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CONTAINER MANUAL
I-BEAR

Container Specifications:

Overall Dimensions:

Height:	114” w/o Chassis 158” w/ Chassis
Width:	96”
Length:	480” w/o Chassis 492” w/ Chassis
Weight:	52,500 lbs w/o fuel 59,050 lbs w/ Chassis

Cooling System Capacity:

170 Gallons
Valvoline Zerex Extended Life Coolant (ZXEDRU2)

Fuel System Capacity:

300 gallons
Diesel Fuel

Table of Contents:

Section 1:

MECHANICAL

Container

- Orientation
- Setup & Maintenance

Fuel System

Cooling System

<Insert 11 x 17 Container Drawing>

Left Side View

Right Side View

Front View

Rear View

Louver Doors

Standard Operation Set Up:

1. If container is off the chassis, level the container using shims to ease end door opening.
2. Remove door restraints (105600). Return screws to original location. Apply Loctite 242 Threadlocker to bolts prior to installation.
3. Remove keys to the personnel and louver doors from the manual box.
4. Remove the steps from the radiator room. Bolt to the step mounting brackets below the personnel door. (If container is off the chassis, set steps aside.)
5. Open all (5) coolant isolation valves. Valves are located in the radiator room. Isolation valves are the (4) -3" and (1) – 5".
6. Remove the hand rail from the front of the container and install on steps.
7. Remove pre-fit rain rail from the front of the container and install above door openings using existing hardware. Seal with silicone.
8. Remove the louver covers (105587) and return screws to the original location.
9. Remove the fuel connection cover (105588) and return screws to the original location.
10. Remove the exhaust cover (105598).
11. Remove the exhaust elbow (105363) from the genset skid-frame, and install on the exhaust on the left side of the container. Make sure to install a full-faced gasket (101011) between the exhaust flanges.
12. Remove the wire tie securing the rain cap.
13. Remove ship along items.
14. Open louvers.
15. Check fluid levels.

Container Maintenance:

1. Inspect & Clean Louvers
2. Touch up paint where needed
3. Hinges - Light Oil (wipe off excess)
4. Hardware/Latches - Graphite
5. Exhaust - drain condensation
6. Fill caps/Fill cap wrench

Container Pack-Out:

1. Remove the exhaust elbow (105363) from the left side of the container. Bolt elbow to the genset skid –frame. Secure the rain cap with a wire tie.
2. Bolt the exhaust cover (105598) to the exhaust flange on the left side of the container.
3. Install and seal louver covers (105587) to the (4) exterior louvers using #10 stainless screws provided and silicone sealant.
4. Install and seal fuel connection cover (105588) using #10 stainless screws provided and silicone sealant.
5. Secure (2) coiled control cables provided by Cummins to the floor in the operator area.
6. Verify coolant isolation valves are in closed position.
7. Verify coolant drain valves are in closed position.
8. Seal the Manual and keys for the personnel and louver doors in a plastic bag and secure in the manual box.
9. Remove steps and rail from personnel door. Stow the steps in the radiator room and bolt to brackets provided on the midwall. Secure hand rail at front of the container between the Power Circuit Breaker and the container wall using the conduit clamp (s) provided.
10. Remove rain rail above doors and secure to hand rail at the front of the container. Insert screws back into original location.
11. Attach door restraints (105600) using bolts provided. Apply Loctite 242 Threadlocker to bolts prior to installation.

FUEL SYSTEM

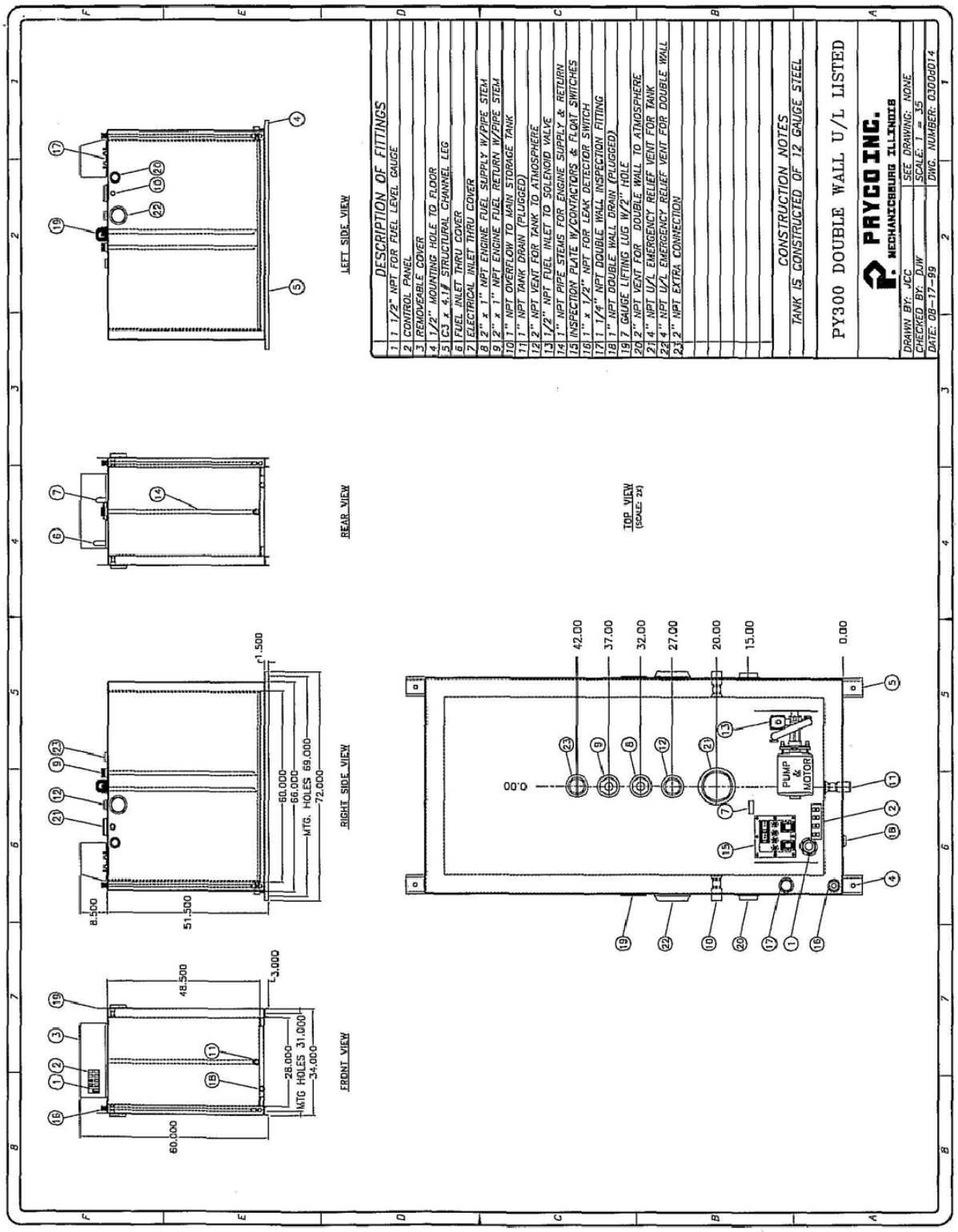
Fuel In/Out and Vents

Daytank

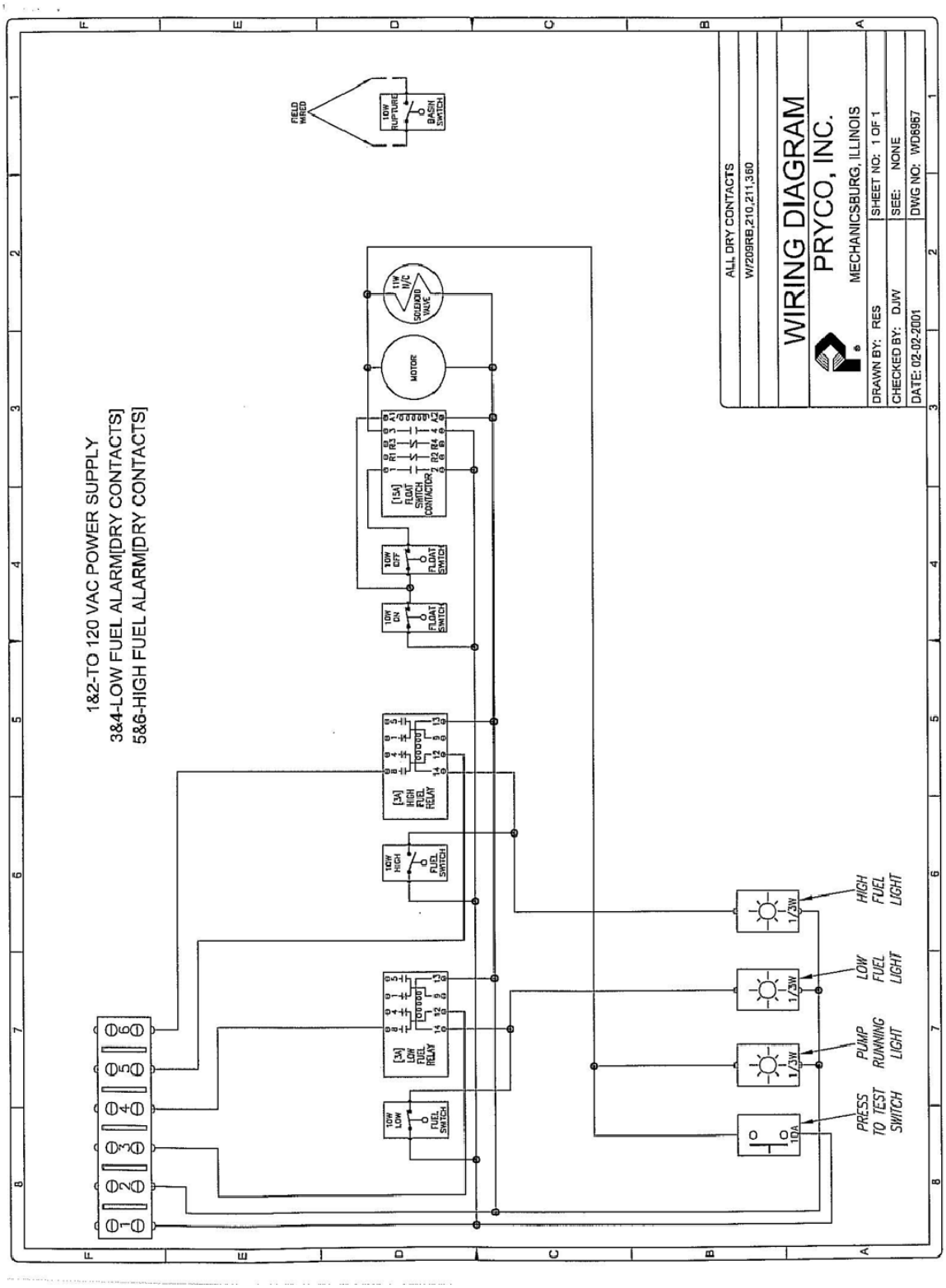
Fuel/Water Seperator

Generator Filters/Pump

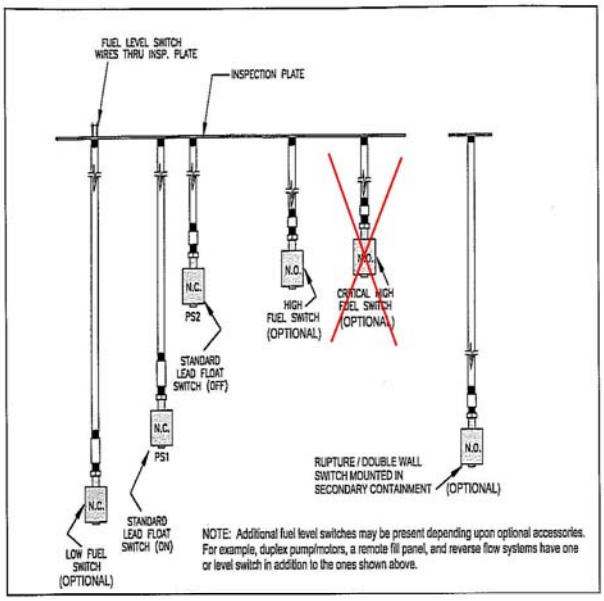
300 Gallon Daytank with Fill Pump



Daytank Wiring Diagram



Daytank Normal Operation



GENERAL SEQUENCE OF OPERATION

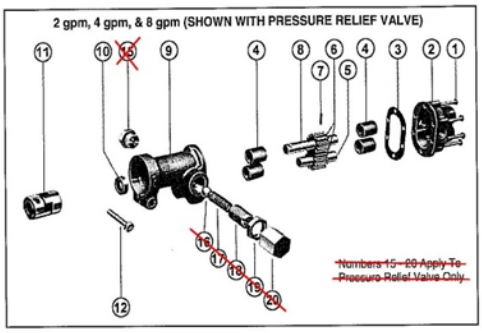
When power is applied to the day tank, the pump/motor will begin to fill the day tank.

- As the fuel rises to the 86% level, the PS1 (Pump/Motor-ON) float switch opens and the tank continues to fill.
- When the fuel level reaches the 100% level, the PS2 (Pump/Motor OFF) float switch opens and stops the pump/motor.
- As the generator engine consumes fuel and the level drops to the 86% level, the pump/motor will fill the tank until the 100% fuel level is reached. PS1 turns on the pump/motor — PS2 turns it off.
- If the fuel level drops to 75%, the LOW FUEL SWITCH (option 203) closes allowing a light on the control panel to illuminate.
- If the fuel in the tank should reach 102% full, the HIGH FUEL SWITCH (Option 209) will close sending a high fuel level signal to the day tank terminal block.
- If the fuel level rises to 103%, the CRITICAL HIGH FUEL SWITCH (option 213) closes allowing the following:
  - a Critical High Fuel light on the control panel to illuminate,
  - a N.O. solenoid valve will close causing the pump/motor to stop, and
  - a set of dry contacts, to be used for remote annunciation, will become active.
- If the fuel rises to 5% in the secondary containment (if installed), the RUPTURE ALARM SWITCH (option 395) closes allowing the following:
  - a Rupture Alarm light on the control panel to illuminate,
  - the pump/motor to stop, and
  - a set of dry contacts, to be used for remote annunciation, will become active.

Daytank Pump Performance

PUMP EXPLODED VIEW and PARTS LIST

~~OPT #402 - 2 GPM~~, OPT #401 - 4 GPM, ~~OPT #400 - 8 GPM~~



PARTS LIST

NO.	PART NAME	REQ.	NO.	PART NAME	REQ.	NO.	PART NAME	REQ.
1	Screw	6	7	Pin	1	15	Plug Nut*	1
2	Body	1	8	Drive Shaft	1	16	Ball*	1
3	Gasket	1	9	Cover	1	17	Spring*	1
4	Bearing	4	10	Seal	1	18	Adjusting Screw*	1
5	Idle Shaft	1	11	Coupling	1	19	Lock Nut*	1
6	Gear	2	12	Cap Screw	1	20	Valve Nut*	1

* Parts For Pressure Relief Valve

PUMP PERFORMANCE CHART - 1725 RPM MOTOR At 60° F.

PUMP	PSI	2	20	40	60	80	100	125	150
#402	GPM	2.10	1.98	1.86	1.74	1.62	1.50	1.35	1.20
2GPM	HP REQ.	.05	.09	.14	.18	.23	.28	.33	.39
	MOTOR HP	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3
#401	GPM	4.07	3.75	3.41	3.08	3.23	3.03	2.75	2.50
4GPM	HP REQ.	.10	.16	.22	.29	.36	.43	.55	.68
	MOTOR HP	1/3	1/3	1/3	1/3	1/2	1/2	3/4	3/4
#400	GPM	8.25	7.75	7.00	6.50	5.50	-	-	-
8GPM	HP REQ.	.38	.50	.73	.80	.95	-	-	-
	MOTOR HP	1/2	1/2	3/4	1	1	-	-	-

Daytank Maintenance

PUMPS - The standard pump is a 2 GPM Bronze Gear Pump. Other pump models include: 4, ~~6, 10, 23, and 40~~ GPM. Each come with or without a pressure relief valve. This information generally applies to all models

The pump is driven directly from the shaft of the electric motor by means of a flexible coupling. An aluminum adapter connects the pump to the motor.

The pump is of bronze construction with stainless steel shafts, positive spring-loaded buna lip seals, and self-lubricating carbon bearings.

Due to close tolerances of components, fuel to the pump must be clean. Fine abrasives such as sand, silt, and powders in suspension will destroy its pumping ability. ~~**A fuel strainer** (Pryco option # 314 or 315) should be installed just ahead of the pump (and colenoid valves, check valves, and other like devices) to keep debris from entering the system.~~

The pump's basic metals construction allow a temperature range of -40°F. to +400°F.; however, the buna lip seals have a temperature limit of +250°F. Avoid extreme temperatures and rapid fluctuations as they are detrimental to the pump's service life.

The pump is capable of creating 18 (plus) inches of vacuum on the suction side and up to 100 psi on the discharge side. Refer to pages 4 and 5 for a chart of the performance of each pump at 1725 RPM.

~~Before starting the system for the first time, you should apply some fuel oil through a **priming tee** (Pryco option #313) to wet the pump gears. The fuel retained in the system lines and the gear chambers serve to wet the gears on subsequent starts.~~

MOTORS - The standard motor coupled to the pump has these characteristics: 1/3 HP, 115 VAC, 1 PH, 60 Hz, Thermal Protected, 6.6 FL Amps, 1.0 Service Factor.

The standard motor is special split phase with moderately high starting torque as well as a moderately high starting current. The thermal protected motors have internal, automatic protectors that will reset after the motor cools. Other motor configurations available range from 1/4 HP VDC motors up to 5 HP, 460 VAC.

Install power to the motor(s) according to National Electrical Code.

MOTOR LUBRICATION

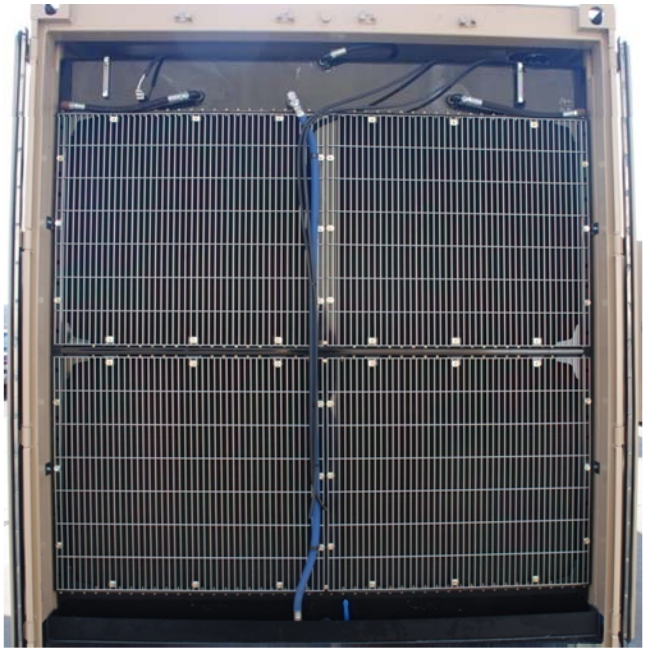
Sleeve Bearings - re-oil using #5W-20 oil every 3000 hours of motor operation.

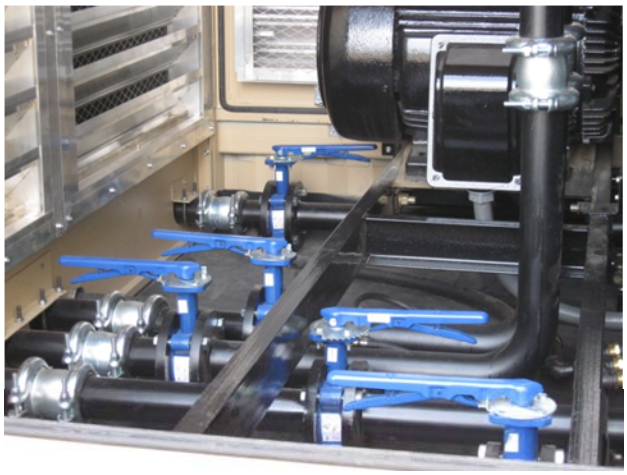
Ball Bearings - If the motor has provision for re-greasing, use a good grade of bearing grease every 2000 hours.

If lubrication instructions appear on the motor, they will supercede these instructions.

Do not use unauthorized repair parts. These can affect proper and safe operation of the motor. Contact Pryco for replacement motors.

Cooling System





Radiator Model: VC046S52
With 75 Horsepower Motor
460v 60hz 3 phase

I.E.A., INC.

FAN/MOTOR RUN-UP SHEET

S.O. # 16187 RADIATOR MODEL # VC046S52 RUN-UP # 2 OF 42

☐ DIRECT DRIVE ☒ V-BELT DRIVEN ☐ QSK50 ENG. DRIVEN AT _____ RPM

FAN DATA: IEA P/N 4101136 MFG Truflow DIA. 72" BLADES 11

TIP SPEED = FAN RPM x FAN DIA. IN FT. x 3.14 APPLICATION ☒ BLOWER ☐ SUCKER

	DESIGN	RUN-UP
FAN SHEAVE DIA.	18.7	18.7
DRIVE SHEAVE DIA.	7.1	7.1
FAN RPM	796	716
TIP SPEED, FPM	15000	15000
FAN HP		

CRITICAL SPEED (S) RPM _____ MAX. TIP SPEED, FPM 15000 MIN. TIP SPEED FPM _____

MOTOR DATA:

☐ TEST MOTOR ☒ MOTOR ON RADIATOR HP 75

MFG Westinghouse SERIAL # OR MODEL # KS107A707006

FRAME 365T SF 1.15 VOLTS 230/460

RPM 1775 HZ 60 PH 3

F.L. AMPS 170/185/1 F.L. EFF. 95.4 F.L. PF _____

HP: 75
PHASE: 3
FREQUENCY: 60 HZ
VOLTAGE: 230/460 VAC
RPM: 1760 +/-25
FRAME SIZE: 365T
ENCLOSURE: TEFC
SERVICE FACTOR: 1.15
EFFICIENCY: STANDARD OR BETTER
AMBIENT RATING: 50°C
BEARINGS: SHIELDED OR SEALED
CONDUIT BOX LOCATION: F1
PREFERRED CONDUIT SIZE: STANDARD
HOUSING CONSTRUCTION: MFG STD
MOUNTING: FOOT MOUNT
ORIENTATION: HORIZONTAL
APPLICATION: OUTDOOR ENVIRONMENT
SEAL: MINIMUM OF SLINGER ON SHAFT. MANUFACTURER'S ALTERNATIVES ALLOWED IF BETTER.
SPECIAL FEATURES:

MANUFACTURER: MANUFACTURER'S PART OR MODEL NUMBER

MARATHON
RELIANCE
BALDOR
US ELEC.
WEG

FOR FINISH TO BE APPLIED BY IEA SEE THE BOM FOR THE SUFFIX SPECIFIED. FOR SUFFIX DETAIL SEE CS-9928.

MOTOR 75 HP

Cleaning Procedures

Periodically inspect the radiator core for signs of damage, corrosion, and clogging. Straighten any fins that have become bent or have been flattened. If the radiator core appears to be clogged with debris, it should be cleaned using water and mild detergent that does not react with copper or aluminum. Clean the cores from the AIR DISCHARGE side of the radiator to avoid pushing the debris further into the core. Clean the outside of the radiator, if dirty, to aid in routine inspection of the cooling system. Take care to keep all sight glasses clean to ease system fluid inspection. Repair or replacement of the core should be performed by qualified service personnel. If any air filters are used upstream of the core, inspect and replace as needed. Periodically test coolant fluid samples to assure it is free of sediment, corrosive products, and/or biological contaminants. If automatic air vents are not used in the cooling system, periodic air venting should be performed to remove accumulated air. CAUTION should be exercised when venting the cooling system to avoid injury. High pressure and/or high temperature fluids can cause serious injury. If the core is to be stored during the winter, the coolant should be removed and the system thoroughly dried to avoid system damage due to freezing, unless an anti-freeze agent is used in the cooling system.

Lubrication Procedure and Interval

Radiators using bearings require greasing at an interval dependant upon their usage. The table below shows a lubrication maintenance schedule according to service hours. All radiators should be greased with Shell Avania #3 lithium base grease or equivalent. DO NOT MIX GREASE TYPES. Radiators requiring different lubricant or lubrication methods will be specified on the radiator drawing.

SERVICE HOURS	LUBRICATION FREQUENCY
40 Hours per Year	Every Six Months
18 Hours per Day	Twice a Month
18 Hours per Day	Once Each Week
(Dirty Environment)	
24 Hours per Day	Once Each Week
24 Hours per Day	Daily
(Dirty Environment)	

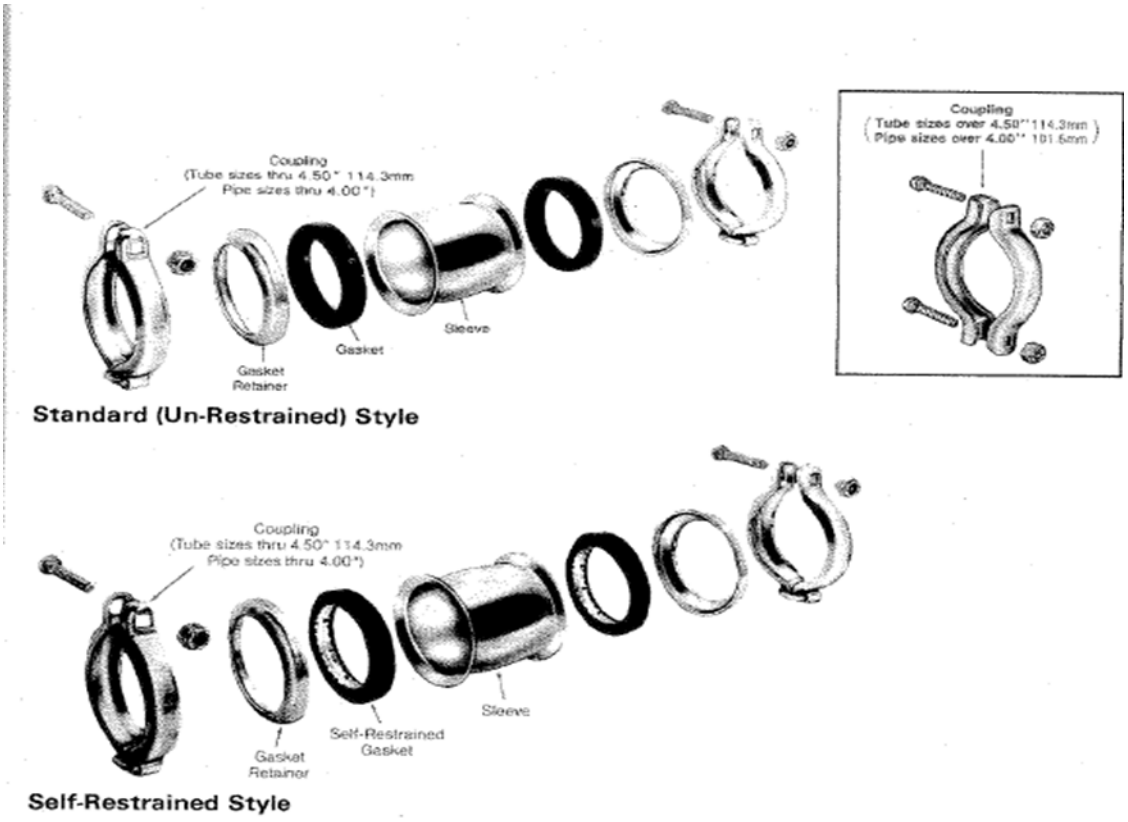
When lubricating pillow block bearings, add grease slowly until it shows slightly at the seals. This indicates proper bearing lubrication. The use of excessive pressure when greasing the bearing can pop the bearing seals. Electric motor bearings should always be kept between 1/2 and 3/4 full. This will ensure proper lubrication to the motor. Both pillow block and electric motor bearings should be serviced using the maintenance schedule above.

Belt Tension Procedure

Radiators using V-belt driven fans should have the belt tensions checked regularly. On remote units, belts and sheaves are installed by IEA. On EC-F type units, belts and sheaves may be supplied by IEA, but are mounted by the customer. IEA recommends periodic checks using a tachometer to ensure compliance of fan speed to specifications.

1. All sheaves MUST be aligned correctly to ±0.0625, or premature belt failure may occur. Use a long level to check sheave alignment (see Fig. 31).
2. Install the belts onto the sheaves. Tension the belts on the slack-side of the drive with the idler until the correct belt tension is achieved. Follow the operating instructions of the belt tensioning gage being used to measure belt tension.
3. Recheck the belt tension after 24 hours of operation - after the belts have seated in the sheave grooves.

Aeroquip/Flexmaster Joints



Aeroquip/Flexmaster Joints

Pipe and tubing preparation and FLEXMASTER joint installation instructions

1. Pipe (Tube) End Preparation
- a) Deburr and clean pipe (tube) ends.
- b) Surface should be free of deep scratches, gouges, dents, dirt, etc.

2. Joint Installation
- a) Install retainer (1), gasket* (2) and sleeve (3) on one side of pipe in sequence shown in Figure 1.
- b) Install remaining retainer (4) and gasket (5) on other pipe end.
- c) Position retainer (4) and gasket (5) to proper pipe insertion depth ("D") as shown in Table 1.

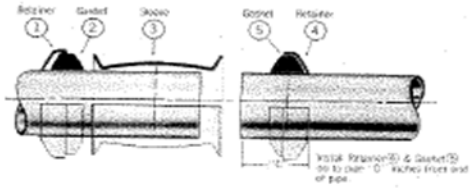


Figure 1

- d) Slide sleeve (3) to gasket (5) and move gasket (2) and retainer (1) into position as shown in Figure 2. Pipe must be inserted to proper depth ("D") into both gaskets as shown in Table 1.

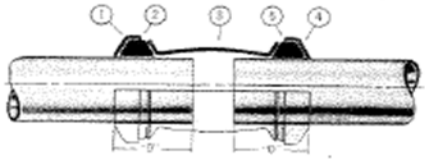


Figure 2

***3.** Special Notes
- a) Assembly of gaskets can be made easier by dipping gaskets in water or the fluid to be sealed. The use of other rubber lubricants can be detrimental to the life of the gaskets. Never lubricate the metal parts.

- b) Self-restrained gasket installation. To simplify installation of a self-restrained gasket, install lower gasket halfway onto the pipe first, leaving the split area in the steel retaining ring free at the top. See Figure 3. Then, stretch the gasket and split area of the retaining ring until they slip over the tube or pipe and into position. Refer to Figure 3.

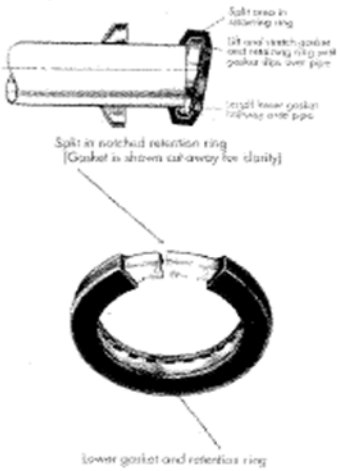


Figure 3

4. Coupler Installation
Install both V-couplings, encompassing the retainer, gasket and sleeve as shown in Figure 4. Do not tighten either coupling until the entire joint is assembled (See Figure 2). Tighten nuts to the torque specified in Table 2. Do not lubricate the nut or bolt before assembly. The gap method outlined in Table 3 may be used for standard gaskets only.

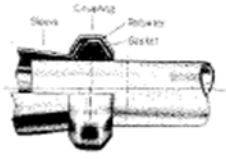


Figure 4

Section 2:
ELECTRICAL SYSTEMS

DC Electrical System

Shore Power System

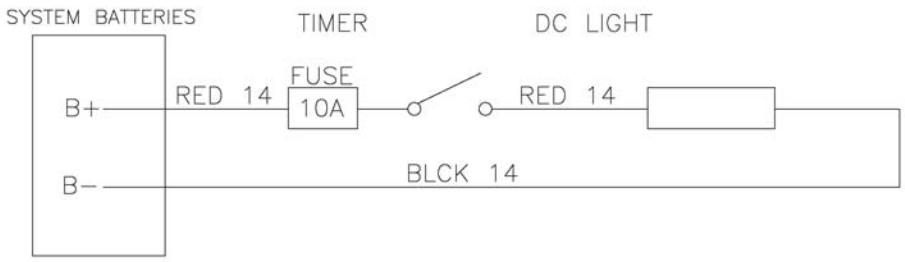
Fan Motor System

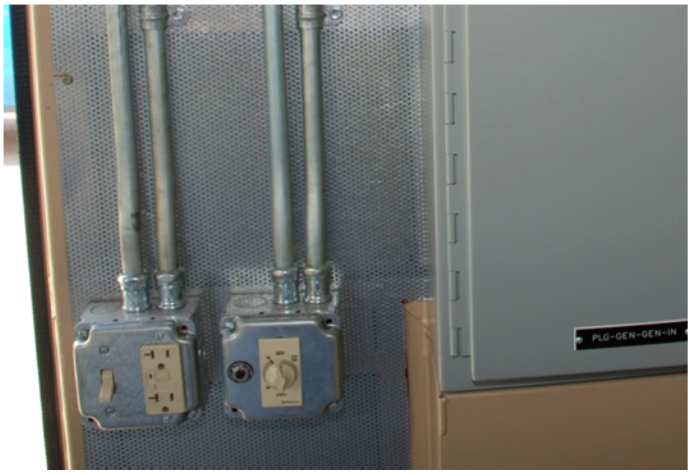
Power System

Control System

Grounding/Protection System

DC Electrical System





Shore Power System

Shore Power Entrance

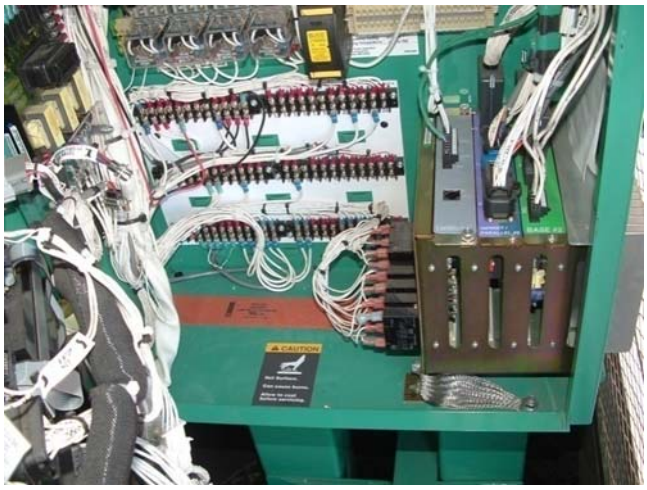
Shore Power Panel (120/208V 3 PH)

Engine Water Jacket Heater

AC Lights (120V)

Shore Power System

Outlets (Receptacles) 120V



Control Panel Heater (208V)

Alternator Heater (120V)

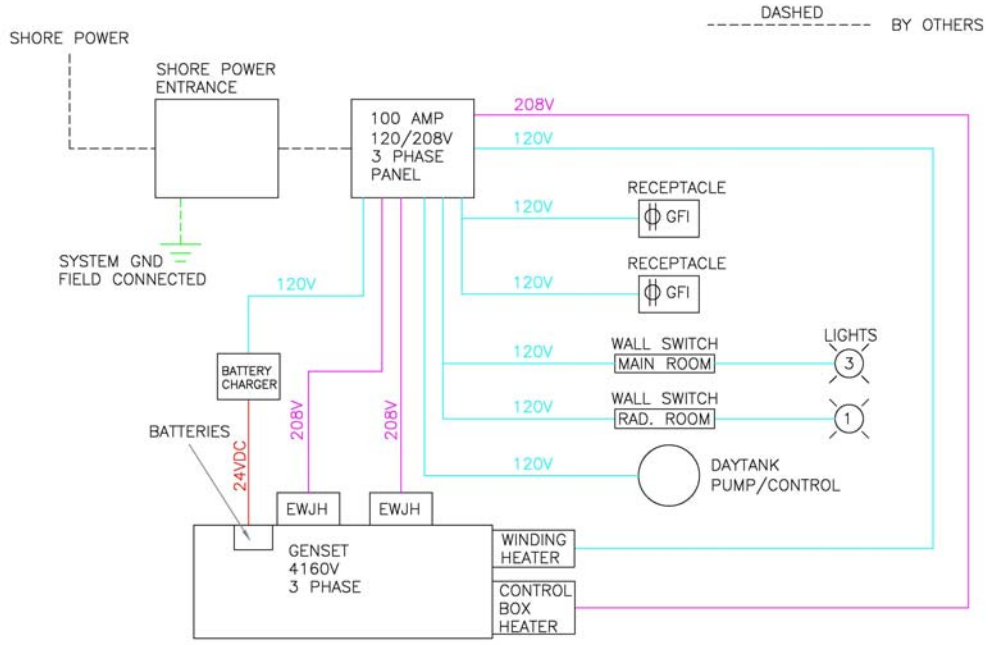
Daytank Pump & Controls (120V)

Shore Power System

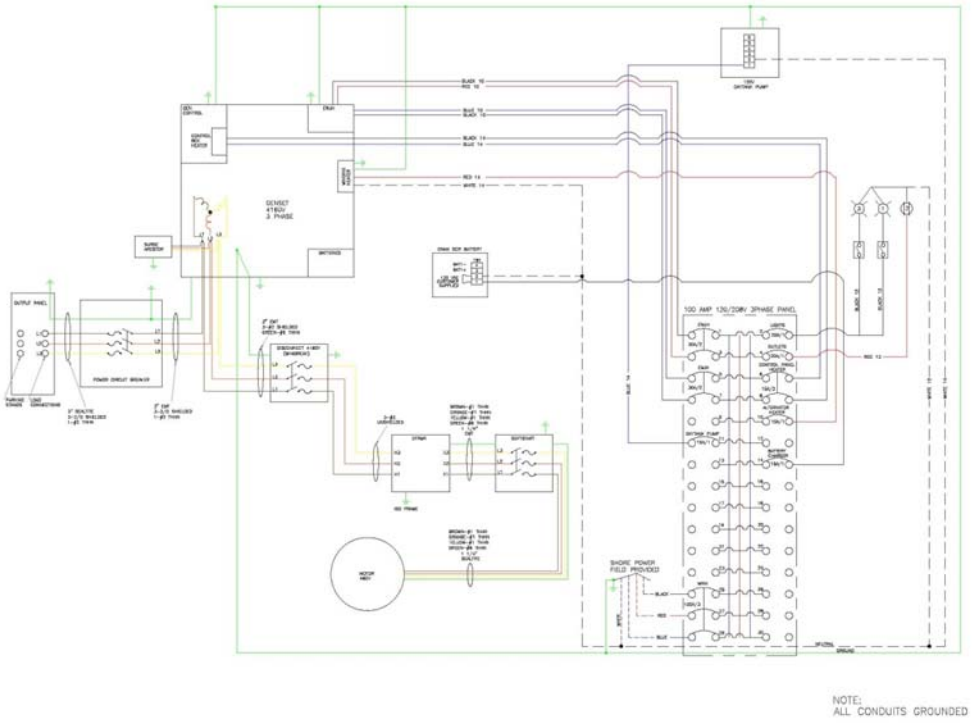
Battery Charger (120V)

Shore Power:

One-Line Diagram



Wiring Diagram



Fan Motor System

Genset Output (4160V)

Minibreak (4160V)

Minibreak (4160V) - *Inside*

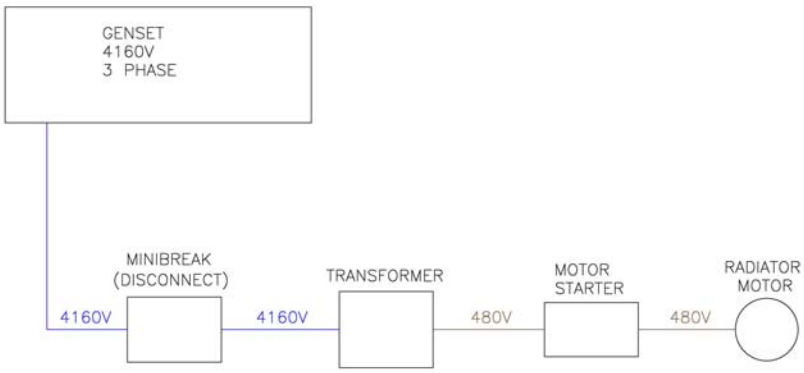
Transformer
(4160V Primary/480V Secondary)

Fan Motor System

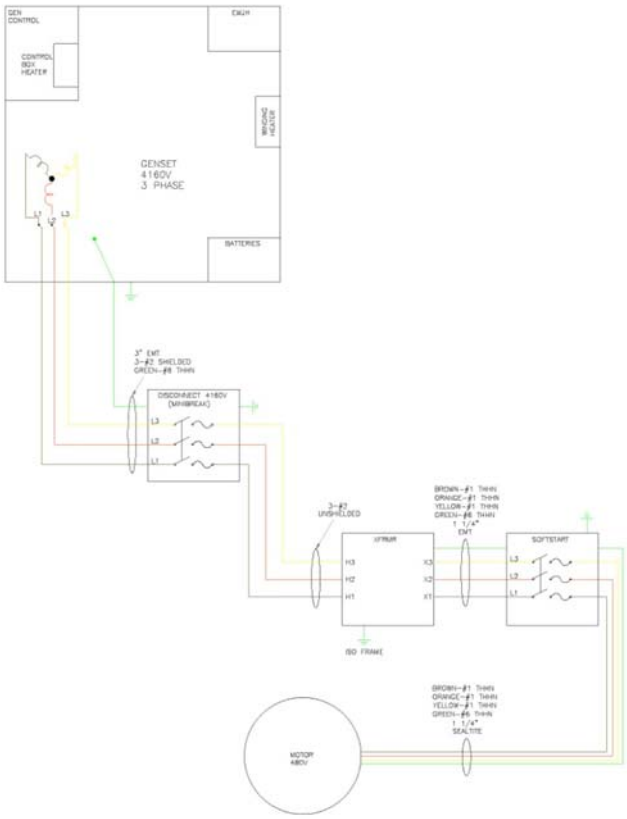
Soft Start (480V)

Radiator Fan Motor (480V)

Fan Motor System:
One-Line Diagram



Wiring Diagram



Power System

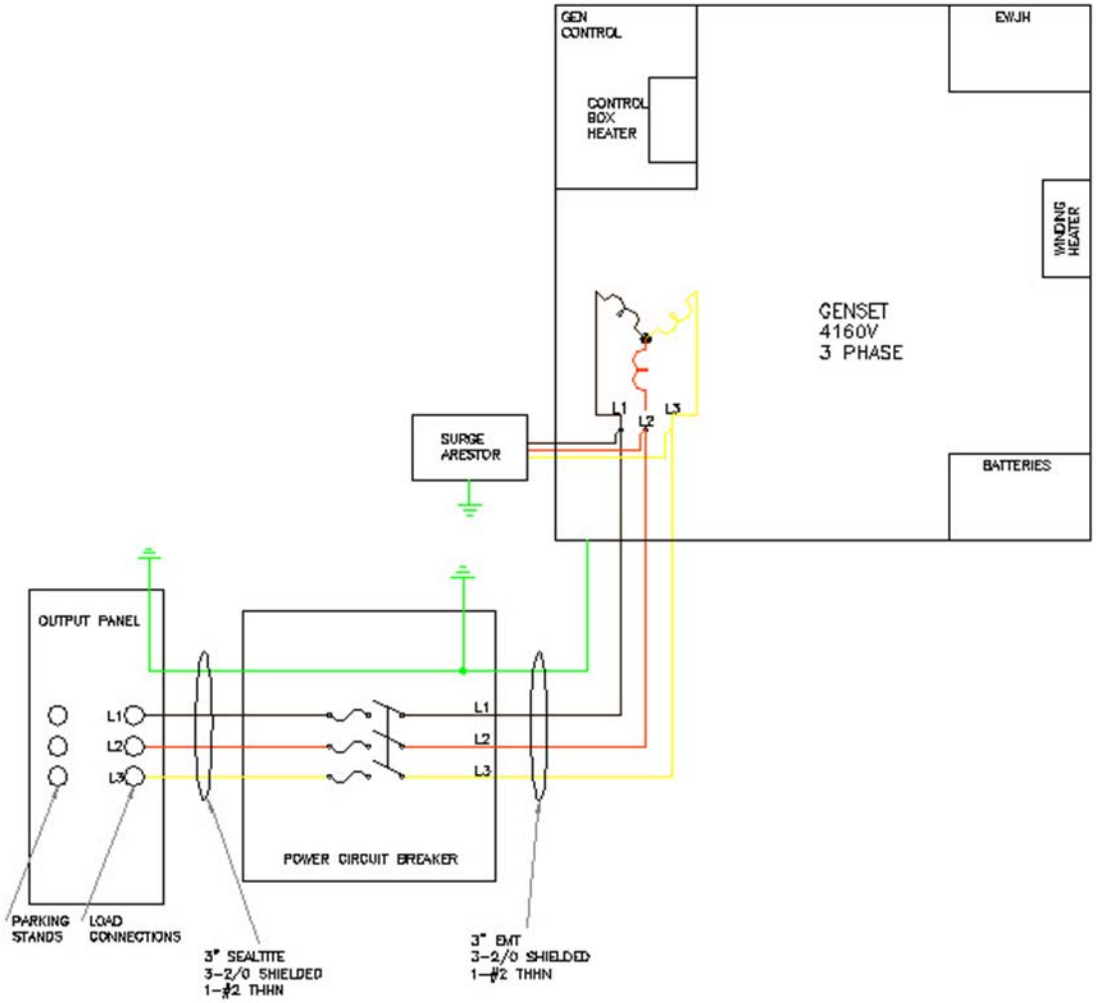
Genset (4160V)

Breaker (4160V) – *operator view*

Breaker (4160V) – *output view*

Load Connection Box (4160V)

Power System Wiring Diagram



Control System

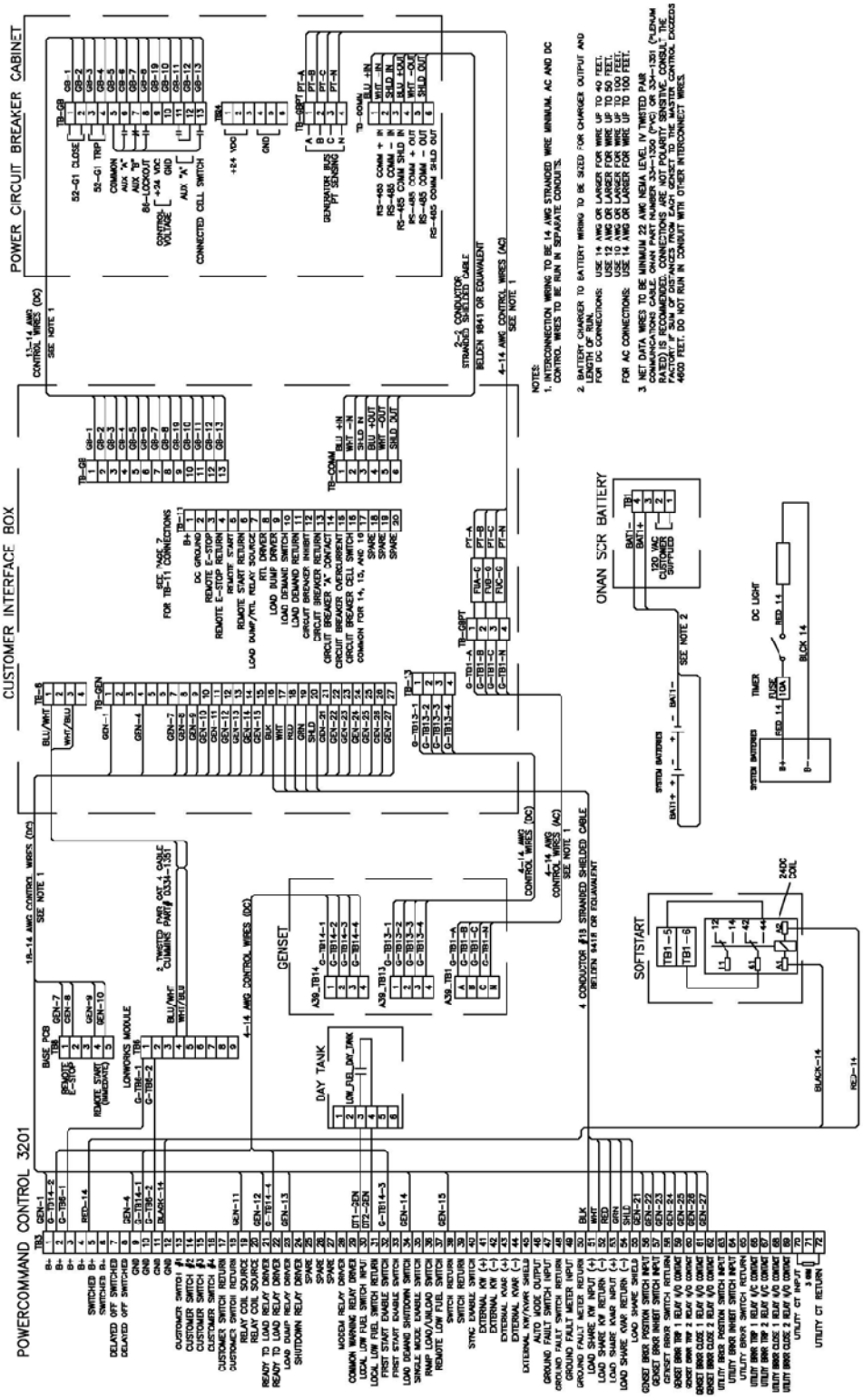
Generator Control Panel

Control Output Box

Control Output Box

DMC

Control System Schematic



Grounding/Protection System

Surge Arrestors

Shore Power Inlet

Load Connection Box

Section 3:

CHASSIS