



Owners Manual

Model RMP 14-6



Congratulations on your purchase of the RigMaster® Power Auxiliary Power Unit.

The RigMaster® Power APU is a totally self contained, stand-alone AC generator, Air Conditioner and Heater System. The only items that are shared with your truck systems are fuel and battery supply. The RigMaster® Power APU also trickle charges the truck batteries while in operation.

Superior design and performance have been incorporated into this product to give you trouble-free, economical operation. We are confident you will be satisfied with your new RigMaster Auxiliary Power Unit.

The following pages contain design features, principles of operation, preventative maintenance procedures and trouble shooting guides. Please review it carefully prior to starting and operating your RigMaster® Power APU.

Should you have any questions or concerns please contact your nearest authorized RigMaster Power Dealer, or RigMaster Power Corp. Product Support Group at:

1-888-208-3101

(For technical support only)

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HEATER, AIR CONDITIONER, 120V GENERATOR

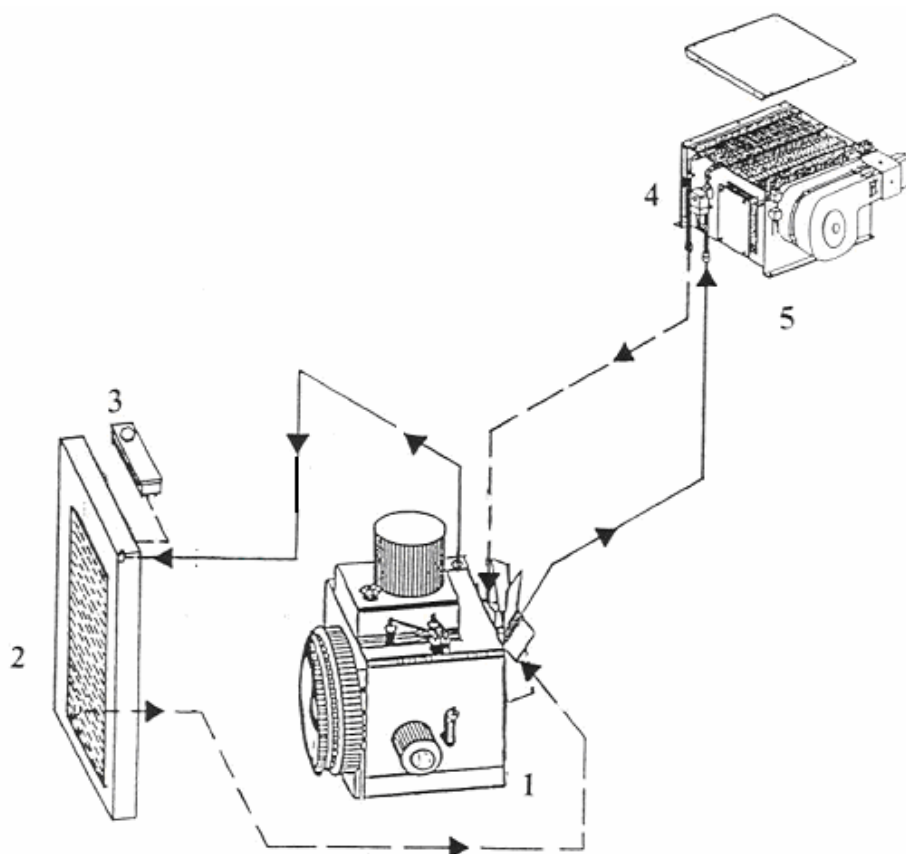
HEATER

RigMaster's heating system is fully automatic. A constant comfort zone is maintained with the temperature selector (see Climate Control Operation - Page 10). The bunk heating system has a capacity of 13,500 BTU's. This is a complete stand alone system that is not integrated into the vehicle's cooling system. When heat is selected, and the RigMaster® Power APU is in operation, the hot coolant flows through the heater core (installed under the bunk see Figure 1).

The heater/air conditioner blower motor (fan) circulates the cab air through the heater core pushing warm air into the bunk area. The coolant is then re-circulated back to the RigMaster's main unit.

NOTE: PLUGGING IN THE BLOCK HEATER PLACES A LOAD OF APPROXIMATELY 1,500 WATTS ON THE ENGINE, THIS LOAD ENABLES THE ENGINE TO HEAT THE COOLANT.

This system is designed to maximize the bunk heating efficiency.



HEATER - FIGURE 1

Legend:

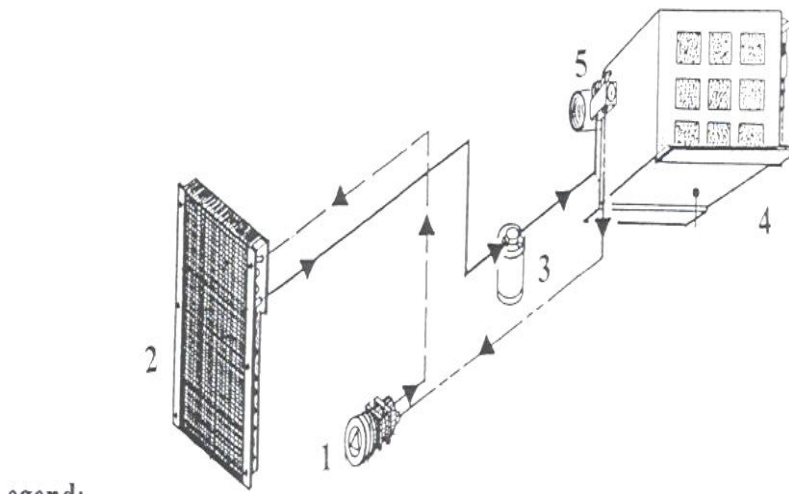
- Hot Coolant Supply
- Cold Coolant System
- 1) Engine
- 2) Radiator
- 3) Fill/Expansion Reservoir
- 4) Flow Control Valve
- 5) Heater/Air Conditioner Unit

AIR CONDITIONER

The RigMaster air conditioner is fully automatic. A constant comfort zone is maintained with the temperature selector setting (see Climate Control Operation - Page 9). The RigMaster air conditioner is a R134A system that is not integrated into the vehicle's existing air conditioning system.

WARNING: ONLY CERTIFIED AIR CONDITIONING TECHNICIANS SHOULD SERVICE THE AIR CONDITIONER.

The compressor within the RigMaster main unit pumps the refrigerant gas through the condenser that dissipates the heat and changes the refrigerant from a gas to a liquid. The liquid refrigerant passes through a filter (receiver/dryer), and then through the evaporator core located in the bunk heater/air conditioner unit. The heater/air conditioner blower motor (fan) then activates and cool, dry air is then forced into the bunk area.



AIR CONDITIONER - FIGURE 2

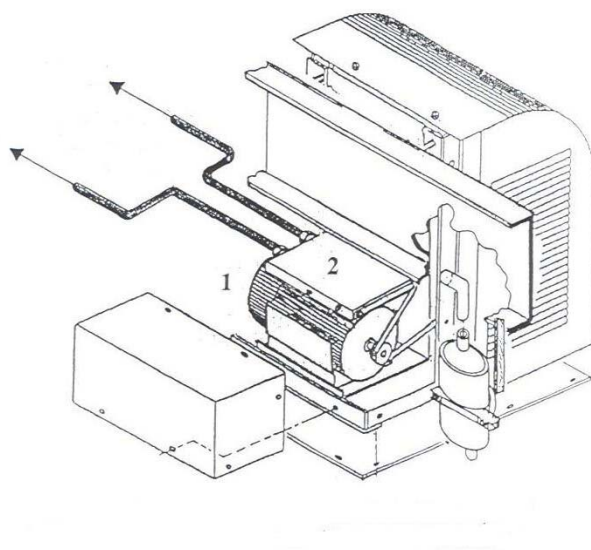
Legend:

---- High Pressure Gas
—— High Pressure Liquid
- . . - Low Pressure Gas

1) Refrigerant Compressor
2) Condenser
3) Receiver Dryer
4) Heater / Air Conditioner Unit
5) Expansion Valve

120-VOLT GENERATOR

The 6kw heavy-duty generator is located at the rear of the RigMaster® Power APU and is belt driven at 3600 RPM. The generator has two (2) factory supplied cords. One (1) block heater cord (complete with a plug), allows the generator to be plugged into the vehicle's block heater. This ensures that the vehicle's main engine will be warm when starting in cold weather. This provides a load on the RigMaster engine that allows the APU to run more efficiently and prolong the RigMaster's service life. The block heater connection uses one (1) – 20 AMP breaker. **It is recommended that the RigMaster remain plugged into the vehicle's block heater throughout the winter months and unplugged for the spring and summer months.** A second 20 AMP supply of 120V power is supplied for the owner/operator convenience. A multiple outlet cord is supplied and can be installed in the bunk area of the vehicle to provide power for 120V appliances.



GENERATOR - FIGURE 3

NOTE: Each 20 Amp Breaker has a capacity of 2400 Watts

Legend:

1) 6KW VAC Generator

2)-Connection Box comes with 2 -20AMP-Breakers: 1 for the Block Heater 1 for the Bunk Cord.

PRE-START INSPECTION

WITH THE RIGMASTER TURNED OFF

- 1) Remove the cover.
- 2) Visually inspect the unit for evidence of oil or coolant leakage.
- 3) Check the oil and add oil if necessary.
- 4) Check the tension and wear of all belts.
- 5) Check the mounting bolts and tighten if necessary.
- 6) Check for broken, corroded, or loose connectors and/or wires.
- 7) Check the physical condition and tightness of all hoses and hose clamps.
- 8) Replace and secure the cover.

CONTROL PANEL OPERATING PROCEDURES



- 1 **The LCD MODULE DISPLAY** is used to prompt the user through each operating mode. The display will back light when the user touches any key and will turn off if not used for 30 seconds.
- 2 **The GREEN STATUS** light indicates the cabin controller is active and functional. **The RED STATUS** light indicates a system problem and an error message will appear on the display. (Refer to error message listing of this supplement).

NOTE: No STATUS light indicates the system is inactive (OFF).

- 3 **The POWER key** controls whether the module is active. Pushing the Power key will turn on the LCD backlight and activate the menu display or will turn the system off.
- 4 **The MODE key** is used to activate the different operational modes and will back you out of the menu mode to the main display.
- 5 **The ARROW keys** are used to locate the desired data and/or adjust those values.
- 6 **The SELECT key** enters the data and advances the program to the next menu step.

NOTE: Pressing the select button will save the information inputted when entering operational data.

OPERATION OF THE CABIN CONTROLLER

Power On

When the RigMaster system is off, the cabin controller enters the low power mode and becomes inactive, shutting off all non-critical functions. In low power mode the display shows: the day of the week and date on the top line and the time and total hours of operation on the bottom line.

Pressing the POWER key will activate the normal mode turning the system on. The display will light and the status LED will become green. The display will show the day of the week and time on the top line and the system status (on/off) as well as the temperature setting on the bottom line. Pressing the MODE key again will activate the menu mode. The display will show SELECT on the top line and START SYSTEM on the bottom line.

Set Time/Date

NOTE: It is necessary to enter and date programming mode if the module has never been programmed or a different time zone is required.

Press MODE key

Press UP or DOWN key to find Set Time / Date mode on the display

Press SELECT key

Press UP or DOWN key to find Set Time

Press SELECT key clock hour will start flashing

Press UP or DOWN key to adjust clock hour

Press SELECT key clock hour will stop flashing and clock minutes will start flashing

Press UP or DOWN key to adjust clock minutes

Press SELECT key clock minutes will stop flashing and am/pm will start flashing

Press UP or DOWN key to change am/pm

Press SELECT key to save settings and return to menu mode

Press MODE key to back out of the menu

To Set Date

Press MODE key

Press UP or DOWN key to find Set Time/Date mode on the display

Press SELECT key

Press UP or DOWN key to find Set Date mode

Press SELECT key Month will start flashing

Press UP or DOWN key to find the correct month

Press SELECT key Month will stop flashing and calendar date will start flashing

Press UP or DOWN key until correct date appears

Press SELECT key to save settings and return to menu mode

Press MODE key to back out of the menu

To Set Day

Press MODE key.
Press UP or DOWN key to find Set Time/Date mode on the display.
Press SELECT key
Press UP or DOWN key to find Set Day mode.
Press SELECT key
Press UP or DOWN key to find the correct day of the week.
Press SELECT key to save settings and return to menu.
Press MODE key to back out of the menu

Set Alarm Clock

Press MODE key
Press UP or DOWN key to find Set Alarm Clock mode.
Press SELECT key clock hour will start flashing
Press UP or DOWN key to adjust clock hour
Press SELECT key clock hour will stop flashing and clock minutes will start flashing
Press UP or DOWN key to adjust clock minutes
Press SELECT key clock minutes will stop flashing and am/pm will start flashing
Press UP or DOWN key to change am/pm
Press SELECT key on or off will display
Press UP or DOWN key to change setting
Press SELECT key to save changes and return to menu mode
Press MODE key to back out of the menu

Note: The Alarm symbol “*” will appear on the screen to indicate that the alarm is on. When the alarm is activated the SELECT button will cancel the alarm and remove the alarm symbol from the screen. If the alarm is not turned off manually it will ring for one minute and then “snooze” for four minutes before sounding again.

Engine Start

Press MODE key
Start System will display
Press SELECT key
The control panel will display the status of the operation as it occurs:

- Starting System
- Glow Plugs and a 15 second countdown
- Cranking Engine
- Please Wait.....
- Engine Running will display for 5 seconds and then return to the normal mode

The normal mode will display System On

Engine Stop

Press MODE key.

Stop System will display.

Press SELECT

The control panel will display the status of the operation as it occurs:

- Engine Running
- Engine Stopped

The control panel after 5 seconds will return to normal mode

Temperature Control

Press MODE key.

Press UP or DOWN key to find the Set Temperature mode

Press SELECT key

Press UP or DOWN keys to find desired temperature

Press SELECT key to save setting

Press MODE key to return to normal mode

NOTE: Temperature control ranges from 65°F to 85°F. The system will remember the last set temperature when it is turned off

Fan Speed Control

Press MODE key.

Press UP or DOWN key to find the Set Fan Speed mode

Press SELECT key

Press UP or DOWN key to desired fan setting

Press SELECT key to save setting

Press MODE key to return to menu

NOTE: The system will remember the last fan setting after system is shutdown. To stop climate control the fan speed **MUST** be set to the off setting. During warmer months use the **automatic on** setting to improve air conditioner efficiency. During the cooler months use the **automatic off** setting to improve heater efficiency.

Low Battery Alarm

When the truck battery voltage reaches 12.0 V +/- .2 Volts the low battery alarm will sound

AUTOSTART CONTROL OPTION

This feature can be purchased at an additional cost.

AutoStart Date/Time

Allows you to program the AutoStart to the exact date and time you need your RigMaster to start automatically up to seven days in advance. If you are setting this feature to heat or cool the bunk you **MUST** make sure your fan speed and temperature settings are programmed. This program has a run time of three hours and will override all other AutoStart features. Once the program is completed it will shut off and the last time/date will be stored. You will need to turn on this feature each time you use it.

NOTE: If your RigMaster is running on another AutoStart program, e.g. Auto Temperature Control or Low Battery Start-up program and surpasses the time and date set for AutoStart then the APU will not start on this program.

Automatic Temperature Control

This control allows you to regulate the temperature in the bunk automatically providing additional fuel savings. Fan and temperature settings **MUST** be set in order to activate this control. The engine will **NOT** shut down if the fan setting is set to the off position.

If you are setting the Auto-start Temp to heat the bunk, the APU will start at 6 degrees below the set temperature and run until set temperature is reached, then shut off.

If you are setting the Auto-start Temp to cool the bunk, the APU will start at 6 degrees above the set temperature and run until set temperature is reached, then shut off.

NOTE: Fan speed has to be set to **low, medium, high, automatic off, or automatic on** before the engine will shut down when using the AutoStart feature. The engine will not shut down if the fan setting is set to off.

Low Battery Start Up

This feature replaces the low battery alarm and automatically starts up the RigMaster to charge the truck batteries if they get below 12 volts \pm .2 volts. The engine will shut down after 20 minutes of charging. The engine will then restart after four minutes if the truck batteries are still below 12 volts \pm 0.2 volts. When the truck batteries fail to sustain voltage and the truck batteries drop below 11.5V the RigMaster will shut down and a system charging error message will display on the cabin controller.

NOTE: Once the RigMaster starts on low battery AutoStart, it will not operate any system other than the engine, charging system, and the 110V generator regardless of fan speed and temperature settings.

Programming AutoStart Code

When you purchase the AutoStart feature you will be provided with a 4 character/digit code which must be first programmed in to the cabin controller

Ensure the cabin controller is in low power mode. (Status light off)

Press and hold the MODE key and SELECT key at the same time for 5 seconds.

The display will show AutoStart code XXXX and the first character/digit will be flashing

Press UP or DOWN key to locate the first digit/character in the code

Press the SELECT key to accept the data and move to the next digit

Continue entering the code in the above manner until all four characters have been selected.

Once all four digits have been entered the system will accept the code and a message will display..... Code Ok

AutoStart Code: _____

Note: The AutoStart code will ONLY function on provided controller kit

Programming AutoStart

Press MODE key.

Press UP or DOWN key to find the Set AutoStart mode

Press SELECT key and Set Time AutoStart appears

Press SELECT key and day of week starts flashing

Press UP or DOWN key to adjust day of week

Press SELECT key and day of week will stop flashing and clock hour will start flashing

Press UP or DOWN key to adjust clock hour

Press SELECT key and clock hour will stop flashing and clock minutes will start flashing

Press UP or DOWN key to adjust clock minutes

Press SELECT key and clock minutes will stop flashing and am/pm will start flashing

Press UP or DOWN key to adjust am/pm

Press SELECT key and am/pm will stop flashing and on/off will start flashing

Press UP or DOWN key to change on/off

Press SELECT key to save settings and return to menu mode

Press MODE key to return to normal mode

Note: Once you have set the program a # symbol will appear on the normal mode screen. If you touch any keys once this program is activated it will default to OFF. This control will run a continuous 3 hour program and then will default to OFF. You MUST set this program each time you use it.

Set Auto Temperature Control

Press MODE key.
Press UP or DOWN key to find the Set AutoStart mode
Press SELECT key and Set Time AutoStart appears
Press UP or DOWN key to find the Set Auto Temperature mode
Press SELECT key and on/off will start flashing
Press UP or DOWN key to turn on/off
Press SELECT key to save setting and return to menu mode
Press MODE key to return to normal mode

Note: This is a one time program and will default to OFF. If you touch any keys once this program is activated it will default to OFF. You MUST set this program each time you use it.

Set Auto Battery Control

Press MODE key.
Press UP or DOWN key to find the Set AutoStart mode
Press SELECT key and Set Time AutoStart appears
Press UP or DOWN key to find the Set Auto Battery
Press SELECT key and on will display
Press SELECT key to exit and return to the menu mode
Press MODE key to return to normal mode

Note: This setting can not be changed on cabin controller version 1.08 or higher, it is always set to ON. This setting can be changed on older cabin controller versions.

Notes

ERROR MESSAGES LISTING

Error Code	Displayed Error	Description
1	Safety Cover Open	Safety cover of main unit is open. Auxiliary engine will not start or run until the cover is closed.
2	Oil Pressure Low	Alarm, low oil pressure. Auxiliary engine would start but will not continue running unless oil pressure becomes normal with 60 seconds of engine start.
3	Battery Voltage Low	Alarm, low battery voltage-start system immediately.
4	Engine Run Failure	Engine started but did not run properly. Manual start attempts can occur.
5	Engine Overheated	Engine will not run until temperature becomes normal.
6	Electrical Problem	Engine will not start until the system is powered down and the problem has been fixed.
7	Engine Start Failure	Engine did not start. Automatic start is disabled until operator presses select button.
8	No Communication Error	Communication between control panel and power module is lost. Engine will not start or run until communication is re-established.
9	Main Engine Running	Truck main engine is running. RigMaster® Power APU will not run if the main engine is already running.
10	Maximum Run Time Shutdown	The engine was shut down the 3 hours maximum run time has been exceeded.
11	Check Power Module Fuse	Very low battery voltage detected, check and replace the fuse if required.
12	Battery Charging Failure	Battery voltage still low 2 minutes after cranking. Auto and manual starts can occur.
13	Battery Discharged	Alarm, system will enter low power mode. Auto and manual starts cannot occur.
14	Check External Temperature Sensor	External temperature sensor disconnected from the power module.
15	External Temp Disable Limit	Engine shut down since the external temperature is outside the programmed range.
16	Invalid Power Module Version	Incompatible versions of the power module and the cabin module.
17	Power Up	Displayed when the power module is starting up.

FUEL SYSTEM

The RigMaster® Power APU incorporates a low/high pressure system. In order to prevent the vehicle engine from drawing the fuel from the RigMaster's fuel supply line, an in-line check valve is mounted at the point of connection on the vehicle's suction fitting and the RigMaster.

The RigMaster fuel supply line is connected to the Perkins engine feed pump, which in turn supplies fuel to the filter/sediment bowl assembly and then in turn to the injection pump.

NOTE: THIS TYPE OF FUEL SYSTEM DOES NOT DE-AIRATE ITSELF.

All air must be bled from all of the hoses and components. There are air bleed screws located in the fuel filter head assembly.

BLEEDING PROCEDURES

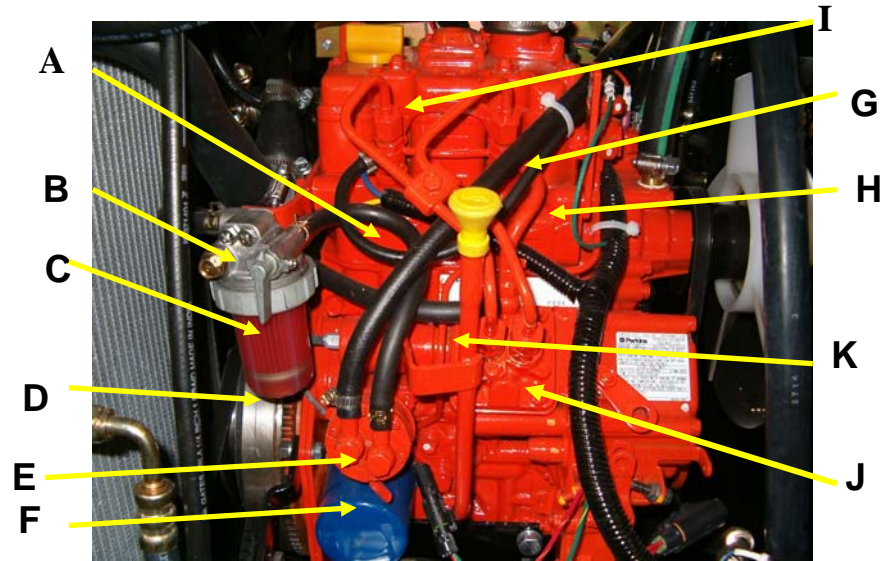
Low Pressure System

TOOLS NEEDED

Philips screwdriver #3

NOTE: THE LOW PRESSURE SYSTEM MUST BE COMPLETELY FREE OF AIR BEFORE THE HIGH PRESSURE SYSTEM CAN BE BLED PROPERLY.

- a) Position a container or shop wiper under the fuel sediment bowl in order to contain any spillage of fuel.
- b) Using a Philips screwdriver, loosen the right hand bleed screw located in the fuel filter head (Location B).
- c) Prime the fuel system using the manual primer pump lever located on the fuel feed pump (Location F).
- d) Continue to pump until the sediment bowl is full and clear flow of fuel is present at the bleed screw.
- e) Tighten the bleed screw in the fuel filter head (Location B).
- f) Bleeding low pressure system is complete



FUEL SYSTEM - FIGURE 5

Legend:

- A) Filter Feed Hose
- B) Air Bleed Screw (Filter Housing)
- C) Shut-Off Valve
- D) Fuel Filter Element and Fuel Bowl
- E) Fuel Supply Pump - Feed Pump
- F) Manual Primer Pump Lever (Fuel Supply Pump)
- G) Fuel Supply Hose
- H) Fuel Return Hose (Injector Bleed-off)
- I) Fuel Injector Nozzles
- J) Fuel Injection Pump
- K) Injector Pump Feed Line

BLEEDING PROCEDURES

High Pressure System-Injectors (see Figure 5)

TOOLS NEEDED

17mm Wrench

NOTE: THE LOW PRESSURE SYSTEM MUST BE COMPLETELY FREE OF AIR BEFORE THE HIGH PRESSURE SYSTEM CAN BE BLED PROPERLY.

NOTE: IT IS RECOMMENDED THAT A SECOND PERSON ASSIST IN THE PERFORMANCE OF STEPS #1, #2, #3, #6 AND #7. NEVER DISABLE OR BY-PASS THE SAFETY DEVICE.

- 1) Have a helper hold down the safety cover switch located on the unit.
- 2) Loosen both high-pressure line nuts located at the injectors using a 17mm wrench (Location I).
- 3) Start system using method described on Page 11.

NOTE: This procedure is meant only to remove air bubbles. APU will not start with nuts loosened.

- 4) If the air bubbles are still present after 30 seconds of cranking, re-start with nuts loose.
- 5) Tighten the left injector line nut using a 17mm wrench (Location I).
- 6) If the APU fails to start, Repeat steps 1 thru 5
- 7) As a final measure, it is recommended to bleed the fuel system with the engine running.
- 8) Slowly loosen one injector nut using a 17mm wrench (left nut first -Location I) at a time and retighten quickly when engine speed drops. This will remove any remaining air. Be sure to tighten the first injector nut (left nut) using a 17mm wrench before continuing to the next injector nut (right nut).

PREVENTATIVE MAINTENANCE

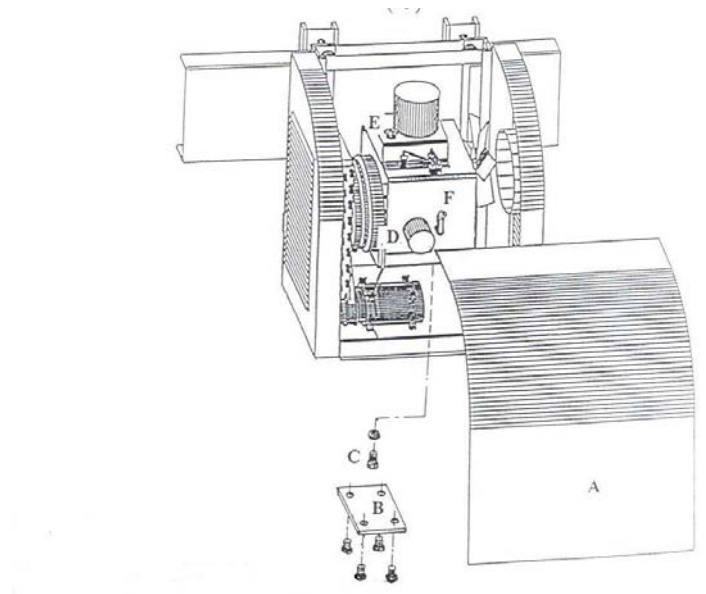
Maintenance schedules listed below are for **NORMAL** road conditions and the specific hour intervals must be adhered to. For **SEVERE** conditions perform the scheduled maintenance(s) earlier.

SCHEDULED INTERVALS EVERY							MAINTENANCE ITEMS
50 hrs.	200 hrs.	500 hrs.	600 hrs.	800 hrs.	1000 hrs.	1600 hrs.	
•							Check coolant level. Top up with premixed coolant only.
				•			Check concentration of coolant.
						•	Renew coolant, (fill slowly, ensure correct quantity is used).
		•					Renew engine lubricating oil, (fill slowly, ensure right quantity is used – 2 ltr. / 2 US qt. or 3 ltr. / 3 US qt.) See note at the bottom of the page. To determine the amount of oil used for your engine see page 22.
			•				Renew fuel filter element.
	•						Check tension of drive belts.
	•						Check drive belts for wear.
			•				Renew drive belts.
		•					Check and clean heater/AC unit filter
		•					Wash out internal engine compartment (see figure 12 for instructions)
	•						Check electrical systems. (see figure 12 for instructions)
			•				Check all nuts/bolts for tightness.
					•		Check injectors for performance.
		•					Renew air filter element / Standard filter.
					•		Renew air filter element / Long Life filter.
•	•	•	•	•	•	•	Check for and correct any leaks or engine damage.

NOTE: THESE PREVENTATIVE MAINTENANCE PERIODS APPLY TO AVERAGE CONDITIONS OF OPERATION. IF NECESSARY USE SHORTER INTERVALS.

Note: The first oil change must be performed at 50 hours of service and 500 hour intervals there after.

OIL FILTER		AIR FILTER	
<u>BRAND</u>	<u>PART No.</u>	<u>BRAND</u>	<u>PART No.</u>
AC Delco	PF1233	RigMaster/Mann	00-C1140
Perkins	140516250		
Wix	51396		
K-Mart Motorvator	K014477		
Fram	PH4386	ASSEMBLY	
Baldwin	B37	RigMaster	103002
FUEL FILTER		FAN BELT	
<u>BRAND</u>	<u>PART No.</u>	<u>BRAND</u>	<u>PART No.</u>
Wix	33262	RigMaster	RP8-009
NAPA	3262	Bando	2310 9.5 X 790LA
Perkins	130366040		
Fram	C7516		
Baldwin	PF937		
AC Delco	GF771		
COMPRESSOR DRIVE BELT		GENERATOR DRIVE BELT	
<u>BRAND</u>	<u>PART No.</u>	<u>BRAND</u>	<u>PART No.</u>
Gates	13A0875	RigMaster	RP8-006
Dayco	51009	Gates	3VX420
GLOW PLUGS		RECEIVER-DRIER	
<u>BRAND</u>	<u>PART No.</u>	<u>BRAND</u>	<u>PART No.</u>
Perkins	185366220	RigMaster	RP9-027
		Four Seasons	34334
		Everco (UAP)	A78239



OIL CHANGE - FIGURE 6

TOOLS REQUIRED:

3/8 Ratchet
17mm Socket
7/16 Socket

PROCEDURE:

- 1) Remove front cover (A).
- 2) Remove drain plug access cover (B) using a 7/16 socket.
- 3) Remove drain plug (C) using a 17mm socket.
- 4) Remove oil filter (D).
- 5) Install new oil filter.
- 6) Inspect drain plug gasket and replace if needed
- 7) Install and tighten drain plug using a 17mm socket.
- 8) Refill engine with (2 liters 2 US qts.) Or (3 liters / 3 US qt.) of new engine oil (E)**

NOTE: See page 22 for the size of the oil pan. This will tell you how much oil your engine takes.

- 9) Check oil level with dipstick (F).
- 10) Run the RigMaster.
- 11) Recheck the oil Level and Add Oil if necessary. Note: make sure you don't overfill the oil, if over filled make sure the oil is drained to the proper level

****NOTE:** Use only good quality lubricating oil which meets (and not exceeds) any of the following specifications - API CC/CD/CE/CF/CF-4/CG-4 - ACEA E1/E2/E3

Recommended Viscosity Grades: 10W30 & 15W40 are most commonly used.

This oil pan holds 2 ltr./2 US qt. This engine oil pan is mounted flush with the engine block. Do not go by the color of the engine. The first oil change must be performed at 50 hours of service & 500 hour intervals there after.

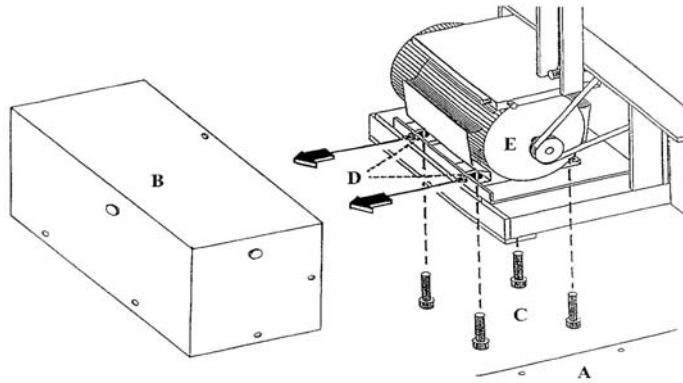


Oil Pan

This oil pan holds 3ltr./3US qt. This engine pan is mounted out from the engine block. Do not go by the color of the engine. The first oil change must be performed at 50 hours of service & 500 hour intervals thereafter.



Oil Pan



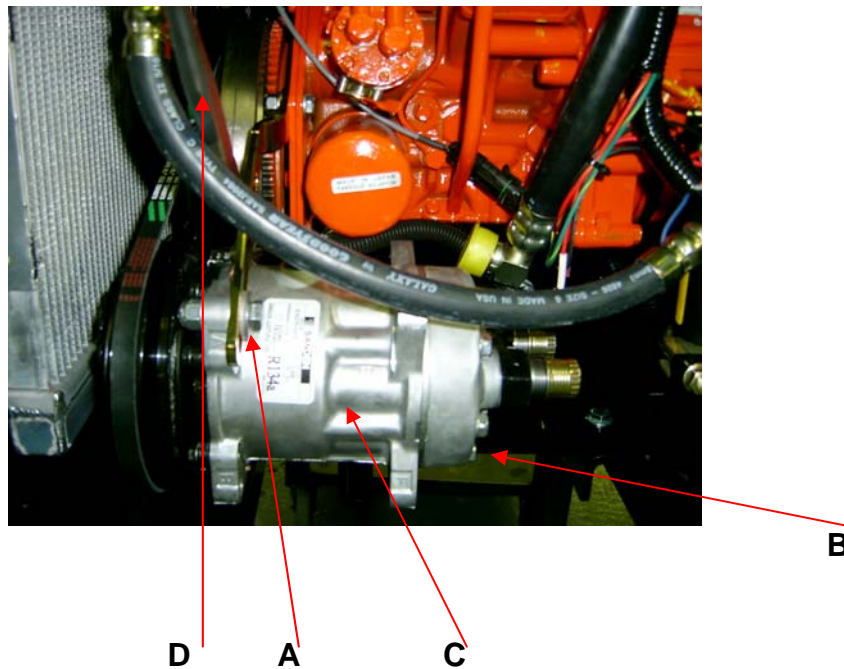
GENERATOR BELT REMOVAL / ADJUSTMENT - FIGURE 7

TOOLS REQUIRED:

7/16 Wrench
9/16 Wrench
9/16 Socket
7/16 Socket
3/8 Ratchet

PROCEDURE:

- 1) Remove bottom panel (A) using a 7/16 socket.
- 2) Remove generator cover (B) using a 7/16 socket.
- 3) To replace the generator belt, first - loosen and remove the compressor belt (see figure 8 for details).
- 4) **LOOSEN**, but **DO NOT REMOVE**, the four (4) generator mounting bolts (C) using a 9/16 socket.
- 5) Using the two eye bolts (D) using a 7/16 wrench, gently pull the generator (E) outward and evenly in the direction of the arrows until the belt deflection is less than 12 mm.(1/2").
- 6) Tighten the four generator bolts (C) using a 9/16 wrench & a 14mm socket, replace and adjust the compressor belt (see figure 8 for details).
- 7) Replace the generator cover (B) using a 7/16 socket and the bottom panel (A) using a 7/16 socket.



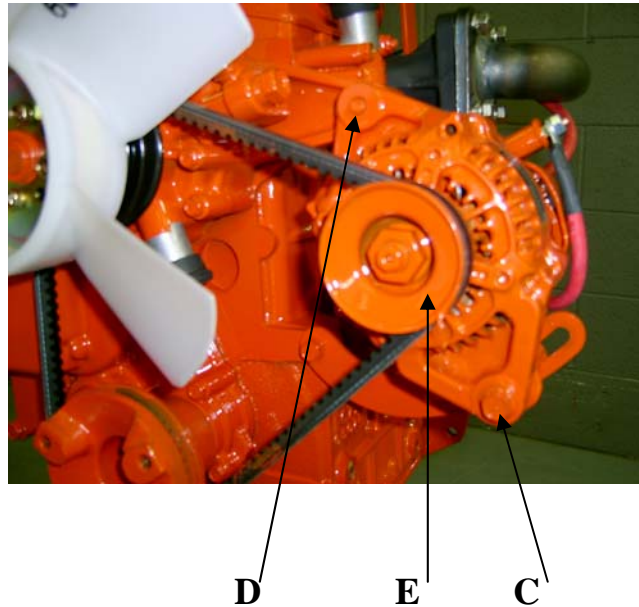
COMPRESSOR BELT REMOVAL / ADJUSTMENT - FIGURE 8

TOOLS REQUIRED:

9/16 Wrench
3/8 Ratchet
9/16 Socket
16 Inch pry bar

PROCEDURE:

- 1) Remove the front cover.
- 2) Loosen the adjustment bolt (A) using a 9/16 socket & a 9/16 wrench and the Pivot Bolt (B) using a 9/16 socket.
- 3) Rotate the compressor (C) towards you using a 16 inch pry bar (D) until the belt deflection is less than 6 mm. (1/4").
- 4) **Note:** When using the pry bar, put the pry bar between the top left ear on the compressor & the flywheel & push the compressor downwards.
- 5) When the belt is sufficiently tight, tighten the adjustment bolt (A) using a 9/16 socket & a 9/16 wrench, and then tighten the pivot bolt (B) using a 9/16 socket.



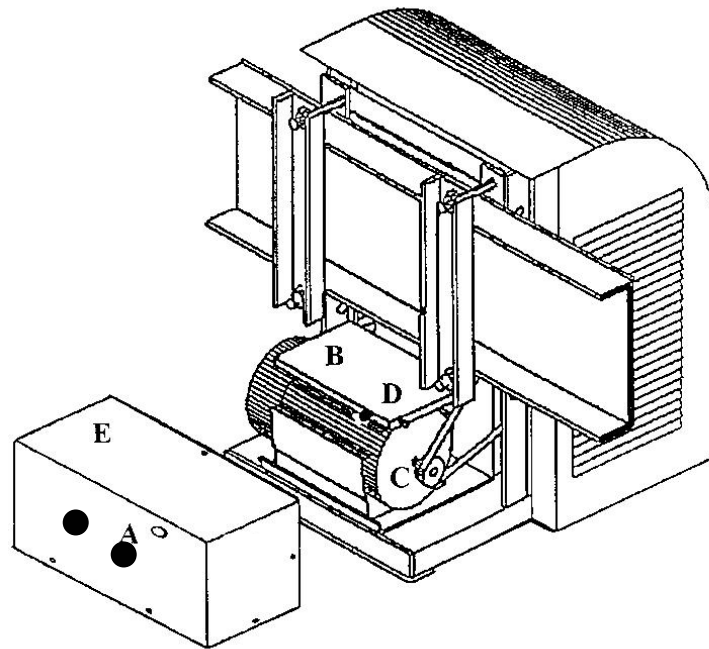
FAN BELT REMOVAL / ADJUSTMENT - FIGURE 9

TOOLS REQUIRED:

12mm Wrench
3/8 Ratchet
12mm Socket
7/16 Socket
16 inch pry bar

PROCEDURE:

- 1) Remove the one piece fan side chamber using a 7/16 socket.
- 2) Loosen, but **DO NOT REMOVE**, the adjustment bolt (C) using a 12mm wrench & a 12mm socket. Then loosen the pivot bolt (D) using a 12mm socket.
- 3) To remove the fan belt, slide the alternator (E) down towards the back of the engine & remove the fan belt.
- 4) Install the new fan belt & slide the alternator (E) up towards the top of the engine using a 16 inch pry bar & until the belt deflection is less than 6 mm. (1/4").
- 5) When the fan belt is tight, tighten the adjustment bolt (C) using a 12mm wrench & 12mm socket. Then tighten the pivot bolt (D) using a 12mm socket.
- 6) Reinstall the one piece fan side chamber using a 7/16 socket. Make sure the ring on the one piece side chamber does not touch the engine fan blade. **NOTE:** Inspect the fan blade for broken blades or worn tips; if the blade is damaged, check the engine mounts & bottom stiffeners. (loose bolts or worn engine mounts).



RESETTING THE 20 AMP BREAKERS - FIGURE 10

NOTE: The cover is shown removed for clarity purposes only.

WARNING: CORRECT THE ELECTRICAL OVERLOAD PRIOR TO THE RESETTING OF EITHER BREAKER.

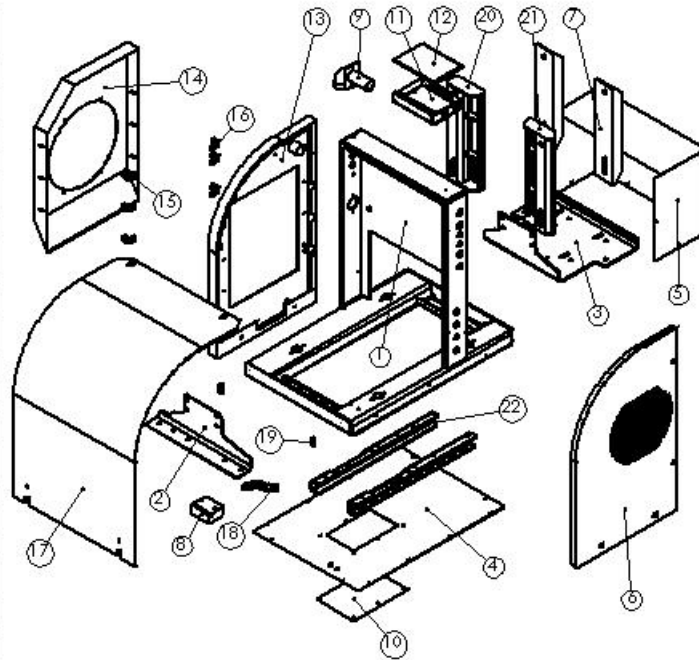
TOOLS NEEDED:

Flat head screwdriver

PROCEDURE:

- 1) Remove the Rubber Plugs (A) from the Generator Cover (E) using a flat head screwdriver.
- 2) Locate the Breakers (D) located on the front of the Electrical Connection Box (B) mounted on top of the Generator (C).
- 3) Insert the screwdriver and depress the Buttons (D), which protrudes from the Electrical Connection Box (B) to reset the breakers.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	RP10-001-1	Frame Assembly	1
2	RP10-001-09	Mount Plate, Front	1
3	RP10-001-10	Mount Plate, Rear	1
4	RP10-001-05	Bottom Cover	1
5	RP10-001-23	Rear Generator Cover	1
6	RP10-001-48	Right Side Chamber	1
7	RP10-001-08	Frame Clamping Bracket	2
8	RP10-001-52	Alum. Block	1
9	RP10-001-30	Exhaust Tube	1
10	RP10-001-32	Bottom Access Cover	1
11	RP10-001-24	ALT. Junction Box	1
12	RP10-001-25	Junction Box	1
13	RP10-001-50	LH side chamber	1
14	RP10-001-43	Fan shroud	1
15	RP10-001-44	Fan shroud bracket	3
16	RP10-001-45	Fan shroud bracket	3
17	RP10-001-18	Cover	1
18	RP10-001-53	Compressor Bracket	1
19	RP10-001-11	Pull Handle Spacer	2
20	RP10-001-57HD	"S" bracket	1
21	RP10-001-56HD	"S" bracket	1
22	RP10-001-02	Bottom Stiffener	2



MAIN COMPONENTS AND PART LOCATIONS - FIGURE 11

CLEANING INSTRUCTIONS

The RigMaster® Power Auxiliary Power Unit should be periodically inspected and any accumulation of road contaminants (such as: paper; plastic; dirt; oil; etc.) must be removed. Three main components, as outlined below, must be kept clean and free of contaminants and/or debris. Refer to Figure 12 for location of components.

MAIN UNIT GENERAL CLEANING (See Figure 12)

- a) Using a power spray wand, wash down the exterior of the main unit especially all louver panels (air intake / exhaust openings).
- b) Remove the front cover and wash down the interior of the main unit, holding the spray wand no closer than twelve inches (24") away from any component.
- c) Before replacing the front cover you will have to spray all electrical connections & sensors to prevent the connections & sensors from corroding. Make sure the engine compartment is dry first. Using battery sealant, spray the positive & negative post, glow plugs, run solenoid. (see below for areas to spray with battery sealant). **NOTE:** The following parts are not shown in the picture, but make sure that the green wire to the starter solenoid & the positive post on the alternator & starter is sprayed with battery spray. For the low oil sensor, high temperature sensor & the binary switch spray them with die electrical grease. **Note:** Make sure the boots are installed back on to the sensors.



Positive & Negative Post
High Temperature Sensor
Low Oil Sensor
Glow Plugs
Run Solenoid
Binary Switch

MAIN UNIT - FIGURE 12

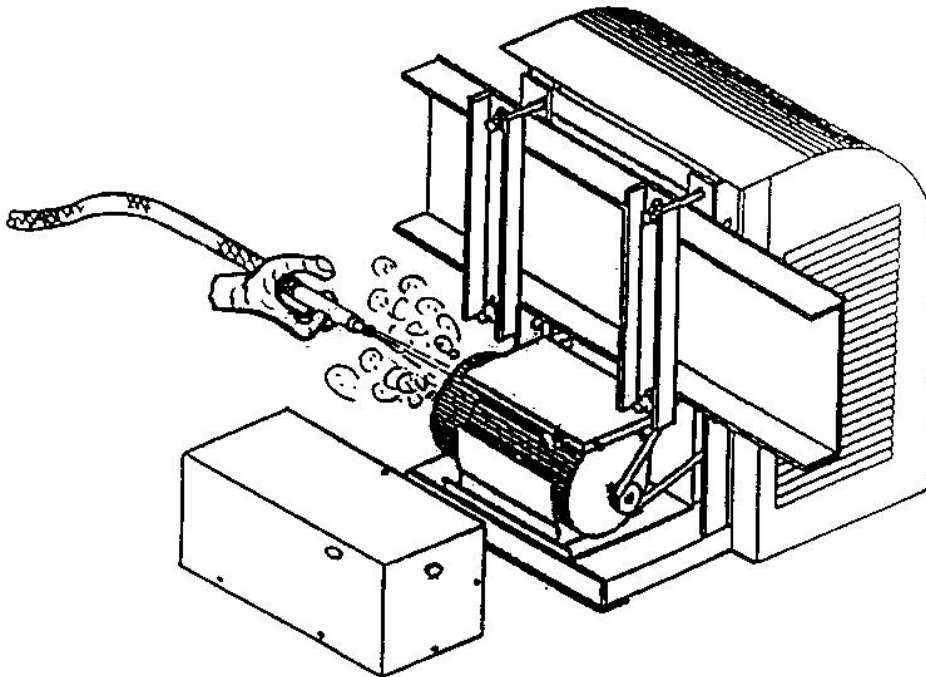
GENERATOR CLEANING (See Figure 13)

TOOLS NEEDED:

7/16 SOCKET

PROCEDURE:

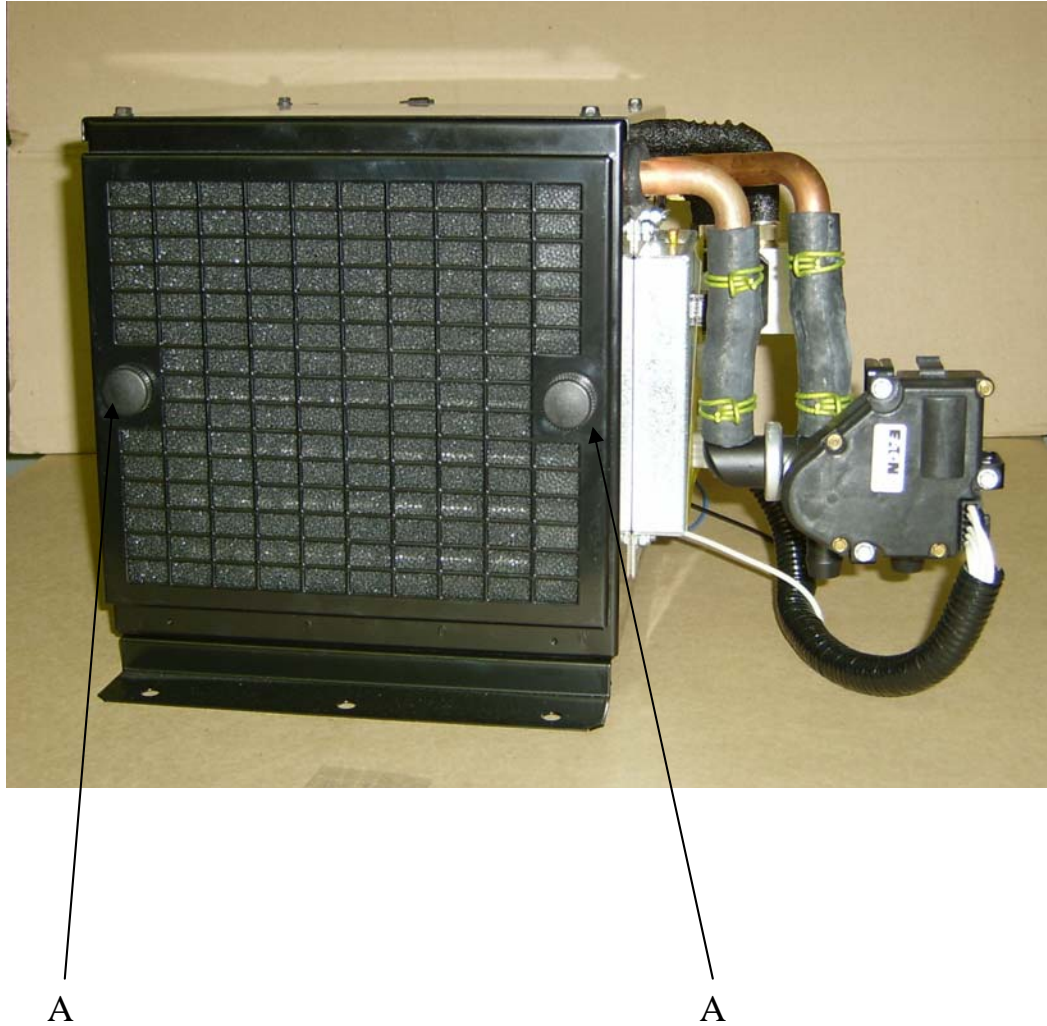
- a) Remove the Generator Cover using a 7/16 socket and inspect for any accumulation of dirt or oil especially at the generator air inlet and outlet openings.
- b) Using a compressed air line and nozzle, blow out the generator compartment.
- c) Using a clean cloth, soak up any oil or other liquids.
- d) Replace the Generator Cover and secure using a 7/16 socket.



GENERATOR - FIGURE 13

HEATER / AIR CONDITIONING UNIT (See Figure 14)

- a) Unscrew the two thumb nuts (A) & remove the air filter out of the HVAC box.
- b) Wash the air filter using soapy water or blow clean with compressed air.
- c) Re-insert the (dry) air filter to the filter cover & tighten down the two thumb nuts.



HEATER / AIR CONDITIONER UNIT - FIGURE 14

ENGINE

Troubleshooting

SYMPTOM	PROBABLE CAUSE	REMEDY/COMMENT
Engine does not crank	<ol style="list-style-type: none"> 1. Starter relay 2. Starter motor faulty 3. Broken engine ground strap 4. Battery connections loose 5. Low battery voltage 	<ol style="list-style-type: none"> 1. Check for power at relay during starting sequence 2. Check for power at starter solenoid 3. Replace strap 4. Tighten connections 5. Charge batteries
Engine cranks but does not start	<ol style="list-style-type: none"> 1. Air filter 2. Speed sensor 3. Glow plug or Glow plug relay 4. Fuel 5. Run solenoid not operating 6. Governor assembly (spring) 	<ol style="list-style-type: none"> 1. Check air filter 2. Check speed sensor gap: 0.025", Ohms: 625 +/- 75 3. Check for power @ the glow plug relay 4. Check if the fuel bowl is full & that the filter is clean 5. Check 12v at run solenoid 6. See Perkins manual
Engine hard to start	<ol style="list-style-type: none"> 1. Air filter 2. Fuel 3. Glow plugs 	<ol style="list-style-type: none"> 1. Check air filter 2. Check if the fuel bowl is full & that the filter is clean 3. Check for power @ the glow plug relay
Engine Cranks Slowly	<ol style="list-style-type: none"> 1. Damaged / corroded battery connections 2. Faulty starter 3. Faulty A/C Compressor 4. Faulty generator 	<ol style="list-style-type: none"> 1. Replace or clean the battery connections 2. Check connections at the starter 3. Compressor seized 4. Generator seized
Engine Starts & Stalls	<ol style="list-style-type: none"> 1. Speed sensor 2. Clogged fuel filter 3. Excessive load on the motor; generator, a/c compressor 4. Damaged or loose wiring connections 	<ol style="list-style-type: none"> 1. Check speed sensor Gap: 0.025", Ohms: 625 +/- 75 2. Replace filter 3. Unplug the block heater when using the a/c compressor 4. Inspect wiring connection & connectors

SYMPTOM	PROBABLE CAUSE	REMEDY/COMMENT
Engine Shuts Down	<ol style="list-style-type: none"> 1. Air filter 2. Fuel filter 3. Blown fuses 4. Damaged or loose wiring 	<ol style="list-style-type: none"> 1. Check air filter 2. Check fuel filter 3. Replace fuse 4. Inspect condition of wiring and wiring connections
White or blue smoke	<ol style="list-style-type: none"> 1. Excess engine oil 2. Coolant in combustion chamber 	<ol style="list-style-type: none"> 1. Inspect & correct oil level 2. Check for blown head gasket
Dark grey/black smoke	<ol style="list-style-type: none"> 1. Over loading 2. Clogged air filter 	<ol style="list-style-type: none"> 1. Unplug 120 volt appliances & block heater 2. Check air filter
Engine runs rough	<ol style="list-style-type: none"> 1. Air filter c 2. Fuel filter 3. Fuel leak 4. Worn/contaminated fuel injectors 5. Engine in poor condition 	<ol style="list-style-type: none"> 1. Check air filter 2. check fuel filter 3. Inspect all hoses & clamps 4. Inspect Injectors 5. Replace or rebuild the engine
Loss of engine oil	<ol style="list-style-type: none"> 1. Oil seals leaking 2. Leaking drain plug 3. Pinched or clogged breather tube 4. Engine worn or in poor condition 	<ol style="list-style-type: none"> 1. Replace crankshaft seals (seals leaking is do to having too much oil in the system) 2. Replace oil pan plug gasket 3. Repair or replace the tube 4. Replace or rebuild the engine

CHARGING SYSTEM

SYMPTOM	PROBABLE CAUSE	REMEDY/COMMENT
Batteries not charging	<ol style="list-style-type: none">1. Loose or broken belt2. Damaged or loose battery connections3. Faulty alternator4. Battery in poor condition	<ol style="list-style-type: none">1. Tighten or replace belt2. Inspect wiring3. Check alternator4. Test batteries
Batteries overcharging	<ol style="list-style-type: none">1. Faulty Alternator	<ol style="list-style-type: none">1. Check Alternator output

FUEL

SYMPTOM	PROBABLE CAUSE
Fuel odor/leak	<ol style="list-style-type: none">1. Loose fuel fittings2. Damaged fuel line or fuel filter bowl3. Fuel injection pump leak

COOLING SYSTEM

SYMPTOM	PROBABLE CAUSE	REMEDY/COMMENT
Engine overheating	<ol style="list-style-type: none"> 1. Coolant level low 2. Engine fan belts loose 3. Radiator fins blocked (external) 4. Elec fan 5. Faulty engine thermostat 6. Faulty by-pass valve 7. Overloading the engine 	<ol style="list-style-type: none"> 1. Add coolant 2. Tighten or replace 3. Clean radiator fins 4. The elec fan only engages when the compressor clutch engages. 5. Clean the radiator 6. Replace the by-pass thermostat valve 7. Reduce 110v load (eg. Block heater)
Engine overcooling	<ol style="list-style-type: none"> 1. Block heater not plugged in & working 2. Faulty by-pass valve 3. Faulty thermostat 	<ol style="list-style-type: none"> 1. Plug in block heater 2. Check the by-pass valve 3. Check the thermostat
Coolant loss	<ol style="list-style-type: none"> 1. Coolant system over filled 2. External coolant leak 3. Internal coolant leak 4. Blown head gasket 	<ol style="list-style-type: none"> 1. Check coolant level regularly 2. Check coolant hoses from RigMaster to the HVac system 3. Check internal coolant hoses inside the engine compartment 4. Replace the head gasket Note: the cylinder head should be machined
Poor circulation	<ol style="list-style-type: none"> 1. Water pump not operating properly 2. Cooling system restricted 	<ol style="list-style-type: none"> 1. Check the belt tension 2. Check for kinks in the coolant hoses

HVAC

SYMPTOM	PROBABLE CAUSE	REMEDY/COMMENT
Poor air flow	<ol style="list-style-type: none"> 1. HVac filter 2. HVAC air intake obstructed eg. Cloths or plastic bag 3. Excessive duct hose 4. Poor placement of vent 5. Faulty blower motor 6. Ducted through trucks ventilation system 	<ol style="list-style-type: none"> 1. Clean filter 2. Remove obstruction & tell the drive to keep the filter clear 3. Reduce the hose by extending the hose to maximum length 4. Relocate the vent 5. Check for power & ground 6. See install manual for ducking the vents
Little or no hot air	<ol style="list-style-type: none"> 1. Engine overcooling 2. Water valve Faulty 3. Airlock in coolant or low in coolant 4. Faulty coolant by-pass valve 5. Cooling system blocked 	<ol style="list-style-type: none"> 1. Main engine block heater not plugged in 2. Check water valve operation 3. Bleed system & fill coolant 4. Replace the by-pass valve 5. Flush complete cooling system
Little or no cold air	<ol style="list-style-type: none"> 1. Compressor not working 2. Compressor drive belt loose or damaged 3. Condenser or radiator fins blocked 4. A/C system leak 5. Elec fan not operating 6. Evaporator core frozen 	<ol style="list-style-type: none"> 1. Check the compressor clutch fuse 2. Tighten or replace the drive belts 3. Clean radiator/condenser using compressed air 4. Check pressures using gages 5. Check the fuse 6. Check the temperature switch & the location of the probe

120 VOLT ELECTRICAL SYSTEMS

SYMPTOM	PROBABLE CAUSE	REMEDY/COMMENT
No power to receptacles (Bunk and block heater)	<ol style="list-style-type: none"> 1. Breakers tripped 2. Generator drive belt loose or damaged 3. Wiring damaged 4. Internal damage to generator 	<ol style="list-style-type: none"> 1. Reset the breakers. 2. Check the belt 3. Check all connections 4. Check the generator out put (61 Hertz with no load)
Generator continually trips	<ol style="list-style-type: none"> 1. Circuit overloaded (20A or 2400 W max) 2. Short circuit 	<ol style="list-style-type: none"> 1. Check power rating of appliances

THE LIMITED WARRANTY

This limited warranty applies to the RigMaster® Auxiliary Power unit ("APU") which consists of the following components:

- 1) The generator set
- 2) The generator set control panel
- 3) The combination heater/air conditioner unit

12 MONTH WARRANTY COVERAGE

RigMaster Power Corp. warrants that, under normal service and use, the RigMaster® Power APU will be free from defects in material and workmanship for twelve (12) months from the date of installation, subject to all terms and conditions, limitations and provisions of this limited warranty. This limited warranty is governed by the laws of the Province of Ontario, Canada, and any claims or disputes arising out of this limited warranty shall be governed by the laws of the Province of Ontario, Canada.

24 MONTH OR 4000 HOUR WARRANTY COVERAGE

STARTING JAN, 1-2006 Perkins Engine Model 402.5, RigMaster® Power Model RMP 14-6 Serial Number 03202 and higher will have a RigMaster warranty of 24 months or 4000 hours (Whichever comes first) from the 'in-service date' as stated in the RigMaster Warranty Policy.

WARRANTY OBLIGATION

During the warranty period, RigMaster Power Corp. will repair or replace, at its option, the RigMaster® Power APU components, which consist of the generator, the control panel, or the combination heater/air conditioner. Repair or replacement will be completed at an authorized dealer or company owned facility, upon presentation of proof of purchase and determination by RigMaster Power Corp. or its authorized dealer that a component is defective or has failed under normal service and use, at no charge to the owner of the RigMaster® Power APU, within the first 12 month warranty period package or the 24 month /4000 hour whichever comes first warranty period package.

DISCLAIMER OF OTHER WARRANTIES

RIGMASTER POWER CORP., INCLUDING ITS AGENTS AND AUTHORIZED DEALERS, MAKES NO OTHER WARRANTIES AND EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. No person, firm, or representative is authorized to assume any obligation or make any warranty on behalf of RigMaster Power Corp. other than the limited warranty as stated herein.

MAINTENANCE

The RigMaster® owner's manual lists all maintenance functions required to validate this limited warranty. **PLEASE NOTE THAT FAILED COMPONENTS DUE TO POOR OR IMPROPER MAINTENANCE WILL NOT BE COVERED BY THIS LIMITED WARRANTY.** Where a dispute arises regarding proper maintenance, the manufacturer reserves the right to request proof in the form of receipts for maintenance, and any other records of service to establish that proper maintenance has been performed, as per the service and repair manual and/or dealer communications.

INSTALLATION

It is the responsibility of the installer and the owner to ensure that all RigMaster® APU components are in proper working order at the time of installation. The manufacturer is not responsible for failed components that are a result of improper installation.

In order to validate your RigMaster® Power APU warranty, the APU must be either installed by an authorized RigMaster dealer or must be inspected and certified by an authorized RigMaster dealer within 30 days of purchase. A RigMaster Installation Check List must be completed and registered by the dealer to certify the installation. Cost to certify is at the owner's expense. For APU's not installed by an authorized dealer; the warranty, if validated, will be from the date of purchase, not the date of certification.

WARRANTY VOIDED OR TERMINATED

Any modification to the RigMaster® Power without the written authorization from the manufacturer will void this limited warranty. Repair, replacement, or maintenance, using other than approved parts, will be cause to terminate this limited warranty.

EXCLUSIONS FOR LIMITED WARRANTY

The costs of normal maintenance such as, but not limited to tune-ups, adjustments, and inspections, tightening of clamps, fasteners, hoses, the replacement of belts, fuel, air, oil and filters are excluded from this limited warranty.

LIMITATION OF REMEDIES

The remedy of repair or replacement as set forth herein is the sole exclusive remedy available to the purchaser or user of the RigMaster® Power APU. RigMaster Power Corp. disclaims and shall not be liable or responsible to the owner or user of the RigMaster® APU or any other person for incidental, consequential, direct, indirect, special or general damages of any kind arising out of or in any way related to the use of the RigMaster® APU including, but not limited to towing charges, accident repairs, road calls, traveling expenses, loss of revenue profits, loss of truck use or damage to persons or property. No claim of any kind asserted against RigMaster® APU, whether asserted under legal theories of negligence, strict liability, warranty, or any other common law or statutory basis, shall be greater in amount than the purchase price of the RigMaster® with respect to which damages are claimed.

INDEMNITY

The user and owner of the RigMaster® APU agree to indemnify and hold RigMaster Power Corp. harmless from any and all claims, expenses, suits or liability of any nature whatsoever asserted against RigMaster Power Corp. arising out of or in any way related to negligence on the part of the user or owner of the RigMaster® APU.

WARRANTY CLAIMS

Failed or defective parts must be inspected and their replacement installed by an authorized RigMaster® dealer. The manufacturer reserves the right to inspect failed or defective parts prior to a decision on any claim under this limited warranty. It is the owner's responsibility to act promptly in submitting any such claim.

TRANSFER OF WARRANTY

Where the vehicle with the RigMaster® APU has been sold by the first owner to a second owner and the RigMaster® has not been removed, this limited warranty is transferable from the original owner to a second owner with whatever portion of the limited warranty that remains from the date of sale to the first owner. Where the RigMaster® APU has been removed from the vehicle in which it was originally installed, and sold by the first owner to a second, re-installation is required to be completed by an authorized dealer in order to validate the remaining portion of this limited warranty. Where the original owner transfers the RigMaster® to a new vehicle, the installation must be completed by an authorized dealer to validate whatever is remaining of this limited warranty.

WARRANTY POLICY

RigMaster Power Corp. (RIGMASTER POWER CORP.) warrants that, under normal service and use, the RigMaster® Power APU will be free from defects in material and workmanship as stated.

During the warranty period RIGMASTER POWER CORP. will provide the exclusive remedy of ensuring the repair or replacement of those parts which are demonstrated to be defective in material or workmanship.

The purpose of the warranty is to provide the owner with free repair and replacement of defective parts in the manner outlined in the following policy. This remedy does not apply to normal wear of service parts, improper installation, deterioration, modification or economic loss.

Customer Assistance Procedure

To obtain warranty repairs you must request the needed repairs within the warranty period from an authorized RigMaster dealer.

A reasonable time must be allowed to perform the warranty repair after taken the APU to an authorized dealer location. Repairs will be performed during normal business hours.

To ensure your complete satisfaction the following procedures must be followed in the event You have a problem.

1- Contact the nearest (most convenient) RigMaster dealer to schedule a warranty service appointment. Prior to contact have the following information available

- APU serial number
- Hour meter reading
- In service (Purchase) date
- Nature of problem

2- Deliver APU to dealer for service. Upon completion of repairs review and sign the dealer work order, keeping a copy for reference.

3- Frequently, customer concerns are a result of a breakdown in communications and can be quickly resolved at the dealer level.

4- If you are still not satisfied, present the entire matter in writing to:

**RigMaster Warranty Administration
11 Diesel Drive
Toronto, Ontario
Canada, M8W-4Z7
Fax: (416) 201-7532**

<p>CALIFORNIA Proposition 65 Warning Diesel engine exhaust and some of its constituents are known by the State of California to cause cancer, birth defects and other reproductive harm.</p>
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MAINTENANCE RECORD

MAINTENANCE RECORD

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NOTES

