

Subject
RAPTAIR60 Error Codes and Symptoms

System or Parts affected


- RAPTAIR60 - without Cold Climate kit (D600003)
- RAPTAIR60 - with Cold Climate kit (D600004)

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Overview

A quick reference for error codes, symptoms, trouble shooting and wire diagrams.

 **If an error is present, the RAPTAIR60 unit WILL NOT start the compressor until the error is cleared. When an error is present the WARNING LED will flash on/off and the screen will display 'ERRORS DETECTED' followed by the following list of errors. The user MUST scroll through ALL the displayed errors by pressing the NEXT button before the unit can re-try the start sequence.**

Entering DIAGNOSTIC MODE to Retrieve Logged Errors

- 1) Key on the system but do not start. No error messages on the display box should be shown.
- 2) Press the “NEXT” and “BACK” buttons for 5 seconds to enter Diagnostics Mode.
- 3) Press the “NEXT” and “BACK” buttons to scroll to “VIEW LOGGED ERRORS”.
- 4) Press the “ON/ENTER” button to view the errors.
- 5) Use “NEXT” and “BACK” to scroll through the errors. Fill in all of the blank boxes on the following table.

The tables below represent the lines that will be shown on the control box display. Completely fill in all of the blanks on the following tables. (Figure 1 provides an example of an error message)

Document	Version	Department	Revision Details	Revised by	Tech	Engineering	Implemented
EXT-D60-002	A	Tech	Document Release	SP 27 Aug 2015	BC 27 Aug 2015	N/A	27 Aug 2015

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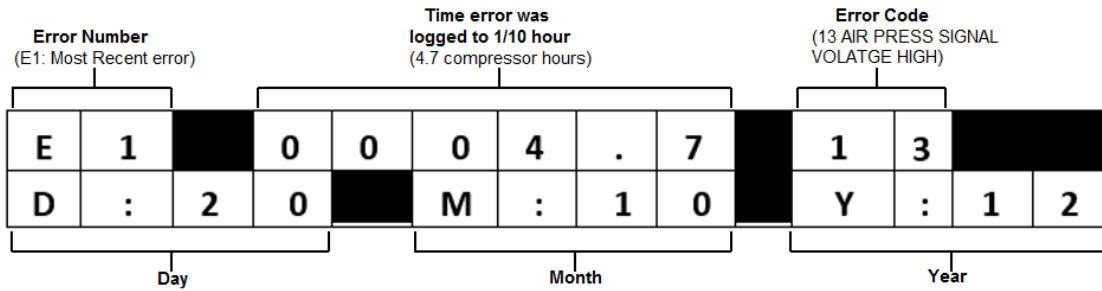


Figure 1

Name: _____
 Company: _____
 Date: _____

Phone#: _____
 Email/Fax#: _____

E	1		0	0	0	4	.	7		13		
D	:	2	0		M	:	1	0		Y	:	1 2
E	2						.					
D	:				M	:				Y	:	
E	3						.					
D	:				M	:				Y	:	
E	4						.					
D	:				M	:				Y	:	
E	5						.					
D	:				M	:				Y	:	
E	6						.					
D	:				M	:				Y	:	
E	7						.					
D	:				M	:				Y	:	
E	8						.					
D	:				M	:				Y	:	
E	9						.					
D	:				M	:				Y	:	
E	10						.					
D	:				M	:				Y	:	

Please complete the sheet below and email to tech@vmacair.com.
 (A clear picture of this filled in sheet can be emailed if that is easier).
 This sheet can also be faxed to: [1-877-740-3202](tel:1-877-740-3202).

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Error Message Table

Error Code	Error Message Displayed	Cause
5	COMP TEMP SENSOR FAILED – OPEN	Temperature sensor on the compressor is unplugged or wire to control box has been cut.
6	COMP TEMP SENSOR FAILED – SHORT	Temperature sensor on the compressor is shorted.
7	COMP TOO COLD xx.x F/xx.x C	Compressor is too cold to start. The temperature is displayed.
8	COMP OVER TEMP xx.x F/xx.x C	Compressor is too hot to start. The temperature is displayed.
9	MANIFOLD TEMP FAILED – OPEN	Temperature sensor on the manifold is unplugged or wire to control box has been cut.
10	MANIFOLD TEMP FAILED – SHORT	Temperature sensor on the manifold is shorted.
11	MANIFOLD ERROR CHECK COALESCER	The coalescer should be checked. There is a possibility of a plug.
12	AIR PRESS SIGNAL VOLTAGE LOW	Low voltage reading on the air pressure transducer.
13	AIR PRESS SIGNAL VOLTAGE HIGH	Low voltage reading on the air pressure transducer.
14	AIR PRESS SENSOR TOO HIGH	Air pressure is too high to start the engine.
	AIR PRESSURE xxx.x PSI	If the previous error is present the air pressure is displayed.
34	ENGINE RPM NOT DETECTED	Engine RPM is not detected. Wire may be cut, tach sensor on bell-housing may be loose or fuel problem caused engine to stop suddenly.
35	ENGINE CRANK NOT DETECTED	The engine did not start during the crank cycle.
36	ENGINE OIL LOW	Oil level in the diesel engine is low.
37	ENGINE TEMP PROBE OPEN	Temperature sensor on the diesel engine is unplugged or wire to control box has been cut.
38	ENGINE TEMP PROBE SHORT	Temperature sensor on the diesel engine is shorted.
39	ENGINE TEMP TOO COLD TO START	The diesel engine is too cold to start.
40	ENGINE OVER TEMP	The diesel engine is too hot to start.
42	FUEL LEVEL LOW PLEASE RE-FILL	Fuel level for the diesel engine is low. It must be re-filled before the unit is run.
27	UNEXPECTED ENGINE OPERATION	Unexpected engine operation can have many causes. It is likely due to RPM detected during an OFF state.

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-	DISPLAY CANBUS CONN ERROR	A CAN bus error between the Display box and Control box.
-	End of Errors OK to Retry?	End of errors screen. Pressing ENTER will try to restart the system.
52	ENGINE RPM UNDERSPEED	Engine speed went below 2000RPM for 3 seconds.

Listed below are additional messages, which may be displayed. If a message is present, the red WARNING LED will flash on and off. These messages appear in both the SYSTEM READY and SYSTEM RUNNING menu

Warning Message Table

Error Code	Message Displayed	Cause
29	AIR FILTER PLUGGED	Air filter is not working, or working incorrectly.
32	BATTERY VOLTAGE TOO LOW	The battery voltage is below threshold for 5 seconds (see Section 7.7 for threshold adjustment).
46	ENGINE RESTART DUE TO COLD	The engine has auto restarted due to the low internal temperature.
-	500HR/6MTH SERV DUE IN xx HOURS	This warning will show up 10 hours before the 500 hour service interval.
54	COMPRESSOR SERV 500HR / 6MTH	The system is due for a service. This warning will show after every 500 hours of running the compressor. Clearing the compressor service reminder is required through the Diagnostic menu.
	1000HR / 12MTH SER DUE IN xx HOURS	This warning will show up 10 hours before the 1000 hour service interval.
55	COMPRESSOR SERV 1000HR/12MTH	The system is due for a service. This warning will show after every 1000 hours of running the compressor. Clearing the compressor service reminder is required through the Diagnostic menu.
-	ENGINE SERVICE 50 HOURS	Engine servicing required. See Section 8.6 of the Owner's Manual
-	ENGINE SERVICE 100 HRS/ENG. OIL	100 hour engine servicing required. See Section 8.6 of the Owner's Manual
-	ENGINE SERVICE 200 HRS/ENG. OIL	200 hour engine servicing required. See Section 8.6 of the Owner's Manual
58	ENGINE RESTART DUE TO LOW BATT	

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Trouble Shooting Table

Symptom	Possible Cause	Corrective Action
Frequent relief valve operation	Pressure control line plugged or frozen	Remove and clear the line
	System still at high pressure	Wait for system blow-down or bleed off all system pressure
	Defective relief valve	Replace the valve
Compressor does not run	High system pressure	system will not start with more than 10 psi system pressure
	High oil temperature	See "frequent over-temperature shut-down"
Frequent over-temperature shut-down	Low oil level	Check oil level with equipment on level ground
	Restricted oil lines	Check for kinked or pinched lines
	Plugged oil filter	Replace oil filter
	Cooler not functioning or plugged	Replace or clean oil cooler
	Engine cooling system failure (high engine temperature)	Correct problem
	High ambient temperatures	Reduce duty cycle
	Oil temperature sensor failure	Replace if defective
Excessive oil in the air	Coalescing separator failure	Replace element
	Clogged scavenge line screen	Clean or replace
	High oil level	Check oil level with equipment on level ground
	Operating angle in excess of 15 degrees from horizontal	Reduce operating angle
	Air operated equipment is faulty, or not correctly connected to supply valve	Test air operated equipment for proper operation and connect to supply valve
	Incorrect start-up/ shutdown procedures	Observe start-up/ shutdown procedures detailed in the Owner's Manual
Objectionable noise level	Excessive gear wear	Replace gearbox assembly

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Modifying System Parameters

To modify a system parameter (such as Standby Delay):

- Turn the key ignition ON. Do not start the compressor system.
- Press and hold the NEXT and BACK buttons on the display box for 5 seconds to enter Setup/Diagnostics Menu.
- When display box shows USER SETUP, press ON/ENTER
- Use NEXT and BACK to scroll to STANDBY DELAY
- Press ON/ENTER.
- Use NEXT and BACK to change Standby Delay parameter value.
- Press ON/ENTER to select value, or EXIT to cancel change.
- Verify STANDBY DELAY screen shows desired parameter value.
- Press EXIT to return to USER SETUP.
- Press EXIT to exit Setup/Diagnostics Menu.

Factory Reset

All adjustable parameters will reset to factory settings.

- Pressing ENTER on this screen will display CANCEL
- Pressing NEXT will show CONFIRM RESET? Pressing BACK will display CANCEL again
- Select the desired option and press the ENTER button

For details and an explanation for adjusting system parameters, see section 7.7 Adjusting System Parameters in the RAPTAIR60 Installation and User's Manual.

Setting	Description	Adjustment	Default
Unload Delay	Delay time to unload	0.5, 1, 2, 5, 10, 15, 30 minutes, Never	1 min
Standby Delay	Delay time to standby	1, 2, 5, 10, 15, 30 minutes, Never	5 min
System Pressure	Operating System Pressure	80 to 150PSI @ 5PSI increments	150PSI
Top-up Pressure	PSI below system pressure to allow inlet to open and build pressure	1 to 15PSI @ 1PSI increments	10PSI
High Air Use Rate	Air rate set-point for pressure-based restart condition	0 to -30PSI @ 0.5PSI increments -	3.0PSI/sec
Pressure Restart PSI	Air pressure set-point for pressure-based restart	80 to 150PSI @ 5PSI increments	120PSI
Allow Cold Engine Restart	Allow to restart the engine if engine is beginning to freeze	Enable/Disable	Enabled
Disable Auto Restart Delay	Timer for disabling automatic engine restart	Always, 30 min, 60 min, 120 min, Never	60 min

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Setting	Description	Adjustment	Default
Allow Low Battery Restart	In Standby, allow the engine to restart based on low battery level	Enabled/Disabled	Enabled
Battery Restart Lower Threshold	Engine will restart if below this threshold for 30 seconds in Standby	10.0 – 14.0V @ 0.1V increments	12.1V
Battery Restart Upper Threshold	System will start duration timer if above value	10.0 – 15.0V @ 0.1V increments	12.8V
Battery Restart Duration	Once above Upper Threshold, stay running for duration to charge battery	1, 2, 5, 10, 15, 30 minutes	2 min

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Wiring

Main Wire Diagram

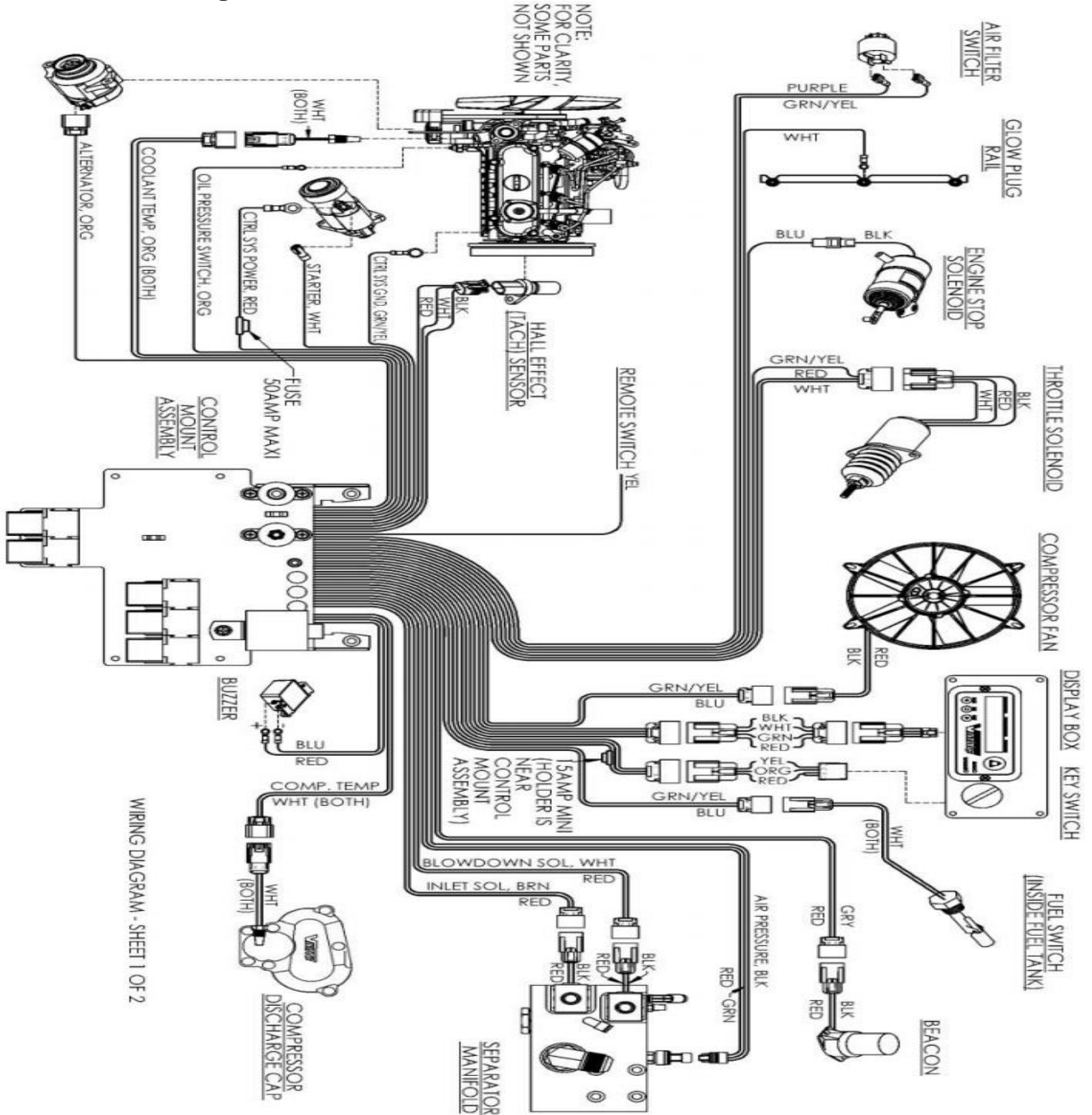


Figure 2

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Control Panel and Relay Wire Diagram

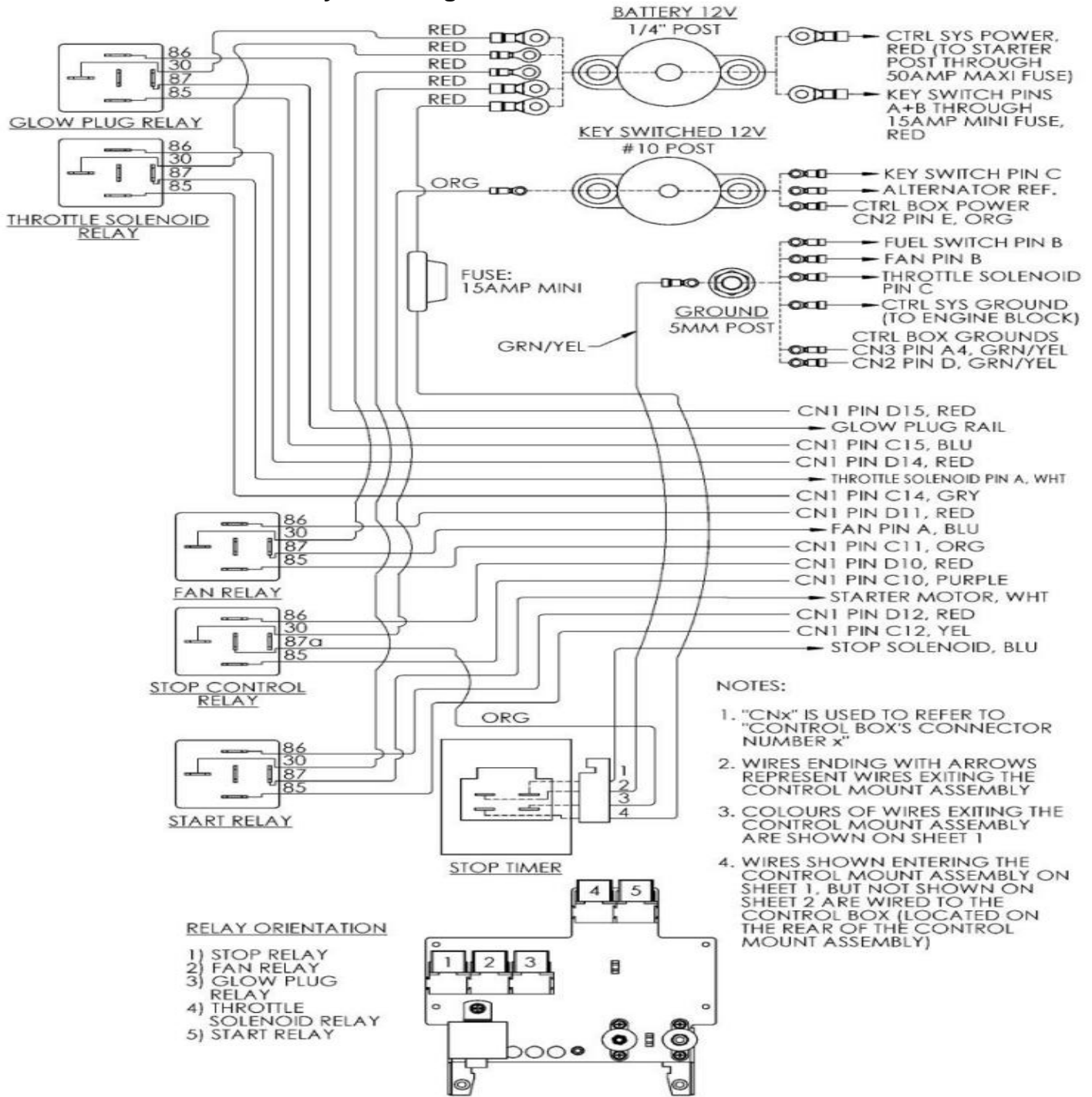


Figure 3

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