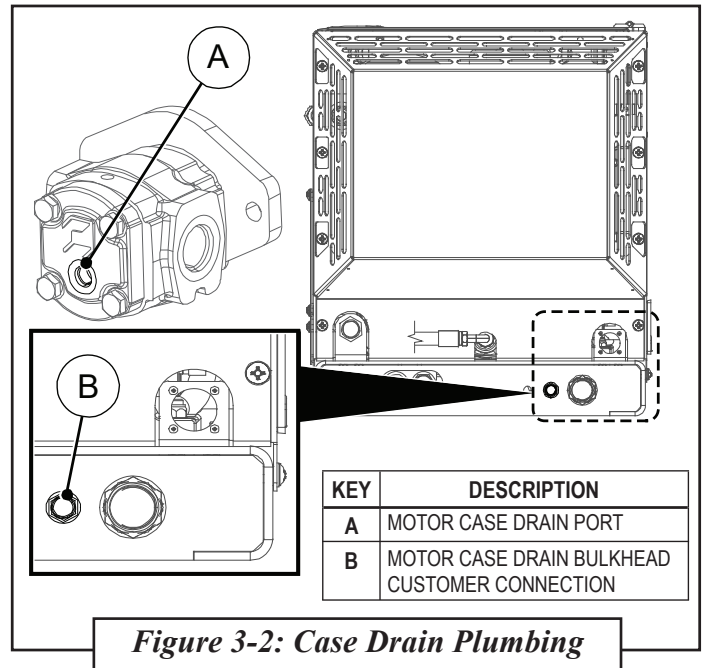


Figure 3-2: Case Drain Plumbing

DO NOT combine the case drain line, nor connect the line to other circuit returns to the tank lines.

The case drain circuit is designed for motor internal leakage ONLY, for minimal flow at low pressure.

The motor case line at the tank should be located above the fluid level so entrained air can escape on start-up. This will prevent air from being introduced into the hydraulic system.

3.3.4 HYDRAULIC OIL RESERVOIR

3.3.4.1 DETERMINING RESERVOIR SIZE

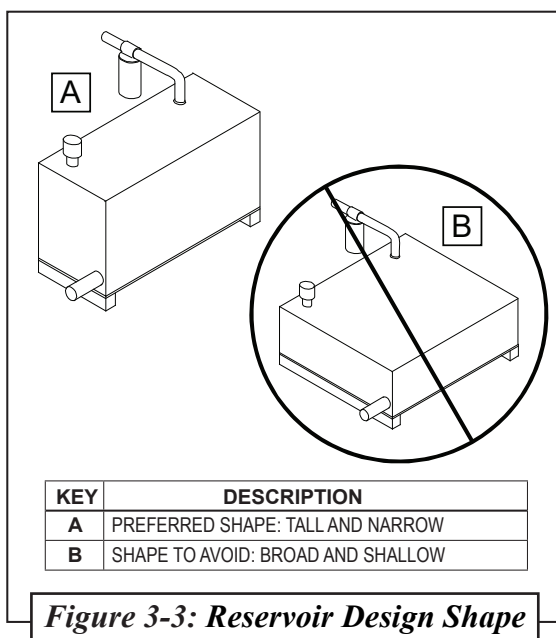
In a conventional hydraulic system, minimum tank size, in gallons, should be equal to the maximum GPM flow rate, times two (x 2).

For the CAS80RL, a minimum 35 gallon reservoir is recommended.

3.3.4.2 DETERMINING RESERVOIR SHAPE

The reservoir structure should be tall and narrow rather than shallow and broad (**Figure 3-3**). A tall, narrow tank is recommended because:

1. The oil level is well above suction line opening, avoiding the possibility of drawing air into the pump due to a vortex or “whirlpool” effect within the tank during operation flow.
2. Allows for better oil level tolerance level of the system if vehicle operates at an unusual (slightly off level) vehicle angle.
3. To keep return flow well below the surface so it does not break the surface and cause aeration (cavitation) of the oil.



3.3.4.3 MANDATORY RESERVOIR FEATURES

Refer to **Figure 3-4**. The reservoir should incorporate the following design features:

1. In terms of location of the reservoir tank within the hydraulic system, note that the hydraulic pump's inlet line (suction line out from the reservoir to the pump) should be located near the bottom of the tank, well below the oil level. The suction line should protrude a minimum of two (2") inches into the reservoir to keep it away from potential contaminant surface buildup.
2. A baffle or baffles should be included to prevent sloshing, or centrifugal motion of the oil; the goal is to break up direct flow of the oil from the return point to the suction point. This allows for the cooling action contact with the tanks' inner surfaces, and promote separation of any air or contaminants that interact with the flowing oil.
3. An ideal baffle design would position several (but not too many) baffles to promote an 'S' shape flow within the reservoir, as viewed from above. The area of the end gaps should be at least twice the area of the suction line diameter.
4. A drain port with plug, situated at the lowest point of the reservoir, is needed to assure complete draining. It should be installed using an adapter or housing which does not protrude above the inner surface of the floor of the tank. It should be visible and accessible for removal, with sufficient space available for catching the waste oil.
5. If the return line entrance to the tank is located near the top, it should be extended downward within the tank to minimize foaming and aeration of the circulating oil. This extends oil integrity, which in turn helps to maintain system performance and reliability.

6. An independently-run case drain port to allow for pressure relief on the motor shaft seal. Should motor pressure build-up reach above 25 PSIG, it may result in blowing out the shaft seal (refer to **Section 3.3.3.5**).
7. An in-line filter on the return line is needed to protect the system against contaminants being introduced into the oil. The filter should be mounted externally from the reservoir in a location that allows for ease of service access.
8. A breather and fill cap is needed at the oil fill port, which needs to be located above the system oil level. The breather cap acts to both filter air that is drawn into the reservoir as the oil level diminishes, and bleeds air out as the level is regained. This maintains constant atmospheric pressure in the air volume within the reservoir.
9. A sight-glass provides a direct visual indication of the oil level without having to open, or otherwise access, the reservoir.

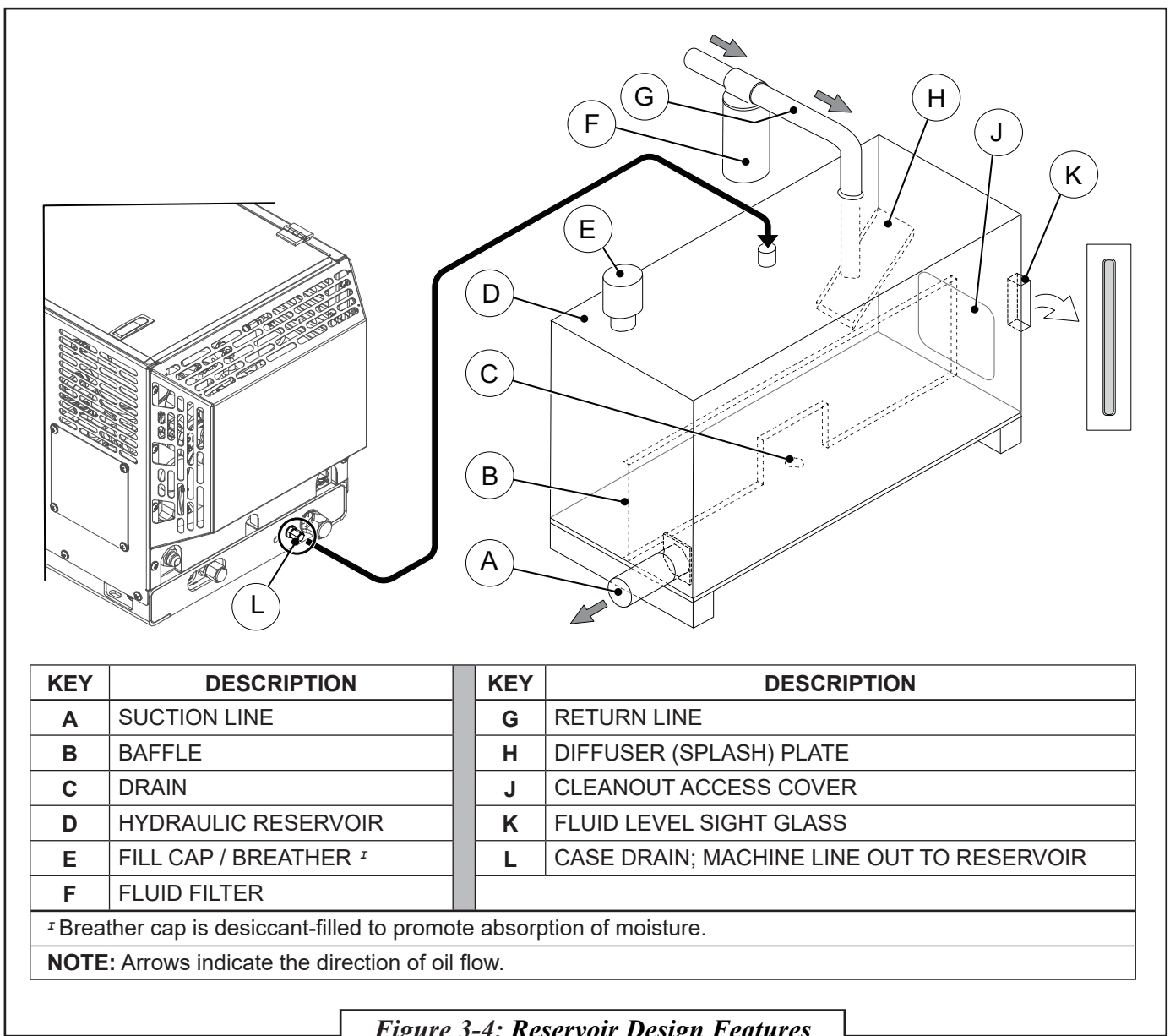


Figure 3-4: Reservoir Design Features

3.3.5 HYDRAULIC SYSTEM FILTRATION

IMT® recommends using a 10 micron oil filter on the hydraulic oil return line. Flow rating of the filter must be equal to, or greater than, the maximum GPM at which the system will be operated.

IMPORTANT

Only use filters specifically designed for hydraulic systems.

3.3.6 RECOMMENDED OPTIONS

Although not essential for an adequately functioning reservoir, the following components will contribute to maximize the hydraulic system's efficiency and maintain a quality operational level.

- Magnetic drain plug: Attracts and concentrates ferrous contaminants at the drain plug source for easier accessibility and removal when cleaning tank interior.
- A temperature gauge: Located in approximation to, or built into, the sight glass assembly allowing for temperature reading at a glance.
- Filler port strainer: Prevents large contaminant particles from blending with system oil when adding new oil.
- Return line diffuser (splash) plate reduces velocity of oil flow before return oil stream merges with the main reservoir oil volume.
- A reservoir heater: For those systems that are exposed to cold climate ambient temperatures, having the ability to preheat the hydraulic oil prior to start up will make for easier startups, and reduce the strain of warming up the system under adverse cold conditions.

3.3.7 FEATURES TO AVOID

A pressurized reservoir is not

recommended for vehicles, as its complexity invites too much potential for loss of system reliability if it is not properly maintained.

3.3.8 RECOMMENDED HYDRAULIC SYSTEM SPECIFICATIONS

IMPORTANT

A suction line screen strainer is not recommended for systems designed for mobile equipment. Such a strainer may promote cavitation (system strain), that, when combined with other deterrents* may hamper the ability of the system to maintain proper circulation.

*Possible mobile line deterrents may include: a long suction line, cold-start-ups, non-tracked or infrequent maintenance practices, etc.

Refer to *Figure 3-6 or 3-7*.

Flow controller is optional to reduce flow if necessary. Consult IMT® for information.



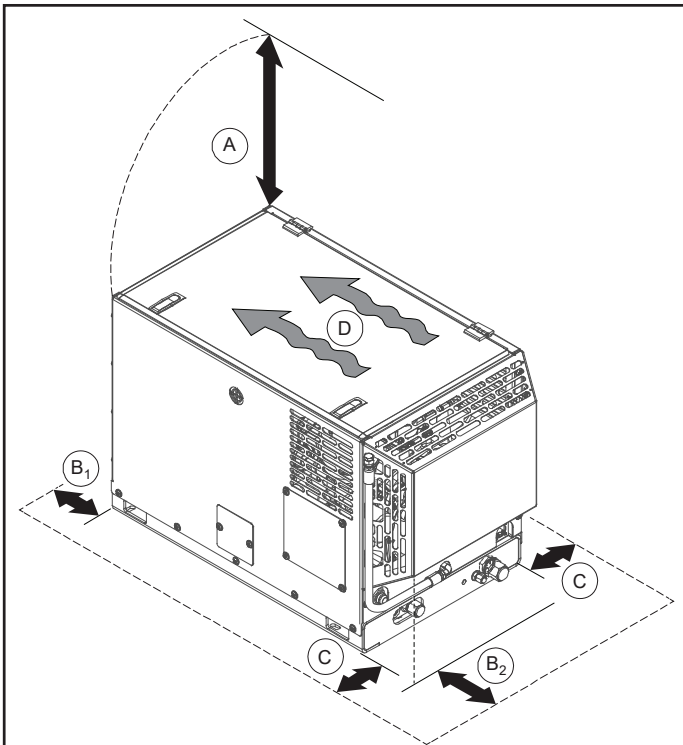
WARNING

Hydraulic system must be completely assembled before operating the machine.

HYDRAULIC LINES

The following is a minimum requirement and NO quick disconnects may be used. Lines are to be kept as straight and short as possible.

- Pressure port = Standard, #12, 3/4" hose (located at manifold block)
- Load sense = #4 JIC = 1/4" hose (Used for closed center system only)
- Pressure relief/case drain = #6 JIC = 3/8" hose
- Hydraulic suction = Standard, #16, 1" hose



NOTE

Length-side issues to also consider:

- Panel-view access on gauges on the panel-side.
- Compressor drain hose accessibility on the drain tube access side.

KEY	DESCRIPTION
A	ROOF PANEL CLEARANCE RADIUS: 20° (minimum)
B ₁	LATERAL (AIR-OUT SIDE) WIDTH: 6" (minimum)
B ₂	LATERAL (AIR-IN SIDE) WIDTH: 8-10" (minimum)
C	LATERAL LENGTH SIDES: 6" (minimum)
D	COOLING AIR FLOW DIRECTION THROUGH UNIT

Figure 3-5: Machine Surrounding Clearances

3.3.9 STANDARDS GUIDELINE

Hydraulic pressure relief is factory set at 3,300 PSI.

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 3-5**). Cooling air enters the enclosure at the right end when facing the instrument panel end of the machine, passes through the cooler and exits through vents in the upper sides and the rear.

IMPORTANT

The CAS80RL hydraulic unit must be mounted above deck. DO NOT mount the unit below the vehicle deck.

3.4.2 CLEARANCES

Referring to **Figure 3-5**, ensure proper clearance space is given around the machine to allow for adequate cooling ventilation through the canopy shroud, unobstructed service and maintenance access, and a clear view of the control panel.

3.4.3 MOUNTING

Mounting surface or support should be adequate for the weight of the machine (285 lbs.) and should be level for normal operation. Mounting holes are located in the frame footing for four (4) 1/2" hold down bolts.

3.4.4 SERVICE CONNECTIONS

Refer to **Figure 3-6 or 3-7** for the particular machine build involved. Service connections are conveniently grouped at the lower rear section of the unit in the base frame

3.4.5 ELECTRICAL CONNECTIONS

This system is operates on a 12V DC circuit. Refer to **Table 3D**, and **Section 7.33** or **Section 7.34** (wiring diagrams).



3.4.6 HYDRAULIC SUPPLY CIRCUIT

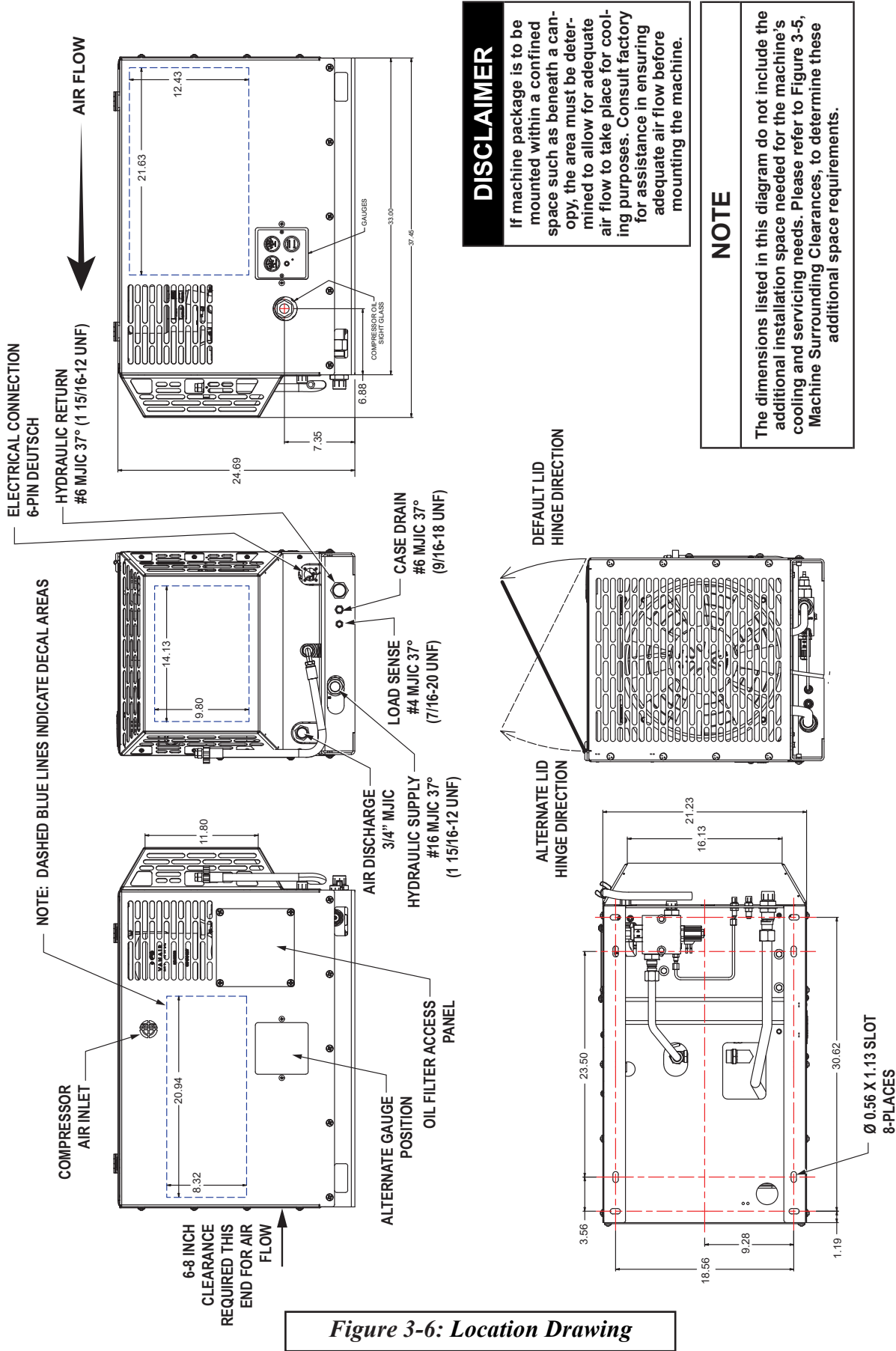
It is recommended that the compressor unit possesses a separate pump/flow/return hydraulic circuit to other hydraulic equipment. This is to prevent the possibility of pressure/flow drops that may occur if other hydraulically powered equipment is activated during compressor operation, which may in turn,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

3.4.7 ROUTING

Refer to the proper hydraulic flow schematic (see **Sections 7.29 through 7.32**) in **Section 7, Illustrated Parts List**. 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 corrosion, and consequently, loss due to down time.

TABLE 3D: 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



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SECTION 4: Operation

4.1 GENERAL INFORMATION

WARNING

Before starting, performing maintenance or replacing parts - pressure must be relieved from the entire system. After the machine has blown down, open a service valve to vent all pressure to the atmosphere.
To ensure that any remaining pressure is relieved - slowly remove the fill cap, which will vent all residual pressure to the atmosphere.

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 IMT® CAS80RL Hydraulic Compressor, read this section thoroughly and familiarize yourself with the controls and indicators, their purpose and their use.

4.2 MACHINE OPERATION PROCEDURES

4.2.1 INITIAL START-UP PROCEDURE: PRE-CHECKS

The following are step by step instructions for the initial start-up of the CAS80RL system.

1. Ensure the compressor is positioned on a level surface to allow for proper oil

The CAS80RL Hydraulic compressor has a comprehensive array of controls and indicators (see **Figure 2-1**). Understanding the correct operation of the system will help you to understand and recognize when it is operating optimally. The information in this **Operation**

TABLE 4A: 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.

levels to be checked before use. Add oil as needed per **Table 5A, Section 5; [Key 1]**.

2. Make sure the unit is securely bolted into place.



WARNING

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

3. Ensure all hose connections are tight and wiring connections are correct and tight.
4. Check for proper compressor oil level. Add or drain oil as needed to achieve the recommended compressor oil level.

NOTICE

The compressor oil level check and fill procedure is found in Table 5A, [Key 1] in Section 5.



WARNING

DO NOT remove caps, plugs and/or other components when compressor is running or pressurized!

Stop compressor and depressurize the system prior to maintenance. Relieve pressure from the entire system by opening the service valve - which will vent all remaining pressure to the atmosphere.



WARNING

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

5. Ensure hydraulic oil is present at the pump inlet, and prime if necessary.
6. Ensure service valve on compressor is closed.
7. Engage hydraulic system (PTO or hydraulic supply) and allow hydraulic oil to circulate to the hydraulic motor on the compressor, and start producing air.
8. Check for any leaks.
9. Partly open service valve to load compressor and allow system to warm up. Monitor the temperature. Ideal temperature should fall between 180°F (82°C) and up to 220°F (104°C); approximately 100 degrees over the ambient temperature. (NOTE: May be higher in areas with high ambient conditions.)
10. Cycle compressor on/off with service valve to make sure it is working.
11. Close the service valve.
12. Disengage the hydraulic system.
13. Allow all air to vent to the atmosphere. Check compressor oil level and top off as needed. Inspect for any leaks and fix any that are found. Tighten any loose fittings.

4.2.2 OPERATING CONDITIONS

1. Operate only in well-ventilated areas.
2. Ensure there are no obstructions or cooling air intakes and outlets around the machine.
3. Do not leave anything resting on top of the machine. Hot air output from cooling air flow will generate high heat, and must not be restricted.
4. Operate the machine with the top cover closed.
5. Refer to specifications for operating parameters.

4.2.3 ROUTINE START-UP PROCEDURE

1. Ensure the compressor is positioned on a level surface so that an accurate oil level can be indicated. If low, add oil as needed to reach proper oil level. Do not overfill.
2. Close the air service valve.
3. Engage the hydraulic system (PTO or Hydraulic supply). This will activate the compressor.
4. Allow the machine to warm up for several minutes before operating.

IMPORTANT

Be sure to leave sufficient room around the machine for cooling air to circulate during operation. (See Figure 3-5 for measurements). Heated air must be vented away from the cooling air intake.

IMPORTANT

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

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

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

Consult the information in **Section 4.2.4.1**, and **Table 4A** for preventative and corrective actions to take when operating in an ambient environment with high moisture content.

4.2.4.1 PREVENTION OF EMULSIFICATION

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

4.2.5 ROUTINE SHUTDOWN PROCEDURE

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

4.2.6 INFREQUENT USE

In some installations the compressor may not be regularly used. In order to ensure the compressor system is maintained in working order, the compressor should be started and run at least once per month. Follow the procedure outlined in **Section 4.2.4.1** on a once per month basis.

Be sure to follow all fluid and filter maintenance as outlined in the manual following the recommended change intervals. In cases where the machine is scheduled to be idle for long periods of time, consult **Section 5.4.3, Long Term Storage** for long idle preparation.



4.2.7 OPERATING IN EXTREME CONDITIONS

When operating in extreme hot or cold conditions, extra attention should be given to any maintenance procedures that could be affected by harsh environmental conditions, such as high or low temperatures, dusty, or humid environments. (Especially oil condition, oil level, and air filtration.)

4.2.8 OPERATING IN HIGH TEMPERATURES

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

Extra care should be taken to keep the vents and air compressor clean and free from any obstructions or debris that

IMPORTANT

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

IMPORTANT

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

may restrict the air flow in or out of the machine. Maintain required clearances for proper cooling and airflow around the machine. (See **Figure 3-5** for reference.)

The operator should be aware that high temperatures can influence performance, which can affect some of the output capacities of the machine's functions.

TABLE 4B: HIGH TEMPERATURE OPERATION

SYMPTOM	CAUSE	PREVENTION / CORRECTIVE ACTION
Overheating/high compartment temperatures	High ambient temperatures, or poor cooling air circulation caused by confined spaces, soundproof cases and other reasons. Among these the most important factor is the temperature of the intake and cooling air.	<ul style="list-style-type: none"> • Extra care should be taken to keep the engine and air compressor clean and to not restrict the air flow around the unit. • 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. <p>The operator should be aware that high temperatures can influence compressor performance, which can directly effect some machine function capacity outputs.</p>

SECTION 5: Maintenance

5.1 GENERAL INFORMATION

A good maintenance program is key to long compressor life. This section contains a program that, when adhered to, should keep the compressor in top operating condition. The suggested maintenance schedule is based on normal operation in a good, clean work environment. Harsh or dirty working environments and extreme ambient temperatures, or extended light load conditions will require more frequent inspections, oil changes, and general maintenance.

Follow the prescribed maintenance schedules given in this section. Failure to follow the prescribed maintenance at the recommended intervals may impair the equipment's safety, performance, shorten the life of the equipment and negatively affect the warranty coverage of the unit.

NOTICE

Keep in mind that operating the CAS80RL in a severe environment may require more frequent service intervals than prescribed in the standard maintenance schedule in this section.

Before starting the compressor system, inspect the machine and remedy any suspect condition that may cause a safety hazard or hamper operation. Make any needed adjustments or repairs prior to use. Replace any damaged components with genuine IMT® Replacement Parts.

WARNING

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

WARNING

Wear proper 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 the system prior to maintenance. Relieve pressure from the entire system by opening the service valve - which will vent all remaining pressure to the atmosphere.

WARNING

DO NOT perform maintenance or repairs on this equipment, or any electrical components, unless power has been removed or shut OFF.

CAUTION

Compressors and drive motors generate heat and create hot surfaces. Use caution when operating or servicing the compressor system. Some surfaces may become hot.



CAUTION

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

IMPORTANT

It is important to inspect the compressor oil in accordance with this manual, and use the recommended type of compressor oil, and air filters when it comes time to replace them according to the schedule in Section 5 of this Manual.

DO NOT mix oils of different types.

Using replacement parts other than genuine IMT® Replacement Parts will void the warranty.

5.2 MACHINE MAINTENANCE SCHEDULE

Refer to **Table 5A: Routine Maintenance Schedule**. A routine maintenance schedule based on a time and/or hours logged, is given in Table 5A. The intervals are determined from machine usage under typical operation conditions. However, the operator must be aware that operating conditions will vary depending on such things as specific customer requirements, environmental temperatures, and cleanliness of the ambient air. With this in mind, the specifications given in Table 5A should be used as a guideline rather than a fixed agenda. A safe approach to routine maintenance would be to perform the given maintenance task more frequently when machine is used under harsher conditions.

5.3 REPLACEMENT PARTS

Replacement parts should be purchased through your local IMT representative or where the compressor system was purchased. If, for any reason, parts are not available in this manner, they may be purchased through IMT directly.

NOTICE

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

NOTICE

If additional spare parts are being stored for future use, make certain they are stored in proper containers that will protect them from contamination in a clean area at moderate temperature. For information on storing the machine package for periods of non-use, consult Section 5.4.3 Long Term Storage.



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TABLE 5A: ROUTINE MAINTENANCE SCHEDULE

KEY	TASK DESCRIPTION	INTERVALS (Refer to footnote ^x Table 5B)			TABLE 5B: ROUTINE MAINTENANCE ITEMS ORDER INFORMATION ^x			
		After 8 Hours or Daily	After Initial 50 Hours	After 500 Hours or Annually	KEY NO.	DESCRIPTION	PART NO.	QTY
1	Before performing maintenance: Shut down machine, relieve all system pressure and lock out all power, as per the Safety Section of this manual. Always clearly tag the start-up instrumentation against accidental system start-ups during maintenance.	■	■	■	1	IMT Compressor Oil (one gallon replacement)	89086222	1
		■	■	■	2	Compressor Air Filter Element Replacement	70048258	1
		■	■	■	3	Compressor Oil Filter Element Replacement	70052180	1
		■	■	■	4	Compressor Separator Element Replacement	70535070	1

^x If working in dusty or dirty conditions, reduce the recommended time intervals between servicing by half for compressor oil replacement and compressor filter servicing.

NOTE: Refer to Section 7, Table 7A for full replacement parts listing, including non-routine items, and options.

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

ACTION TO TAKE / REFERENCE

1	Before starting, check compressor oil level.	■	■	■	<p>REFERENCE:</p> <ul style="list-style-type: none"> Compressor Sight Glass [↗] Compressor Oil Fill Port [↘] Compressor Oil Drain Tube [↙] <p>For procedure see ACTION TO TAKE / REFERENCE under [Key 5].</p>	
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.

Continued on next page



TABLE 5A: ROUTINE MAINTENANCE SCHEDULE

TABLE 5B: ROUTINE MAINTENANCE ITEMS ORDER INFORMATION ^z			
KEY NO.	DESCRIPTION	PART NO.	QTY
1	IMT Compressor Oil (one gallon replacement)	89086222	1
2	Compressor Air Filter Element Replacement	70048258	1
3	Compressor Oil Filter Element Replacement	70052180	1
4	Compressor Separator Element Replacement	70535070	1

^z If working in dusty or dirty conditions, reduce the recommended time intervals between servicing by half for compressor oil replacement and compressor filter servicing.

NOTE: Refer to Section 7, Table 7A for full replacement parts listing, including non-routine items, and options.
PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.

INTERVALS (Refer to footnote ^x Table 5B)

Interval	Frequency
After 8 Hours or Daily	■
After Initial 50 Hours	■
After 500 Hours or Annually	■

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

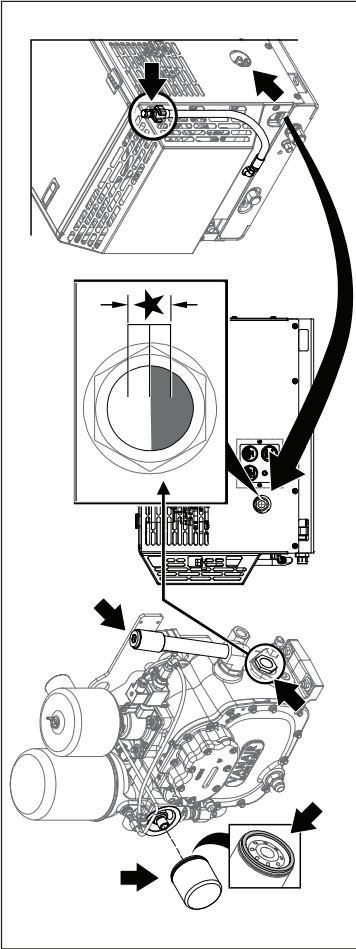
KEY	TASK DESCRIPTION	ACTION TO TAKE / REFERENCE
4	Check for leaks.	<p>Visually note any leaks or evidence of leaks around the compressor unit and hose connections. Tighten any loose connection point where needed. Repair or replace any damaged part.</p> <p>⚠ WARNING When tightening hoses or fittings make sure unit is shut off.</p> <p>⚠ WARNING High pressure leaks can cause serious injuries! Never use hands or body parts to check for leaks!</p>

Continued on next page

TABLE 5A: ROUTINE MAINTENANCE SCHEDULE (Cont.)

(See Table 5B on previous page)

ACTION TO TAKE / REFERENCE



REFERENCE:

- Compressor Oil Filter [↓]
- Oil Filter Seal [↗]
- Refer to key #1 for oil fill replacement. Oil capacity is approximately five [5] quarts for machine.
- Compressor Sight Glass [★]
- Compressor Oil Fill Port [↘]
- Compressor Oil Drain Tube [↖]

PART REPLACEMENT:

When approaching the initial 50 Hours it is suggested to order the compressor oil filter and two gallons of IMT replacement compressor oil). Refer to **Table 5B** for individual order items.

For scheduling and convenience, 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 IMT Compressor Oil **No. 89086220** (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 [★]; **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.

Continued on next page



TABLE 5A: ROUTINE MAINTENANCE SCHEDULE

⚠ WARNING

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

INTERVALS (Refer to footnote [†] Table 5B)

After 8 Hours or Daily	After Initial 50 Hours	After 500 Hours or Annually
------------------------	------------------------	-----------------------------

TABLE 5B: ROUTINE REPLACEMENT KIT ORDER INFORMATION [†]

KEY NO.	DESCRIPTION	PART NO.	QTY
1	IMT Compressor Oil (one gallon replacement)	89086222	1
2	Compressor Air Filter Element Replacement	70048258	1
3	Compressor Oil Filter Element Replacement	70052180	1
4	Compressor Separator Element Replacement	70535070	1

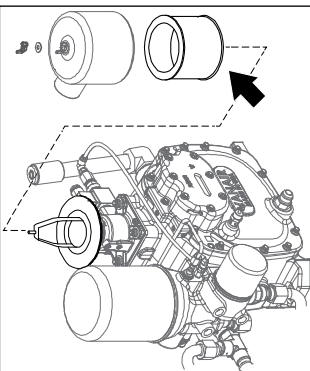
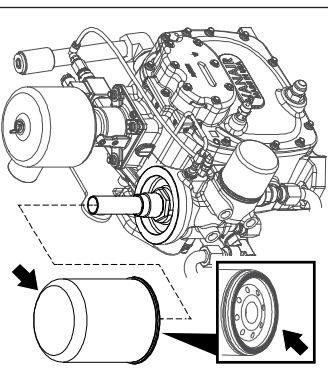
[†] If working in dusty or dirty conditions, reduce the recommended time intervals between servicing by half for compressor oil replacement and compressor filter servicing.

NOTE: Refer to Section 7, Table 7A for full replacement parts listing, including non-routine items, and options.

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

KEY TASK DESCRIPTION

ACTION TO TAKE / REFERENCE

<p>6 Inspect intake air filter.</p>	<p>■</p> <p>■</p>	 <p>REFERENCE:</p> <ul style="list-style-type: none"> Compressor Air Filter Element [↗] <p>PART REPLACEMENT:</p> <p>Order 50 Hours kit No. 73744226 (See Table 5B, above)</p> <p>PROCEDURE:</p> <p>Unscrew and remove the wingnut and washer securing the air filter housing to the base stem. Lift the air filter element off of the base and inspect the filter material for pinholes or tears (note that this is easier when a light is used to illuminate the filter surface from the inside), along with the top and bottom for any damage or wear.</p>
<p>7 Replace separator element</p>	<p>■</p>	<p>Replace the oil & oil filter element at the same change interval. Replace element whenever it shows any damage or wear, even if the inspection occurs before the recommended replacement interval.</p>  <p>REFERENCE:</p> <ul style="list-style-type: none"> Compressor Separator Filter Element [↗] Filter Element Seal Ring [↗] <p>PART REPLACEMENT:</p> <p>When approaching the 500 Hour interval have a new oil filter, separator filter, air filter element and two gallons of Vanguard replacement compressor oil on hand for scheduled maintenance. Refer to Table 5B for individual order part(s).</p> <p>For full service assistance, also refer to key #1 and key #5 in this Table.</p>
<p>8 Inspect exterior of front-mounted oil cooler.</p>	<p>■</p>	<p>Clean if necessary.</p>

5.4 PARTS REPLACEMENT AND ADJUSTMENT PROCEDURES

Most routine maintenance assistance can be found in the appropriate “Action to Take: column given in a specific routine maintenance item.

This section is mainly concerned with non-routine maintenance items and procedures. For assistance with any procedure needed beyond what is presented in this manual, please contact the IMT® Service Department.



DANGER

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

NOTICE

It may become necessary to change the compressor fluid & fluid filter more frequently if the compressor fluid has water contamination, or if the compressor system is operated in a dirty environment.



WARNING

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

NOTE THAT THE SYSTEM CAN BE STARTED REMOTELY!

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

Take care to avoid hot surface contact!

5.4.1 SERVICING THE FUSES AND THE RELAY

The fuse can be found within the harness line, and the relay is mounted on the unit weight-bearing plate, as shown in *Figure 5-1*. IMT recommends using a fuse removal tool, although pliers will suffice when removing the fuses.

5.4.2 SAFETY SHUTDOWN SYSTEMS

Protection for over-pressure and/or overheating is provided. If either condition should occur, the solenoid valve should activate to divert hydraulic fluid back into the tank and the compressor will stop and the fault reset on the instrument panel will pop out and stay out until it is reset.

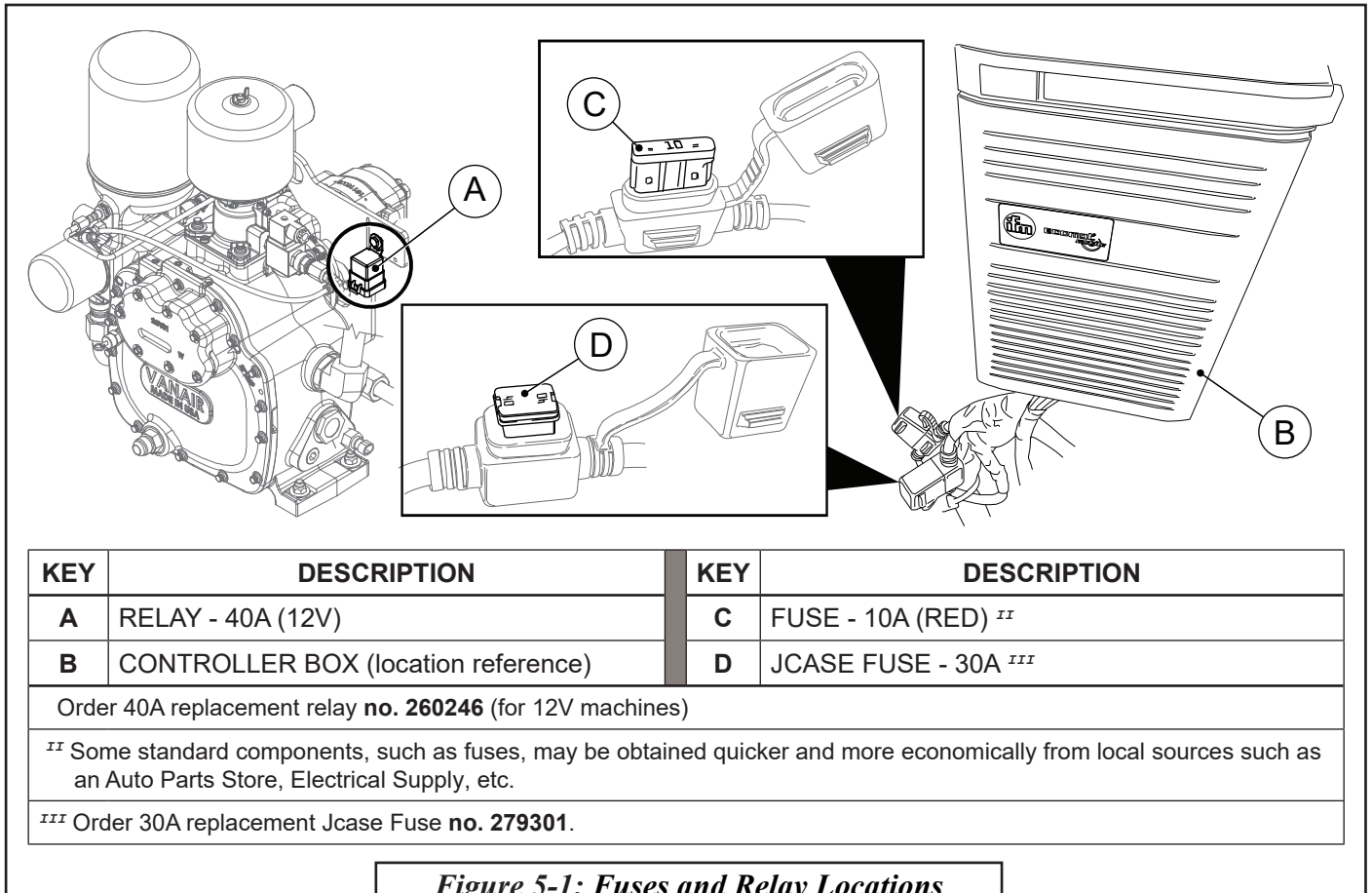


WARNING

NEVER FORCE the reset button back into position after it is tripped, or hinder it in any way in attempt to operate the machine by overriding its safety function. A tripped reset button indicates a problem that should be resolved before operation continues.

5.4.2.1 PRESSURE RELIEF VALVE

Refer to **Section 7.2** for valve location. Although the pressure relief valve has a reset ring at the cap, **DO NOT** test the pressure relief by pulling on this reset ring. To ensure that all the system is fully depressurized, once the system is unloaded - slowly crack open then remove the fill cap to vent any remaining sump pressure.



5.4.3 LONG TERM STORAGE

Parts can wear out over time - regardless of the degree of usage. If storing the CAS80RL unit for long periods of time, depressurize the air tank and open the drain valve on the tank. Cover with a tarp or plastic to prevent the accumulation of dust, but leave the bottom open for air circulation. Whenever possible, store in a sheltered area to minimize exposure to the elements.

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 may occur. All available data concerning the trouble should be systematically analyzed before undertaking any repair or component replacement procedures.

A detailed visual inspection is worth performing for almost all troubleshooting issues, and may avoid unnecessary additional damage to the machine. The procedures which can be performed in the least amount of time, labor and disassembly of parts, should be performed first. Always remember to:

- Check for loose wiring.
- Check for leaks, damaged hoses or piping.
- Check for parts damaged by heat or and electrical short circuit, usually noticeable by discoloration or a burnt odor.
- Should the problem persist after making the recommended checks, consult your nearest IMT representative or the IMT Service Department.

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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 its power source.
NOTE: THAT THIS SYSTEM CAN BE STARTED REMOTELY:
 Install a lock-out tag to identify the equipment as inoperable to other personnel to prevent accidental application.

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 the residual pressure to the atmosphere.

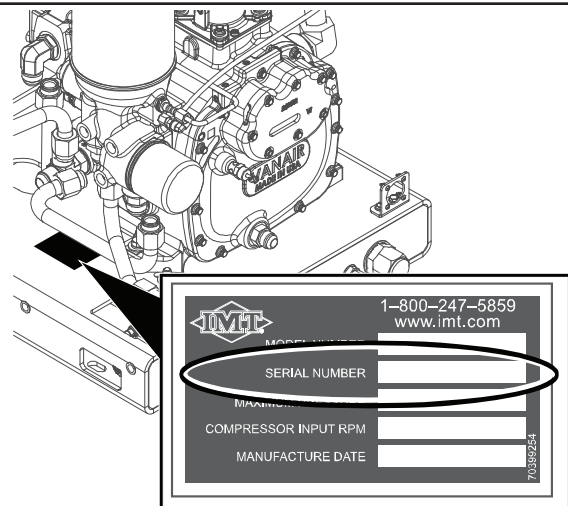


Figure 6-1: Machine Serial No. Location

TABLE 6A: 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 gauge	Replace pressure gauge.
	Motor does not speed up	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 gauge	Replace pressure gauge; 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	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 overfull	Drain to proper level.
	Plugged oil scavenge line	Contact the IMT® Service Department.
	Discharge pressure too low	Check minimum pressure valve and adjust. Replace if necessary.
	Defective coalescer	Replace coalescer element.
	Over-speed	Adjust hydraulic flow to maintain compressor RPM speed.
Compressor overheating	Insufficient oil	Check oil level and fill to proper level.
	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 short in wires.
		Check fan motor.
	Plugged oil filter	Replace oil filter.
	Contaminated cooler core	Remove and clean cooler core. Consult service department for recommended flushing procedure.
	Pressure set too high	Contact factory service department.
	Unit running too fast	Check hydraulic flow and pressure and adjust if necessary.
Thermal valve	Faulty valve; replace thermal valve.	
Oil level too low	Check level; replenish as necessary.	
Compressor fails to start	No power	Check fuse.

TABLE 6A: TROUBLESHOOTING GUIDE - MACHINE OPERATION

MALFUNCTION/ FAULT	POSSIBLE CAUSE	CORRECTIVE ACTION
<i>Continued on next page</i>		
Compressor fails to start (continued)	No power (continued)	Check breaker.
		Check relays.
		Check for broken wires.
System retains pressure after shutdown	Solenoid valve stuck	Should be no power to solenoid valve. Replace solenoid valve.
	Leak back from air line	Check minimum pressure valve for leaks.
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 blow-down 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.
	Leak in seals on pressure 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 6B: TROUBLESHOOTING GUIDE - HYDRAULICS

MALFUNCTION/FAULT	POSSIBLE CAUSE	CORRECTIVE ACTION
HYDRAULIC DRIVE SYSTEM: EXCESSIVE NOISE		
Motor is too noisy	Coupling is mis-aligned	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.
HYDRAULIC DRIVE SYSTEM: 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.

TABLE 6C: TROUBLESHOOTING GUIDE - HYDRAULICS

MALFUNCTION/FAULT	POSSIBLE CAUSE	CORRECTIVE ACTION
<i>Continued on next page</i>		
HYDRAULIC DRIVE SYSTEM: EXCESSIVE HEAT (CONTINUED)		
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).
	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.
HYDRAULIC DRIVE SYSTEM: 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.
HYDRAULIC DRIVE SYSTEM: INCORRECT PRESSURE CONDITION		
Pressure is absent	No flow	Refer to information in the "No Existing Flow" column under INCORRECT FLOW CONDITION in this guide

TABLE 6C: TROUBLESHOOTING GUIDE - HYDRAULICS

MALFUNCTION/FAULT	POSSIBLE CAUSE	CORRECTIVE ACTION
<i>Continued on next page</i>		
HYDRAULIC DRIVE SYSTEM: INCORRECT PRESSURE CONDITION (CONTINUED)		
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.
HYDRAULIC DRIVE SYSTEM: 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 IMT® 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 for the IMT® CAS80RL Series, 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 numbers below.

When ordering parts always indicate the **serial number** of your machine. This can be obtained from the Bill of Lading for the machine package, or from the unit's serial number plate. The serial plate should be located on the frame in front of the air compressor - in front of the oil level sight glass. See **Figure 7-1** for location of machine package serial plate. Consult **Table 7A: Recommended Spare Parts List** and others on the next several pages for a listing of replacement parts.

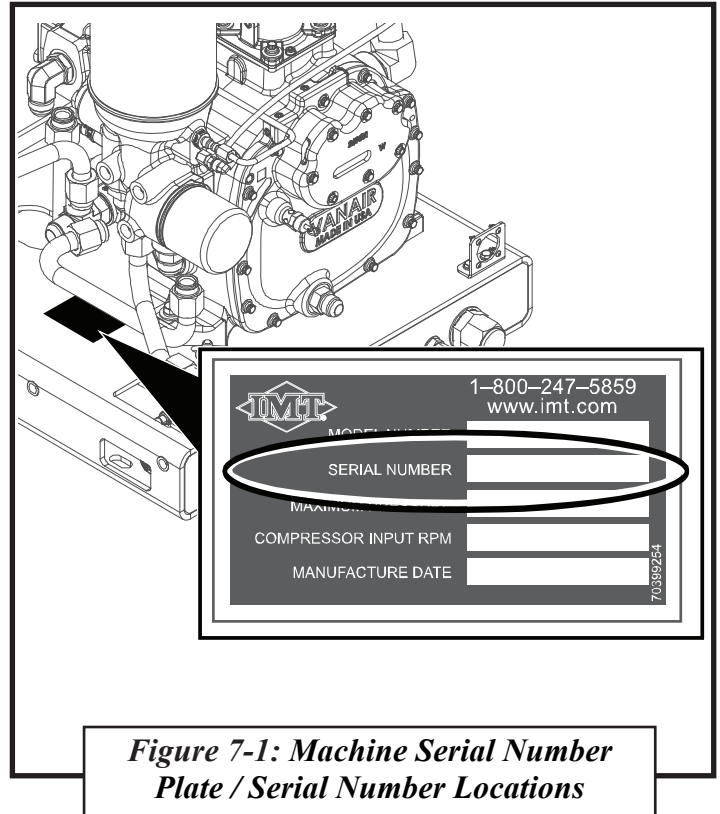


Figure 7-1: Machine Serial Number Plate / Serial Number Locations



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TABLE 7A: RECOMMENDED SPARE PARTS LIST

KEY NO.	DESCRIPTION	PART ORDER NO.	QTY	KEY NO.	DESCRIPTION	PART ORDER NO.	QTY
ROUTINE/SCHEDULED MAINTENANCE ITEMS							
1	Oil, IMT® Compressor (gallon) ^x	89086222	1	3	Element, Air/Oil Spin-on Separator	70535070	1
2	Element, Compressor Oil Filter	70052180	1	4	Element, Compressor Air Filter	70048258	1
MAINTENANCE SERVICE KITS							
5	Kit, 500 hr. Maintenance (compressor) ^{xx}	73744227	1	10	Kit, Tube and Hose (open center, no thermal valve)	(See note) ^v	1
6	Kit, Initial 50 Hour Service (compressor) ^{xxx}	73744226	1	11	Kit, Tube and Hose (open center, with thermal valve)	(See note) ^v	1
7	Kit, Air Inlet Replacement	73540545	1	12	Kit, Tube and Hose (closed center, no thermal valve)	(See note) ^v	1
8	Kit, Minimum Pressure / Discharge Check Valve (rebuild)	73744225	1	13	Kit, Tube and Hose (closed center, with thermal valve)	(See note) ^v	1
9	Kit, Compressor Shaft Seal	(See note) IV	1	14	(n/a)	-	-
INDIVIDUAL MAINTENANCE ITEMS							
15	Fuse, Jcase 30A, Low Profile Push-in (for 12V machines)	71417227	1	19	Valve, Thermal Replacement By-pass (Hydraulic System)	73540600	1
16	Fuse, 10A (red) ^{yz}	77041906	1	20	(n/a)		
17	Relay, NO/NC Weatherproof with Bracket & Resistor (12V)	77041900	1	21	(n/a)		
18	Valve, Thermal Replacement (Compressor)	73540546	1	22	(n/a)		
NOTES							
^x 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 5A, Routine Maintenance Schedule for information.							
^{xx} 500 Hour Maintenance Kit (no. 73744227) consists of: IMT compressor oil (no. 89086222) Note quantity of two [2] gallons); air filter replacement element (no. 70048258), and oil filter replacement element (no. 70052180).							
^{xxx} Initial 50 Hour Service Kit (no. 73744226) consists of: IMT compressor oil (no. 89086222 - note quantity of two [2] gallons); and oil filter replacement element (no. 70052180).							
PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.							

IMPORTANT

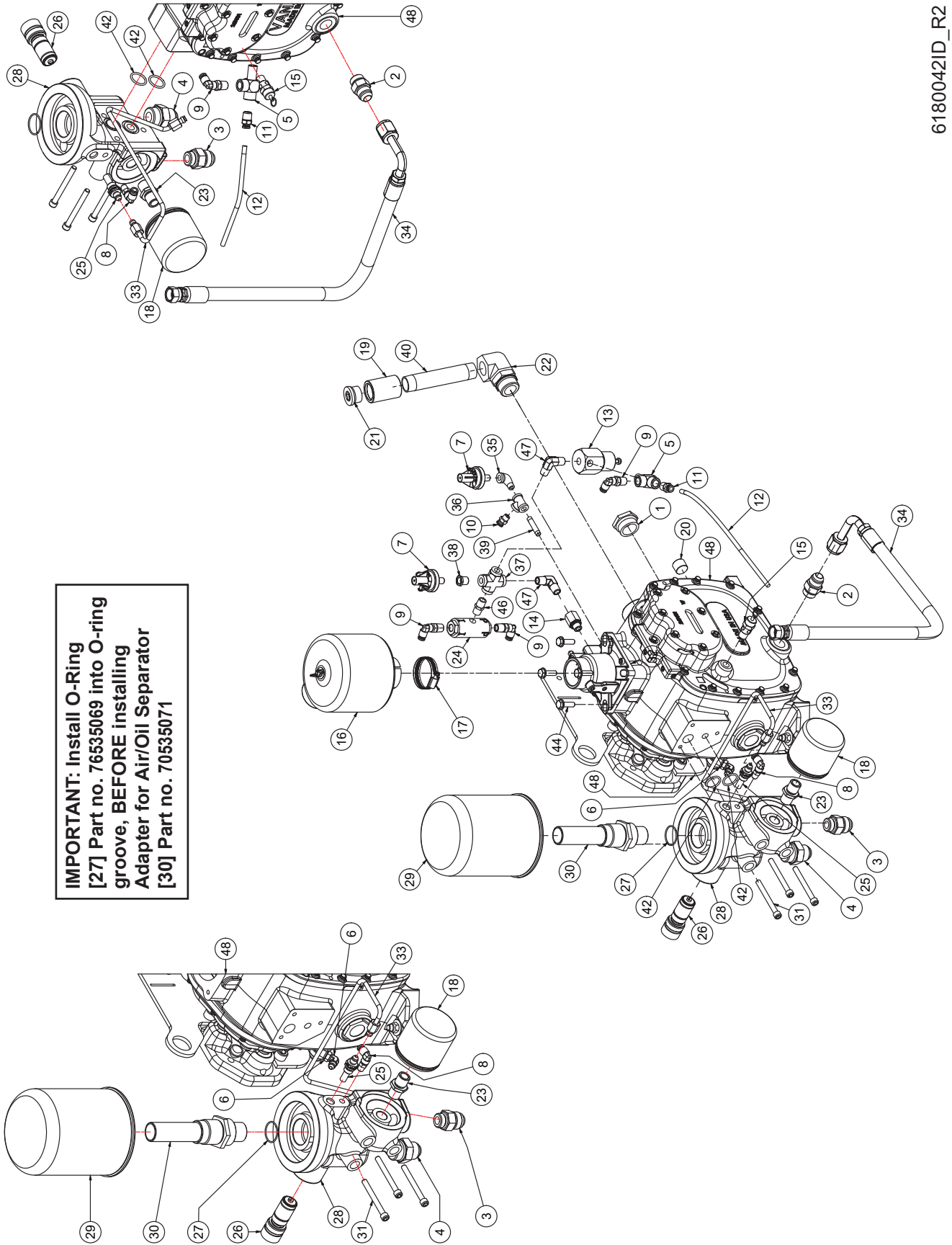
If additional spare parts are being stored for future use, ensure they are stored in proper containers that allow for protection against contamination in a clean area with a moderate temperature. For information on storing the machine package for extended periods of non-use, consult **Section 5.4.3 - Long Term Storage**.

IMPORTANT

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

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

7.2 COMPRESSOR & PARTS ASSEMBLY (12V ANALOG)



IMPORTANT: Install O-Ring [27] Part no. 76535069 into O-ring groove, BEFORE installing Adapter for Air/Oil Separator [30] Part no. 70535071

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**7.3 COMPRESSOR & PARTS LIST (12V ANALOG)**

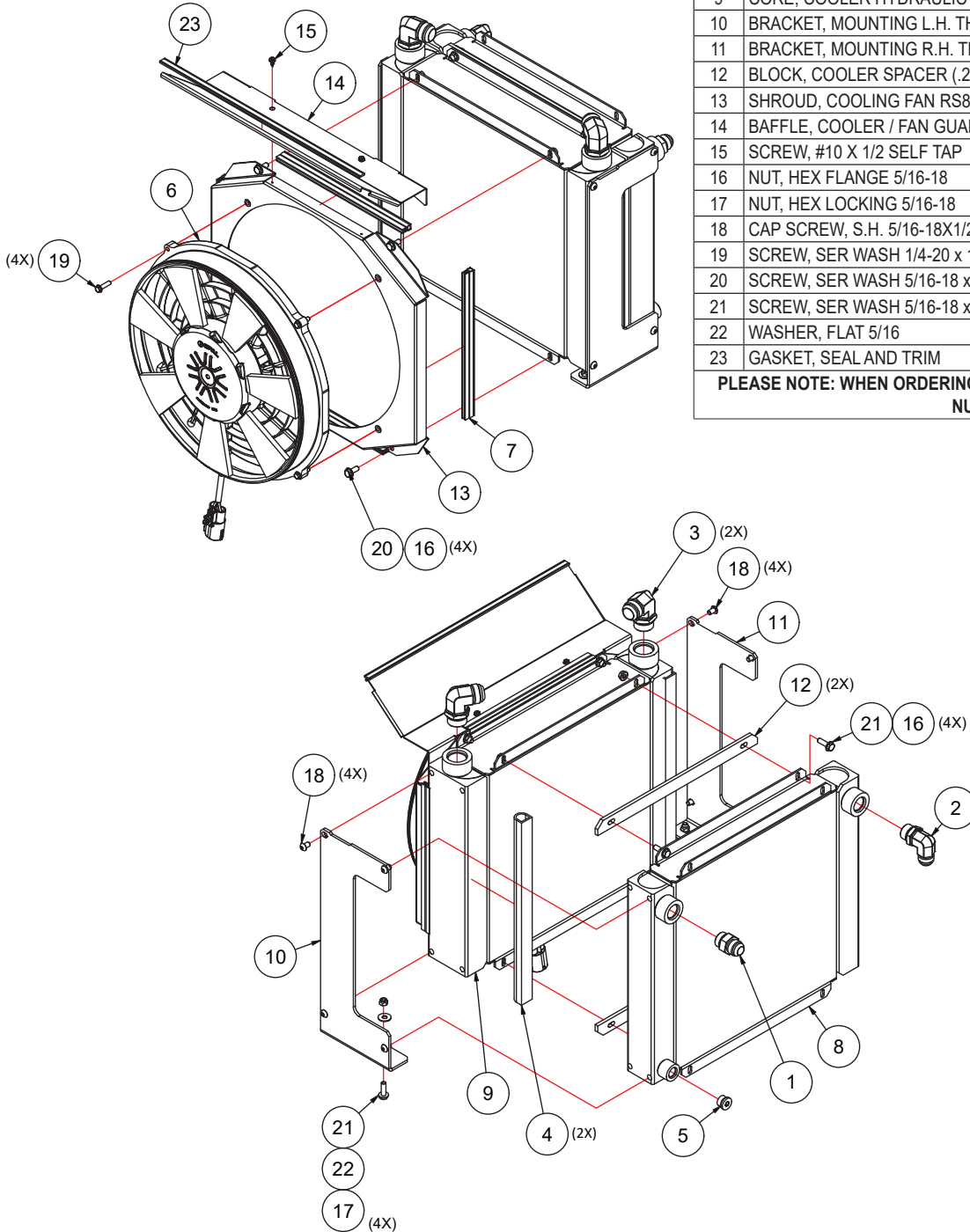
ITEM	DESCRIPTION	PART NUMBER	QTY	ITEM	DESCRIPTION	PART NUMBER	QTY
1	SIGHTGLASS, O-RING TMBD 1-5/16	70052179	2	25	ORIFICE, STRAINER 0.030 #6 MSAE x #4 MJIC	71417214	1
2	CONNECTOR, #10 MSAE x #10 MJIC		1	26	VALVE, MIN PRESS INTERNAL PARTS VM180	73744225	1
3	CONNECTOR, #10 MSAE x #12 MJIC		2	27	O-RING, VITON 1/16 DIA x 1.176 ID	76535069	1
4	CONNECTOR, O-RING 1-3/16 x 3/4 JIC PARKER		1	28	MANIFOLD, AIR/OIL VM180	70540691	1
5	TEE, MALE STREET 1/4 x 1/4 x 1/4	71417204	1	29	SEPARATOR, AIR/OIL SPIN ON 106CFM	70535070	1
6	ELBOW, 1/4T x 1/8P PUSH-ON		1	30	ADAPTER, AIR/OIL SEPARATOR M42 x M39	70535071	1
7	SWITCH, PRESSURE N.C. 10 PSI HOBBS	77041959	2	31	CAP SCREW, HEX SOC 5/16-18 x 3		3
8	ELBOW, 1/4T x 1/8P PUSH-ON		1	32	VALVE INLET, 1.5" VMC RH38	73540545	1
9	ELBOW, 90 DEG PUSH-ON 1/4T x 1/4P	71417205	3	33	TUBE, SCAVENGE 0.25 COMPRESSOR	71417468	1
10	CONNECTOR, 1/8P x 1/4T PUSH-ON		1	34	HOSE, OIL DRAIN		1
11	CONNECTOR, 1/4T x 1/4P PUSH-ON		1	35	ELBOW, PIPE STREET 1/8		1
12	TUBING, PLASTIC 1/4 WHITE	71416826	3 FT.	36	TEE, PIPE GALV 1/8		1
13	VALVE, REGULATOR. 6:1	73540543	1	37	CROSS, PIPE 1/4 INCH STEEL		1
14	ADAPTER, FEMALE PIPE x BSPP 1/4	71417070	1	38	BUSHING, RED STEEL 1/4 x 1/8		1
15	VALVE, RELIEF 200 PSI 1/4 NPT MALE	73540467	1	39	NIPPLE, PIPE GALV 1/8 x 1.5		1
16	FILTER, AIR UNDERHOOD	70048258	1	40	NIPPLE, PIPE GALV 3/4 x 5		1
17	CLAMP, HOSE #28	72535066	1	41	NUT, HEX LOCKING 3/8-16	71416255	3
18	FILTER, OIL 6" TANK	70052180	1	42	O-RING, VITON 1.130 O.D x 0.924 I.D x 0.103 (#119)	76535072	2
19	ADAPTER, 3/4 NPT TO 1-1/16 SAE O-RING		1	43	CAP SCREW, HEX GR8 3/8-16 x 1.75		3
20	PLUG, PIPE 1/2 NPT HOLLOW HEX		1	44	SCREW, SER WASH 5/16-18 x 1		4
21	PLUG, SAE O-RING HOLLOW HEX #12	72535067	1	45	WASHER, FLAT 3/8	71416254	6
22	ELBOW, 90 DEG #16 MSAE x 3/4 FNPT	72535040	1	47	NIPPLE, PIPE HEX 1/4 x 1/4	71417207	1
23	CONNECTOR, OIL FILTER ENCAPS	71417467	1	48	ELBOW, PIPE 1/4M x 1/4M	71417208	2
24	VALVE, BLOWDOWN 1/4 PISTON	73540544	1	49	AIREND ASSY, VRS-E85 ALGDSP347	70047015	1

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

7.4 COOLING SYSTEM - COMP & THK HYD 12V BRUSHLESS PUSHER LW

NOTES:

1. LUBRICATE ALL ELASTOMERIC SEALS/ GASKETS/O-RINGS BEFORE TIGHTENING.
2. ALL BOLTS TO BE TORQUED TO THEIR RESPECTIVE SAE TORQUE SPECIFICATIONS, FOR THEIR GRADES AND SIZES, UNLESS OTHERWISE SPECIFIED.

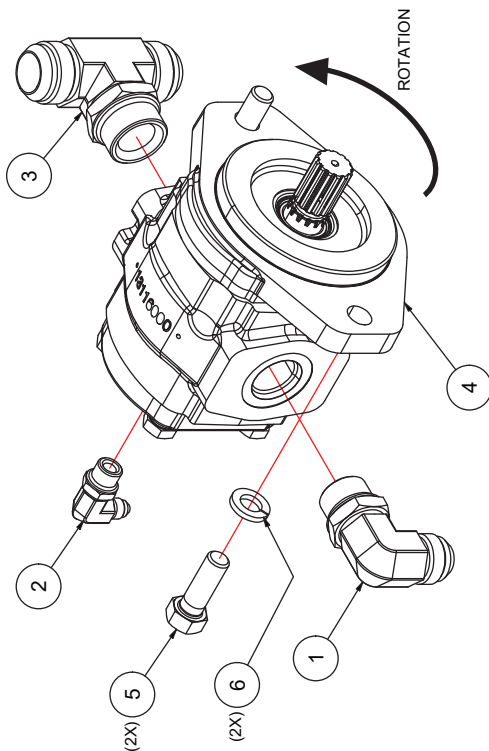


ITEM	DESCRIPTION	PART NUMBER	QTY
1	CONNECTOR, #12 MSAE x #12 MJIC		1
2	ELBOW, 90 DEG #12 MJIC x #12 MSAE		1
3	ELBOW, 90 DEG #16 MJIC x #16 MSAE		2
4	SEAL, RUBBER "D" TRIM-LOK	71417159	2.6 FT
5	PLUG, SAE O-RING HOLLOW HEX #8		1
6	FAN & MOTOR ASSY, BRUSHLESS 300W	73052183	1
7	TRIM-LOK, 1/8 GROOVE W/ BULB	70490507	3.5 FT
8	CORE, COOLER COMPRESSOR	70052182	1
9	CORE, COOLER HYDRAULIC THK	70052193	1
10	BRACKET, MOUNTING L.H. THK COOLER	71417459	1
11	BRACKET, MOUNTING R.H. THK COOLER	71417460	1
12	BLOCK, COOLER SPACER (.25 THK)	71417461	2
13	SHROUD, COOLING FAN RS85-LW 1	71417313	1
14	BAFFLE, COOLER / FAN GUARD LW THK. CORE	71417462	1
15	SCREW, #10 X 1/2 SELF TAP	71417471	2
16	NUT, HEX FLANGE 5/16-18	71417202	8
17	NUT, HEX LOCKING 5/16-18	72062416	4
18	CAP SCREW, S.H. 5/16-18X1/2 ZINC PLT	71417463	8
19	SCREW, SER WASH 1/4-20 x 1	71417472	4
20	SCREW, SER WASH 5/16-18 x 0.75	71415898	4
21	SCREW, SER WASH 5/16-18 x 1	71417464	8
22	WASHER, FLAT 5/16	71417465	4
23	GASKET, SEAL AND TRIM	71417084	1.583 FT

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

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7.5 MOTOR AND DRIVE PARTS OPEN CTR, LW

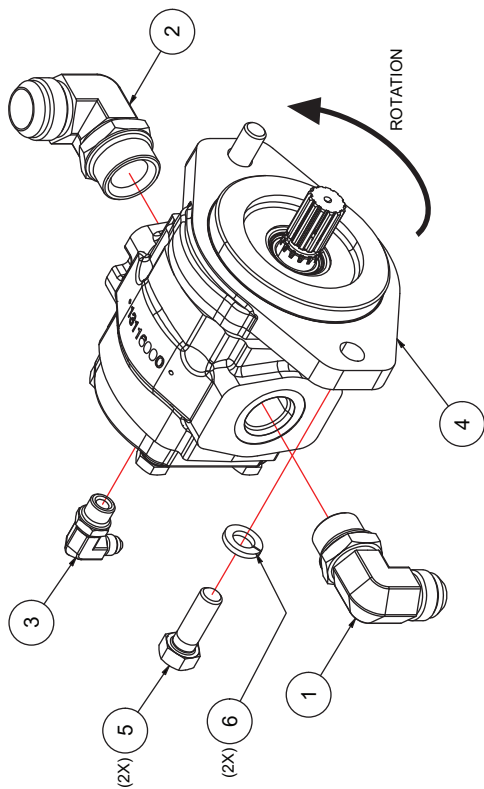


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ITEM	DESCRIPTION	PART NUMBER	QTY
1	ELBOW, 90 DEG #12 MJIC x #12 MSAE		1
2	ELBOW, 90 DEG #4 MJIC x #6 MSAE		1
3	TEE, JIC/JIC/SAE #16		1
4	MOTOR, HYD CASAPPA PHM20.25 13 TOOTH SPLINE	73511406	1
5	CAPSCREW, HEX GR8 1/2-13 x 1.5		2
6	WASHER, LOCK 1/2		2
PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.			

NOTES:
 1. LUBRICATE ALL ELASTOMERIC SEALS/ GASKETS/O-RINGS BEFORE TIGHTENING.
 2. ALL BOLTS TO BE TORQUED TO THEIR RESPECTIVE SAE TORQUE SPECIFICATIONS, FOR THEIR GRADES AND SIZES, UNLESS OTHERWISE SPECIFIED.

7.6 MOTOR AND DRIVE PARTS CLOSED CTR, LW



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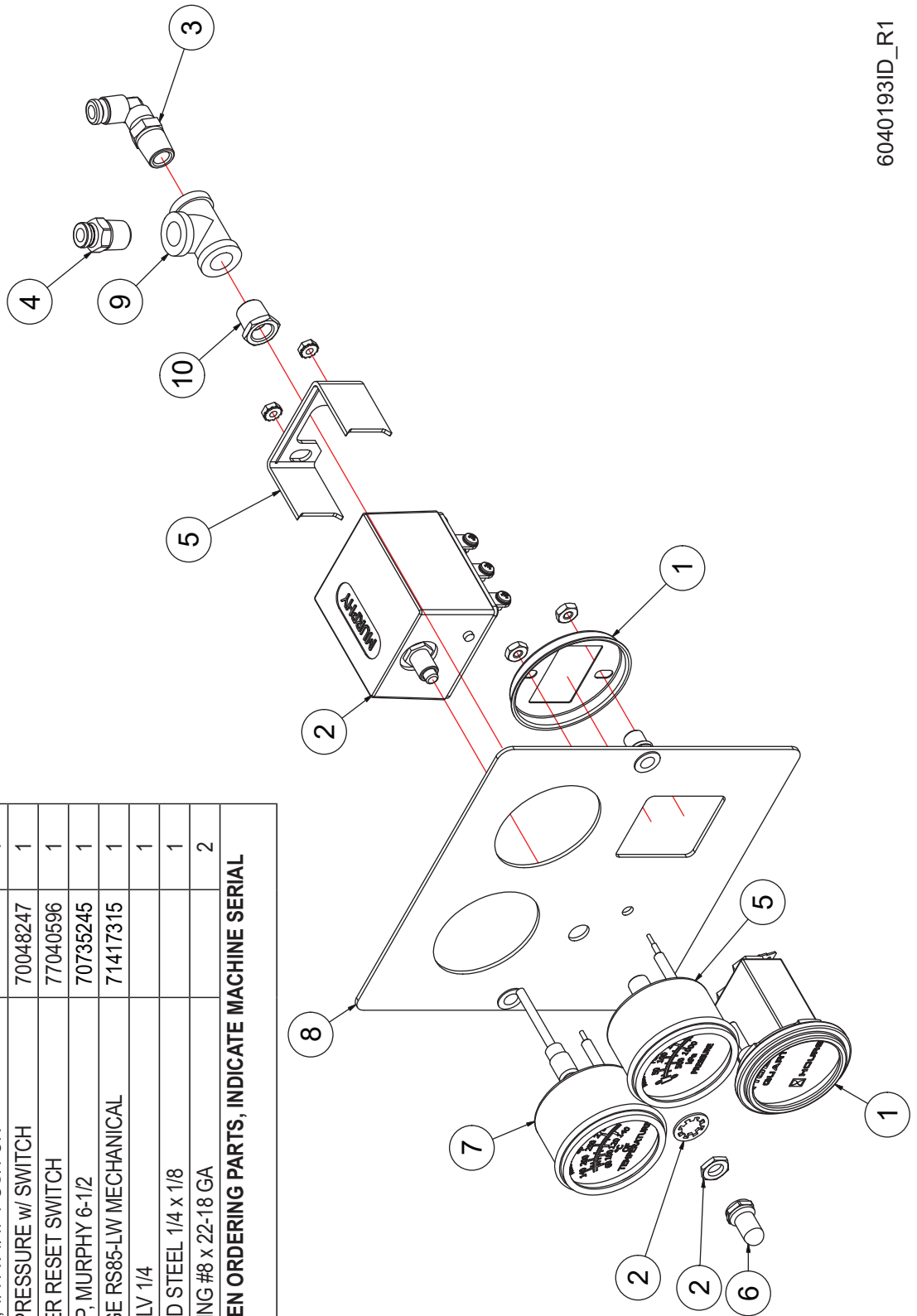
ITEM	DESCRIPTION	PART NUMBER	QTY
1	ELBOW, 90 DEG #12 MJIC x #12 MSAE		1
2	ELBOW, 90 DEG #4 MJIC x #6 MSAE		1
3	TEE, JIC/JIC/SAE #16		1
4	MOTOR, HYD CASAPPA PHM20.25 13 TOOTH SPLINE	73511406	1
5	CAPSCREW, HEX GR8 1/2-13 x 1.5		2
6	WASHER, LOCK 1/2		2
PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.			

NOTES:
 1. LUBRICATE ALL ELASTOMERIC SEALS/ GASKETS/O-RINGS BEFORE TIGHTENING.
 2. ALL BOLTS TO BE TORQUED TO THEIR RESPECTIVE SAE TORQUE SPECIFICATIONS, FOR THEIR GRADES AND SIZES, UNLESS OTHERWISE SPECIFIED.

7.7 DISPLAY & CONTROLLER ASSEMBLY (ANALOG)

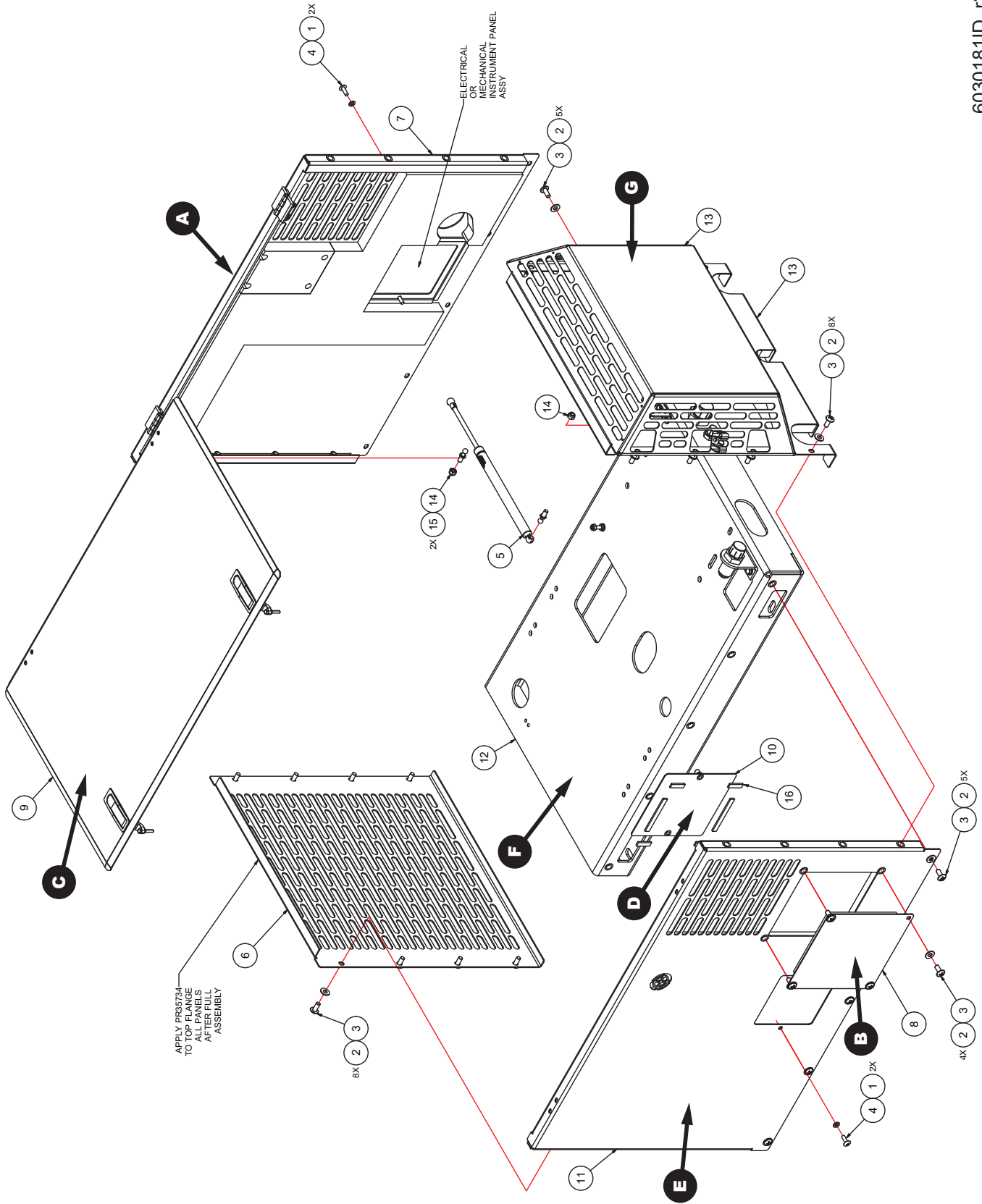
ITEM	DESCRIPTION	PART NUMBER	QTY
1	GAUGE, HOUR METER	77441491	1
2	SWITCH, HIGH TEMP. SHUTDOWN	70734663	1
3	ELBOW, 90 DEG PUSH ON 1/4T x 1/4P	71417205	1
4	CONNECTOR, 1/4T x 1/4P PUSH-ON		1
5	GAUGE, AIR PRESSURE w/ SWITCH	70048247	1
6	BOOT, RUBBER RESET SWITCH	77040596	1
7	GAUGE, TEMP, MURPHY 6-1/2	70735245	1
8	PANEL, GAUGE RS85-LW MECHANICAL	71417315	1
9	TEE, PIPE GALV 1/4		1
10	BUSHING, RED STEEL 1/4 x 1/8		1
11	TERMINAL, RING #8 x 22-18 GA		2

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



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7.8 FRAME AND CANOPY ASSEMBLY

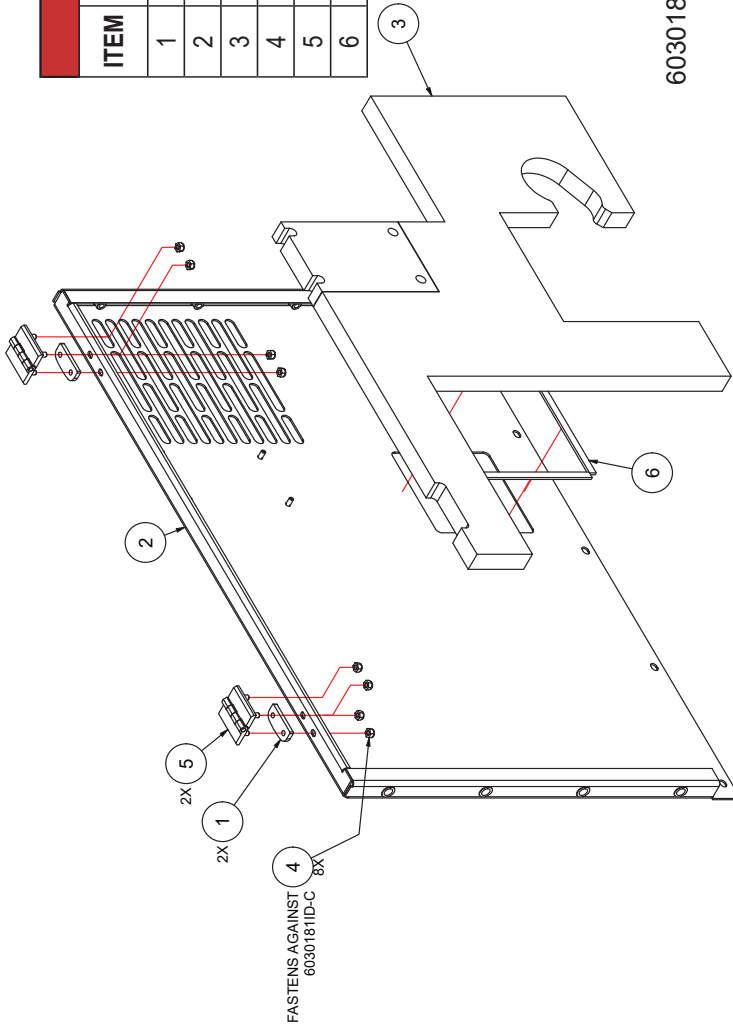




7.9 FRAME & CANOPY ASSEMBLY PARTS LIST

ITEM	DESCRIPTION	PART NUMBER	QTY
1	WASHER, NYLON FLAT 1/4	72063300	4
2	WASHER, NYLON 5/16-18	71415893	30
3	SCREW, TRUSS HD 5/16-18x3/4 SS	71415794	30
4	SCREW,TRUSS HD 1/4-20x3/4	72063301	4
5	GAS SPRING, 6 STROKE, 20#	70661784	1
6	PANEL, COOLER SIDE	71417318	1
7	PANEL, FRONT SIDE - A		1
8	DOOR, ACCESS - B		1
9	PANEL, ROOF - C		1
10	DOOR, ACCESS - D		1
11	PANEL, BACK SIDE - E		2
12	FRAME, NEW ABOVE DECK HYD DRIVE - F		2
13	PANEL, COMPRESSOR SIDE - G		2
14	NUT, HEX LOCKING 5/16-18	72062416	2
15	STUD, BALL, .39 DIA. X .55 LG	72602179	2
16	TAPE, VINYL FOAM 4508 1/8x3/8 BLACK	70399936	6
PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.			

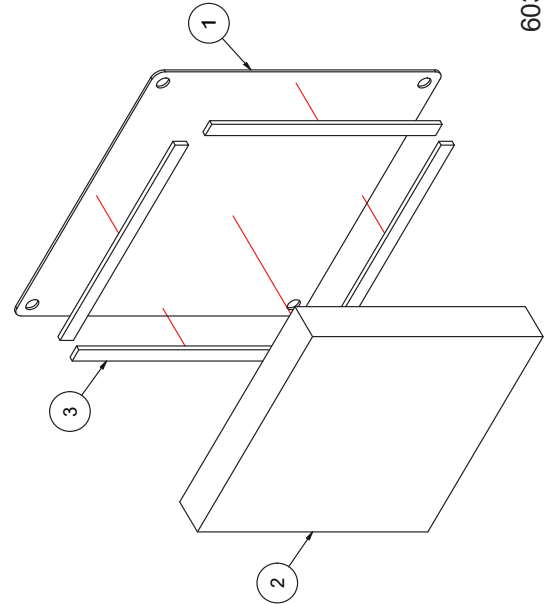
7.10 FRAME & CANOPY - FRONT SIDE PANEL (A)



ITEM	DESCRIPTION	PART NUMBER	QTY
1	SPACER, HINGE	70661789	2
2	PANEL, FRONT SIDE	71417319	1
3	ACOUSTICAL INSULATION	90490425	1
4	NUT, LOCK, M6 x 1.0 PITCH	72062419	8
5	HINGE, 2" x 2", BLACK	71416172	2
6	TAPE, VINYL FOAM 4508 1/8 x 3/8 BLACK	71417084	2.25 FT

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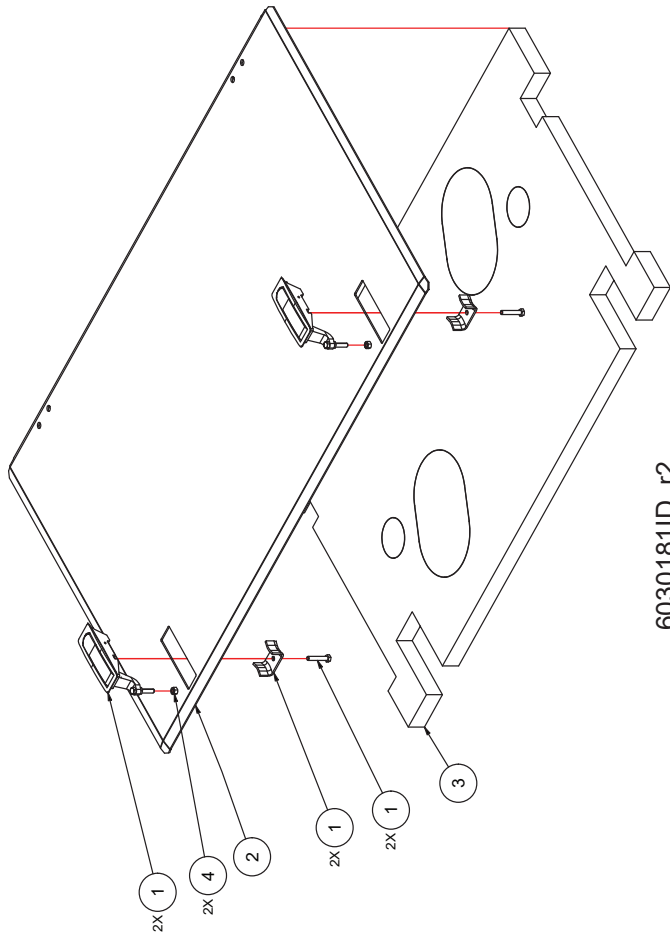
7.11 FRAME & CANOPY - ACCESS DOOR (B)



ITEM	DESCRIPTION	PART NUMBER	QTY
1	COVER, ACCESS	71417324	1
2	ACOUSTICAL INSULATION	90490425	1
3	TAPE, VINYL FOAM 4508 1/8 x 3/8 BLACK	71417084	2.25 FT

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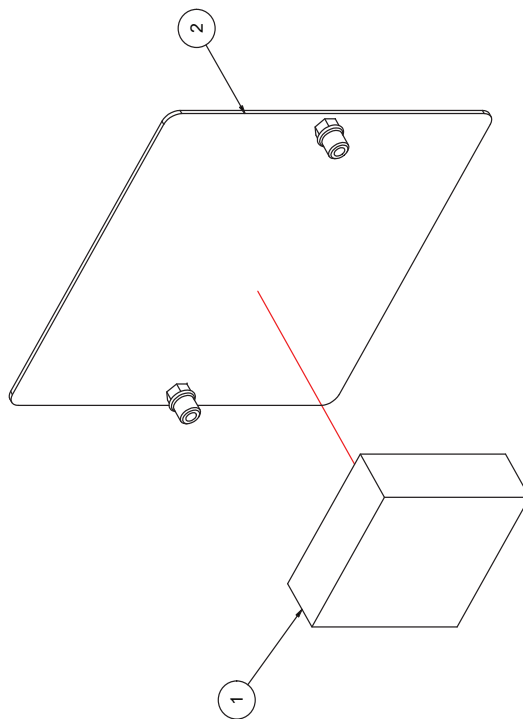
7.12 FRAME & CANOPY - ROOF PANEL (C)



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ITEM	DESCRIPTION	PART NUMBER	QTY
1	LATCH, SENTRY PANEL	72661793	2
2	PANEL, ROOF	71417321	1
3	ACOUSTICAL INSULATION	90490425	1
4	NUT, HEX METRIC 5mm x 0.8	72602149	2

7.13 FRAME & CANOPY - ACCESS DOOR (D)

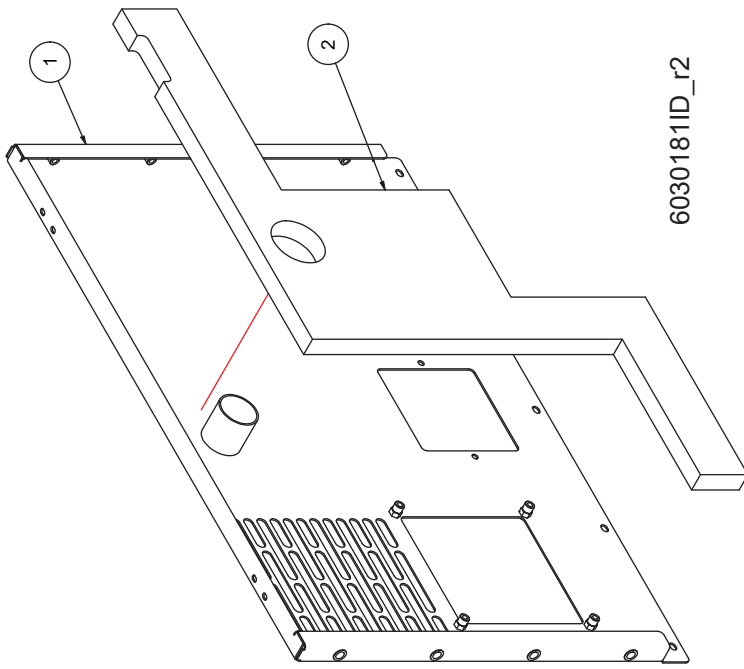


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ITEM	DESCRIPTION	PART NUMBER	QTY
1	ACOUSTICAL INSULATION	90490425	1
2	PANEL, GAUGE BLANK	71417322	1

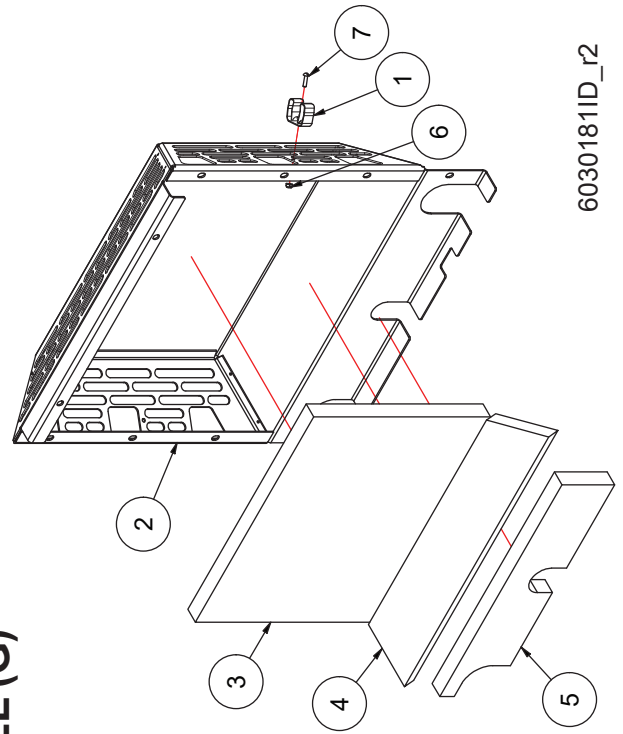
7.14 FRAME & CANOPY - BACK SIDE PANEL (E)

ITEM	DESCRIPTION	PART NUMBER	QTY
1	PANEL, BACK SIDE	71417323	1
2	ACOUSTICAL INSULATION	90490425	1



7.15 FRAME & CANOPY - COMPRESSOR SIDE PANEL (G)

ITEM	DESCRIPTION	PART NUMBER	QTY
1	CLIP, TOOL ZINC 3/4 TO 1-1/8	71417156	1
2	PANEL, COMPRESSOR SIDE	71417328	1
3	ACOUSTICAL INSULATION	90490425	1
4	ACOUSTICAL INSULATION	90490425	1
5	ACOUSTICAL INSULATION	90490425	1
6	NUT, HEX LOCKING #8-32	72062417	1
7	SCREW, ROUND HEAD #8-32 X 0.625	71417470	1

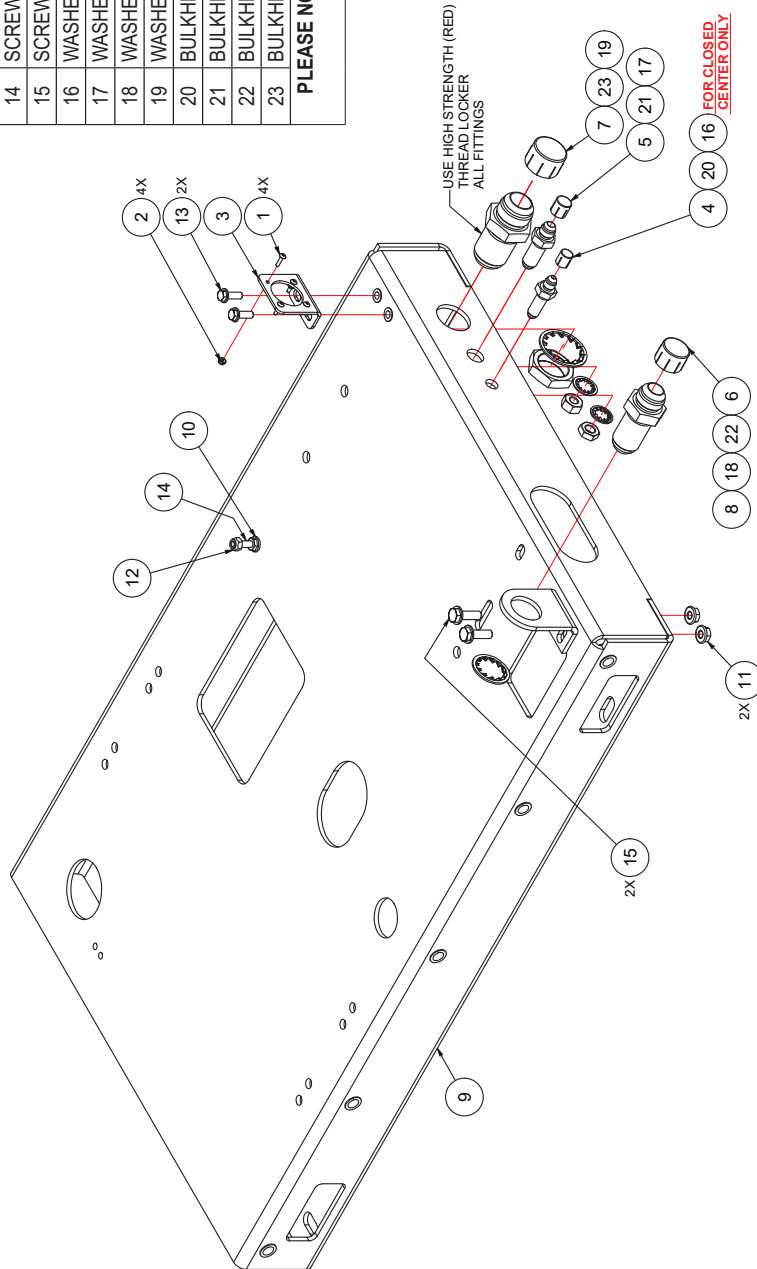




7.16 FRAME & CANOPY - FRAME (F)

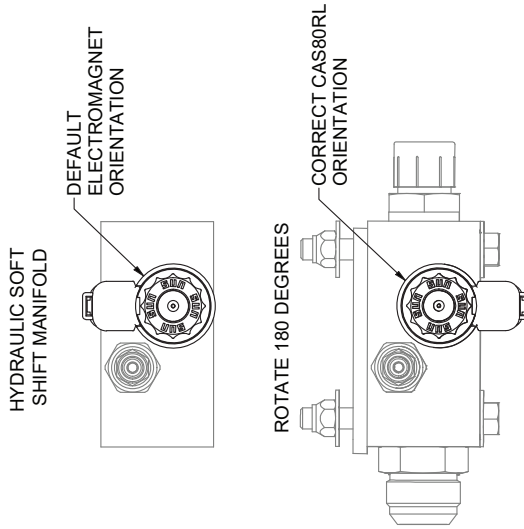
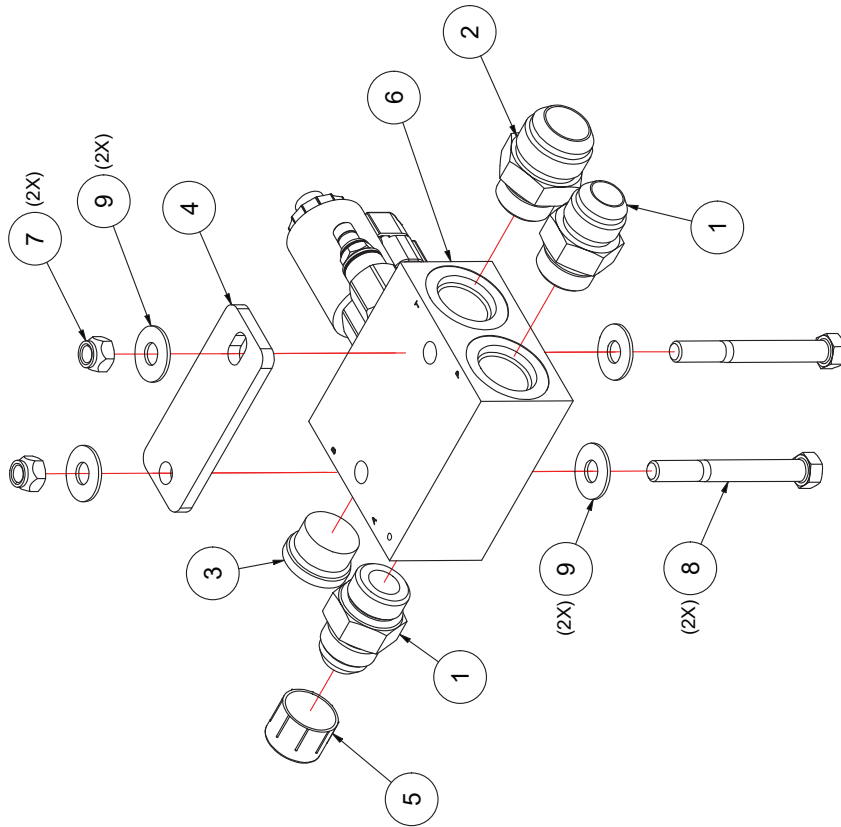
ITEM	DESCRIPTION	PART NUMBER	QTY
1	SCREW, TRUSS #4-40 X 1/2		4
2	NUT, HEX LOCKING #4-40 UNC		4
3	BRACKET, 6 PIN CONNECTOR	71417407	1
4	CAP, FEMALE JIC SHIPPING #4 7/16-20		1
5	CAP, FEMALE JIC SHIPPING #6 9/16-18		1
6	CAP, FEMALE JIC SHIPPING #12 1 1/16-12		1
7	CAP, FEMALE JIC SHIPPING #16 1 5/16-12		1
8	BRACKET, AIR DISCHARGE		1
9	FRAME	71417469	1
10	NUT, HEX FLANGE 1/4-20	71415896	1
11	NUT, HEX FLANGE 5/16-18	71417202	2
12	NUT, HEX LOCKING 1/4-20		1
13	SCREW, SER WASH 1/4-20 x 0.75		2
14	SCREW, SER WASH 1/4-20 x 1		1
15	SCREW, SER WASH 5/16-18 x 1		2
16	WASHER, INTERNAL TOOTH 1/2 INCH		1
17	WASHER, LOCK INTERNAL TOOTH 9/16 INCH		1
18	WASHER, INTERNAL TOOTH 1 INCH		1
19	WASHER, LOCK INT TOOTH 1 3/8"		1
20	BULKHEAD, MJIC x MJIC #4	72533024	1
21	BULKHEAD, MJIC x MJIC #6	72532835	1
22	BULKHEAD, MJIC x MJIC #12	72533371	1
23	BULKHEAD, MJIC x MJIC #16	72533015	1

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



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7.17 CONTROL MANIFOLD - 12V OPEN CTR

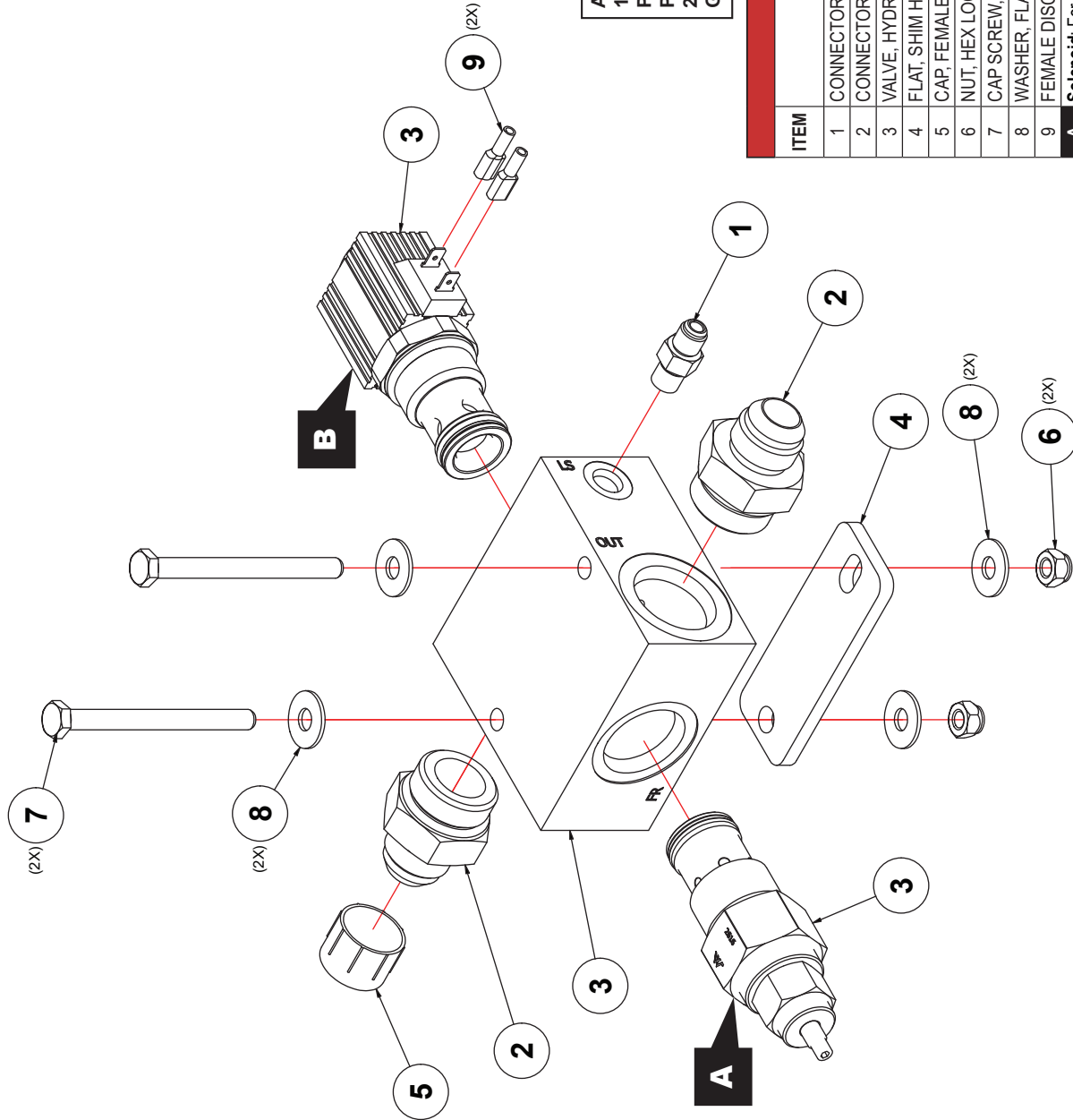


ASSEMBLY NOTES:
 1. USE LOCTITE 567 THREAD SEALANT WITH PTFE OR EQUIVALENT SEALANT ON ALL MALE PIPE THREADS.
 2. LUBRICATE ALL ELASTOMERIC SEALS/ GASKETS/O-RINGS BEFORE TIGHTENING.

ITEM	DESCRIPTION	PART NUMBER	QTY
1	CONNECTOR, #12 MSAE x #12 MJIC		2
2	CONNECTOR, #12 MSAE x #16 MJIC		1
3	PLUG, SAE O-RING HOLLOW HEX #12		2
4	FLAT, SHIM HYDRAULIC MANIFOLD AL		1
5	CAP, FEMALE JIC SHIPPING #12 1 1/16-12		1
6	MANIFOLD, HYD SOFT SHIFT, 12V O.C.	IMT TO REVIEW	1
7	NUT, HEX LOCKING 3/8-16		1
8	CAP SCREW, HEX GR8 3/8-16 x 3.25		1
9	WASHER, FLAT 3/8		1

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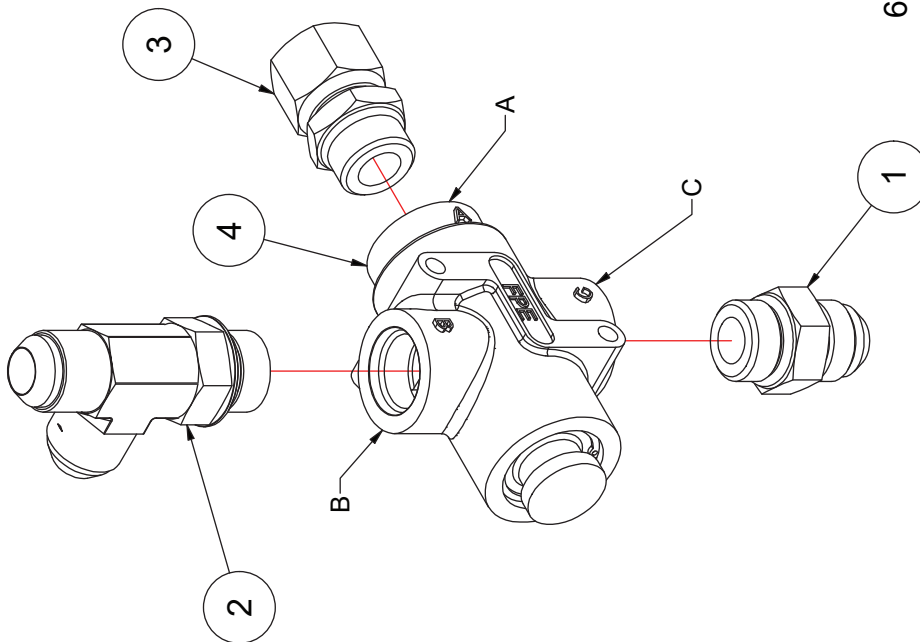
7.18 CONTROL MANIFOLD - 12V CLOSED CTR



ASSEMBLY NOTES:
 1. USE LOCTITE 567 THREAD SEALANT WITH PTFE OR EQUIVALENT SEALANT ON ALL MALE PIPE THREADS.
 2. LUBRICATE ALL ELASTOMERIC SEALS/ GASKETS/O-RINGS BEFORE TIGHTENING.

ITEM	DESCRIPTION	PART NUMBER	QTY
1	CONNECTOR, O-RING 1/4 SAE x 1/4 JIC		1
2	CONNECTOR, #16 MSAE x #12 MJIC		2
3	VALVE, HYDRAULIC ASSY MAINT		1
4	FLAT, SHIM HYDRAULIC MANIFOLD AL		1
5	CAP, FEMALE JIC SHIPPING #12 1 1/16-12		1
6	NUT, HEX LOCKING 5/16-18		2
7	CAP SCREW, HEX GR5 5/16-18 x 3.5		2
8	WASHER, FLAT 5/16		4
9	FEMALE DISCONNECT		2
A	Solenoid: For solenoid replacement, consult the IMT Service Department.		
B	Pressure Relief: For pressure relief replacement, consult the IMT Service Department.		

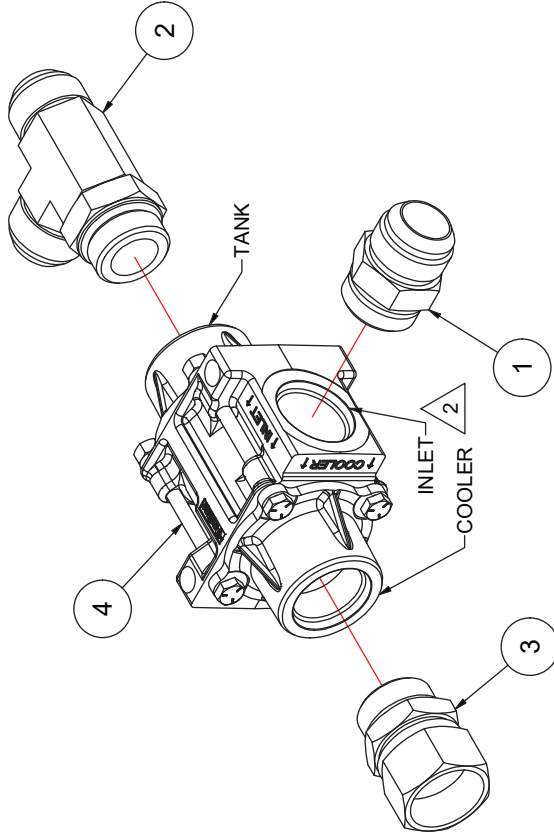
7.19 THERMAL CONTROL



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ITEM	DESCRIPTION	PART NUMBER	QTY
1	CONNECTOR, #12 MSAE x #12 MJIC		1
2	TEE, 37 MJIC, 37MJIC, O-RING RUN 3/4		1
3	ADAPTER, 3/4 FJIC SWIVEL X #12 MSAE	71417466	1
4	VALVE, THERMAL 180 DEGREE ALUM BODY 3/4" SAE FPE	73540546	1

7.20 HYDRAULIC THERMAL CONTROL



6120354ID r2

ASSEMBLY NOTES:
1. LUBRICATE ALL ELASTOMERIC SEALS/
GASKETS/O-RINGS BEFORE TIGHTENING.

ITEM	DESCRIPTION	PART NUMBER	QTY
1	CONNECTOR, #16 MSAE x #16 MJIC		1
2	TEE, RUN #16 MSAE x #16 MJIC		1
3	ADAPTER, #16 FJIC SWIVEL x #16 MSAE O-RING		1
4	VALVE, THERMAL BYPASS 1" SAE 50PSI 100 DEG	73540546	1



7.21 DECAL LOCATIONS - 1 OF 2

ITEM	DESCRIPTION	IMT PART NO.	QTY	ITEM	DESCRIPTION	IMT PART NO.	QTY
1	DECAL, IMT CAS80RL	I	2	7	DECAL, READ MANUAL	II	1
2	DECL, CAP & PLUG RMVL	II	1	7	DECAL, READ MANUAL	II	1
3	DECAL ROTATING PARTS	II	1	8	DECAL, CAUTION AUTO STRT	II	3
4	DECAL, BREATHING AIR	II	1	9	DECAL, HIGH PRES HYD SYS	II	1
5	DECAL, HOT PARTS	II	1	10	DECAL, CMPSR OIL DRAIN	II	1
6	DECAL, AIR HOSE	II	1	11	DECAL, IMT LOGO	I	1

I This decal is included with IMT logo (logo set) decal sheet.
II Unless noted in **I**, inquire via the parts order contact information in Section 7.1 for decal replacement sheet or individual decal.

PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER

WARNING

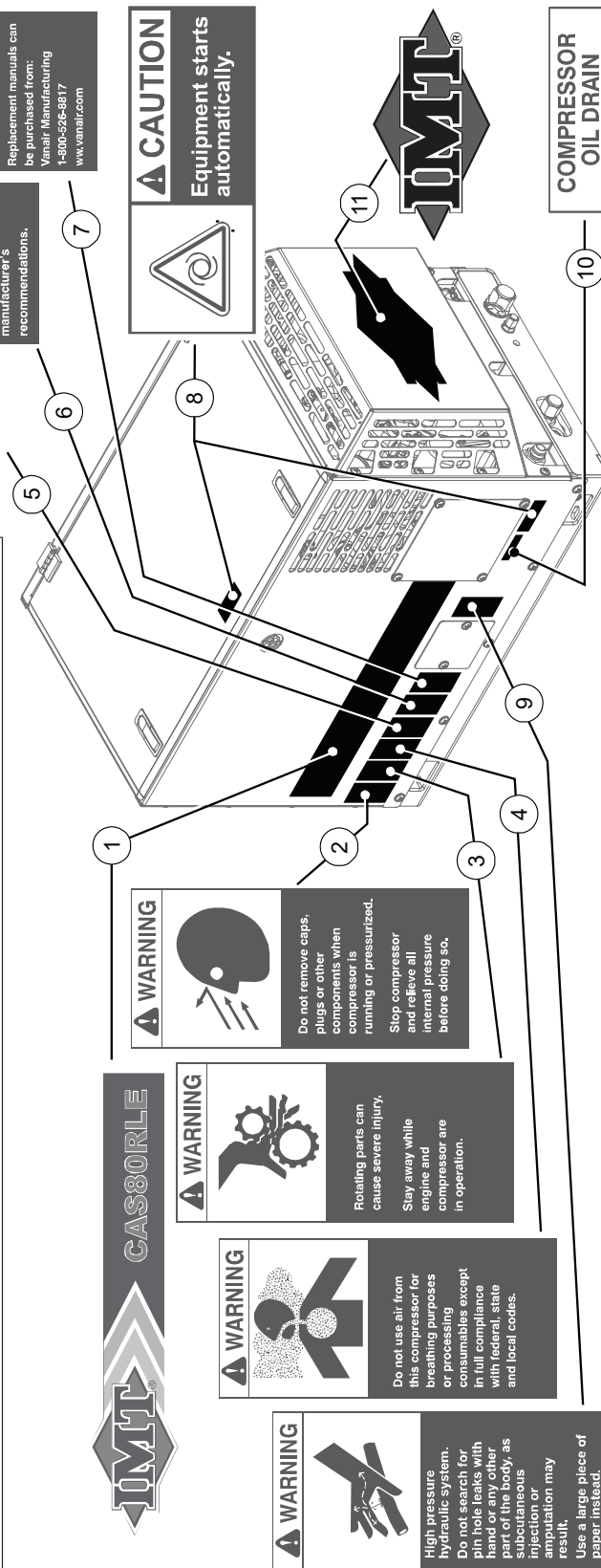
Hot parts can cause severe injury. Do not touch any internal surfaces while operating or just after stopping.

WARNING

Connect air hoses in full compliance with federal, state and local codes. Safety devices should be tested in accordance with manufacturer's recommendations.

WARNING

Read the operator's manual before starting this unit. Failure to adhere to instructions can result in personal injury. Replacement manuals can be purchased from: Vainair Manufacturing 1-800-525-8817 www.vainair.com



WARNING

High pressure hydraulic system. Do not search for pin hole leaks with your hands. Do not touch any other part of the body, as subcutaneous injection or amputation may result. Use a large piece of paper instead.

WARNING

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

WARNING

Rotating parts can cause severe injury. Stay away while engine and compressor are in operation.

WARNING

Do not remove caps, plugs or other components when compressor is running or pressurized. Stop compressor and relieve all internal pressure before doing so.

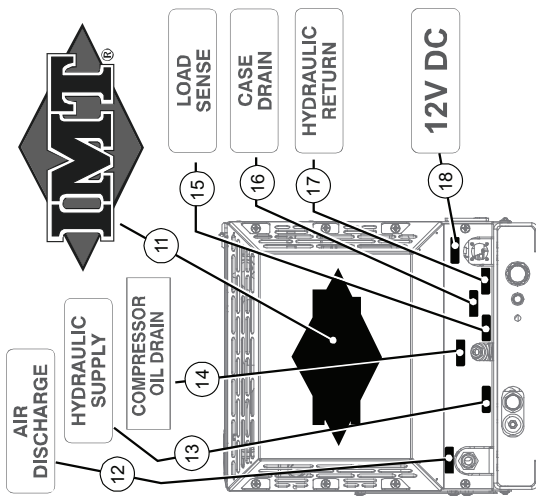
CAUTION

Equipment starts automatically.

COMPRESSOR OIL DRAIN

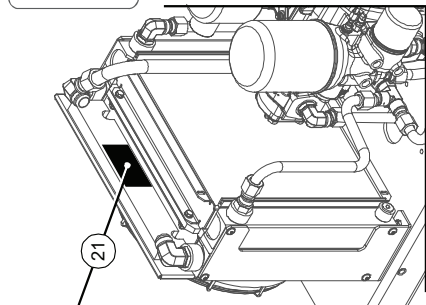


7.22 DECAL LOCATIONS - 2 OF 2



WARNING

Do not operate without fan guard in place.

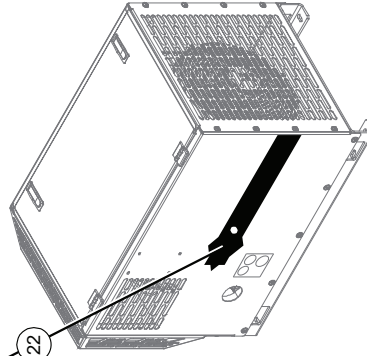


FORWARD CENTER COMPRESSOR OIL
IMT Decals are not to be used on any machine that is not an IMT machine. Do not use on any other machine. Do not use on any other machine.

MACHINE ROOF/HOODPANEL
INSIDE VIEW

**CAUTION
DO NOT
OVERFILL**

CAS80RL



WARNING

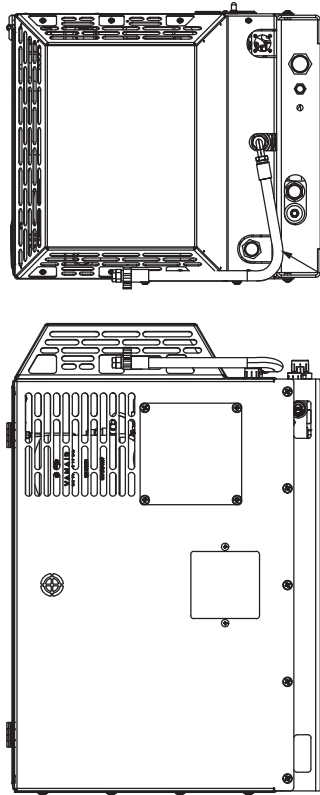
DO NOT REMOVE OR ANY SAFETY DECAL. Replace any safety decal that becomes damaged or illegible.

ITEM	DESCRIPTION	IMT PART NO.	QTY	ITEM	DESCRIPTION	IMT PART NO.	QTY
11	DECAL, IMT LOGO STACKED ⁱ	70029251	2	18	DECAL, 12V DC	II	1
12	DECAL, AIR DISCHARGE	II	1	19	DECAL, IMT COMPRESSOR OIL	II	1
13	DECAL, HYD SUPPLY	II	1	20	DECAL, CAUTION, DO NOT OVERFILL	II	1
14	DECAL, COMPR OIL DRAIN	II	1	21	DECAL, FAN GUARD	II	1
15	DECAL, LOAD SENSE ⁱⁱⁱ	II	1	22	DECAL, CAS90RLE	I	2
16	DECAL, CASE DRAIN	II	1				
17	DECAL, HYD RETURN	II	1				
ⁱ This decal is included with IMT logo (logo set) decal sheet. ⁱⁱ All decals on this page included with decal assembly sheet. Inquire via the parts order contact information in Section 7.1 for replacement details.							
PLEASE NOTE: WHEN ORDERING PARTS, INDICATE MACHINE SERIAL NUMBER.							
ⁱⁱⁱ This decal is only used on closed center machine build con guration.							

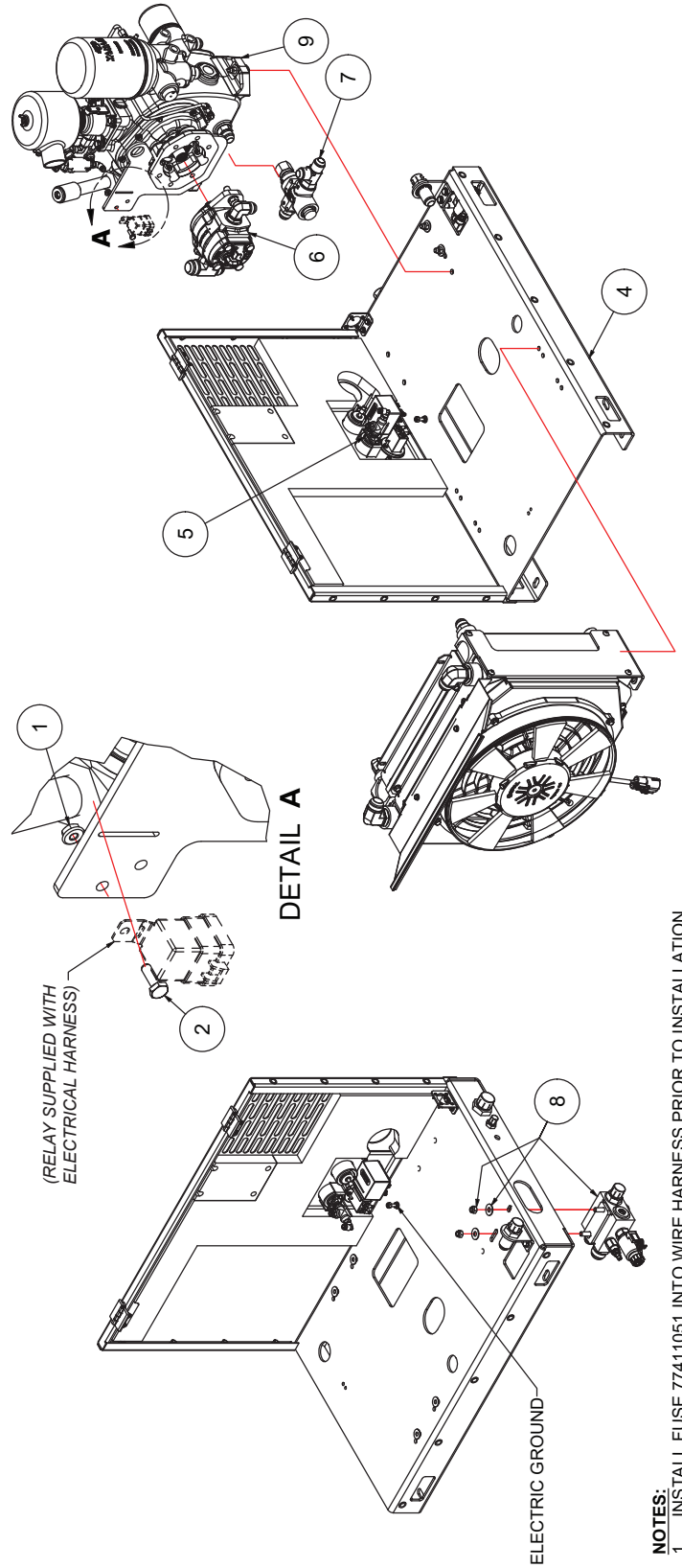


7.23 CAS80RL - OPEN CENTER 12V PARTS

HOSE AND TUBE ROUTING INSTRUCTIONS			
ITEM	IMT PART NO.	DESCRIPTION	QTY
1	-	NUT, HEX FLANGE 1/4-20	1
2	-	CAP SCREW, HEX GR5 1/4-20 x 0.75	1
3	-	OIL COOLING SYS BRUSHLESS 12V PUSHER	1
4	-	FRAME & CANOPY ASSY	1
5	-	INST PANEL ASSY MECHANICAL	1
6	-	MOTOR AND DRIVE PARTS CAS MOTOR OPEN CENTER	1
7	-	COMPRESSOR THERMAL CONTROL	1
8	-	CONTROL MANIFOLD OPEN CENTER 12V	1
9	70735315	AIREND & ATT, VRS85E ALPNGDSP347	1
10	-	HOSE, FLEX AIR INLET 2 INCH BLACK	1.5 FT
NS	77441766	HARNESS, EXTENSION 6 PIN DEUTSCH	1
NS	77411051	FUSE, 40A, JCASE LOW-PROFILE PUSH-IN GREEN	1
NS	77441767	HARNESS, RS85 LW W/GAUGES	1
NS	-	HOSE & FTG ASSY, OC W/ THRM L	1



COMPRESSOR OIL DRAIN HOSE
TO BE INSTALLED AT A 10°
DOWNWARD ANGLE



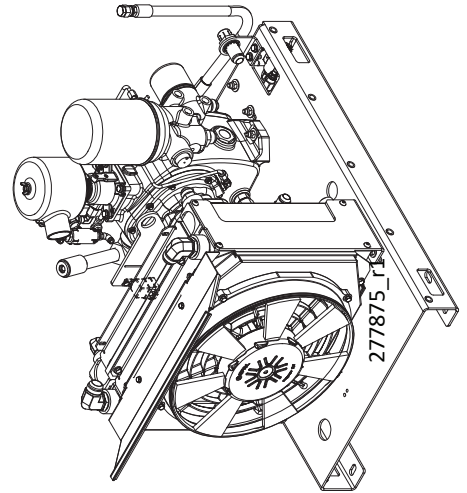
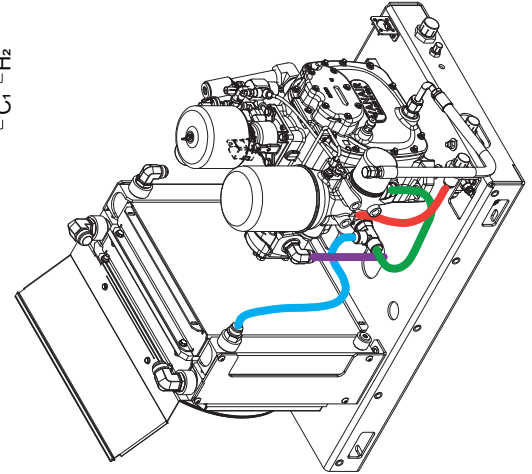
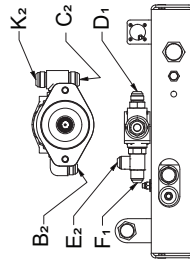
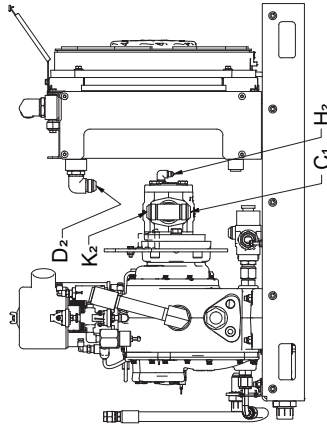
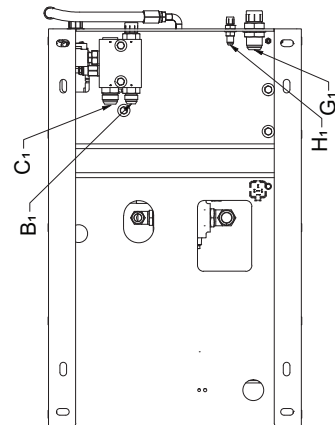
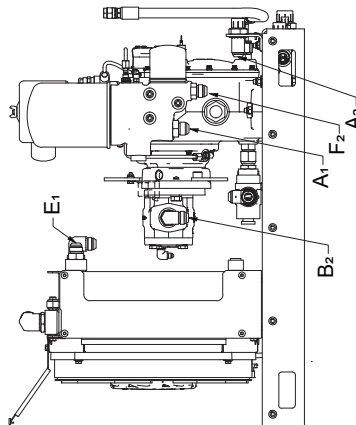
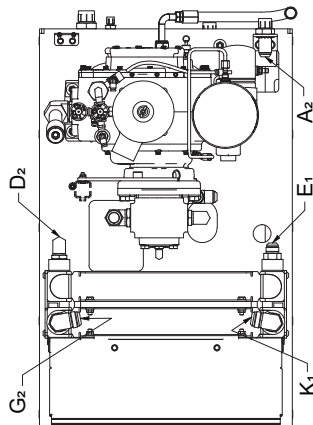
NOTES:
1. INSTALL FUSE 77411051 INTO WIRE HARNESS PRIOR TO INSTALLATION.

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7.24 HOSE AND TUBE ROUTING - OPEN CTR, 12V

HOSE AND TUBE ROUTING INSTRUCTIONS					
ITEM	IMT PART NUMBER	DESCRIPTION	QTY	START	END
1	-	TUBE, CMPR TO SVC AIR OUTLET 3/4 IN	1	A ₁	A ₂
2	-	TUBE, HYD OPEN CTR MNFD TO MOTOR 3/4 IN	1	B ₁	B ₂
3	-	TUBE, HYDR OPEN CTR MNFD RTN TO MTR RTN 1 IN	1	C ₁	C ₂
4	-	TUBE, CMPR THRML VLV TO COOLER 3/4 IN	1	D ₁	D ₂
5	-	TUBE, CMPR COOLER OUT TO THRML VLV 3/4 IN	1	E ₁	E ₂
6	-	TUBE, CMPR THRML VLV TO FILTER 3/4 IN	1	F ₁	F ₂
7	-	TUBE, HYD COOLER TO RTN BULKHEAD 1 IN	1	G ₁	G ₂
8	-	HOSE, HYDR MOTOR CASE DRAIN 1/4 IN	1	H ₁	H ₂
9	-	HOSE, HYDR MOTOR RTN TO COOLER INLET 1 IN	1	K ₁	K ₂

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



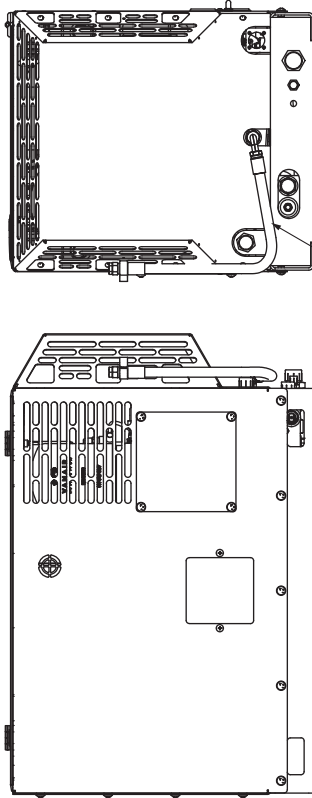
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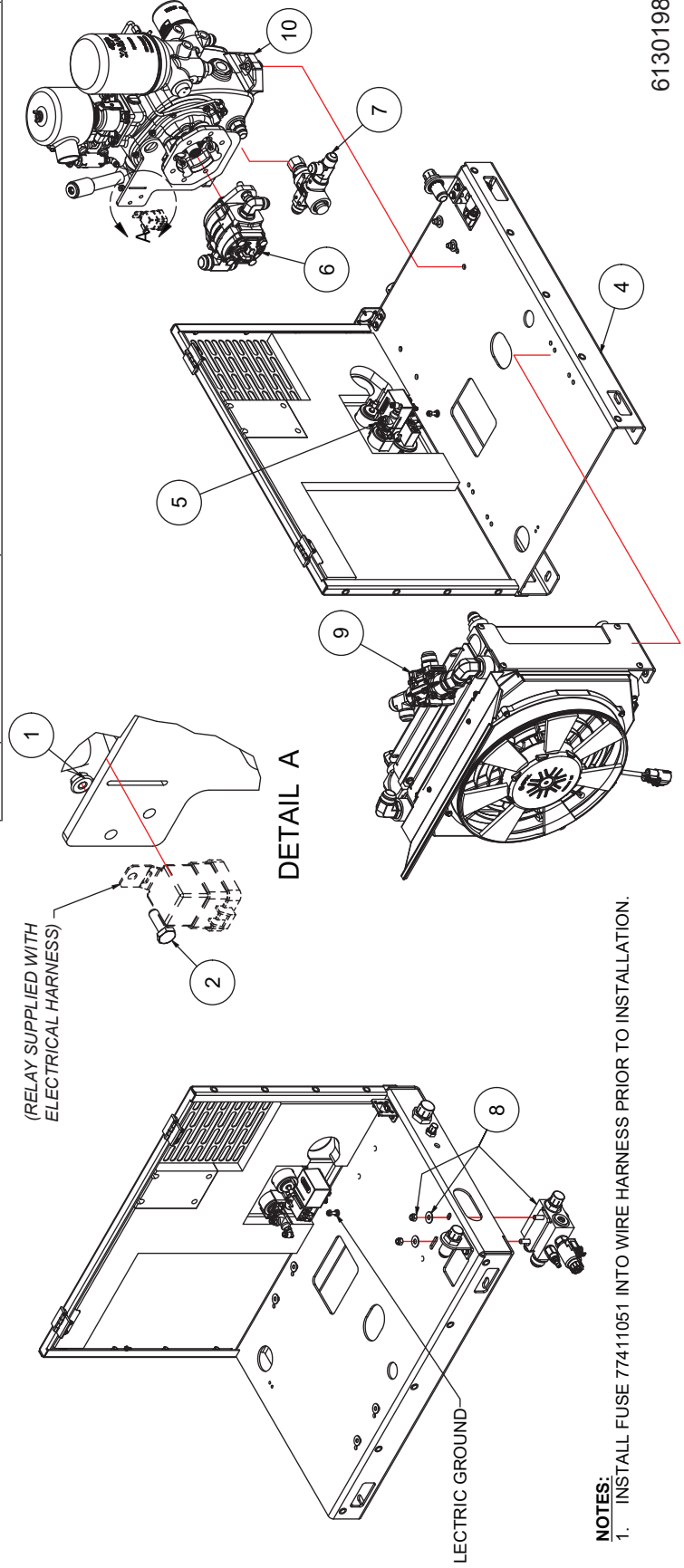
7.25 CAS80RL - OPEN CTR 12V, COLD WTHR PARTS

HOSE AND TUBE ROUTING INSTRUCTIONS

ITEM	IMT PART NO.	DESCRIPTION	QTY
1	-	NUT, HEX FLANGE 1/4-20	1
2	-	CAP SCREW, HEX GR5 1/4-20 x 0.75	1
3	-	OIL COOLING SYS BRUSHLESS 12V PUSHER RS85 LW	1
4	-	FRAME & CANOPY ASSY	1
5	-	INST PANEL ASSY MECHANICAL	1
6	-	MOTOR AND DRIVE PARTS CAS MOTOR OPEN CENTER	1
7	-	COMPRESSOR THERMAL CONTROL	1
8	-	CONTROL MANIFOLD OPEN CENTER 12V	1
9	-	HYDRAULIC THERMAL VALVE ASSEMBLY	1
10	70735315	AIREND & ATT, VRS85E ALPNGDSP347	1
NS	-	HOSE,FLEX AIR INLET 2 INCH BLACK	1.5 FT
NS	77441766	HARNES,EXTENSION 6 PIN DEUTSCH	
NS	77411051	FUSE,40A,JCASE LOW-PROFILE PUSH-IN GREEN	
NS	77441767	HARNES,RS85 LW W/GAUGES	
NS	-	HOSE & FTG ASSY, OC W/ THRM	



COMPRESSOR OIL DRAIN HOSE
TO BE INSTALLED AT A 10°
DOWNWARD ANGLE



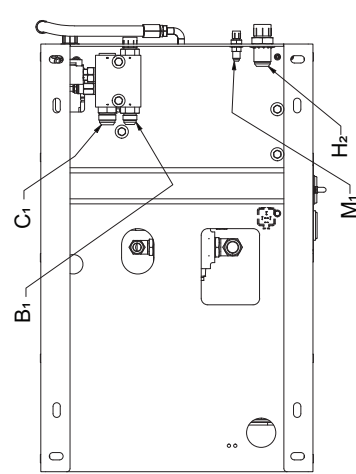
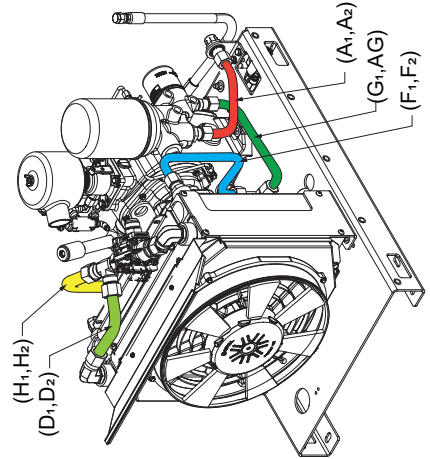
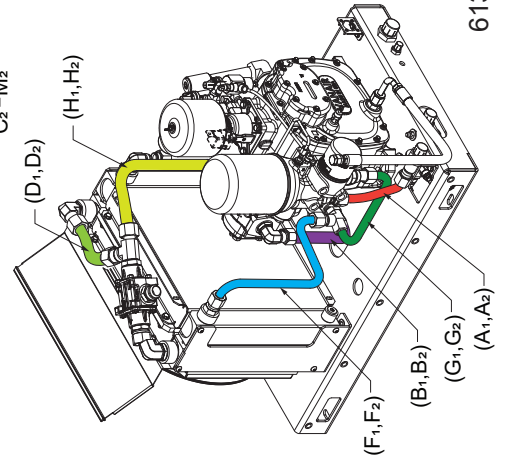
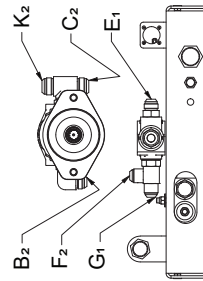
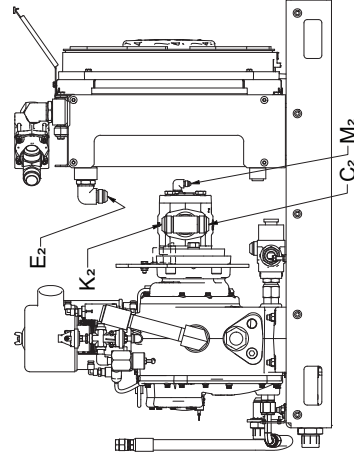
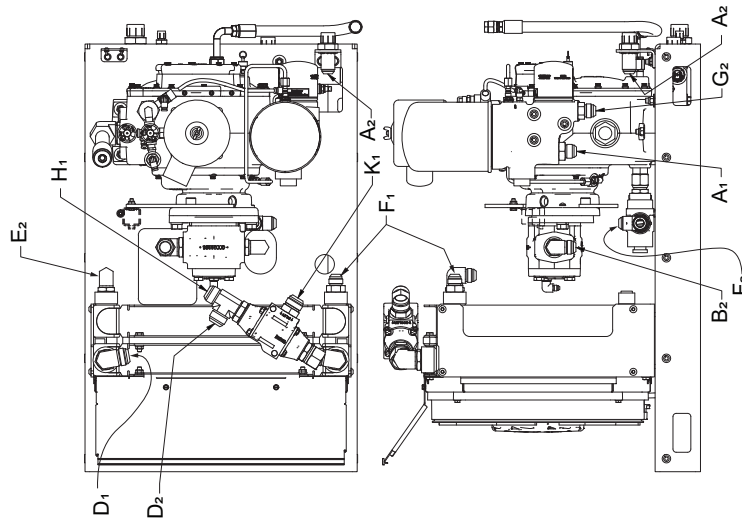
NOTES:
1. INSTALL FUSE 77411051 INTO WIRE HARNES PRIOR TO INSTALLATION.

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7.26 HOSE AND TUBE ROUTING - OPEN CTR, 12V, COLD WEATHER



HOSE AND TUBE ROUTING INSTRUCTIONS					
ITEM	IMT PART NUMBER	DESCRIPTION	QTY	START	END
1	-	TUBE, CMPR TO SVC AIR OUTLET 3/4 IN	1	A ₁	A ₂
2	-	TUBE, HYD OPEN CTR MNFD TO MOTOR 3/4 IN	1	B ₁	B ₂
3	-	TUBE, HYDR OPEN CTR MNFD RTN TO MTR RTN 1 IN	1	C ₁	C ₂
4	-	TUBE, HYD CLR OUT TO BYPASS TEE 1 IN	1	D ₁	D ₂
5	-	TUBE, CMPR THRML VLV TO COOLER 3/4 IN	1	E ₁	E ₂
6	-	TUBE, CMPR COOLER OUT TO THRML VLV 3/4 IN	1	F ₁	F ₂
7	-	TUBE, CMPR THRML VLV TO FILTER 3/4 IN	1	G ₁	G ₂
8	-	TUBE, HYDR BYPASS TEE TO RTN BULKHD 1 IN	1	H ₁	H ₂
9	-	HOSE, HYDR MOTOR TO THRML VLV INLET 1 IN	1	K ₁	K ₂
10	-	HOSE, HYDR MOTOR CASE DRAIN 1/4 IN	1	M ₁	M ₂

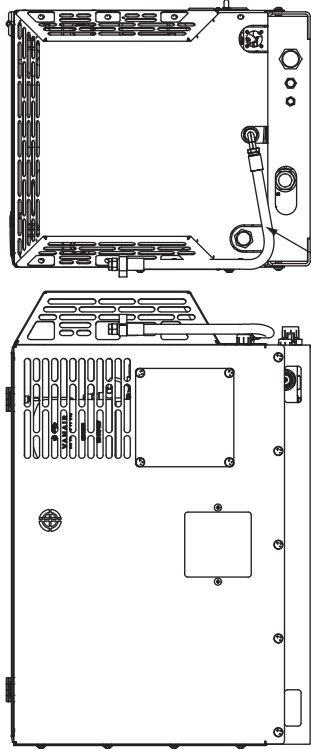


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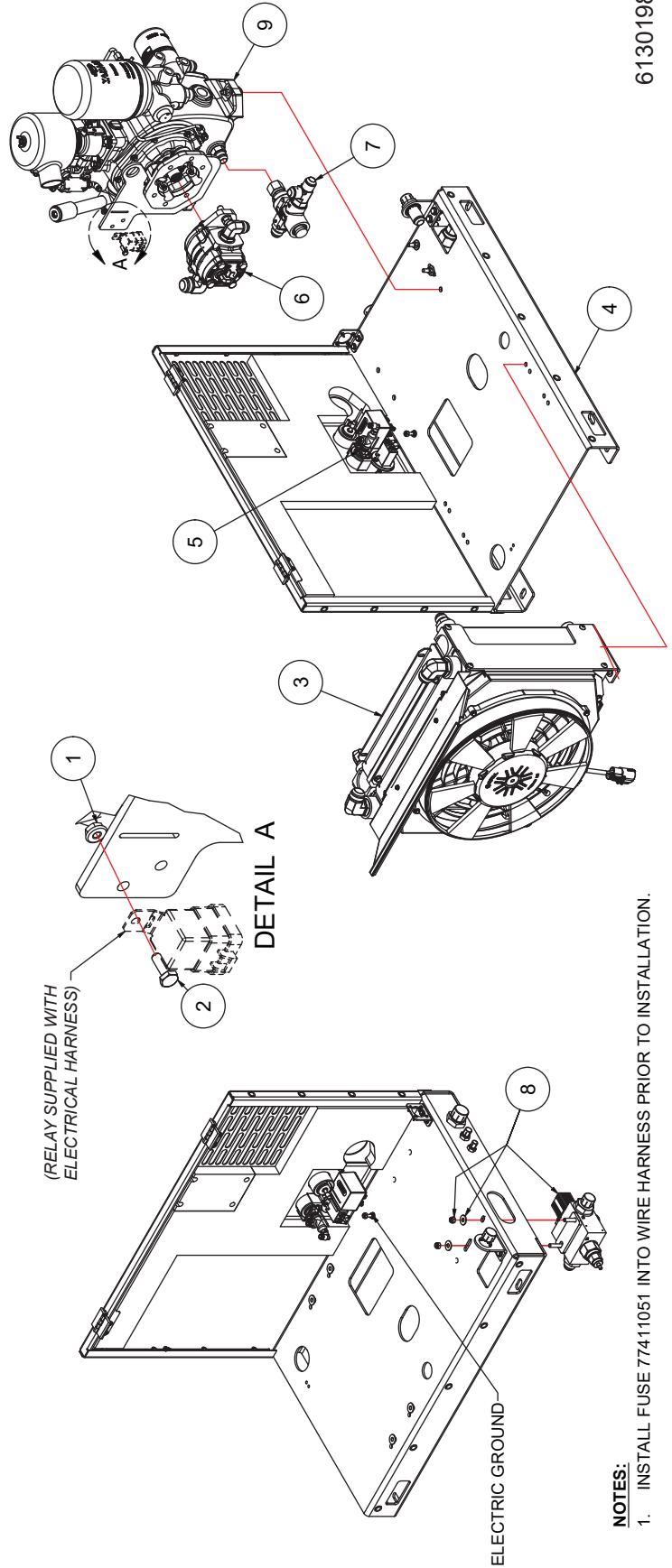


7.27 CAS80RL - CLOSED CTR, 12V PARTS

HOSE AND TUBE ROUTING INSTRUCTIONS			
ITEM	IMT PART NO.	DESCRIPTION	QTY
1	-	NUT, HEX FLANGE 1/4-20	1
2	-	CAP SCREW, HEX GR5 1/4-20 x 0.75	1
3	-	OIL COOLING SYS BRUSHLESS 12V PUSHER	1
4	-	FRAME & CANOPY ASSY, CLOSED	1
5	-	INST PANEL ASSY MECHANICAL	1
6	-	MOTOR & DRIVE PARTS CAS MOTOR CLOSED CENTER	1
7	-	COMPRESSOR THERMAL CONTROL	1
8	-	CONTROL MANIFOLD CLOSED CENTER 12V	1
9	70735315	AIREND & ATT, VRS85E ALPNGDSP347	1
NS	-	HOSE,FLEX AIR INLET 2 INCH BLACK	1.5 FT
NS	77441766	HARNES,EXTENSION 6 PIN DEUTSCH	1
NS	77411051	FUSE,40A JCASE LOW-PROFILE PUSH-IN GREEN	1
NS	77441767	HARNES,RS85 LW W/GAUGES	1
NS	-	HOSE & FTG ASSY, OC W/ THRML	1



COMPRESSOR OIL DRAIN HOSE TO BE INSTALLED AT A 10° DOWNWARD ANGLE



NOTES:

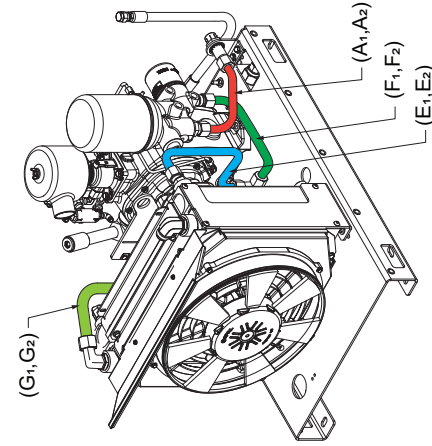
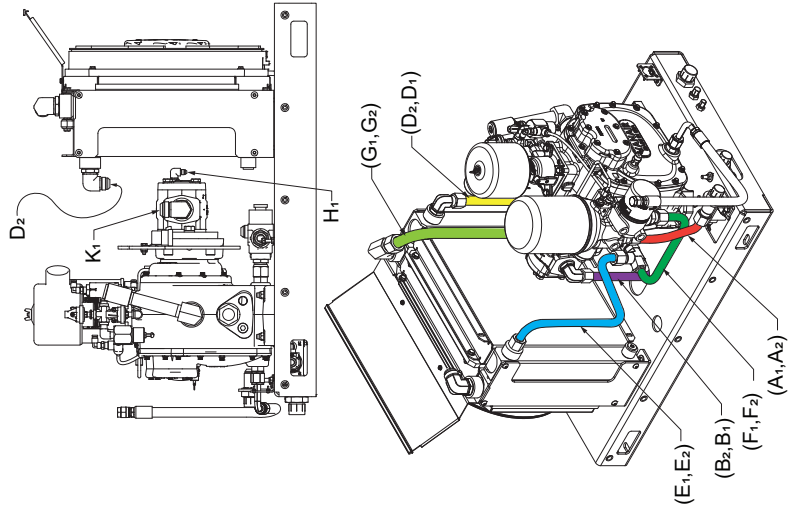
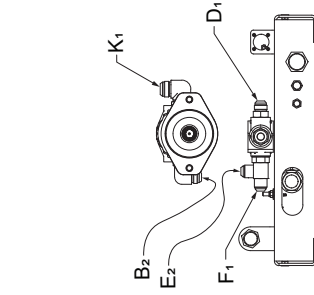
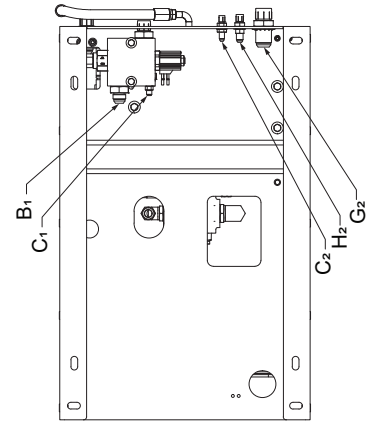
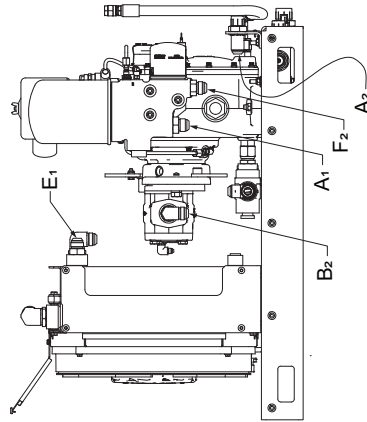
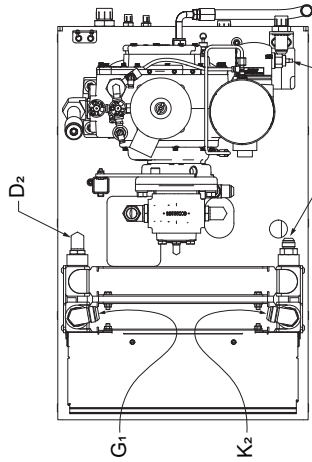
1. INSTALL FUSE 77411051 INTO WIRE HARNES PRIOR TO INSTALLATION.

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7.28 HOSE AND TUBE ROUTING - CLOSED CTR, 12V



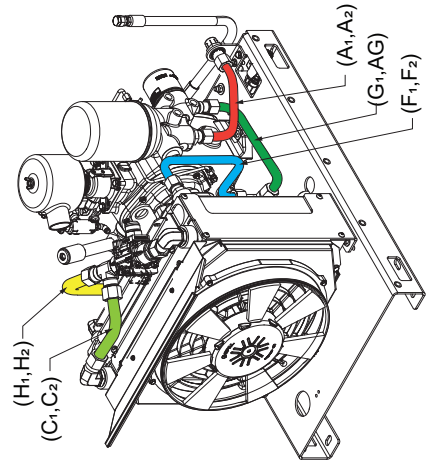
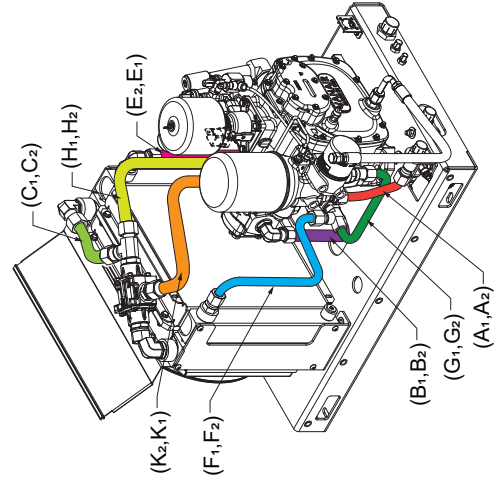
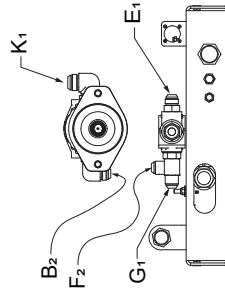
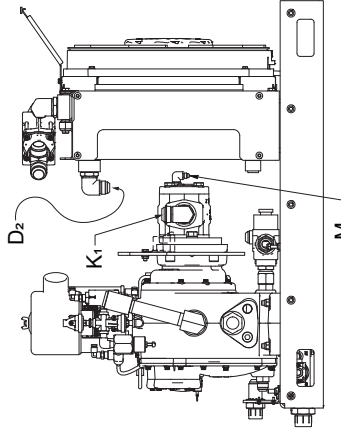
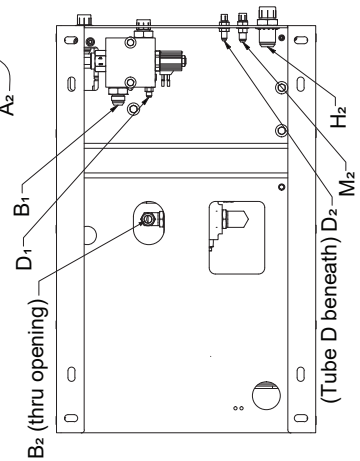
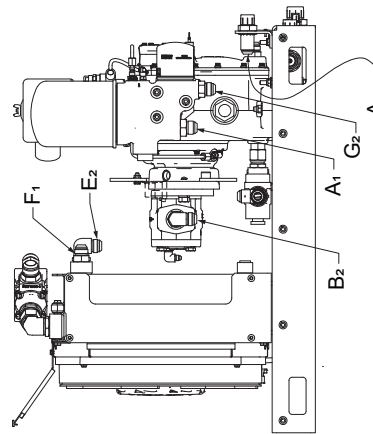
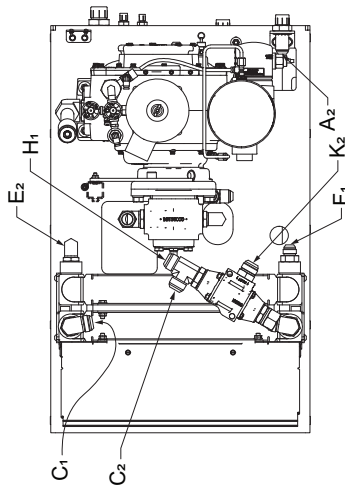
HOSE AND TUBE ROUTING INSTRUCTIONS					
ITEM	IMT PART NUMBER	DESCRIPTION	QTY	START	END
1	-	TUBE, CMPR TO SVCAIR OUTLET 3/4 IN	1	A ₁	A ₂
2	-	TUBE, HYD CLSD CTR MNFD TO MOTOR 3/4 IN	1	B ₁	B ₂
3	-	TUBE, HYD MNFD TO LOAD SENSE 1/4 IN	1	C ₁	C ₂
4	-	TUBE, CMPR THRML VLV TO COOLER 3/4 IN	1	D ₁	D ₂
5	-	TUBE, CMPR COOLER OUT TO THRML 3/4 IN	1	E ₁	E ₂
6	-	TUBE, CMPR THRML VLV TO FILTER 3/4 IN	1	F ₁	F ₂
7	-	TUBE, HYDR COOLER TO RTN BULKHEAD 1 IN	1	G ₁	G ₂
8	-	HOSE, HYDR MTR TO CASE DRAIN 1/4 IN	1	H ₁	H ₂
9	-	HOSE, HYDR MTR OUT TO COOLER 1 IN	1	K ₁	K ₂





7.29 HOSE AND TUBE ROUTING - CLOSED CTR, 12V, COLD WEATHER

HOSE AND TUBE ROUTING INSTRUCTIONS				
ITEM	IMT PART NUMBER	DESCRIPTION	QTY	START END
1	-	TUBE, CMPR TO SVC AIR OUTLET 3/4 IN	1	A ₁ A ₂
2	-	TUBE, HYD CLSD CTR MNFD TO MOTOR 3/4 IN	1	B ₁ B ₂
3	-	TUBE, HYD CLR OUT TO BYPASS TEE 1 IN	1	C ₁ C ₂
4	-	TUBE, HYD MNFLD TO BULKHEAD 1/4 IN	1	D ₁ D ₂
5	-	TUBE, CMPR THRML VLV TO COOLER 3/4 IN	1	E ₁ E ₂
6	-	TUBE, CMPR COOLER OUT TO THRML VLV 3/4 IN	1	F ₁ F ₂
7	-	TUBE, CMPR THRML VLV TO FILTER 3/4 IN	1	G ₁ G ₂
8	-	TUBE, HYDR BYPASS TEE TO RTN BULKHD 1 IN	1	H ₁ H ₂
9	-	HOSE, HYDR MTR TO THRML VLV INLET 1 IN	1	K ₁ K ₂
10	-	HOSE, HYDR MTR TO CASE DRAIN 1/4 IN	1	M ₁ M ₂



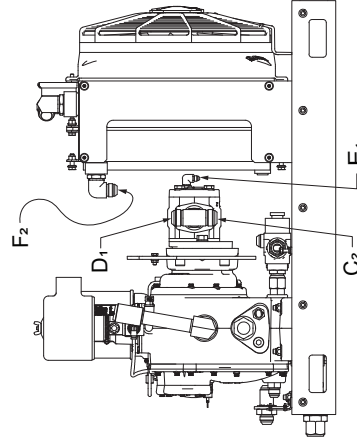
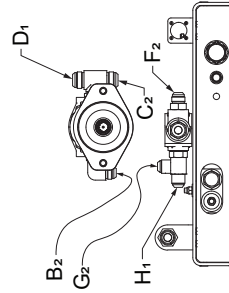
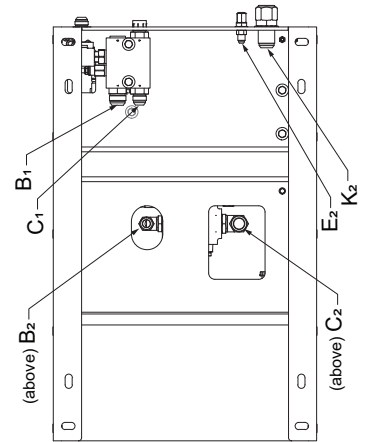
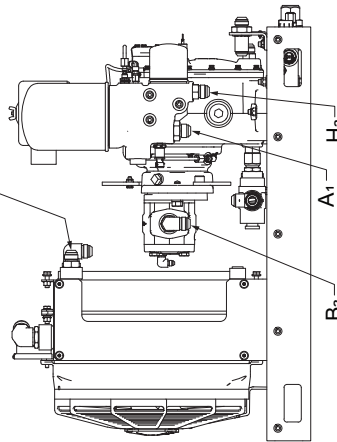
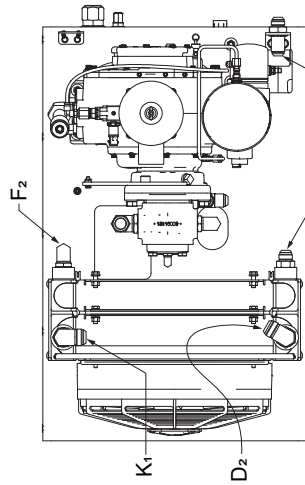
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7.30 HOSE AND TUBE ROUTING - OPEN CTR, 12V, AUTO CRANE, NO THERMAL VLV

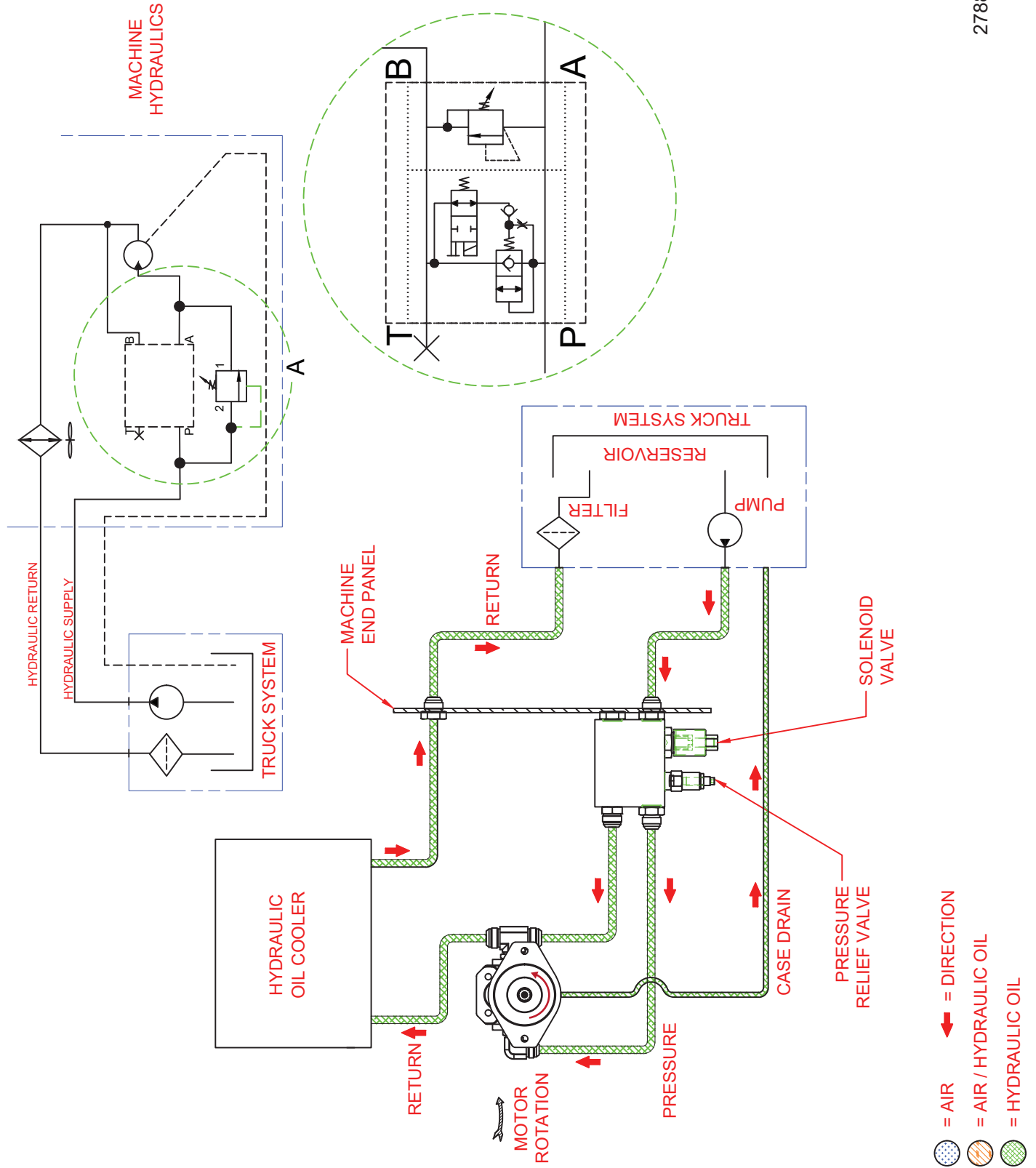


HOSE AND TUBE ROUTING INSTRUCTIONS

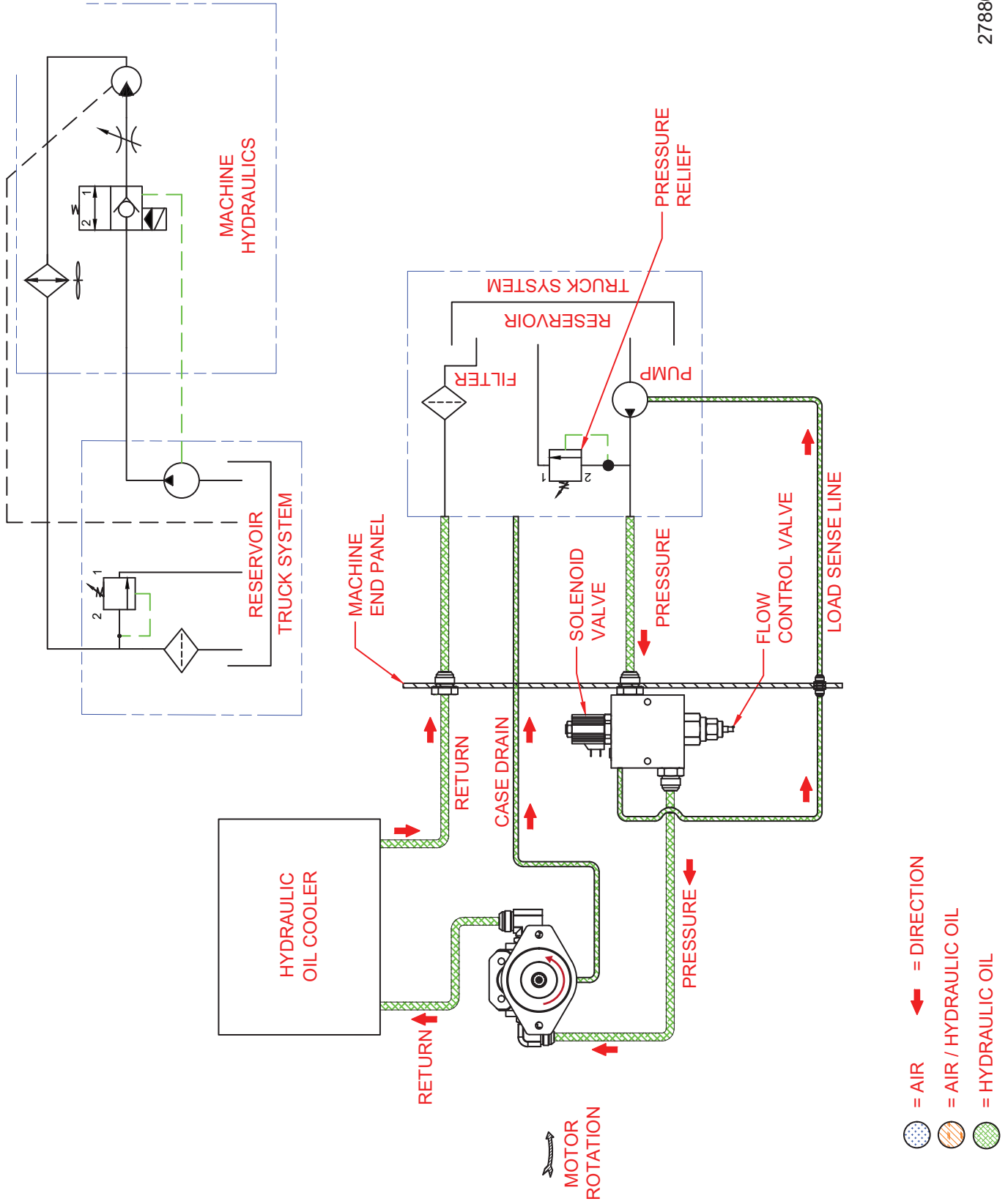
ITEM	IMT PART NUMBER	DESCRIPTION	QTY	START	END
1	-	TUBE, CMPR TO SVC AIR OUTLET 3/4 IN	1	A ₁	A ₂
2	-	TUBE, HYD OPEN CTR MNFD TO MOTOR 3/4 IN	1	B ₁	B ₂
3	-	TUBE, HYD OPEN CTR MNFD RTN TO MTR RTN 1 IN	1	C ₁	C ₂
4	-	HOSE, HYDR MOTOR OUT TO COOLER 1 IN	1	D ₁	D ₂
5	-	HOSE, HYDR MOTOR CASE DRAIN 1/4 IN	1	E ₁	E ₂
6	-	TUBE, CMPR THRLM VLV TO COOLER 3/4 IN	1	F ₁	F ₂
7	-	TUBE, CMPR COOLER OUT TO THRLM VLV 3/4 IN	1	G ₁	G ₂
8	-	TUBE, CMPR THRLM VLV TO FILTER 3/4 IN	1	H ₁	H ₂
9	-	TUBE, HYDR COOLER TO RTN BULKHEAD 1 IN AUTO-CRANE	1	K ₁	K ₂
10	-	HOSE, HYDR MTR TO CASE DRAIN 1/4 IN	1	M ₁	M ₂



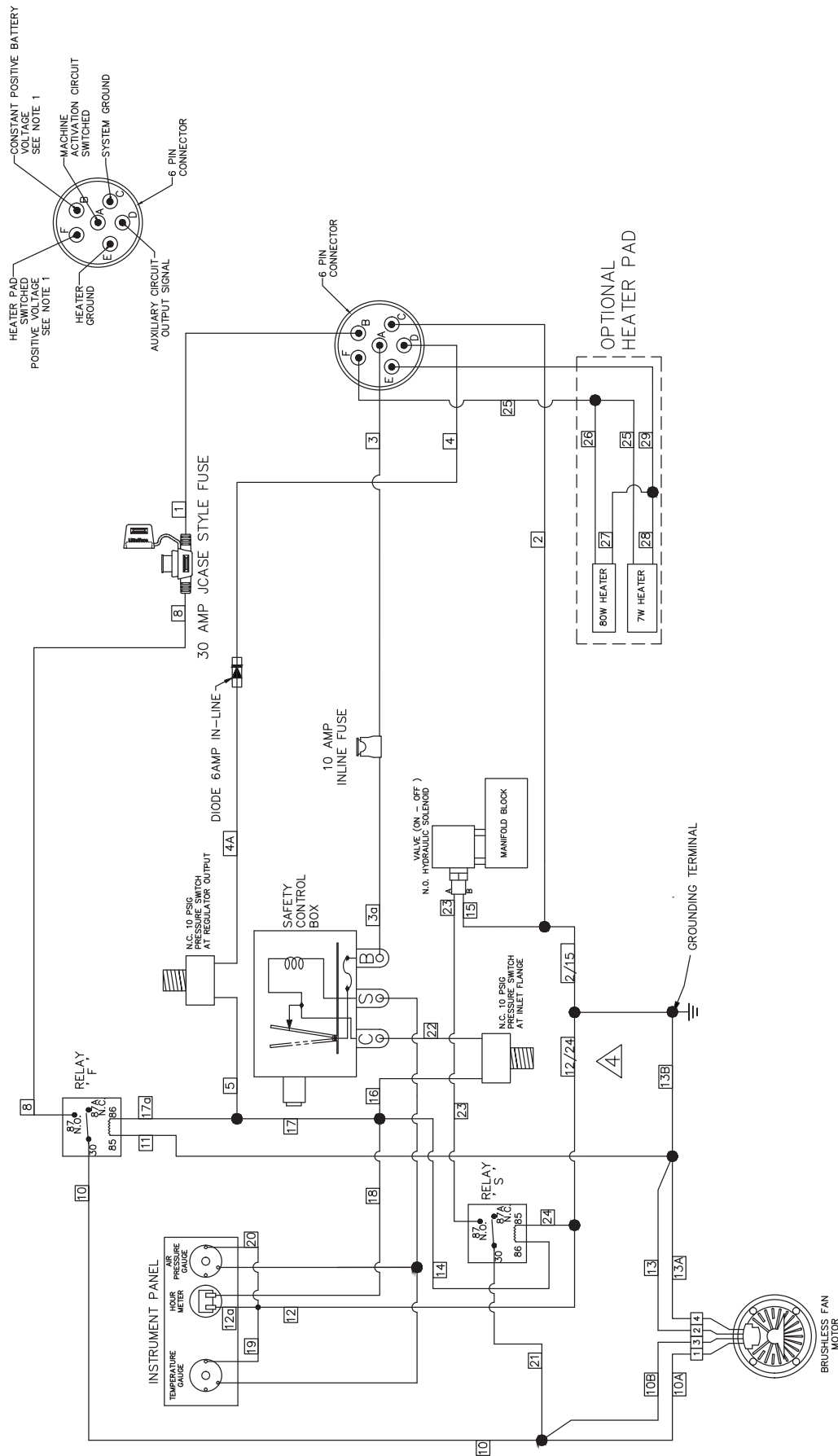
7.31 SCHEMATIC - HYDRAULIC FLOW, OPEN CENTER WITH CASE DRAIN



7.32 SCHEMATIC - FLOW HYDRAULIC LW OPEN CENTER WITH CASE DRAIN COLD WEATHER



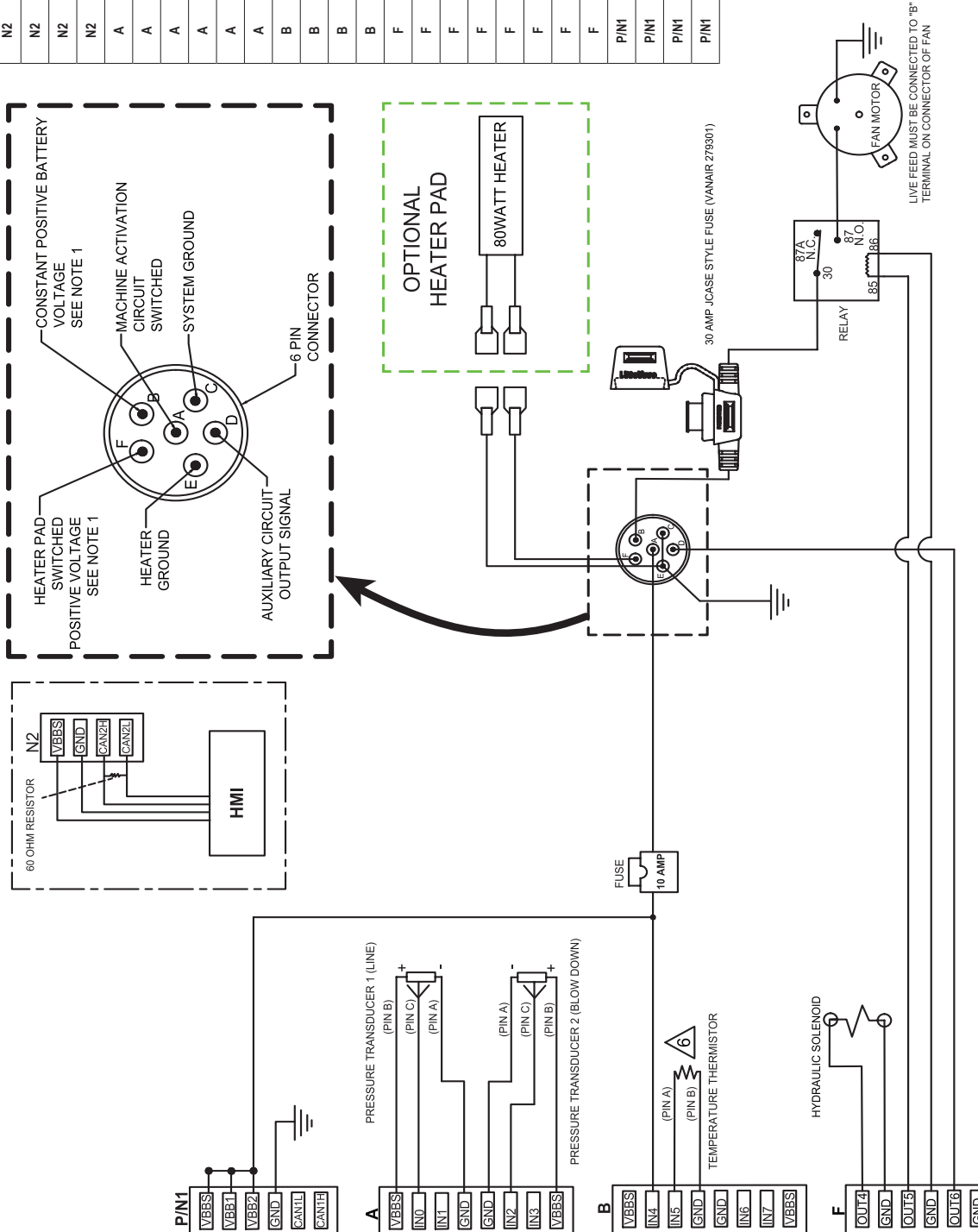
7.33 WIRING DIAGRAM - LW WITH GAUGES



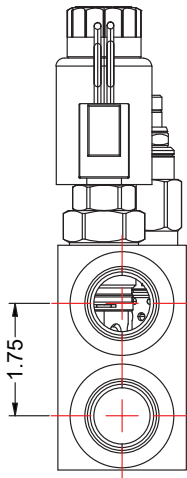
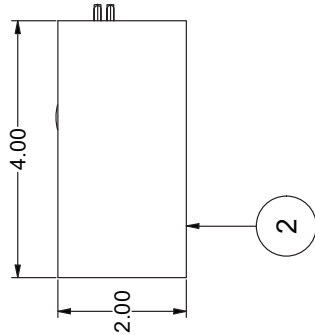
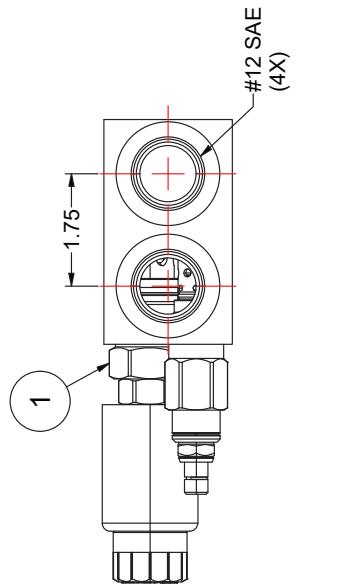
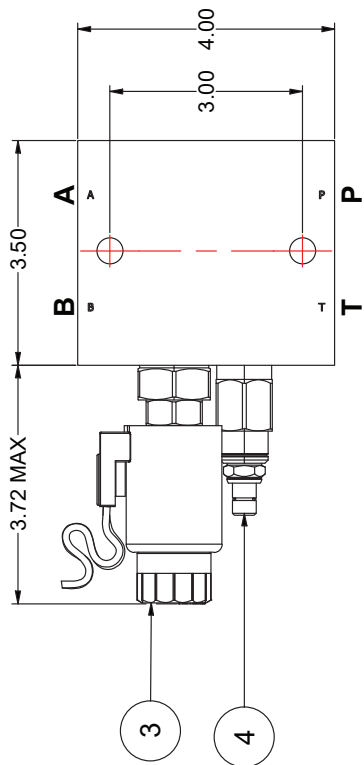
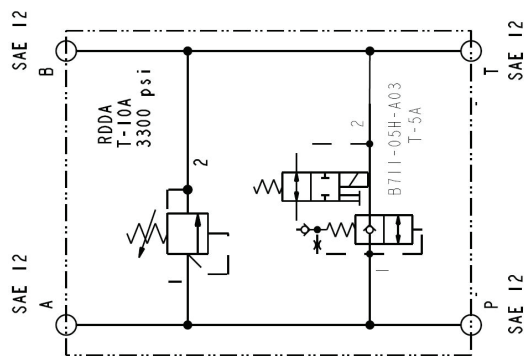
1. 12 OR 24 VOLT DC DEPENDING ON UNIT

7.34 WIRING DIAGRAM

COLUMN	SPADE TERMINAL	FUNCTION
N2	VBBs	POWER TO DISPLAY
N2	GND	GROUND TO DISPLAY
N2	CAN2 H	CANBUS COMMUNICATION
N2	CAN2 L	CANBUS COMMUNICATION
A	VBBs	IN0 & IN1 POWER
A	IN0	PRESSURE TRANSDUCER 1 (LINE)
A	GND	IN0 & IN1 GROUND
A	GND	IN2 & IN3 GROUND
A	IN2	PRESSURE TRANSDUCER 2 (BLOWDOWN)
A	VBBs	IN2 & IN3 POWER
B	IN4	POWER QUALITY SENSE WIRE
B	VBBs	IN4 & IN5 POWER
B	IN5	TEMPERATURE THERMISTOR
B	GND	IN4 & IN5 GROUND
F	OUT4	HYDRAULIC SOLENOID
F	GND	HYDRAULIC SOLENOID GROUND
F	OUT5	FAN RELAY COIL POWER
F	GND	OUT5 GROUND
F	OUT6	AUX OUT
F	GND	OUT6 GROUND
F	OUT7	AIR SOLENOID
F	GND	AIR SOLENOID GROUND
PIN1	VBBs	SYSTEM POWER
PIN1	VBB1	SYSTEM POWER
PIN1	VBB2	SYSTEM POWER
PIN1	GND	SYSTEM GROUND



7.35 MANIFOLD, HYDRAULIC SOFT SHIFT



ITEM	DESCRIPTION	PART NUMBER	QTY
1	INTERNAL CARTRIDGE	73540735	1
2	MANIFOLD BLOCK	73540736	1
3	24V DC SOLENOID	73540682	1
4	RELIEF VALVE	73540683	1

7.36 MANIFOLD, HYDRAULIC SOFT SHIFT

HOSE LAYOUT CONSIDERATION		WRONG	RIGHT
<p>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.</p>			
<p>2. Ample bend radius should be provided to avoid collapsing of line and restriction of flow.</p>			
<p>3. Exceeding minimum bend radius will greatly reduce hose assembly life.</p>			
HOSE LAYOUT CONSIDERATION		WRONG	RIGHT
<p>4. Use elbows or other adapters as necessary to eliminate excess hose length and to insure neater installation for easier maintenance.</p>			
<p>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.</p>			
<p>6. When routing, use clamps to secure the hose in its proper position.</p>			



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