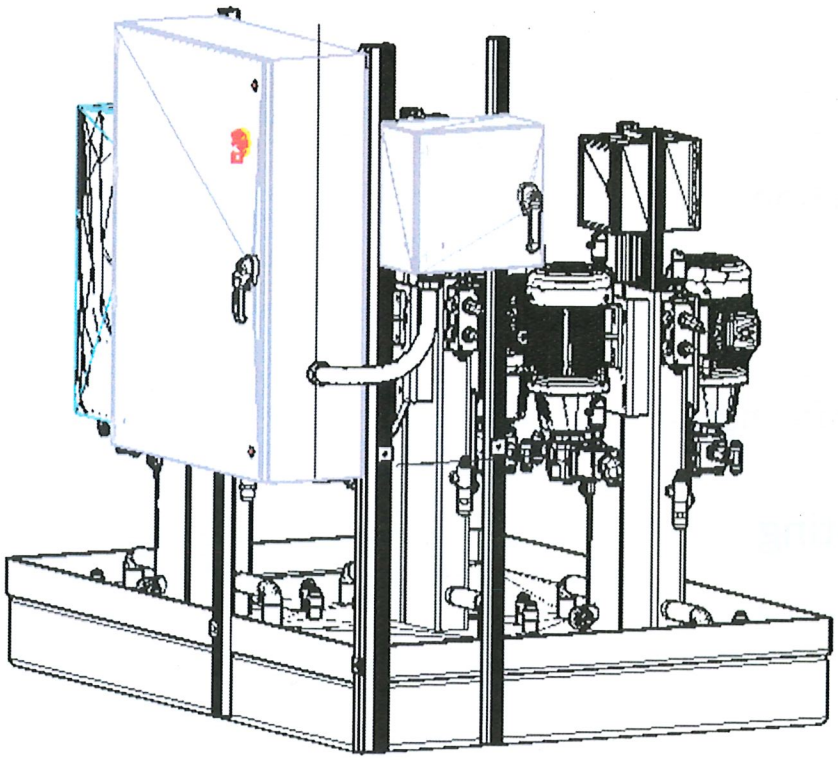
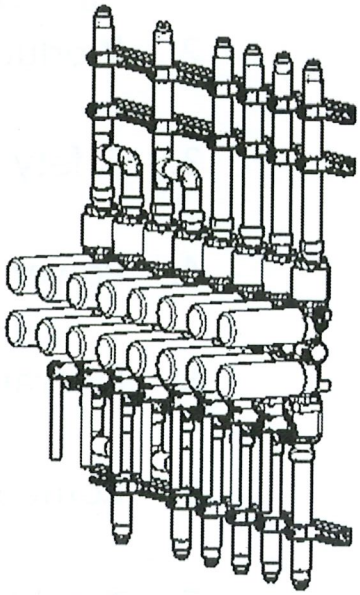
OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM





OPEN LOOP ENERGY

OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM

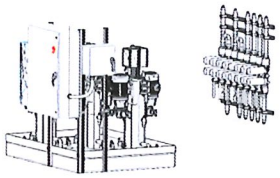
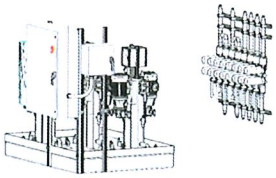


TABLE OF CONTENTS

OPEN LOOP ENERGY

OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



Attention: Read through the complete manual prior to using your LPS system.

Using the Manual

The operating manual is an important part of your LPS Lube Pumping Station. It should be read thoroughly before initial use by all individuals and referred to often to make sure adequate safety and service concerns are being addressed.

Reading the owner's manual thoroughly will help avoid any personal injury or damage to your machine. The information in this manual will offer you the most effective tools for the safety and care required to operate your machine. By knowing how best to operate this machine you will be better positioned to show others who may also operate it.

This manual is placed in order starting from the safety requirements to the operating functions of your machine. You can refer back to the manual at any time to help troubleshoot any specific operating functions, so store it with the machine at all times.

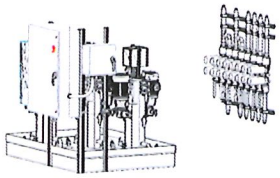
Notice

Actual pressure released at the nozzle points of discharge may vary by lubrication due to multiple factors including but not limited to lubricant viscosity and temperature during the course of any day.

OPEN LOOP ENERGY

OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



SAFETY

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

The safety alert symbol (⚠) is used with a signal word (DANGER, CAUTION, WARNING), a pictorial and/or a safety message to alert you to hazards.

DANGER indicates a hazard which, if not avoided, will result in death or serious injury.
WARNING indicates a hazard which, if not avoided, could result in death or serious injury.
CAUTION indicates a hazard which, if not avoided, might result in minor or moderate injury.
NOTICE indicates a situation that could result in equipment damage. Follow safety messages to avoid or reduce the risk of injury or death.

Hazard Symbols and Meanings

ELECTRICAL SHOCK

SLIPS FALLS

FLUID INJECTION

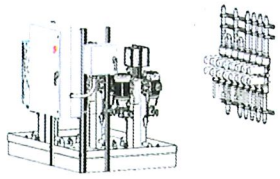
HIGH PRESSURE

ROTATING PARTS

OPEN LOOP ENERGY

OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



SAFETY

DANGER
When performing maintenance on the LPS System all federal, state, and company applicable standard safety and environmental practices should be followed.

WARNING
Prior to work on the system insure there is no pressure in the system.

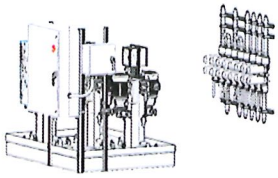
WARNING
Hydraulic fluid may be hot, take precautions to avoid contact with skin.

WARNING
Any maintenance, preventative maintenance and troubleshooting performed on this machine must be done only with authorized and qualified persons.

Additionally, all electrical work must be done by authorized and qualified persons.

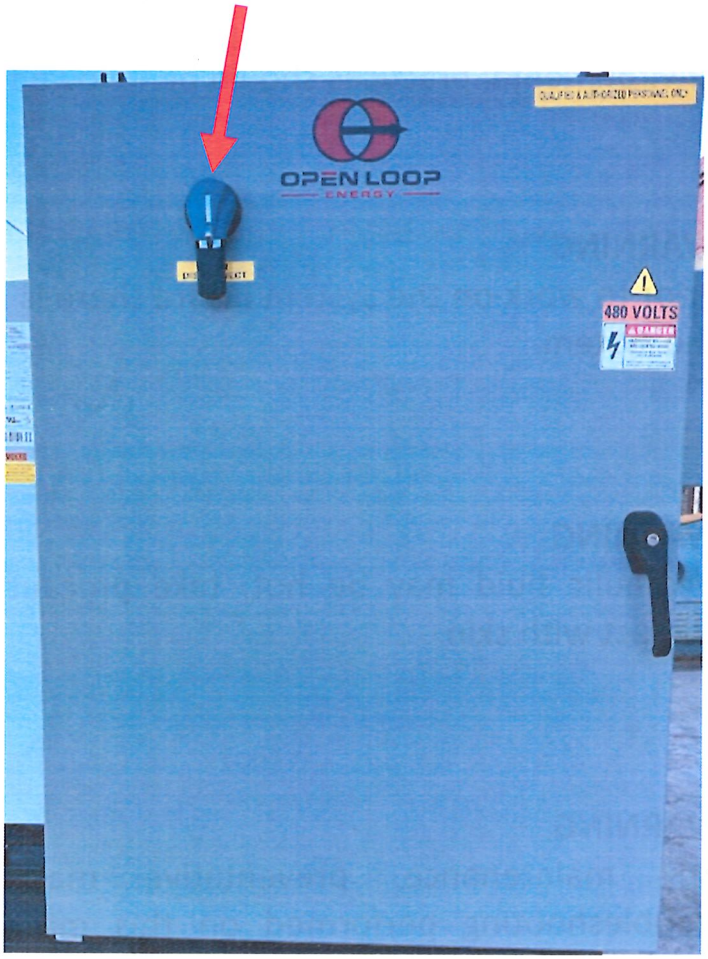
OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



SAFETY

NOTICE
Main local Lock-Out Point for entire LPS system.

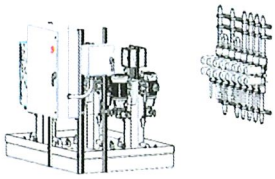


Additional lock-out points will exist. Be sure to understand where each of these are located and coordinate with authorized personnel as needed to comply with RTM safety standards.

OPEN LOOP ENERGY

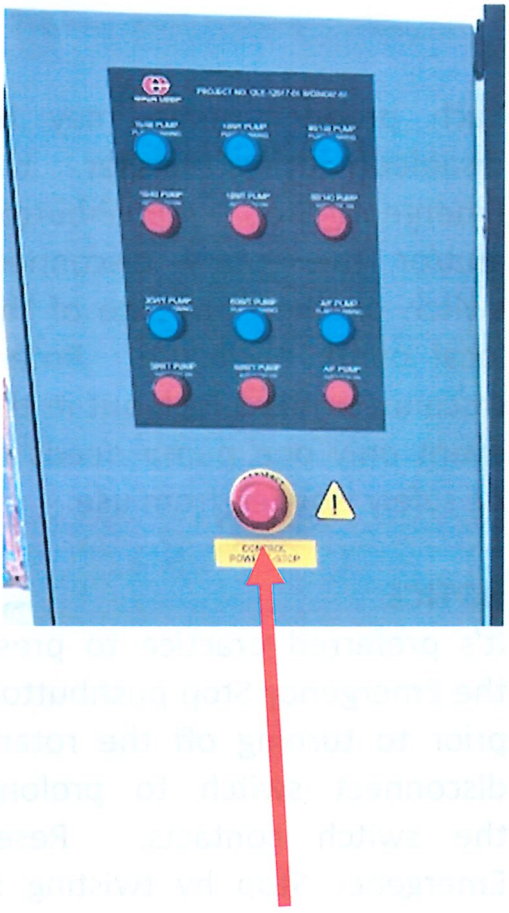
OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



SAFETY

NOTICE
LPS main Lock-Out Point for entire system.



Indicator lights for six product pump status. These will provide a quick indication which pumps are enabled and in operation when approaching the LPS System.

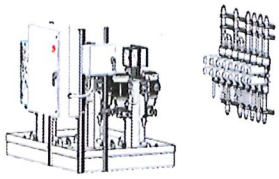
Blue light indicates the product pump is in operation.

Red light indicates that the product pump can operate automatically. This light will remain on when pump is in operation.

Emergency-Stop pushbutton deactivates 24VDC control power. This will stop all product pumps safely and should be activated or enabled prior to lockout and any power disconnects are turned off.

OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



SAFETY

NOTICE
Lock-Out Points local to each product pump

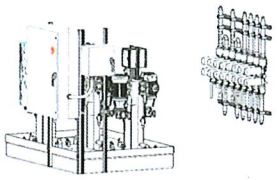
Each product pump may be disabled using either the Emergency-Stop pushbutton and/or the rotary disconnect switch on the right side of the local pump enclosure. Rotary disconnect has a lock-out in the event only one pump needs to be safely isolated from use.

NOTICE
It's preferred practice to press the Emergency Stop pushbutton prior to turning off the rotary disconnect switch to prolong the switch contacts. Reset Emergency Stop by twisting ¼ turn CW.

OPEN LOOP ENERGY

OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



PRODUCT IDENTIFICATION

LPS (Lube Pumping Station) is a six-product pump (pump and motor) lube pumping system designed to move or supply fluids to individual working shop bays for servicing heavy equipment.

PURPOSE

The purpose is to dispense each fluid to the appropriate lube outlet station or PM bay.

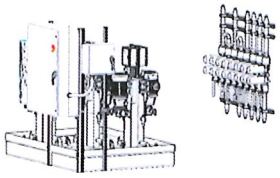
SYSTEM PUMP NUMBER	PRODUCT	LONG NAME	PRODUCT DESCRIPTION
104	1540	SAE 15W-40	Multigrade Diesel Engine Oil
105	10WT	10 WT	ISO 32 Powerflo AW Hydraulic Oil
106	8140	SAE 85W140	Multipurpose Gear Lube
107	60WT	60 WT	PowerDrive Fluid SAE 60
108	30WT	30 WT	PowerDrive Fluid SAE 30
109	A/F	Antifreeze	Engine Coolant 50/50

Each product pump has its own independent control that is set to maintain both high (stop) and a low (start) pressure set-points. Once the **high** set-point is sensed by a pressure switch, the system will pump an additional 45 seconds then turn off the appropriate product pump. Once the pressure drops to the **low** set-point, the appropriate product pump starts and will continue to pump until the **high** set-point is sensed plus an additional 45 seconds. Each product pump has a number association that corresponds to a control diagram.

OPEN LOOP ENERGY

OLE-12917-01 LPS SYSTEM RT BORON

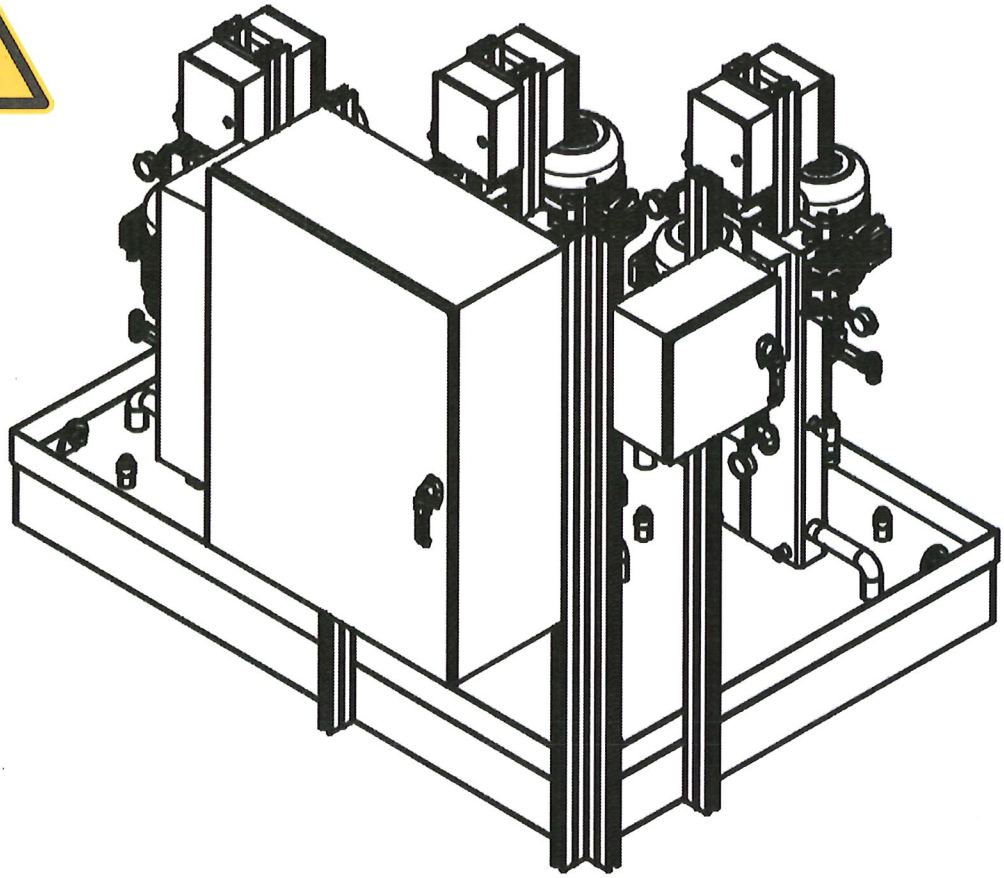
LUBE PUMPING STATION
PUMP TANK FARM



PRODUCT IDENTIFICATION

NOTICE

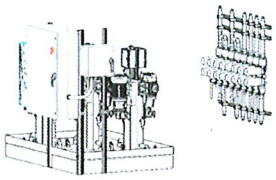
When moving or transporting LPS (Lube Pumping Station) the forklift or tele-handler forks must be fit and fully support both sides of the machine. Failure will cause damage to structure and plumbing located in the base and cause future lubrication leak. Unit base measures 60 x 84 inches.



LPS is shipped with two 4x4 strips on the 60-inch edges.

OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



PRODUCT IDENTIFICATION

NOTICE

Each product pump has a pressure relief valve to protect or limit high pressure that is slightly above the pressure switch set points. This also will protect the conductors from high pressure that would be built by thermal expansion over the course of the day.

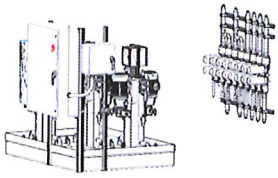
NOTICE

It is important that each pressure relief setting remain as set to avoid constant running of a product pump and also to remain relevant to protecting the system from over-pressure. You must be properly qualified to make a change or adjust the relief valve along with pressure switch adjustments. The relief valve needs to be set a minimum of 10-15% higher than the high-pressure switch setting.

PART NUMBER	Part Description	QTY (EA)	F.L. Amps @ 480 VAC
PEWWE3-36-182TC	MOTOR ELECTRIC 3HP 3600 RPM 182TC FRAME 460V/3PH/60	1	3.7
PEWWE5-18-184TC	MOTOR ELECTRIC 5HP 1800 RPM 184TC FRAME 460V/3PH/60	3	6.3
PEWWE7.5-18-213TC	MOTOR ELECTRIC 7.5HP 1800 RPM 213TC FRAME 460V/3PH/60	2	9.23

OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



PRODUCT IDENTIFICATION

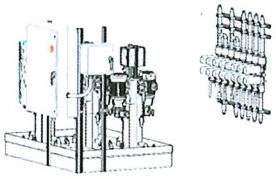
Control Enclosure

NOTICE
Controls should only be set by knowledgeable, authorized and qualified persons. These are preset set upon installation and commissioning to the best optimum operational parameters.

NOTICE
Controls in the Control Enclosure are available for maintenance and troubleshooting purposes. Also, they are additional controls to turn off and disable a particular product pump. There are also pump motor speed control dials that need to remain at the set range for various reasons.

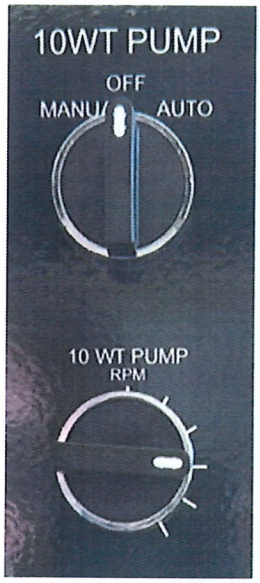
OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



PRODUCT IDENTIFICATION

Control Enclosure



PUMP MOTOR SPEED

Reasons for Product Pump speed variation to remain at optimum operational parameters include but not limited to product pump relief and pressure switch settings, if pump speed is too slow, set pressures may not be achieved resulting in constant pump operation.

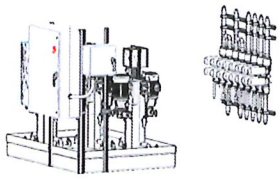
If too fast, set relief pressures will be higher than expected. Also, pump may cavitate with thicker fluids during cooler temperatures.

NOTICE

Pump control selector switch should only be placed in the Manual position when performing troubleshooting and only when present at the lube pumping station area.

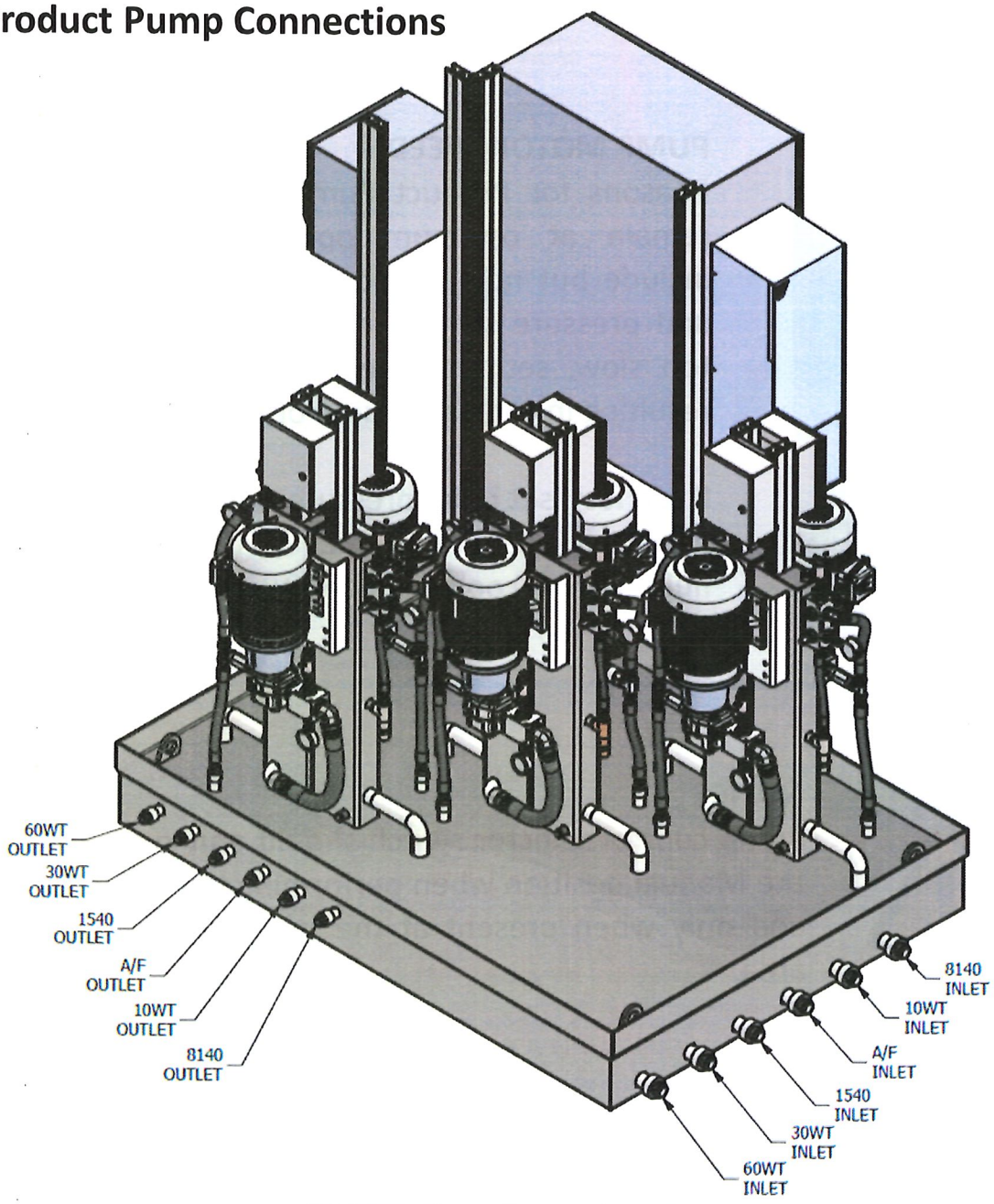
OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



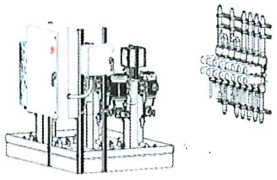
PRODUCT IDENTIFICATION

Product Pump Connections



OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



PRODUCT IDENTIFICATION

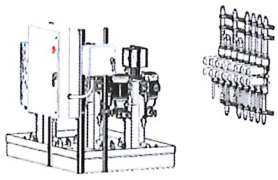
Product Pump Connections

PUMP INLET PORTS

Each product pump has an inlet port located on the back side of the machine that will face the truck shop. These need to be plumbed to the tank farm supply ball valves located on the concrete pony-wall along with the new inlet strainers.

OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM

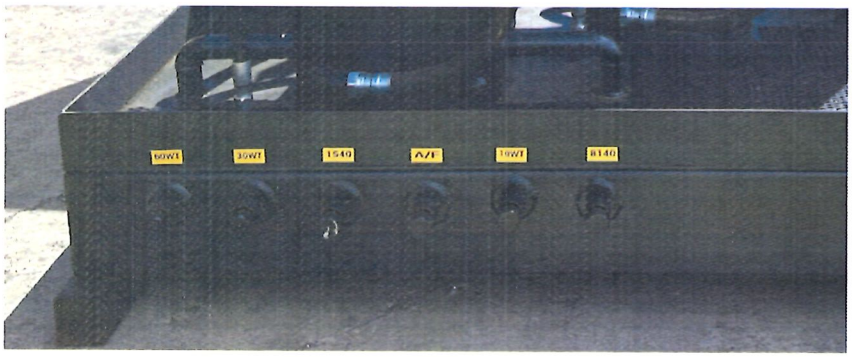


PRODUCT IDENTIFICATION

Product Pump Connections

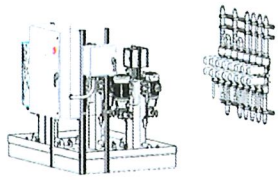
PUMP OUTLET PORTS

Each product pump has an outlet port located on the right side of the machine that will face to the West wall. These need to be plumbed to each appropriate filter inlet port located on the lower side of the filter assemblies. The upper ports will be plumbed to each existing and appropriate high-pressure ball valve and enter the lubrication systems.



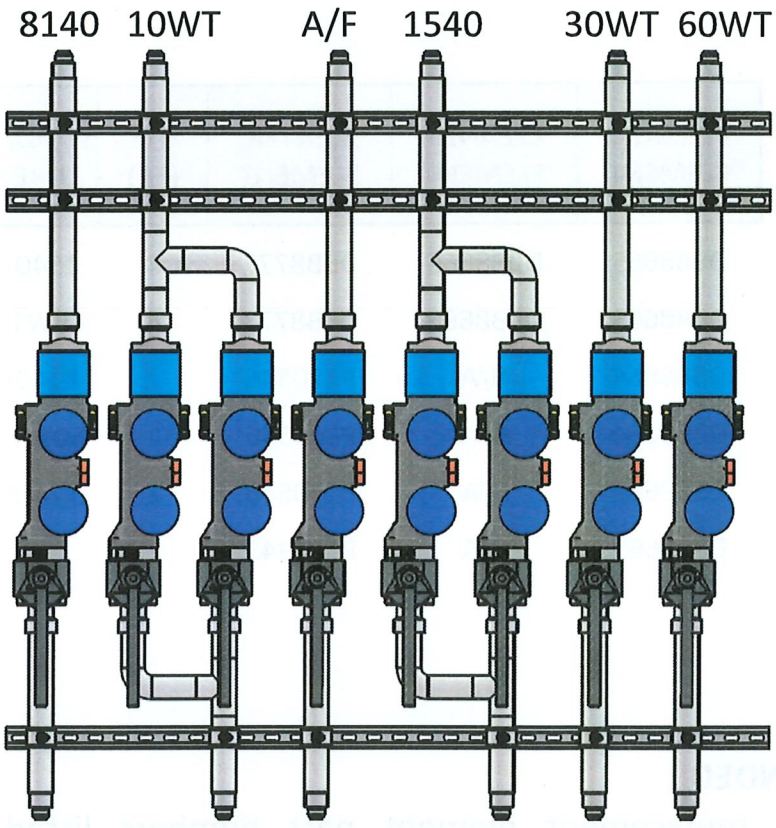
OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



PRODUCT IDENTIFICATION

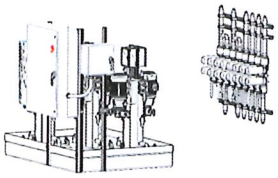
Filter Connections



Inlet ports are on the bottom with outlets on top. There are isolation ball valves at each filter inlet and check valve at each filter assembly outlet. Closing or isolating the inlet ball valve will protect and isolate the filter elements from operation during an element change-out. It's recommended to shut down and isolate the product pump the elements are being changed for prior.

OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



PRODUCT IDENTIFICATION

Filter Element p/n's

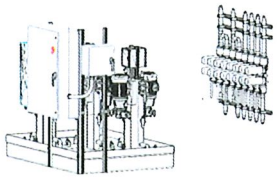
PRIMARY ELEMENT	CLEANER ELEMENT	WINTER ELEMENT	QTY (EA)	FLUID/ LUBE
DBB8665	DBB8666	DBB8777	4	1540
DBB8665	DBB8666	DBB8777	4	10WT
DBB8664	N/A	P170546	2	8140
DBB8664	N/A	P170546	2	60WT
DBB8664	N/A	P170546	2	30WT
DBB8665	N/A	P173943	2	A/F

RECOMMENDED

The above replacement element part numbers listed above are intended to be replacement recommendation with alternate choices based on summer and winter temperatures. Best practice is to replace elements based on time and volume of fluid consumed.

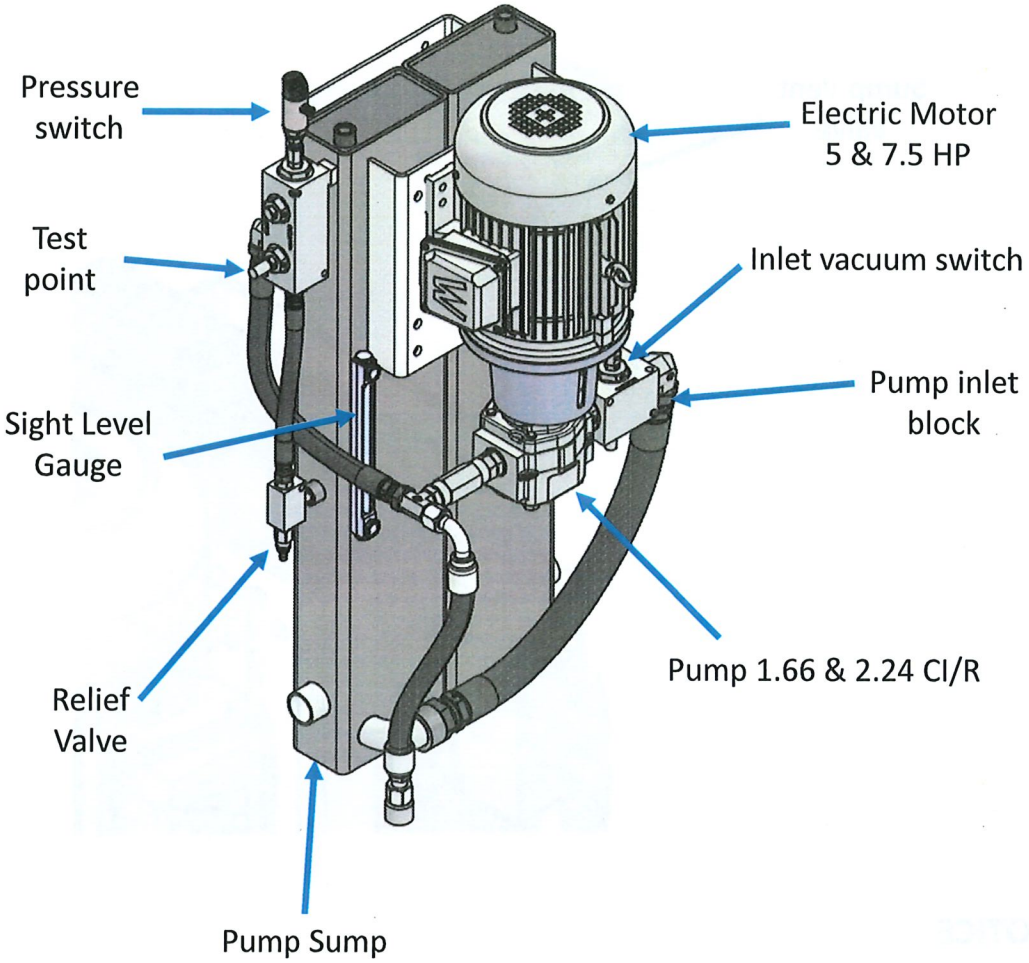
OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



PRODUCT IDENTIFICATION

Product Pump Assemblies

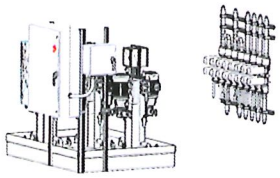


Product Pumps

1540 and 10WT use 7.5 HP with 2.24 size pump 16 GPM
8140, 30WT and 60WT use 5 HP with 1.66 size pump 11.5 GPM

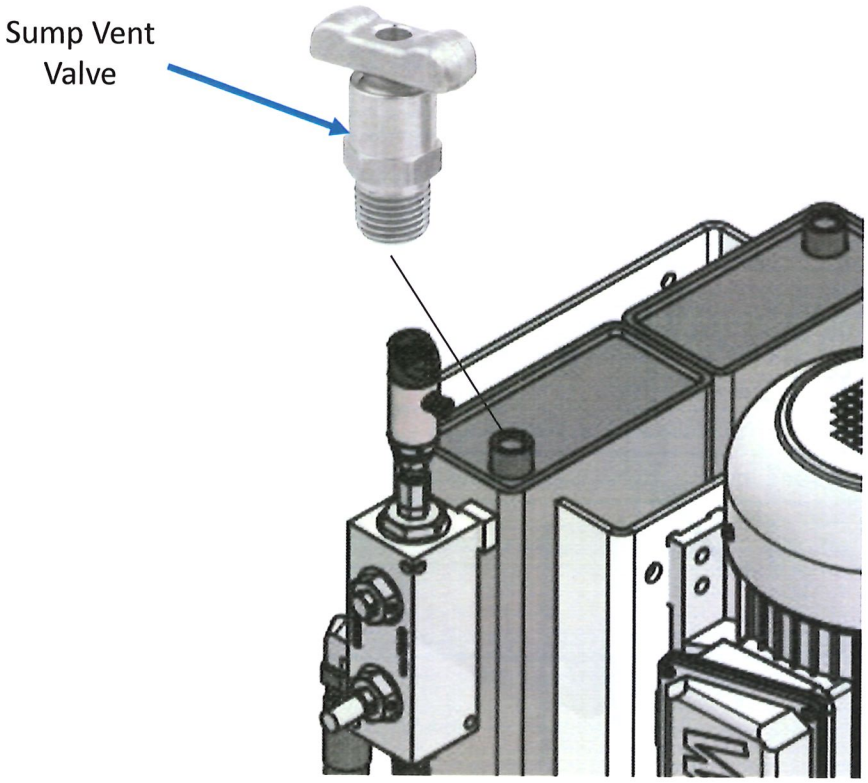
OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



PRODUCT IDENTIFICATION

Product Pump Assemblies

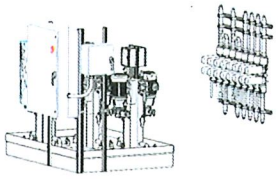


NOTICE

Do not open Sump Vent Valve for any reason other than to perform maintenance or empty the pump sump. This valve is designed only to let in product to the sump and be a consistent supply of lube product to the pump. This needs to be closed and tight so no air can enter sump. Failure will result in pump starvation and failure to perform supply of lube to shop bays.

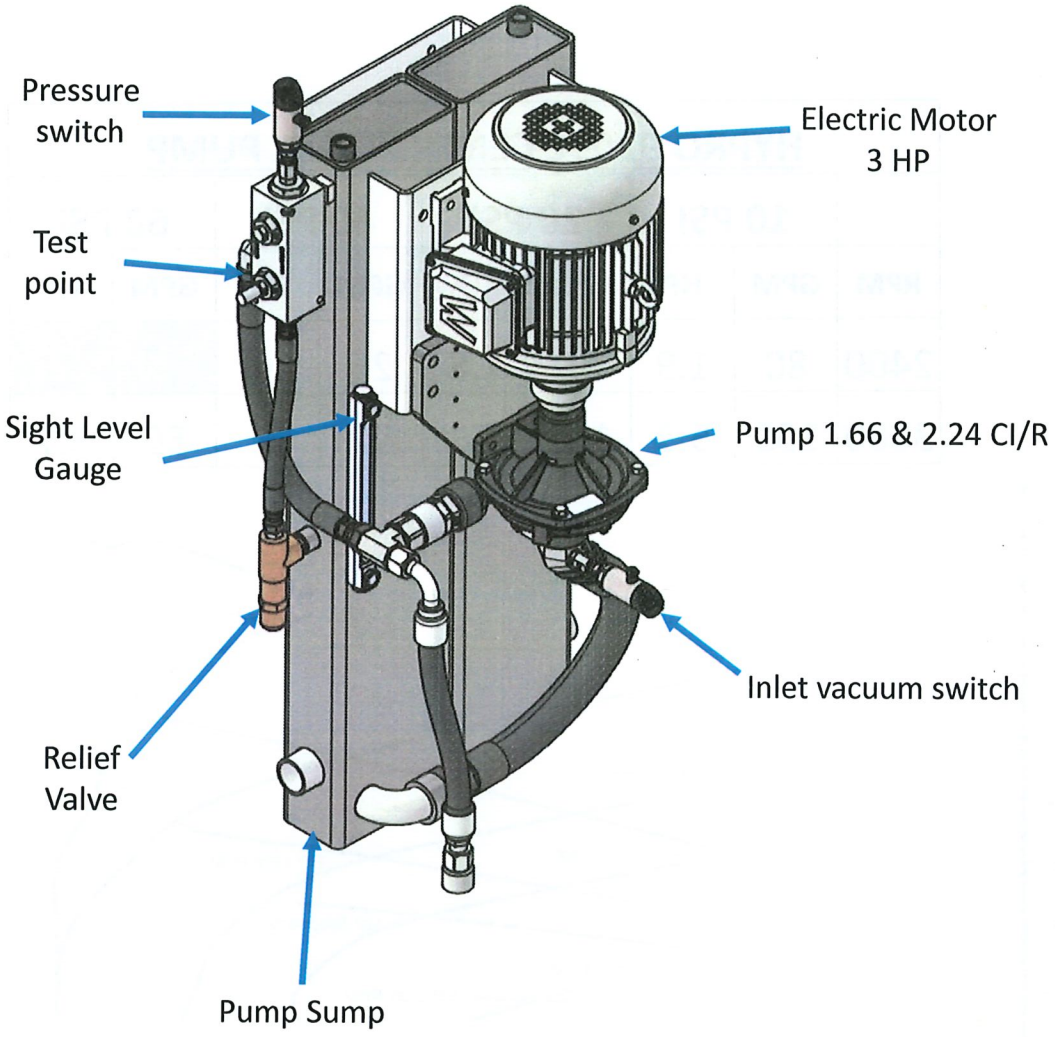
OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



PRODUCT IDENTIFICATION

A/F Product Pump Assembly

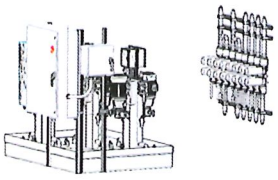


Product Pumps

A/F uses 3 HP with centrifugal pump, manufacture specifications below

OLE-12917-01 LPS SYSTEM RT BORON

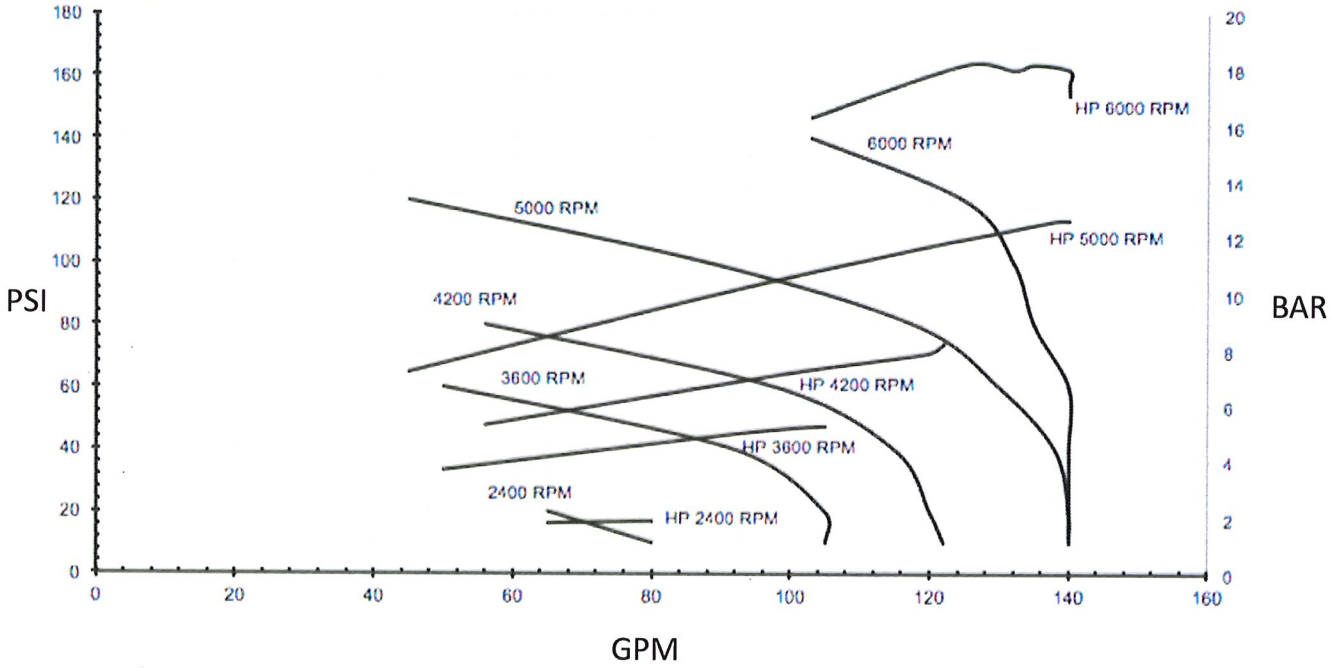
LUBE PUMPING STATION
PUMP TANK FARM



PRODUCT IDENTIFICATION

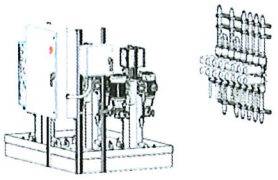
A/F Product Pump Assembly

HYPRO 9203C CENTRIFUGAL PUMP								
	10 PSI		20 PSI		40 PSI		60 PSI	
RPM	GPM	HP	GPM	HP	GPM	HP	GPM	HP
2400	80	1.9	65	1.8	26	1.3		
3600	105	5.3	105	5.3	92	5	50	3.7



OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



PRODUCT IDENTIFICATION

AIR CONDITIONER

Technical Data

Part Number: SCE-AC2550B460

Description: ENCLOSURE AIR CONDITIONER, 2550 BTU/H, R-134a, 480 VAC, CARBON STEEL HOUSING, USE W/NEMA 3R, 4 & 12, SIDE MOUNT

SCE SAGINAW CONTROL & ENGINEERING
Your Enclosure Source & Thermal Source
ENVIRO-THERM®

Safety Instructions

Danger Through Incorrect Work on the Unit
Only specialized personnel are allowed to maintain and clean the unit. Regular maintenance and cleaning must be kept in order to ensure that the unit remains in perfect working condition and has a long working life.

Danger from Electric Voltage
Only specialized personnel are allowed to maintain and clean the unit. The personnel must ensure that for the duration of the maintenance and cleaning, the unit is disconnected from the electrical supply.

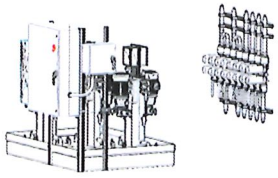
Attention
Damage to the unit through the use of inappropriate cleaning materials. Please do not use aggressive cleaning material.

Instruction
Damage to the environment through unauthorized disposal. All spare parts and associated material must be disposed of according to the environmental laws.

https://youtu.be/QvTrZ7hWwUI?si=gdC7ekzja6lR9r3i

OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



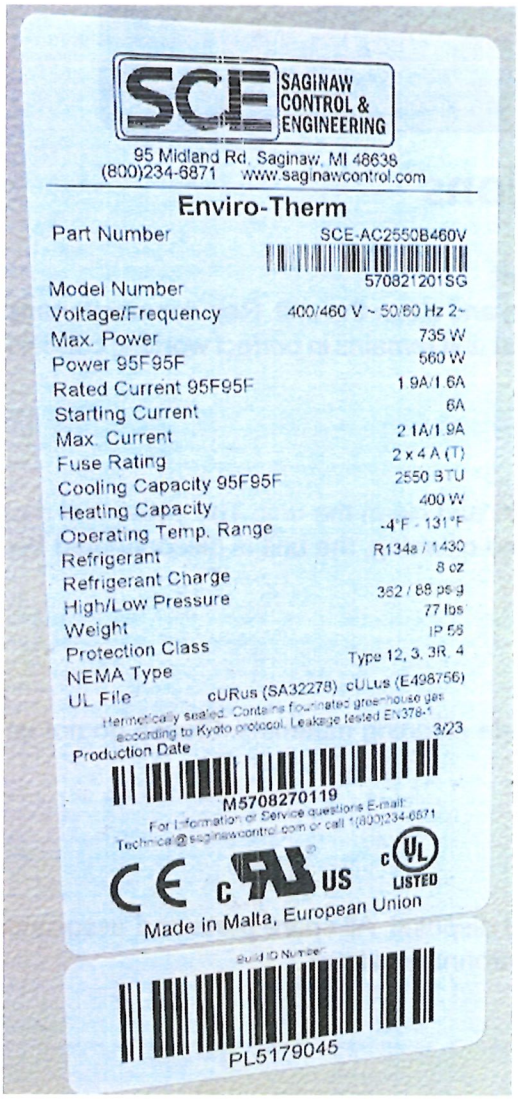
PRODUCT IDENTIFICATION

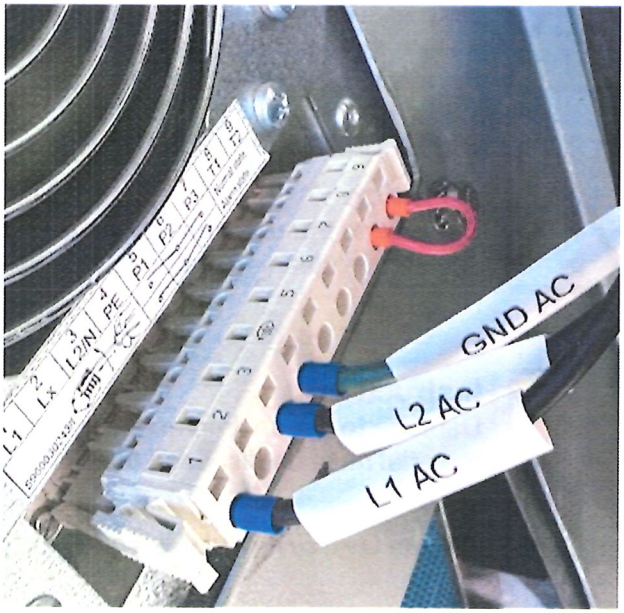
AIR CONDITIONER

Technical Data

Part Number: SCE-AC2550B460

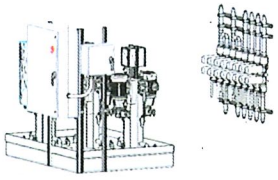
Description: ENCLOSURE AIR CONDITIONER, 2550 BTU/H, R-134a, 480 VAC, CARBON STEEL HOUSING, USE W/NEMA 3R, 4 & 12, SIDE MOUNT





OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



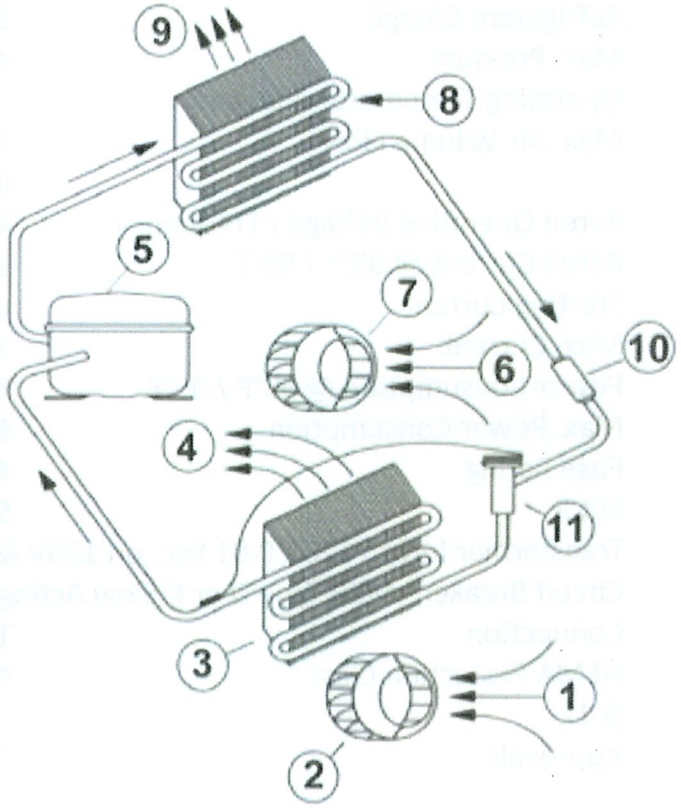
PRODUCT IDENTIFICATION

AIR CONDITIONER

Functional Principle

The unit functions on the principle of the compression refrigerator. The main components are: refrigerant compressor, condenser, choke and evaporator. These four components of the refrigerant plant are connected with each other by pipes to form a hermetically sealed system in which the refrigerant (R134a) circulates.

1. Air Intake, Cabinet Side
2. Radial Fan, Cabinet Side
3. Evaporator
4. Air Outlet, Cabinet Side
5. Compressor
6. Air Intake, Ambient Side
7. Radial Fan, Ambient Side
8. Condenser
9. Air Outlet, Ambient Side
10. Filter Dryer
11. Expansion Valve



OLE-12917-01 LPS SYSTEM RT BORON

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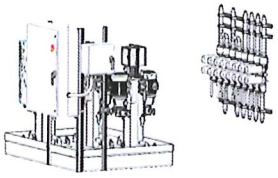

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Description: ENCLOSURE AIR CONDITIONER, 2550 BTU/H, R-134a, 480 VAC, CARBON STEEL HOUSING, USE W/NEMA 3R, 4 & 12, SIDE MOUNT

Cooling Capacity @ 95°F / 95°F	2550 BTU (747 Watts)
Cooling Capacity @ 131°F / 131°F	2788 BTU (817 Watts)
Heating Capacity 400 W	
Compressor	Reciprocating Compressor
Refrigerant	R134a
Refrigerant Charge	8.29 oz
Max. Pressure	457 psig
Operating Temperature Range	-4°F - 131°F
Max. Air Volume Flow	Ambient Air Circuit: 185 cfm Cabinet Air Circuit: 97 cfm
Rated Operating Voltage / Frequency	400/460 V - 50/60 Hz
Rated Current @ 95°F / 95°F	1.6 A @ 50 Hz 1.4 A @ 60 Hz
Starting Current	6 A
Max. Current	1.6 A
Power Consumption @ 95°F / 95°F	545 W @ 60 Hz
Max. Power Consumption	670 W
Fuse Rating	4A (T) - Time Delayed [Slow Acting]
SCCR	5kA
Transformer Inrush 120A 0.01 Sec. on 120V & 460V Unit Class CC	
Circuit Breaker - MCB Type D or K Slow Acting 6A Slow Acting Connection	
Connection	Terminal Block
NEMA Protection Class	NEMA 3, 3R, 4 & 12 SS: NEMA 3, 3R, 4, 4X
& 12	
Approvals	CE / cURus / UL Listed

OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
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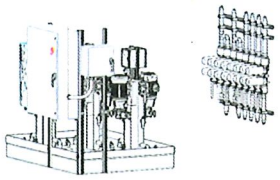

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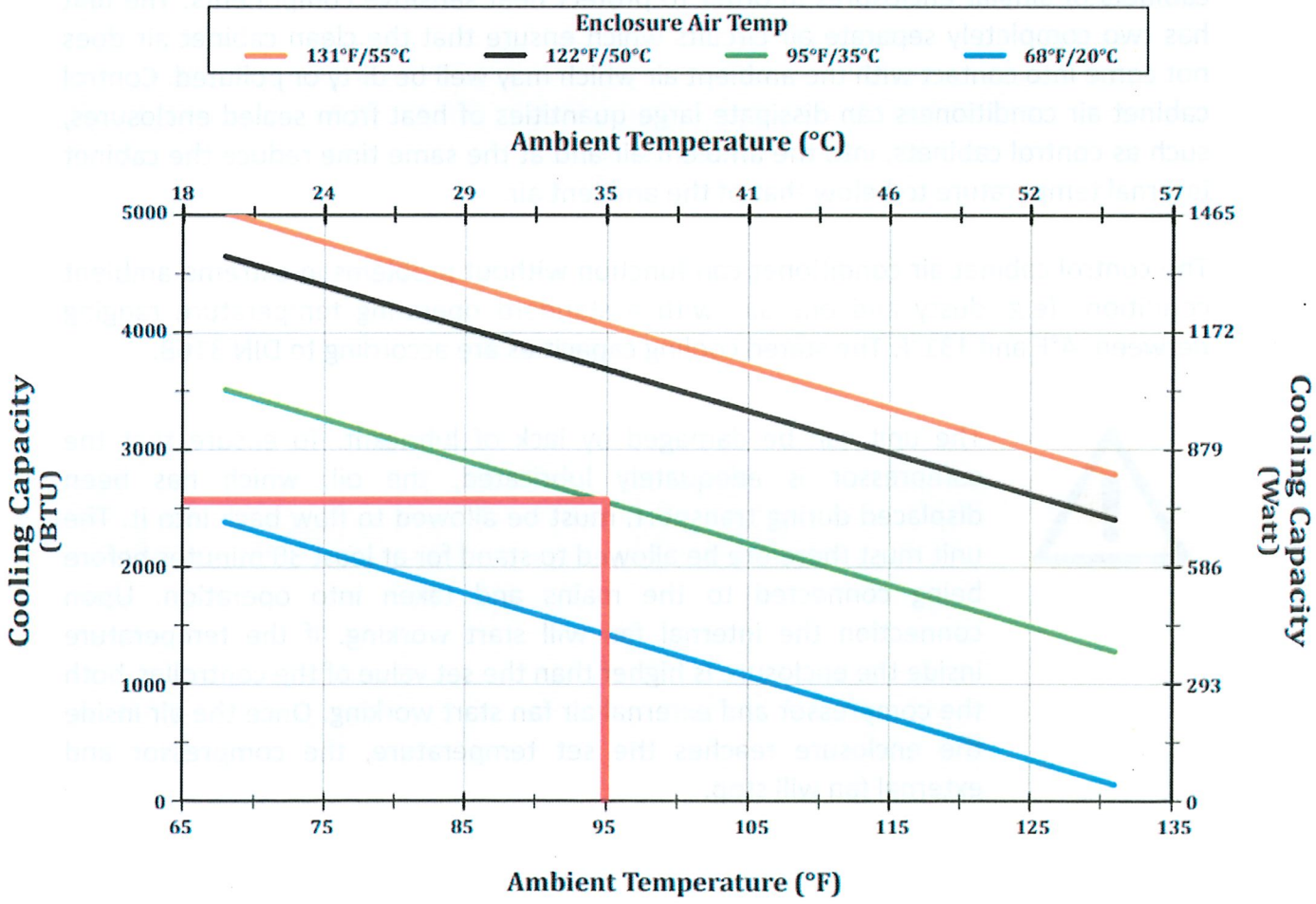

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LUBE PUMPING STATION
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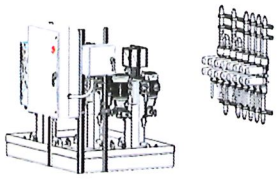

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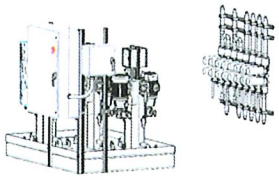
The cooling unit is used where heat needs to be dissipated from electrical control cabinets or similar enclosures in order to protect heat sensitive components. The unit has two completely separate air circuits which ensure that the clean cabinet air does not come into contact with the ambient air which may well be dirty or polluted. Control cabinet air conditioners can dissipate large quantities of heat from sealed enclosures, such as control cabinets, into the ambient air and at the same time reduce the cabinet internal temperature to below that of the ambient air.

The control cabinet air conditioner can function without problems in extreme ambient conditions (e.g. dusty and oily air) with a standard operating temperature ranging between -4°F and 131°F. The stated cooling capacities are according to DIN 3168.

The unit can be damaged by lack of lubricant. To ensure that the compressor is adequately lubricated, the oil, which has been displaced during transport, must be allowed to flow back into it. The unit must therefore be allowed to stand for at least 30 minutes before being connected to the mains and taken into operation. Upon connection the internal fan will start working. If the temperature inside the enclosure is higher than the set value of the controller, both the compressor and external air fan start working. Once the air inside the enclosure reaches the set temperature, the compressor and external fan will stop.

OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



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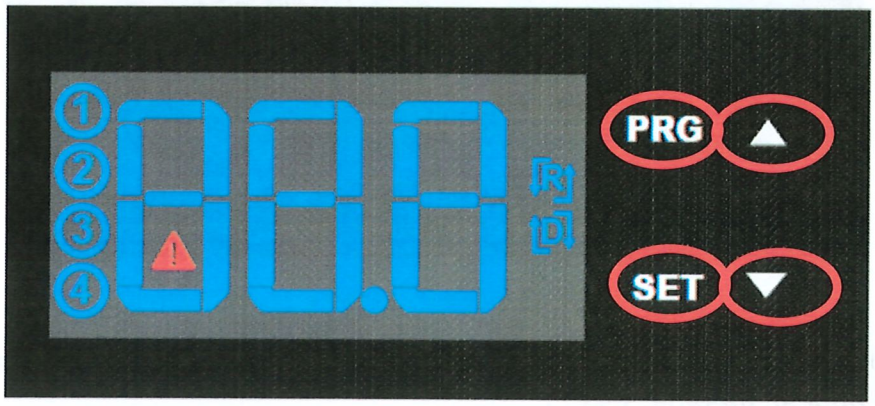
Controller Programming

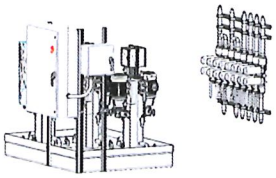
The unit can function without problems in extreme ambient conditions (e.g. dusty and oily air) with a standard operating temperature ranging between +50°F and +130°F.



There are four individual buttons on this program panel that are used to change any programming. Default setting is 95° Fahrenheit which is customary for enclosure electronics. This works best when there are no added openings, and the enclosure is closed.

OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



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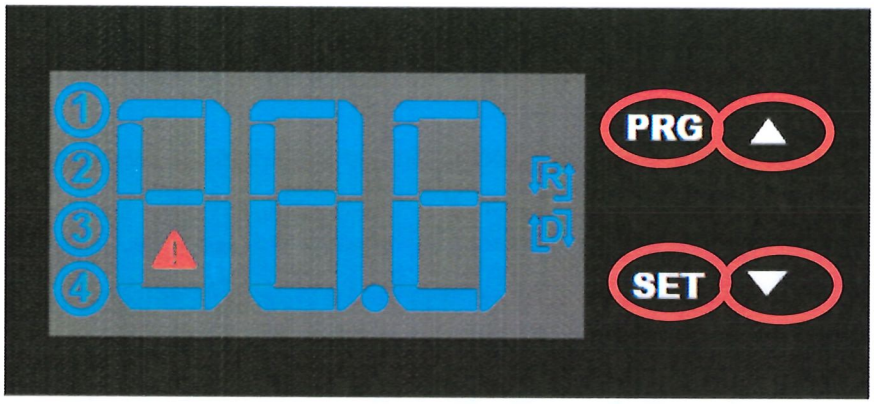

1. Press and hold “SET” until the display shows St1. Once released the pre-set value of St1 will appear. (default: +95°F)
2. Reach the desired value by using ▲ or ▼.
3. Press “SET” again to save the new value of St1

OLE-12917-01 LPS SYSTEM RT BORON

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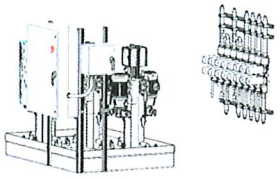

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Maintenance & Cleaning

Always switch power supply off before starting any maintenance on the unit.

Any repairs that may be needed must only be done by qualified personnel. The cooling unit is a low maintenance type and for most environments, no filter is required. If an air filter is installed, check it periodically for dirt and clogs. Clean or replace filter when necessary.

AC Filter (4 Pack) p/n SCE-AC18BF1

Disposal

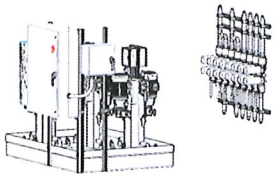
The cooling unit contains R134a refrigerant and small quantities of lubricating oil. Replacement, repairs and final disposal must be done according to the regulations of each country/locallity for these substances.

Transportation & Storage

During transport and storage, the cooling unit must be kept in the position marked on the box and at a temperature between -40˚F and 158˚F and a relative humidity of max. 95% (at 77°F). Check that the packaging has not been damaged during transport.

OLE-12917-01 LPS SYSTEM RT BORON

LUBE PUMPING STATION
PUMP TANK FARM



PRODUCT IDENTIFICATION

AIR CONDITIONER REPAIR

Failure	Condition	Cause	Solution
Unit Does Not Cool	Internal fan does not work	Power not connected.	Verify power supply
	Internal fan works, external fan and compressor do not work	Enclosure temperature is below setting temperature (St)	Verify values of parameter "St"
		Door switch contact is open	Verify door switch
		Controller does not work	Replace controller
	Internal fan works, external fan and compressor do not work Display shows alternating "OFF" and temperature	The sequence of the phases inside the power supply connector is incorrect	Change phases inside power supply connector
	External and internal fan work, compressor does not work	Compressor motor electrical failure	Verify external fan, verify ambient temperature, clean condenser
		Capacitor for compressor failed	Replace capacitor
	Compressor works, external fan does not work	External fan needs to be replaced	Replace external fan
Enclosure Overheating	Compressor and fans (external and internal) work all the time	Unit cooling undersized	Enclosure needs a bigger cooling unit
	Enclosure needs a bigger cooling unit	Thermal compressor protector triggered	Verify ambient temperature, clean condenser
		Refrigerant leakage	Contact dealer/service center
Excessive Condensate	Door enclosure open	Ambient air gets into the enclosure	Ensure door is closed, add a door switch and connect it to controller
	Door enclosure closed	Enclosure IP degree minimum IP54	Seal openings on enclosure
		Damaged/misplaced sealing strip	Repair strip accordingly