

Suburban Dynaline™

SERVICE & WARRANTY MANUAL

DL3 SERIES

A Combination Gas Heating / Electric Cooling System
Designed to Service an Individual Room or Zone

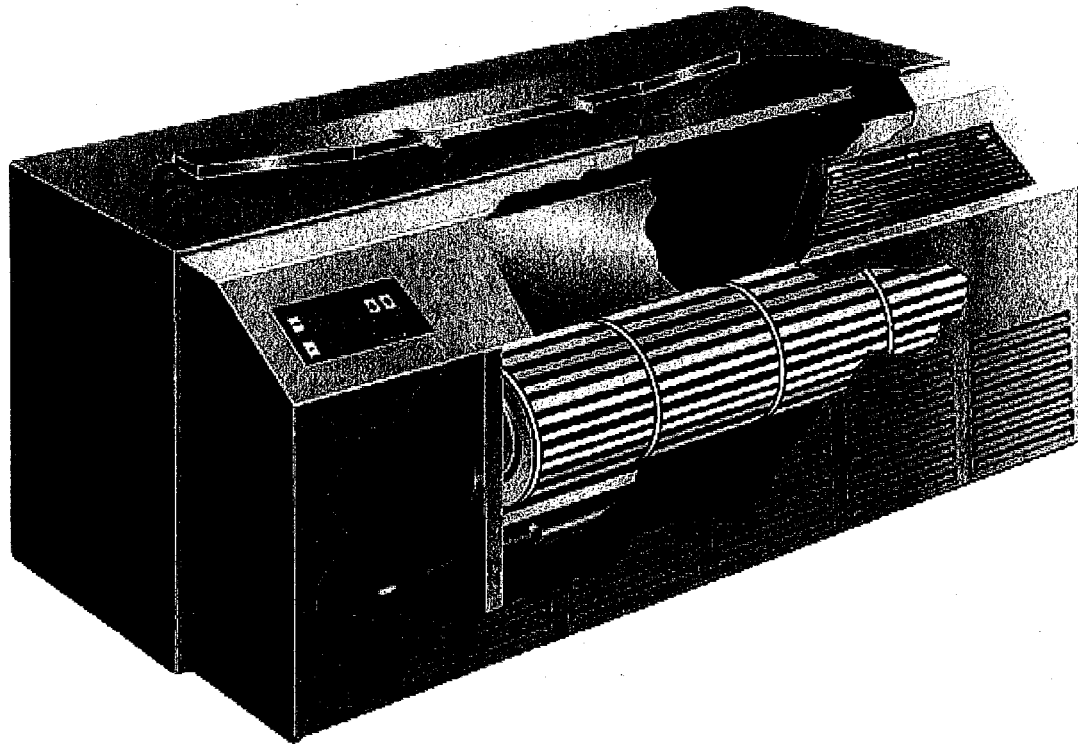


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DL3 MODULE BOARD IMPLEMENTATION HISTORY

ORIGINAL PRODUCTION BEGAN IN 2002

DL3 Module Board part number 232646
Display part number 101906
Board Manufacture Novar
Board Color Green

REVISION B STARTING AT SERIAL NUMBER 032908921

DL3 Module Board part number 232785
Display part number 520913
Board Manufacture Novar / Honeywell
Board Color Black

NOTE: With Revision B change, both the board and display were required to be replaced when a failure occurred as they were not backward compatible.

CURRENT STARTING SERIAL NUMBER 133307863

DL3 Module Board part number 233141
Display part number 102575
Board Manufacture CNE
Board Color Black/Blue

NOTE: When a replacement is required for previous revisions, both the board and display are required to be replaced as a set. **USE KIT NUMBER 521098**

SYSTEM FAULTS AND SERVICE MENU DESCRIPTION

When a system fault is detected such as the HIGH LIMIT SWITCH OPEN, the DECIMAL POINT located in the lower right hand corner of the display will illuminate. When the fault is corrected or removed, the DECIMAL POINT will extinguish. The fault is logged into the microprocessor and can be recalled by the field service person. Faults will remain logged as long as power has not been interrupted to the control.

To review the faults that have been logged, a SERVICE menu can be activated by pressing both the SYSTEM key and the WARMER key simultaneously. Sr will now be displayed and the SYSTEM mode will go to the STANDBY setting. Check for fault number associated with the STANDBY mode.

Using the SYSTEM key, press once to go from STANDBY to HEAT. Check for fault numbers associated with the HEAT mode.

Press the SYSTEM key again to go from HEAT to COOL. Check for fault numbers associated with the COOL mode.

The SERVICE menu will "Time Out" automatically, and revert back to the previous setting.

NOTE 1: To removed faults that have been logged, cycle the power OFF (for 3 seconds) and then back ON.

NOTE 2: To reset a HEAT MODE LOCKOUT condition, exit the HEAT MODE of operation by pressing the system key and selecting any other system mode such as STANDBY for a minimum of 2 seconds before re-selecting the HEAT MODE of operation.

NOTE 3: When air conditioning is turned off, the compressor will not restart for five minutes. This delay period is to protect the compressor.

NOTE 4:

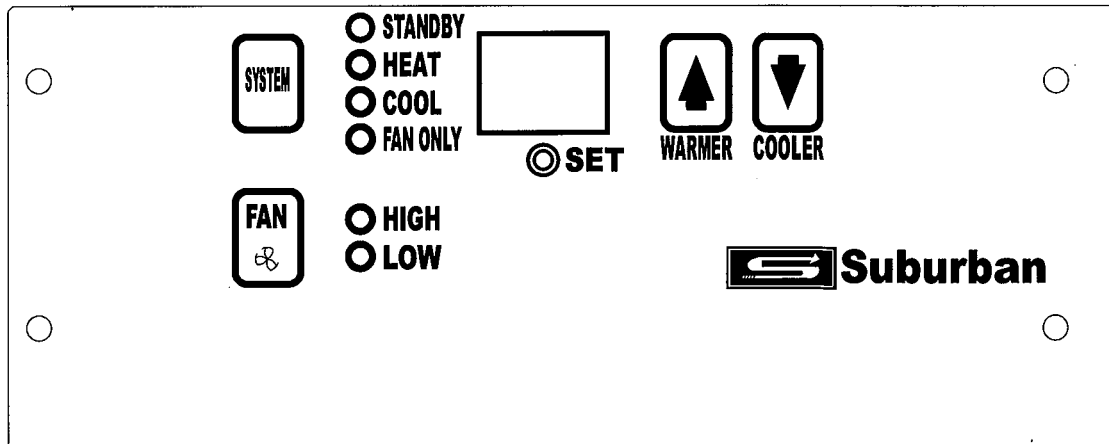
TEMPERATURE DISPLAY °F or °C

1. Depress "SYSTEM" and "WARMER" buttons at once and release. "SR" will display.
2. Depress both "WARMER" and "COOLER" buttons to display F° or C°.

NOTE: "SR" will not display if the SET light is on.

CONTINUOUS FAN MODE SET-UP

1. Depress "SYSTEM" and "WARMER" buttons at once and release. "SR" will display.
2. Depress "FAN" button. "ON" will display for Continuous fan. "oF" will display for fan cycling.



FAULT CODES AND DESCRIPTIONS

FAULT TYPE: THERMOSTAT SENSOR CODE (read in STANDBY mode).

Fault Number Displayed: 2 Room sensor fault.

The display will show "Lo" for an open circuit in sensor or wire and will show "Hi" for a shorted circuit in sensor or wire. If code 2 occurs, the Service System Indicator will stay ON until power is cycled.

NOTE: "Lo" will also display if the room temperature falls below 45°. "Hi" will also display if the room temperature is above 99°. The unit will function in HEAT or COOL if there is a thermostat demand.

FAULT TYPE: LIMIT SWITCH CODES (read in Service/HEAT mode).

Fault Number Displayed: 11 Limit open fault:

High limit fault code is caused by dirty filter, restricted air flow, low room blower rpm. Blocked flue fault code is caused by low exhaust blower rpm, intake or exhaust restriction. The Service System Indicator will be on as long as the limit switch is open (in all modes).

NOTE: Ignition will restart as soon as the limit closes.

Fault Number Displayed: 12 Limit switch lockout:

After 15 limit trips (during one thermostat controlled heat cycle), there is a 60 minute lockout. All unit functions stop during lockout and the Service System Indicator is activated. The heating cycle resumes after the lockout period expires and the limit trip counter is reset to zero. The limit trip count is set to zero each time the thermostat set point is satisfied.

FAULT TYPE: PRESSURE SWITCH CODES (read in Service/HEAT mode)

Fault Number Displayed: 13 Pressure switch fault - stuck closed: (switch contacts close without combustion blower operation).

After the room air blower runs for 15 seconds, a 20 minute lockout period begins. The code is registered and the Service System Indicator is activated. Ignition trial recurs after the lockout expires.

Fault Number Displayed: 14 Pressure switch contacts "Open" lockout - failed to close.

The pressure switch contact remain open on start-up of a HEAT cycle. The exhaust blower cycles 15 seconds ON and 15 seconds OFF. After 5 unsuccessful tries, a 20 minute lockout begins and code 14 is registered. The room air blower stops and the Service System Indicator is activated. Ignition trial recurs after the lockout expires.

Fault Number Displayed: 15 Loss of pressure switch lockout.

Pressure switch contact open during heating operation. After 5 trips of the pressure switch a 20 minute lockout begins, code 15 is registered and the Service System Indicator is activated. During the lockout period the exhaust and room air blowers shut OFF. Ignition trial recurs after the lockout expires.

FAULT CODES AND DESCRIPTIONS

FAULT TYPE: FLAME SENSOR CODES (READ IN SERVICE/HEAT MODE)

Fault Number Displayed: 16 Failed to ignite lockout.

Absence of flame sense during trial for ignition, due to no gas flow, open circuit CO detector, glow bar failure, or flame probe failure or position. There is a 20 second post purge between tries for ignition. After three trials for ignition, fault code 16 is registered and the Service System Indicator is activated. A 60 minute lockout period starts. The exhaust and room air blowers shut off. Ignition trial recurs after the lockout expires.

Fault Number Displayed: 17 Loss of flame lockout.

During heating operation, loss of flame sense, due to gas flow interruption or flame probe failure. Five trips (during one thermostat controlled heat cycle) are required to initiate the code and lockout. A 60 minute lockout period starts. During the lockout period, the exhaust and room air blowers shut off. Ignition trial recurs after the lockout expires.

Fault Number Displayed: 18 False flame fault.

Flame probe senses flame in the absence of heating operation (monitored in all unit modes). The exhaust blower is activated and the room air blower will run on HIGH speed as long as false flame is indicated. The cooling function is suppressed.

FAULT TYPE: GAS VALVE CODE (read code in Service/HEAT mode).

Fault Number Displayed: 19 False gas valve fault.

Indicates a presence of 24 volt power on the gas valve circuit when the unit is not in the heating mode (monitored in all unit modes). The exhaust blower is activated and the room air blower will run on HIGH speed as long a false gas valve is indicated. The cooling function is suppressed.

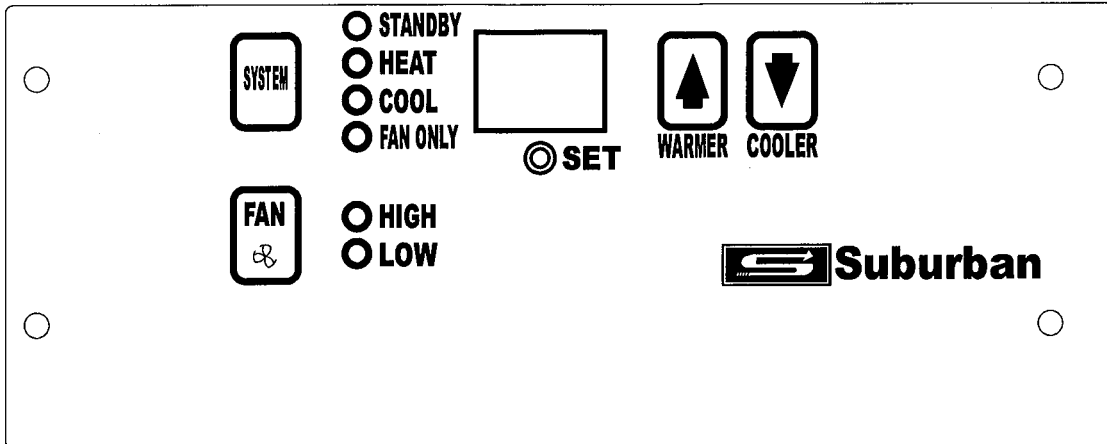
FAULT TYPE: POWER DOWN CODE (read in Service/COOL mode).

Fault Number Displayed: 28 Power down.

Indicated that the power down terminals are energized with 24 VAC due to an emergency generator signal. Prevents (or stops) the compressor and condenser fan operation during emergency generator operation. The Service System Indicator is on during power down when cooling demand is present. The room air blower will run with cooling demand in the power down condition.

INSTRUCTIONS FOR CONTINUOUS FAN OPERATION FOR DYNALINE 3 "BUILT IN CONTROL" APPLICATIONS



The standard (default) fan mode for built in control operation is Cycle Fan Mode (fan cycles ON/OFF after heating and cooling cycles). To select continuous fan mode insert the following sequence commands into the key pad.



- Unit connected to power, upon power up all lights illuminated, a few seconds later the STANDBY light is on.
- After a few seconds display shows room temperature.
- Depress SYSTEM button and the WARMER (arrow up) button as the same time then release. The DISPLAY will show (Sr) in the numerical display read out in any mode of operation.
- Next depress the FAN button you will see (ON) in the display read out when set to continuous fan mode.
- To reselect "standard fan mode" depress SYSTEM button and the WARMER (arrow up) button at the same time, then release. The DISPLAY will show (Sr) in the numerical display read out in any mode of operation.
- Next depress the FAN button you will see (of) in the display read out when set to the standard fan mode.

DYNALINE™ 3 SERIES

R-22 SPECIFICATIONS

Electrical Data	DL3-1622	DL3-1220	DL3-0912	DL3-0712			
Volts/Phase/Cycle	208/230-1-60						
Minimum Wire Size (Copper)	#14 AWG						
Protection-Fused	2-15 amp						
Protection-Circuit (HACR type)	Dual - 15 amp						
Unit Plug:							
Amps					15 amp		
NEMA Rating					6-15 P		
Receptacle:							
Type					Tandem		
Amps					15 amp		
NEMA Rating					6-15 R		
Total Amps Cooling/Heating	7.3 / 1.2	5.7 / 1.0	4.6 / 1.0	3.9 / 1.0			
Total Watts Cooling/Heating	1600 / 260	1170 / 150	950 / 150	710 / 150			

Compressor	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Type	Hermetic Rotary			
Refrigerant Type (HCFC)	R22			
Refrigerant Charge	35 oz.	36 oz.	32 oz.	24 oz.
Rated Load Amps	6.4	4.8	3.8	3.6
Locked Rotor Amps	38.0	26.3	26	19.0
Rated Capacity (BTU/h)	15,000	12,000	9,000	7,890
Compressor Lock-Out Relay	(Normally Closed 24V) 5VA Enrush - 4V Constant			

Condenser Fan Motor	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Condenser Fan Motor RPM	1500			
Full Load Amps	.5			

Room Air Fan Motor	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Speed	2			
RPM High / Low	1500 / 1250	1520 / 1400	1260 / 1130	1260 / 1130
Full Load Amps	.7	.5	.3	.3



Specifications subject to change without notice.

DYNALINE™ 3 SERIES

R410-A SPECIFICATIONS

General Data	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Rated heating input (BTU/h)	20,000	18,000	12,000	12,000
Rated heating output (BTU/h)	16,000	14,580	9,840	9,840
Steady state efficiency	80%	81%	82%	82%
Rated Cooling Capacity (BTU/h)	14,000	12,000	9,200	7,500
Sensible/Latent Cooling	65/35	65/35	69/31	65/35
EER	8.4	10.25	10.55	10.9
Rated Air Flow: Fan only (CFM)	330	280	235	235
Hi cool/low cool (CFM)	400/330	370/280	290/235	265/235
Hi heat/low heat (CFM)	400/330	370/280	290/235	265/235
Weight (Lbs)	185	180	180	180
Cabinet color	Champagne Beige			

Minimum Installation Clearances	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Outside:				
Rear to nearest obstruction		3 feet		
Top, sides to nearest obstruction		0		
Centerline vent to window		9 inches		
Inside:				
Front to nearest obstruction		12 inches*		
Side to nearest obstruction		1 inch		
Bottom to floor (for return air)		0		
Cabinet top to ceiling		12 inches		

Electrical Data	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Volts/Phase/Cycle	208/230-1-60			
Minimum wire size (Copper)	#14 AWG			
Protection-Fused	2 Pole -15 amp			
Protection-Circuit (HACR type)	Dual - 15 amp			
Unit Plug: Amps NEMA Rating	 15 amp 6-15 P			
Receptacle: Type Amps NEMA Rating	 Tandem 15 amp 6-15 R			
Total amps cooling/heating	7.6 / 1.2	6.4 / 1.0	4.3 / 1.0	3.8 / 1.0
Total watts cooling/heating	1605 / 260	1170 / 150	920 / 150	660 / 150

Compressor	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Type	Hermetic rotary			
Refrigerant type (HCFC)	R410A			
Refrigerant charge	36 oz.	32 oz.	28 oz.	26 oz.
Rated load amps	6.8	5.4	3.9	2.9
Locked rotor amps	33.0	25	22	8.6
Rated capacity (BTU/h)	14,200	11,100	8,050	6,600
Compressor lock-out relay	(Normally Closed 24V) 5VA enrush - 4V constant			

Specifications subject to change without notice.

Condenser Fan	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Fan blade diameter	12 inches			
Number of blades	4			
Pitch	25 Degrees			
Condenser Fan Motor RPM	1500			
Full load amps	.5			

Condenser Coil	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Type	Copper / Aluminum			
Coil area	364 square inches			
Rows	3	2	2	2
Fins per inch	15	13	13	13

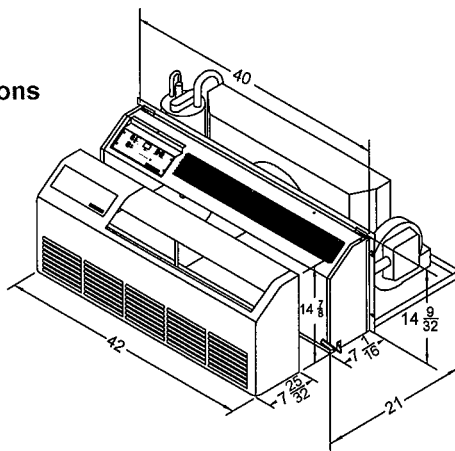
Evaporator Coil	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Type	Copper / Aluminum			
Coil area	260 square inches			
Rows	3			2
Fins per inch	11			
Refrigerant metering	Capillary			

Room Air Fan Motor	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Speed	2			
RPM high / low	1500 / 1250	1520 / 1400	1260 / 1130	1260 / 1130
Full load amps	.7	.5	.3	.3
Minimum wire size (60° Copper)	#18 AWG			

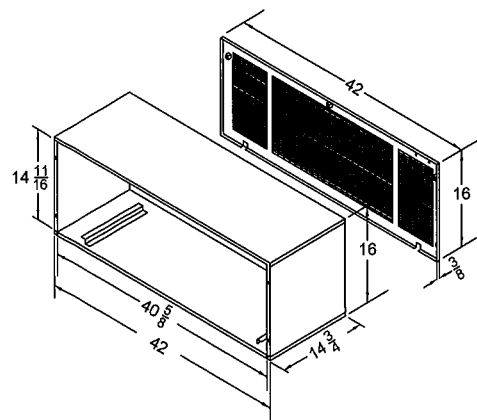
Gas Controls and Additional Data	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Gas (specify)	Natural or LP			
Burners	1			
Ignition system: Solid - state	Hot surface			
High limit (fixed)	220°			
Blocked Flue Switch	205°	200°	200°	200°
Gas connection size	3/8 inch IPS			
Gas connection	(LH) front or rear			

Blower / Evaporator	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Wheel diameter	5.2 inches	4.53 inches	4.53 inches	4.53 inches
Wheel width	26 inches			
Air vent - manual	70 CFM			
Required filter (1 each)	8 1/2" x 30 3/4"	6" x 30 3/4"	6" x 30 3/4"	6" x 30 3/4"
Filter type	Electrostatic / washable media			

Unit Dimensions



Rear opening of wall case centered at 13 1/8" H x 1/8" W.



DYNALINE™ 3 SERIES

R410-A SPECIFICATIONS ENHANCED

GENERAL DATA	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Rated heating input (BTU/h)	20,000	18,000	12,000	12,000
Rated heating output (BTU/h)	16,000	14,580	9,840	9,840
Steady State Efficiency	80%	81%	82%	82%
Rated Cooling Capacity (BTU/H)	15,000	11,500	9,500	7,600
Sensible/Latent Cooling	65/35	65/35	69/31	65/35
EER	9.5	10.4	11.2	11.6
Rated Air Flow: Fan only (CFM)	340	300	260	260
Hi cool/low cool (CFM)	400/330	390/300	300/250	300/250
Hi heat/low heat (CFM)	420/340	410/300	320/260	320/260
Weight (Lbs)	185	180	180	180
Cabinet color	Champagne Beige			

MINIMUM INSTALLATION CLEARANCES	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Outside:				
Rear to nearest obstruction			3 feet	
Top, sides to nearest obstruction			0	
Centerline vent to window			9 inches	
Inside:				
Front to nearest obstruction			12 inches*	
Side to nearest obstruction			1 inch	
Bottom to floor (for return air)			0	
Cabinet top to ceiling			12 inches	

ELECTRICAL DATA	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Volts/Phase/Cycle	208/230-1-60			
Minimum wire size (Copper)	#14 AWG			
Protection-Fused	2 Pole -15 amp			
Protection-Circuit (HACR type)	Dual - 15 amp			
Unit Plug:				
Amps	15 amp			
NEMA Rating	6-15 P			
Receptacle:				
Type	Tandem			
Amps	15 amp			
NEMA Rating	6-15 R			
Total amps cooling/heating	7.5 / 1.2	5.1 / 1.0	3.8 / 1.0	3.3 / 1.0
Total watts cooling/heating	1550 / 260	1125 / 150	855 / 150	675 / 150

COMPRESSOR	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Type	Hermetic rotary			
Refrigerant type (HCFC)	R410A			
Refrigerant charge	36 oz.	32 oz.	26 oz.	28 oz.
Rated load amps	6.6	5.1	3.9	2.9
Locked rotor amps	32	25	22	15
Rated capacity (BTU/h)	14,100	10,300	8,050	6,600
Compressor lock-out relay	(Normally Closed 24V) 5VA enrush - 4V constant			

CONDENSER FAN	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Fan blade diameter	12 inches			
Number of blades	4			
Pitch	25 Degrees			
Condenser Fan Motor RPM	1500			
Full load amps	0.5			

CONDENSER COIL	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Type	Copper / Aluminum			
Coil area	364 square inches			
Rows	3			
Fins per inch	13	13	12	12

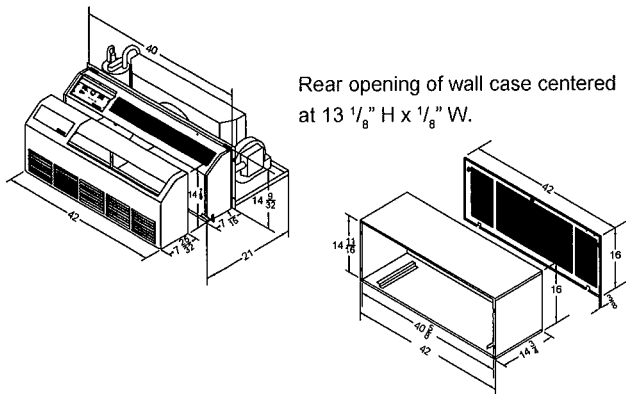
EVAPORATOR COIL	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Type	Copper / Aluminum			
Coil area	260 in2 / 234 in2			
Rows	3			
Fins per inch	11	11	15	15
Refrigerant metering	Capillary			

ROOM AIR FAN MOTOR	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Speed	2			
RPM high / low	1500/1250	1520/1400	1260/1130	1260/1130
Full load amps	0.7	0.5	0.3	0.3
Minimum wire size (60° Copper)	#18 AWG			

GAS CONTROLS AND ADDITIONAL DATA	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Gas (specify)	Natural or LP			
Burners	1			
Ignition system: Solid - state	Hot surface			
High limit (fixed)	220°			
Blocked Flue Switch	205°	200°	200°	200°
Gas connection size	3/8 inch IPS			
Gas connection	(LH) front or rear			

BLOWER / EVAPORATOR	DL3-1622	DL3-1220	DL3-0912	DL3-0712
Wheel diameter	4.53 inches	4.53 inches	4.375 inches	4.375 inches
Wheel width	26 inches			
Air vent - manual	70 CFM			
Required filter (1 each)	8 1/4" x 30 3/4"	6" x 30 3/4"	6" x 30 3/4"	6" x 30 3/4"
Filter type	Electrostatic / washable media			

Unit Dimensions



ELECTRICAL / COMPRESSOR DATA

MODEL NO	STOCK NO	REFRIGERANT	COMPRESSOR MAKE	COMPRESSOR MODEL	COMPRESSOR RLA	COMPRESSOR LRA	COMPRESSOR CAPACITOR
DL3-1220	1504, 1505, 1506, 1507	R22	Tecumseh	RKA5512EXD	4.8	26.3	25 mfd@370V
DL3-1220	1508, 1509, 1510, 1511	R22	Panasonic	2P17S236A	4.6	33	30 mfd@370V
DL3-1220	1617, 1618, 1619, 1620	R22	Tecumseh	RKA5512EXD	4.8	26.3	25 mfd@370V
DL3-0912	1627, 1628, 1629, 1630	R22	Tecumseh	RKA5490EXD	3.8	20	25 mfd@370V
DL3-1220-7	1631, 1632	R22	Tecumseh	RKA5512EXV	4.2	28	30 mfd@370V
DL3-1622	1653, 1654, 1655, 1656	R22	Tecumseh	RKA5515EXD	6.4	38	25 mfd@370V
DL3-0912	1673, 1674, 1675, 1676	R22	Panasonic	2P14S3R236A	3.8	26	30 mfd@370V
DL3-1220	1677, 1678, 1679, 1680	R22	Tecumseh	RKA5512EXD	4.8	26.3	25 mfd@370V
DL3-1622	1681, 1982, 1683, 1684	R22	Tecumseh	RKA5515EXD	6.4	38	25 mfd@370V
DL3-0712	1691, 1692, 1693, 1694	R22	Tecumseh	RGA5472EXD	3.0	17.7	15 mfd@370V
DL3-0712	1699, 1700, 1701, 1702	R22	LG	QA114KCA			25 mfd@370V
DL3-0712	1703, 1704, 1705, 1706 1753, 1754, 1755, 1756	R410A	LG	GA066KA	3.0	15	20 mfd@370V
DL3-0912	1707, 1708, 1709, 1710 1757, 1758, 1759, 1760	R410A	LG	GK080KA	3.7	22	25 mfd@370V
DL3-1220	1711, 1712, 1713, 1714	R410A	LG	GK113KA	5.2	25	35 mfd@370V
DL3-1622	1715, 1716, 1717, 1718 1765, 1766, 1767, 1768	R410A	LG	GK141KA	6.6	33	35 mfd@370V
DL3-1220-7	1725, 1726	R410A	LG	GKS113QA	4.3	25	30 mfd@370V
DL3-1622F	1750	R410A	LG	GK120KA	5.6	29	35 mfd@370V
DL3-1622F	1750	R410A	LG	GKS120KA	5.5	26	40 mfd@370V
DL3-1220	1761, 1762, 1763, 1764	R410A	LG	GK102KA	4.7	25	30 mfd@370V
DL3-1220-7	1751, 1752	R410A	LG	GK102QA	4.2	22	20 mfd@440V

ELECTRICAL INFORMATION - R22

DL3-0712

FOR STOCK NUMBERS 1691, 1692, 1693, 1694 with TECUMSEH COMPRESSOR

SUBURBAN MANUFACTURING COMPANY, DAYTON, TN. 37321														
REFRIGERANT R-22		24	OZ. BY WEIGHT TEST PRESSURE: 300 HI SIDE, 150 LOW SIDE							192804	COMBUSTION AIR MOTOR FLA		MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR HACR TYPE CIRCUIT BREAKER SIZE
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	START AMPS	P.F.%	COMPRESSOR FLA	FAN MOTOR FLA				
7,400/7,500	12,000	208/230	680/710	4.3/3.9	60	1	18	95	2.7/2.4	.9/8		.6	3.9/3.8	15 AMPS.

FOR STOCK NUMBERS 1699, 1700, 1701, 1702 with LG COMPRESSOR

SUBURBAN MANUFACTURING COMPANY, DAYTON, TN. 37321														
REFRIGERANT R-22		24	OZ. BY WEIGHT TEST PRESSURE: 300 HI SIDE, 150 LOW SIDE							192858	COMBUSTION AIR MOTOR FLA		MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR HACR TYPE CIRCUIT BREAKER SIZE
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	START AMPS	P.F.%	COMPRESSOR FLA	FAN MOTOR FLA				
7,400/7,500	12,000	208/230	680/710	4.1/3.9	60	1	18	95	3.1/2.9	.9/8		.6	4.9/4.7	15 AMPS.

DL3-0912

FOR STOCK NUMBERS 1627, 1628, 1629, 1630, 1675

SUBURBAN MANUFACTURING COMPANY, DAYTON, TN. 37321														
REFRIGERANT R-22		32	OZ. BY WEIGHT TEST PRESSURE: 300 HI SIDE, 150 LOW SIDE							192337	COMBUSTION AIR MOTOR FLA		MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR HACR TYPE CIRCUIT BREAKER SIZE
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	START AMPS	P.F.%	COMPRESSOR FLA	FAN MOTOR FLA				
9,600/9,800	12,000	208/230	920/960	4.6/4.3	60	1	30	95	4.0/3.8	.5/4		.6	6.8/6.6	15 AMPS.

FOR STOCK NUMBERS 1627, 1628, 1629, 1630, 1675 after SERIAL NUMBER 061006203

SUBURBAN MANUFACTURING COMPANY, DAYTON, TN. 37321														
REFRIGERANT R-22		28	OZ. BY WEIGHT TEST PRESSURE: 300 HI SIDE, 150 LOW SIDE							192745	COMBUSTION AIR MOTOR FLA		MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR HACR TYPE CIRCUIT BREAKER SIZE
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	START AMPS	P.F.%	COMPRESSOR FLA	FAN MOTOR FLA				
9,600/9,800	12,000	208/230	920/960	4.6/4.3	60	1	30	95	4.0/3.8	.5/4		.6	6.8/6.6	15 AMPS.

DL3-1220

FOR STOCK NUMBERS 1617, 1618, 1619, 1620, 1679

SUBURBAN MANUFACTURING COMPANY, DAYTON, TN. 37321														
REFRIGERANT R-22		36	OZ. BY WEIGHT TEST PRESSURE: 300 HI SIDE, 150 LOW SIDE							191934	COMBUSTION AIR MOTOR FLA		MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR HACR TYPE CIRCUIT BREAKER SIZE
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	START AMPS	P.F.%	COMPRESSOR FLA	FAN MOTOR FLA				
11,500/11,700	18,000	208/230	1160/1170	5.4/5.2	60	1	30	95	5.0/4.8	.5/4		.6	6.8/6.6	15 AMPS.

FOR STOCK NUMBERS 1617, 1618, 1619, 1620, 1679 after SERIAL NUMBER 061006095

SUBURBAN MANUFACTURING COMPANY, DAYTON, TN. 37321														
REFRIGERANT R-22		28	OZ. BY WEIGHT TEST PRESSURE: 300 HI SIDE, 150 LOW SIDE							192746	COMBUSTION AIR MOTOR FLA		MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR HACR TYPE CIRCUIT BREAKER SIZE
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	START AMPS	P.F.%	COMPRESSOR FLA	FAN MOTOR FLA				
11,500/11,700	18,000	208/230	1160/1170	5.4/5.2	60	1	30	95	5.0/4.8	.5/4		.6	6.8/6.6	15 AMPS.

DL3-1220-7

FOR STOCK NUMBERS 1631, 1632

SUBURBAN MANUFACTURING COMPANY, DAYTON, TN. 37321														
REFRIGERANT R-22		36	OZ. BY WEIGHT TEST PRESSURE: 300 HI SIDE, 150 LOW SIDE							192636	COMBUSTION AIR MOTOR FLA		MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR HACR TYPE CIRCUIT BREAKER SIZE
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	START AMPS	P.F.%	COMPRESSOR FLA	FAN MOTOR FLA				
11,700	18,000	277	1170	5.6	60	1	30	95	4.2	.3		.6	5.8	15 AMPS.

DL3-1622

FOR STOCK NUMBERS 1653, 1654, 1655, 1656, 1681

SUBURBAN MANUFACTURING COMPANY, DAYTON, TN. 37321														
REFRIGERANT R-22		35	OZ. BY WEIGHT TEST PRESSURE: 300 HI SIDE, 150 LOW SIDE							192338	COMBUSTION AIR MOTOR FLA		MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR HACR TYPE CIRCUIT BREAKER SIZE
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	START AMPS	P.F.%	COMPRESSOR FLA	FAN MOTOR FLA				
15,000/16,000	20,000	208/230	1570/1590	8.7/8.2	60	1	30	95	7.0/6.4	.5/4		.6	10/9.3	15 AMPS.

ELECTRICAL INFORMATION - R410-A

DL3-0712

FOR STOCK NUMBERS 1703, 1704, 1705, 1706

SUBURBAN MANUFACTURING COMPANY, DAYTON, TN. 37321															
REFRIGERANT R-410A		26	OZ. BY WEIGHT TEST PRESSURE: 450 HI SIDE, 240 LOW SIDE									193087	COMBUSTION AIR MOTOR FLA	MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR HACR TYPE CIRCUIT BREAKER SIZE
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	LRA	P.F.%	COMPRESSOR RLA	FAN MOTOR FLA					
7,000/7,200	12,000	208/230	640/660	3.8/3.5	60	1	15	95	2.9/2.7	.9/8	.6	4.5/4.2	15 AMPS.		

FOR STOCK NUMBERS 1753, 1754, 1755, 1756

AIRXCEL INC., SUBURBAN DIVISION; DAYTON, TENNESSEE															
REFRIGERANT R-410A		28	OZ. BY WEIGHT TEST PRESSURE: 450 HI SIDE, 240 LOW SIDE									193261	COMBUSTION AIR MOTOR FLA	MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR HACR TYPE CIRCUIT BREAKER SIZE
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	LRA	P.F.%	COMPRESSOR RLA	FAN MOTOR FLA					
7,600/7,800	12,000	208/230	675/705	3.3/3.1	60	1	15	95	2.9/2.7	.9/8	.6	4.5/4.2	15 AMPS.		

DL3-0912

FOR STOCK NUMBERS 1707, 1708, 1709, 1710

SUBURBAN MANUFACTURING COMPANY, DAYTON, TN. 37321															
REFRIGERANT R-410A		28	OZ. BY WEIGHT TEST PRESSURE: 450 HI SIDE, 240 LOW SIDE									193088	COMBUSTION AIR MOTOR FLA	MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR HACR TYPE CIRCUIT BREAKER SIZE
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	LRA	P.F.%	COMPRESSOR RLA	FAN MOTOR FLA					
9,000/9,200	12,000	208/230	900/920	4.3/4.1	60	1	22	95	3.9/3.7	.5/4	.6	5.9/5.7	15 AMPS.		

FOR STOCK NUMBERS 1757, 1758, 1759, 1760

AIRXCEL INC., SUBURBAN DIVISION; DAYTON, TENNESSEE															
REFRIGERANT R-410A		26	OZ. BY WEIGHT TEST PRESSURE: 450 HI SIDE, 240 LOW SIDE									193262	COMBUSTION AIR MOTOR FLA	MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR HACR TYPE CIRCUIT BREAKER SIZE
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	LRA	P.F.%	COMPRESSOR RLA	FAN MOTOR FLA					
9,300/9,500	12,000	208/230	830/855	3.8/3.6	60	1	22	95	3.9/3.7	.5/4	.6	5.9/5.7	15 AMPS.		

DL3-1220

FOR STOCK NUMBERS 1711, 1712, 1713, 1714

SUBURBAN MANUFACTURING COMPANY, DAYTON, TN. 37321															
REFRIGERANT R-410A		32	OZ. BY WEIGHT TEST PRESSURE: 450 HI SIDE, 240 LOW SIDE									193089	COMBUSTION AIR MOTOR FLA	MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR HACR TYPE CIRCUIT BREAKER SIZE
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	LRA	P.F.%	COMPRESSOR RLA	FAN MOTOR FLA					
11,500/11,700	18,000	208/230	1160/1170	6.4/6.0	60	1	25	95	5.4/5.2	.5/4	.6	7.8/7.3	15 AMPS.		

FOR STOCK NUMBERS 1761, 1762, 1763, 1764

AIRXCEL INC., SUBURBAN DIVISION; DAYTON, TENNESSEE															
REFRIGERANT R-410A		31	OZ. BY WEIGHT TEST PRESSURE: 450 HI SIDE, 240 LOW SIDE									193263	COMBUSTION AIR MOTOR FLA	MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR HACR TYPE CIRCUIT BREAKER SIZE
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	LRA	P.F.%	COMPRESSOR RLA	FAN MOTOR FLA					
11,500/11,700	18,000	208/230	1075/1125	5.1/4.9	60	1	25	95	4.9/4.7	.5/4	.6	7.1/6.8	15 AMPS.		

DL3-1220-7

FOR STOCK NUMBERS 1725, 1726

SUBURBAN MANUFACTURING COMPANY, DAYTON, TN. 37321															
REFRIGERANT R410A		32	OZ. BY WEIGHT TEST PRESSURE: 450 HI SIDE, 240 LOW SIDE									193111	COMBUSTION AIR MOTOR FLA	MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR 2 POLE HACR TYPE CIRCUIT BREAKER SIZE
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	LRA	P.F.%	COMPRESSOR RLA	FAN MOTOR FLA					
12,000	18,000	265	1175	5.1	60	1	25	95	4.3	.3	.6	6.0	15 AMPS.		

FOR STOCK NUMBERS 1751, 1752

AIRXCEL INC., SUBURBAN DIVISION; DAYTON, TENNESSEE															
REFRIGERANT R410A		31	OZ. BY WEIGHT TEST PRESSURE: 450 HI SIDE, 240 LOW SIDE									193264	COMBUSTION AIR MOTOR FLA	MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR 2 POLE HACR TYPE CIRCUIT BREAKER SIZE
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	LRA	P.F.%	COMPRESSOR RLA	FAN MOTOR FLA					
11,500	18,000	265	1125	4.3	60	1	22	95	4.2	.3	.6	5.9	15 AMPS.		

ELECTRICAL INFORMATION - R410-A

DL3-1622

FOR STOCK NUMBERS 1715, 1716, 1717, 1718

SUBURBAN MANUFACTURING COMPANY, DAYTON, TN. 37321											193110	COMBUSTION AIR MOTOR FLA	MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR HACR TYPE CIRCUIT BREAKER SIZE
REFRIGERANT R-410A	36	OZ. BY WEIGHT TEST PRESSURE: 450 HI SIDE, 240 LOW SIDE									5/4	.6	10/9.3	15 AMPS.
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	LRA	P.F.%	COMPRESSOR RLA	FAN MOTOR FLA				
15,000/15,200	20,000	208/230	1570/1605	7.6/7.2	60	1	33	95	6.8/6.4	5/4				

DL3-1622F

FOR STOCK NUMBER 1750

SUBURBAN MANUFACTURING COMPANY, DAYTON, TN. 37321											193191	COMBUSTION AIR MOTOR FLA	MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR HACR TYPE CIRCUIT BREAKER SIZE
REFRIGERANT R-410A	35	OZ. BY WEIGHT TEST PRESSURE: 450 HI SIDE, 240 LOW SIDE									5/4	.6	8.5/7.8	15 AMPS.
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	LRA	P.F.%	COMPRESSOR RLA	FAN MOTOR FLA				
14,000	20,000	208/230	1310/1350	6.3/5.8	60	1	26	95	6.0/5.5	5/4				

FOR STOCK NUMBER 1750 BEGINNING WITH SERIAL NUMBER 104206677

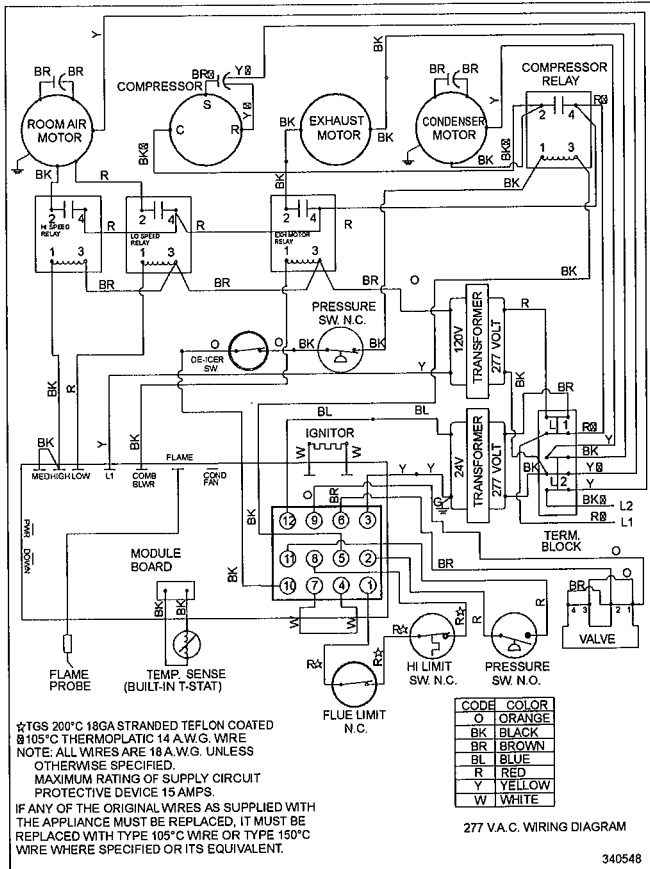
SUBURBAN MANUFACTURING COMPANY, DAYTON, TN. 37321											193200	COMBUSTION AIR MOTOR FLA	MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR HACR TYPE CIRCUIT BREAKER SIZE
REFRIGERANT R-410A	35	OZ. BY WEIGHT TEST PRESSURE: 450 HI SIDE, 240 LOW SIDE									5/4	.6	8.6/7.9	15 AMPS.
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	LRA	P.F.%	COMPRESSOR RLA	FAN MOTOR FLA				
14,000	20,000	208/230	1340/1380	6.4/5.9	60	1	29	95	6.1/5.8	5/4				

DL3-1622

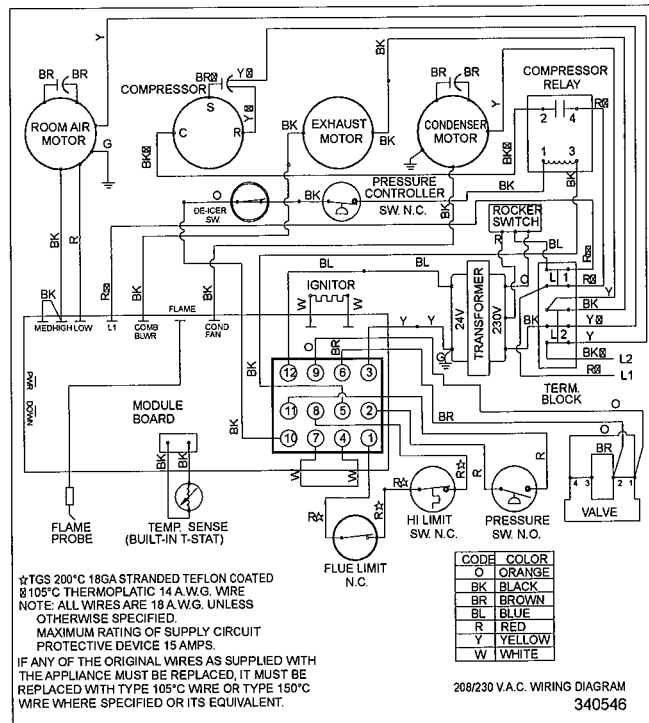
FOR STOCK NUMBERS 1765, 1766, 1767, 1768

SUBURBAN MANUFACTURING COMPANY, DAYTON, TN. 37321											193294	COMBUSTION AIR MOTOR FLA	MINIMUM CIRCUIT AMPACITY	MAXIMUM BRANCH FUSE OR HACR TYPE CIRCUIT BREAKER SIZE
REFRIGERANT R-410A	36	OZ. BY WEIGHT TEST PRESSURE: 450 HI SIDE, 240 LOW SIDE									5/4	.6	9.2/8.4	15 AMPS.
COOL BTU/HR	HEAT BTU/HR	VOLTS	WATTS	RUNNING AMPS	CYC.	PH	LRA	P.F.%	COMPRESSOR RLA	FAN MOTOR FLA				
15,000	20,000	208/230	1490/1550	7.5/6.9	60	1	32	95	6.6/6.0	5/4				

WIRING DIAGRAMS



208/230 V.A.C. WIRING DIAGRAM



277 V.A.C. WIRING DIAGRAM

DL3 UNITS WITH INTEGRATED CARBON MONOXIDE DETECTOR

MODEL #	STOCK #
DL3-0712	1853, 1854, 1855, 1856
DL3-0912	1857, 1858, 1859, 1860
DL3-1220	1861, 1862, 1863, 1864
DL3-1622	1865, 1866, 1867, 1868

CARBON MONOXIDE (CO) DETECTOR (See Figure A below)

The Dynalene units listed above are equipped with an integrated carbon monoxide (CO) detector (System Sensor Model C01224T). To access the CO detector remove the DL front. The CO detector is located on the left side of the unit and consists of the detector and a power supply board. See figure A below.

CO DETECTOR TABLE 1. DETECTOR OPERATION MODES:

OPERATION MODE	GREEN LED	RED LED	SOUNDER
Normal (Standby)	Blink 1 per minute	OFF	OFF
Alarm	OFF	Temp 4 pattern	Temp 4 pattern
Alarm Test	OFF	Temp 4 pattern	Temp 4 pattern
End of Life	OFF	OFF	OFF
CO Trouble	OFF	Blink 1 per minute	OFF
Power Loss / Cell Fault	OFF	OFF	OFF

Alarm Test: Will send alarm signal to panel.

Hush feature / Alarm Silence: The audible alarm can be silenced for 5 minutes by pushing the button marked "Test/Hush". The red alarm light will continue to flash in temp 4 pattern. If carbon monoxide is still present after the 5 minute hush period, the audible alarm will sound. The hush feature will not operate at levels above 350 ppm carbon monoxide.

Trouble Feature: When the sensor supervision is in a trouble condition (e.g. such as a sensor that has been tampered with, or the cell itself has prematurely dried out due to environmental conditions, etc.), the detector will send a trouble signal to the panel. The detector must then be replaced. The green LED turns off and the red LED blinks every minute when the detector is in trouble.

End of Life Timer Feature: When the detector has reached the end of its life, the trouble contact will open. This indicates that the CO sensor inside the detector has passed the end of its life and must be replaced. This detector's lifespan is approximately six years from the date of manufacture. The green LED turns off when the detector is in trouble. Periodically check the "Replace by" sticker located under the detector cover. The detector must be replaced by this date. Order a replacement CO Detector number 233207 from the installer of the PTAC or the selling dealer.

TESTING

Detector must be tested after installation.

Test the detector as follows:

1. A test button is located on the detector housing (see Figure A).
2. Use the tip of your finger to press and hold the test button.
3. If the sounder beeps and the LEDs light up after 1-4 seconds, the detector is operational.

If detector fails the above test method, its wiring should be checked. If the detector still fails after rewiring, it should be replaced.

Resetting the CO detector:

This Dynalene unit with integrated CO detector is equipped with a manual reset button located at the plate immediately to the left of the CO detector. The manual reset button is identified by a label on the plate. When the test/ hush button on the CO detector is depressed the detector will audibly alarm, the green LED will extinguish and the red LED will flash. Power to the DL gas valve will be interrupted and the gas valve will close. Following the required test of the CO detector, it will be necessary to depress the manual reset button to reset the CO detector and allow the DL unit to reopen the gas valve circuit.

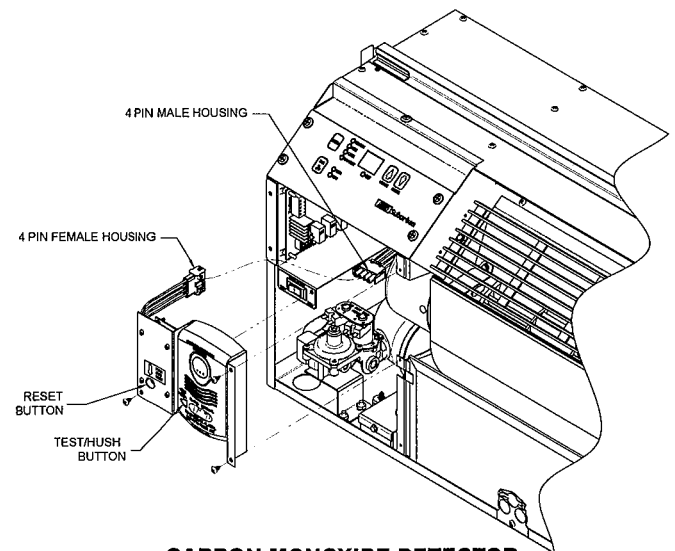
What to do if the carbon monoxide detector goes into alarm:

Should the CO detector go into alarm mode due to the detection of CO the power to the gas valve will be interrupted and the gas valve will close. Do not ignore the alarm and shutdown. Immediately move to a spot where fresh air is available, preferably outdoors. Find a phone in an area where the air is safe and call your building manager and ask them to have the Dynalene unit and/or other fuel burning appliances in the dwelling checked for proper operation. Do not return to a room or dwelling where the CO detector continues to alarm. After the cause of the alarm is determined and corrected, it will be necessary to depress the manual reset button to reset the CO detector and allow the DL unit to reopen the gas valve circuit.

DETECTOR REPLACEMENT

WARNING! Remove Power before replacing detector.

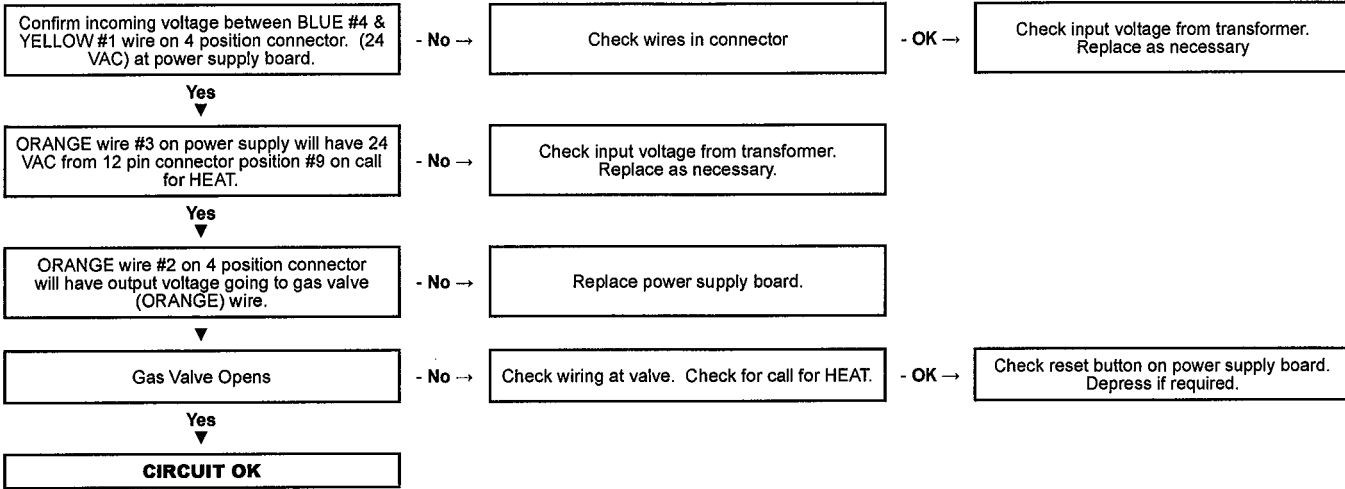
This detector is manufactured with a long-life carbon monoxide sensor. Over time the sensor will lose sensitivity, and will need to be replaced with a new System Sensor carbon monoxide detector. This detector's lifespan is approximately six years from date of manufacture. Periodically check the detector's replacement date. Using a small, flat screw driver, push in the small tab located on the underside of the detector. Once the snap is loosened, lift the bottom end of the cover up and un hinge the top to remove the cover. With the cover removed, refer to the sticker placed on the inside of the detector. The sticker will indicate the date that the detector shall be replaced. This detector is also equipped with a feature that will open the trouble relay once it has reached the end of its useful life. If this occurs, it is time to replace the detector.



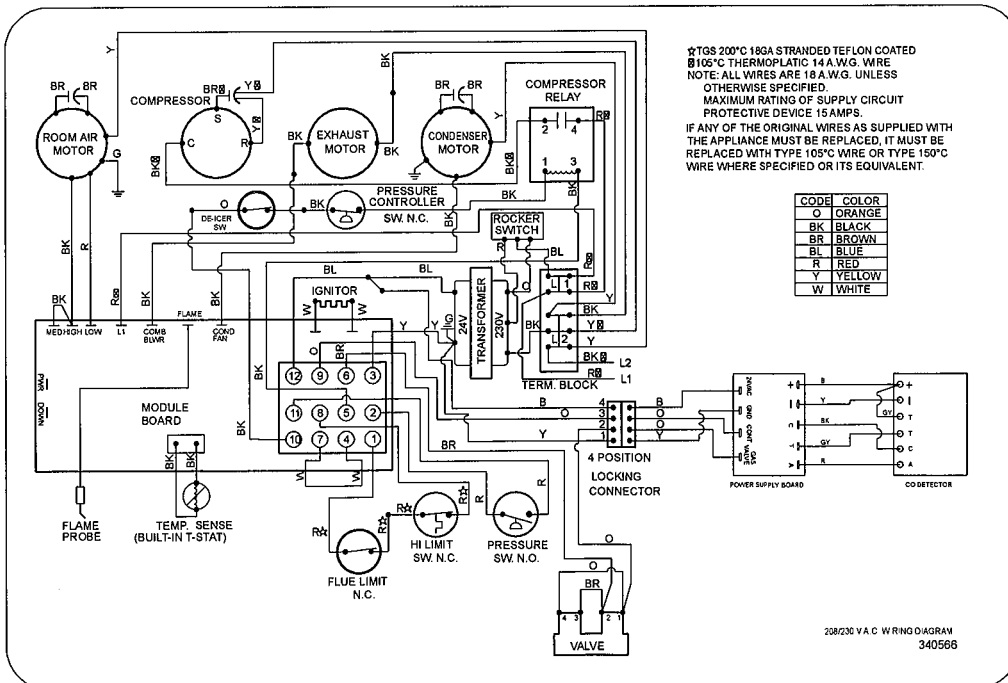
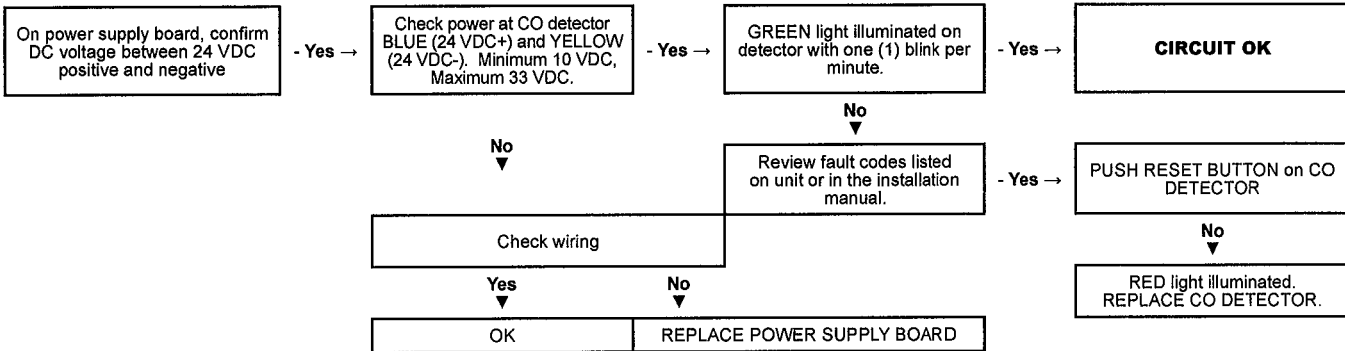
CARBON MONOXIDE DETECTOR

Figure A

CARBON MONOXIDE (CO) DETECTOR TROUBLE SHOOTING GUIDE SUBURBAN DYNALINE MODELS



POWER SUPPLY BOARD OUTPUT SIDE

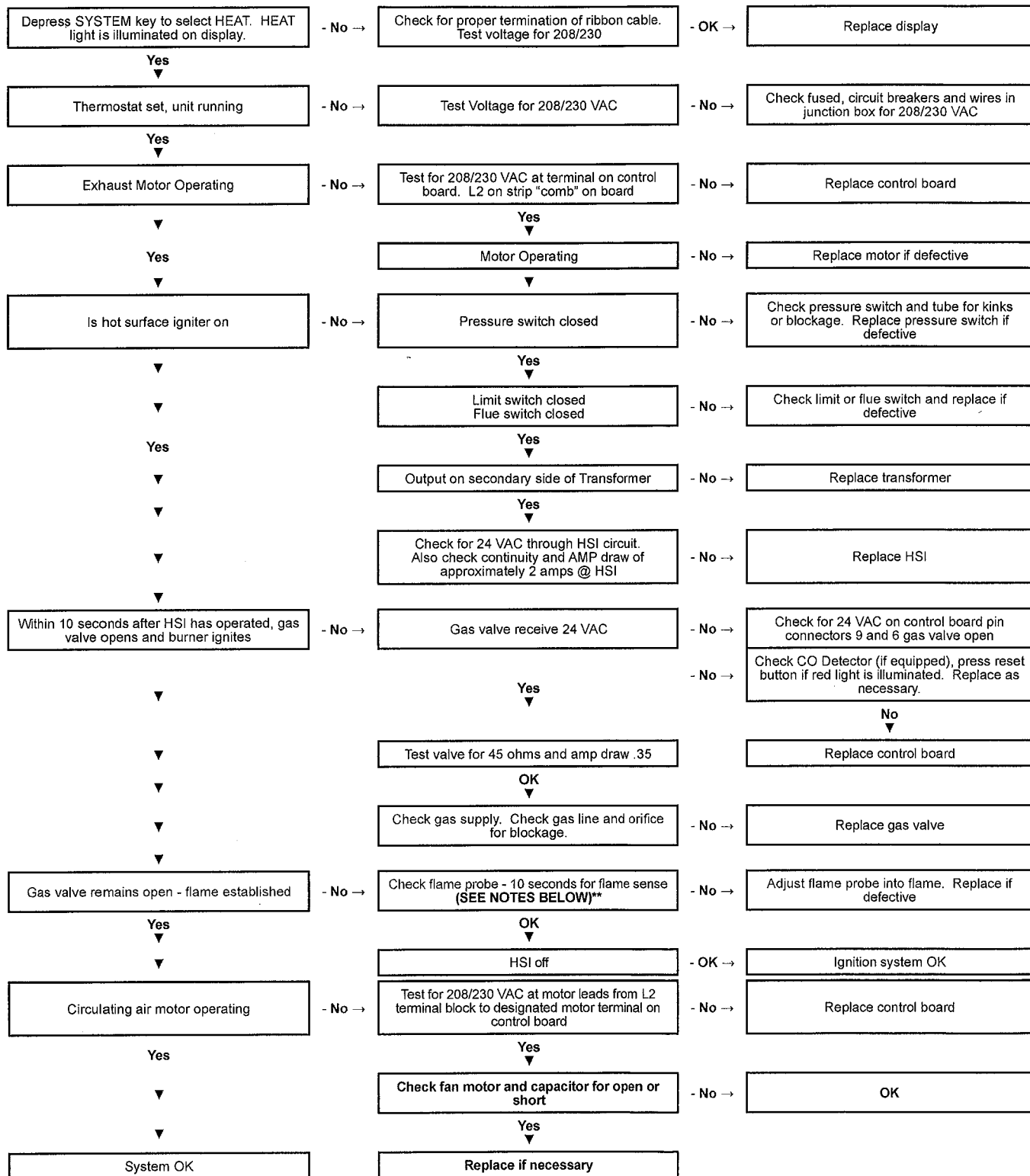


CARBON MONOXIDE DETECTOR (ETL WIRING)

HEATING SECTION TROUBLE SHOOTING GUIDE

SUBURBAN DYNALINE MODELS DL3-0712 • DL3-0912 • DL3-1220 • DL3-1622

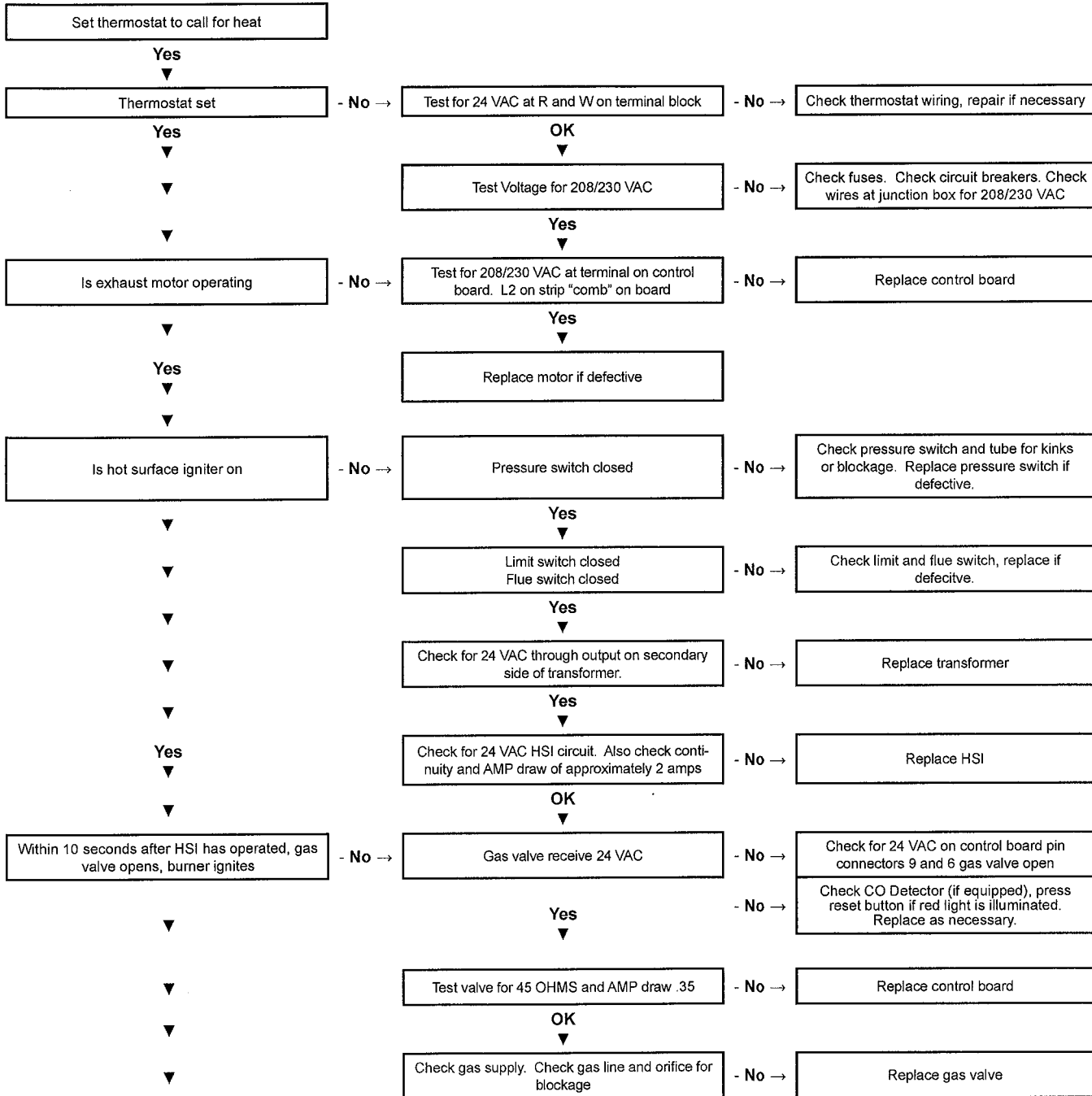
INTERNAL THERMOSTAT



****NOTES:** If proof of flame is not established, the gas valve will close and a post purge period of 30 seconds will take place. A second trial for ignition will then execute. Two (2) seconds will be added to each trial for ignition attempt (maximum of three (3) attempts). If the unit fails to light after three (3) trial for ignition, the control will go into a 60 minute delay if the demand for heat is still present the control will repeat the sequence above.

HEATING SECTION TROUBLE SHOOTING GUIDE

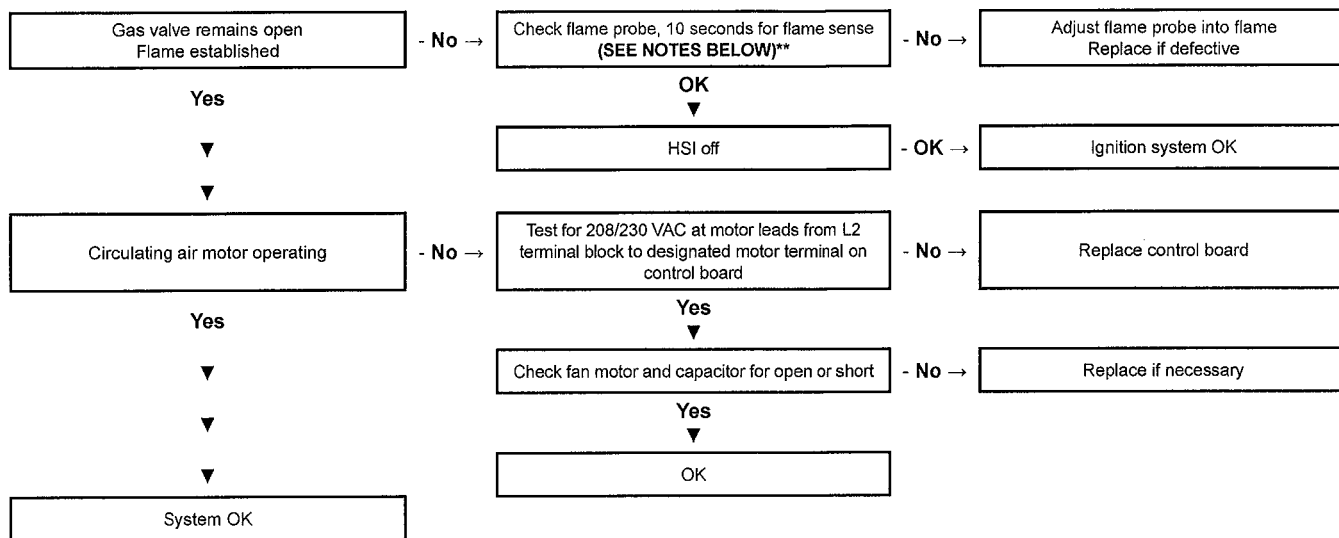
SUBURBAN DYNALINE MODELS DL3-0712 • DL3-0912 • DL3-1220 • DL3-1622 REMOTE THERMOSTAT



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****NOTES: If proof of flame is not established, the gas valve will close and a post purge period of 30 seconds will take place. A second trial for ignition will then execute. Two (2) seconds will be added to each trial for ignition attempt (maximum of three (3) attempts). If the unit fails to light after three (3) trial for ignition, the control will go into a 60 minute delay if the demand for heat is still present the control will repeat the sequence above.**

ELECTRICAL TROUBLESHOOTING FOR COMPRESSORS

A. IF THE COMPRESSOR WILL NOT RUN

If a motor compressor fails to start and run properly, it is important that the compressor be tested to determine its condition. It is possible that external electrical components may be defective, the protector may be open, a safety device may be tripped or other conditions may be preventing compressor operation. If the motor compressor is not the source of the malfunction, replacing the compressor will only result in the unnecessary expenditure of time and money, while the basic problem remains.

1. If there is no voltage at the compressor terminals, follow the wiring diagram and check back from the compressor to the power supply to find where the circuit is interrupted.

Check the controls to see if the contact points are closed (thermostat and de-ice switch). Check for a blown fuse, open disconnect switch or loose connection.

2. If power is available at the compressor terminals and the compressor does not run, check the voltage at the compressor terminals while attempting to start the compressor.

If the voltage at the compressor terminals is below 90% of the nameplate voltage, it is possible the motor may not develop sufficient torque to start. Check to determine if wire sizes are adequate, electrical connections are loose, the circuit is overloaded, or if the power supply is adequate.

3. The suction and discharge pressures must be equalized before starting because of the low starting torque of the motor. Any change in the refrigerant metering device, the addition of a drier, or other changes in the system components may delay pressure equalization and create starting difficulties. If PSC motor starting problems are being encountered, the addition of a capacitor start kit is recommended.

4. On single phase compressors, a defective capacitor or relay may prevent the compressor starting. If the compressor attempts to start but is unable to do so, or if there is a humming sound, check the relay to see if the relay contacts are damaged or fused. The relay points should be closed during the initial starting cycle, but should be open as the compressor comes up to speed.

Remove the wires from the starting relay and capacitors. Use a high voltage ohm meter to check for continuity through the relay coil. Replace the relay if there is no continuity. Use an ohm meter to check across the relay contacts. Potential relay contacts are normally closed when the relay is not energized. Current relay contacts are normally open. If either gives an incorrect reading, replace the relay. Any capacitor found to be bulging, leaking or damaged should be replaced.

Make sure capacitors are discharged before checking. Check for continuity between each capacitor terminal and the case. Continuity indicates a short and the capacitor should be replaced.

Substitute "a known to be good" start capacitor if available. If compressor then starts and runs properly, replace the original start capacitor. On PSC motors, substitute "a known to be good" run capacitor if available. If compressor then start and runs properly, replace the original run capacitor.

If a capacitor tester is not available, an ohm meter may be used to check run and start capacitors for shorts or open circuits. Use an ohm meter set to its highest resistance scale and connect probes to capacitor terminals.

- a. With a good capacitor, the indicator should first move to zero and then gradually increase to infinity.
- b. If there is no movement of the ohm meter indicator, an open circuit is indicated.
- c. If the ohm meter indicator moves to zero and remains there, or shows a low resistance reading, a short is indicated. The defective capacitors should be replaced.

5. If the correct voltage is available at the compressor terminals and no current is drawn, remove all wires from the terminals and check for continuity through the motor windings. On single phase motor compressors, check for continuity from terminals C to R and C to S. On compressors with line break inherent protectors, an open overload protector can cause a lack of continuity. If the compressor is warm, wait one hour for compressor to cool and recheck. If continuity cannot be established through all motor windings, the compressor should be replaced.

Check the motor for ground by means of a continuity check between the common terminal and the compressor shell. If there is a ground, replace the compressor.

6. If the compressor has an external protector, check for continuity through the protector or protectors.

B. IF THE COMPRESSOR STARTS BUT TRIPS REPEATEDLY ON THE OVERLOAD PROTECTOR:

1. Check the compressor suction and discharge pressures while the compressor is operating. Be sure the pressures are within the limitations of the compressor. If pressures are excessive, it may be necessary to clean the condenser, purge air from the system, add a crankcase pressure regulating valve, modify the system control or take other action as may be necessary to avoid excessive pressures.

An excessively low suction pressure may indicate a loss of charge and a suction cooled motor compressor may not be getting enough refrigerant vapor across the motor for proper cooling.

On units with no service gauge ports where pressures can not be checked, check condenser to be sure it is clean and fan is running. Excessive temperatures on suction and discharge line may also indicate abnormal operating conditions.

2. Check the line voltage at the motor terminals while the compressor is operating. The voltage should be within 10% of the nameplate voltage rating. If outside those limits, the voltage supply must be brought within the proper range.
3. Check the amperage drawn while the compressor is operating. Under normal operating conditions, the amperage drawn will seldom exceed 100% of the nameplate amperage and should never exceed 120% of the nameplate amperage. High amperage can be caused by low voltage, high head pressure, high suction pressure, low oil level, compressor mechanical damage, defective running capacitors or a defective starting relay.

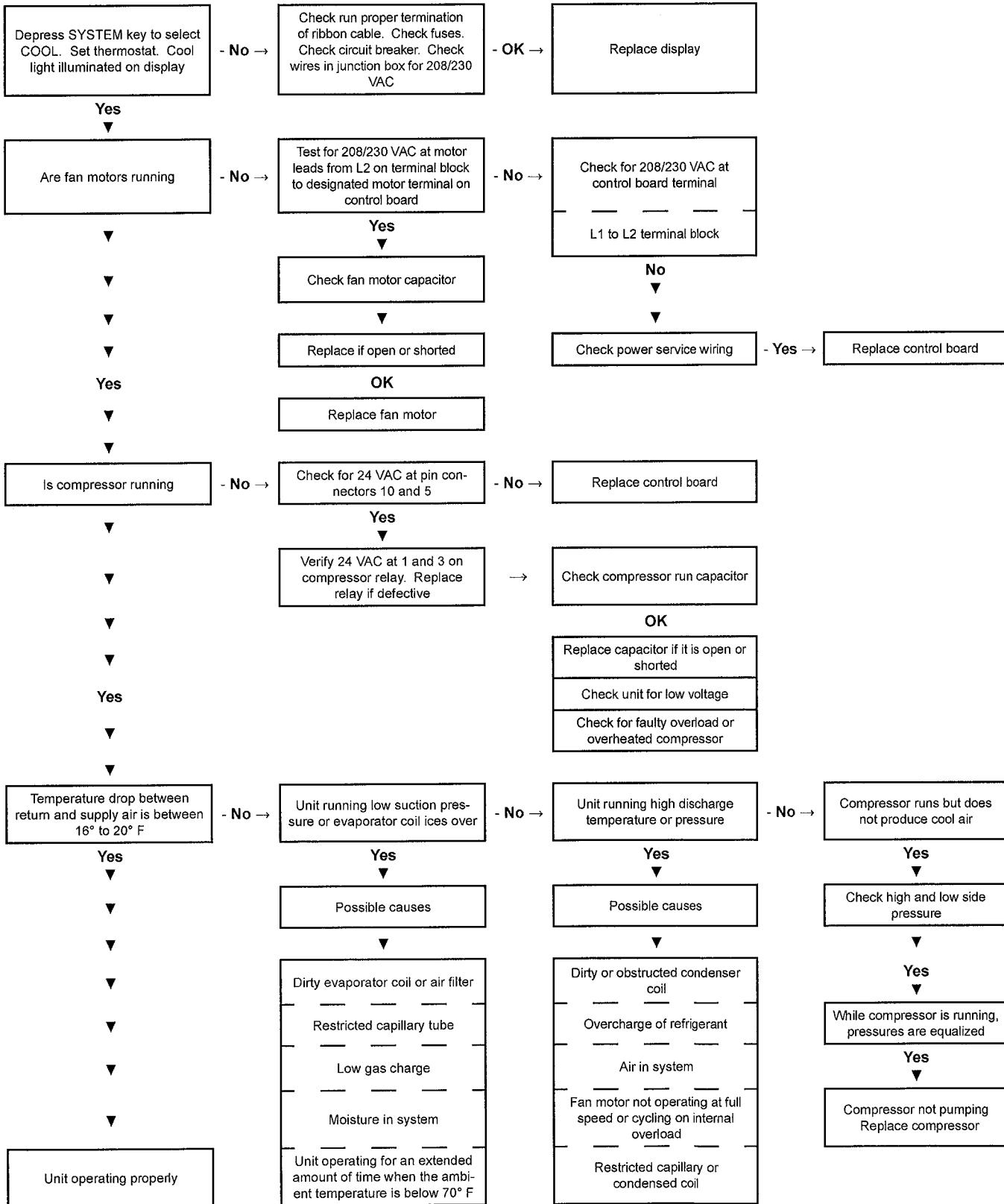
C. COMPRESSOR EVALUATION:

1. Check the refrigerant charge and the operating pressures. Any abnormal operating conditions must be corrected.
2. If the suction pressure is high and the evaporator and condenser are functioning normally, check the compressor amperage draw. An amperage draw near or above the nameplate rating indicates normal compressor operation. It is possible the compressor or unit may have damaged valves or does not have sufficient capacity for the application.

An amperage draw considerably below the nameplate rating may indicate a broken suction reed or broken connecting rod in the compressor. If no other reason for lack of capacity can be found, replace the compressor.

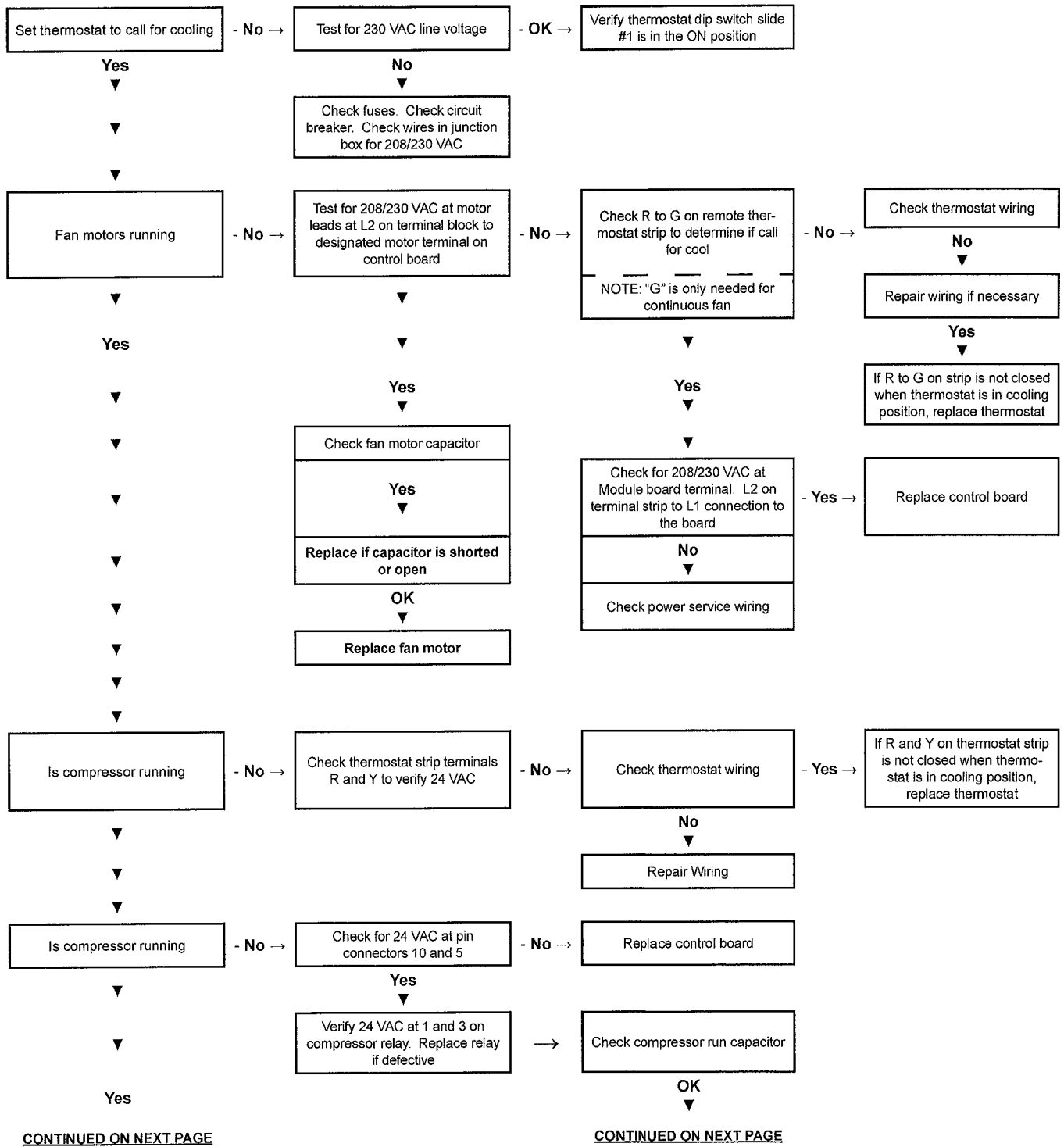
COOLING SECTION TROUBLE SHOOTING GUIDE

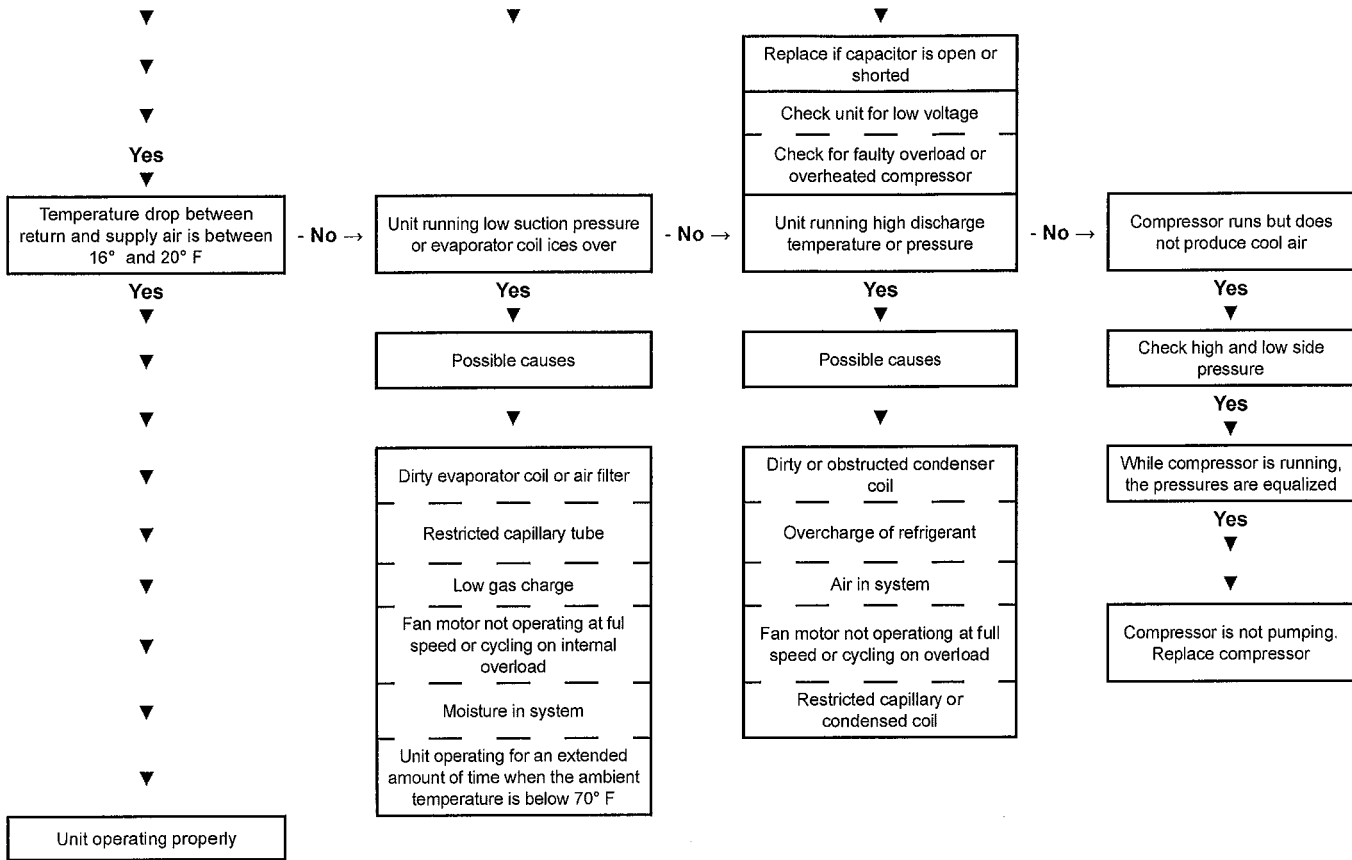
SUBURBAN DYNALINE MODELS DL3-0712 • DL3-0912 • DL3-1220 • DL3-1622 INTERNAL THERMOSTAT



COOLING SECTION TROUBLE SHOOTING GUIDE

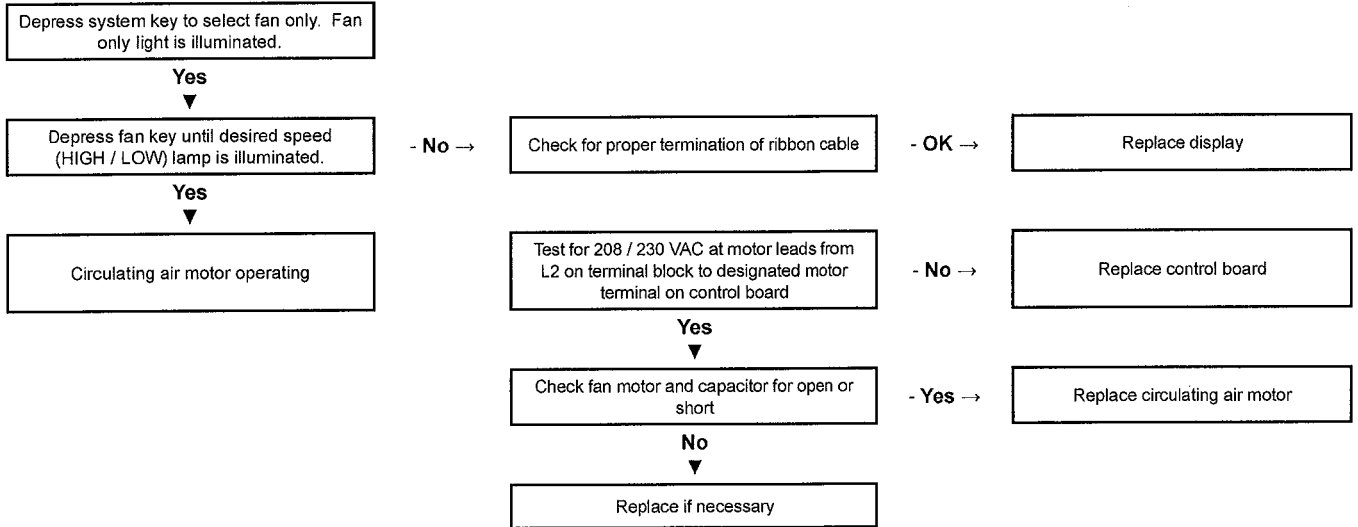
SUBURBAN DYNALINE MODELS DL3-0712 • DL3-0912 • DL3-1220 • DL3-1622 REMOTE THERMOSTAT





FAN ONLY OPERATION TROUBLE SHOOTING GUIDE

SUBURBAN DYNALINE MODELS
DL3-0712 • DL3-0912 • DL3-1220 • DL3-1622
INTERNAL THERMOSTAT



WARRANTY FLAT RATE SCHEDULE - DL3

The following parts are required to be returned for warranty consideration (module boards, gas valves, compressors, motors and combustion chambers). Return to the Authorized Direct Sales Representative with the labor claim.

Only **ONE** service call/trip charge will be paid per location although multiple units may be serviced.

If the repair is not listed, contact Suburban Factory Service Department at 423-775-2131, extension 7102 for authorization to repair and to establish a flat rate time. If your actual time exceeds the time listed below to perform the repair, please contact the Suburban Factory Service Department. If there is not factory approval of this additional time, flat rate time will be used to calculate labor reimbursement.

The replacement flat rate time indicated is paid at hourly rate. This includes the time necessary to remove the unit from the wall sleeve, diagnosis/replacement time, gas leak check and test for proper operation.

The following service parts require chassis removal from the wall sleeve.

Parts Replaced	Flat Rate Time
Heating	Hours
Room Air Motor	.50
Room Air Wheel or Bushing	.50
Room Air Capacitor	.40
Exhaust Motor Assembly	.50
Gas Valve	.75
Burner	.70
Transformer	.50
Pressure Switch	.30
Combustion Chamber Assembly	2.00

Cooling	Hours
Condenser Motor	.50
Condenser Fan Blade	.40
Compressor Relay	.30
Compressor	2.50
Condenser Coil	1.50
Evaporator Coil	2.00
De-Ice Switch	1.00
Dryer with Pressure Control	1.50

The following parts can be replaced without removing the unit:	
Part	Hours
Limit Switch / Flue Limit	.25
Module Board	.50
Thermostat Control Plate Assembly	.25
Ignitor	.25
Flame Probe	.25
Compressor Capacitor	.20
Condenser Capacitor	.20
Thermostat (24 Volt Remote SMC # 161198)	.25
CO Detector	.40
CO Detector Control Board	.25

SUBURBAN LIMITED WARRANTY DYNALINE

LIMITED ONE YEAR WARRANTY

This SUBURBAN product is warranted to the original purchaser to be free from defects in material and workmanship under normal use and maintenance for a period of one year from the date of installation whether or not actual use begins on that date. It is the responsibility of the consumer/owner to establish the warranty period. Suburban does not use warranty registration cards. You are required to furnish proof of installation date which may be a Bill of Sale or other payment record which verifies the original installation. A new or remanufactured part to replace any defective part will be provided, at Suburban's sole option, without charge for the part itself, FOB the shipping point. THE EXCHANGED PART WILL BE WARRANTED FOR ONLY THE UNEXPIRED PORTION OF THE ORIGINAL WARRANTY. Defective parts must be returned to Suburban, transportation charges prepaid (Suburban is not responsible for any freight charges), where Suburban will establish to its sole satisfaction that the part was or became defective under normal use and maintenance. Said first year repairs, made by an authorized Suburban service agency, will qualify for labor reimbursement (to the service agency only) up to a maximum as established by Suburban's flat rate schedule effective at that time. No reimbursement will be made for transportation, diagnosing, shipping or handling. THIS WARRANTY APPLIES ONLY TO THE PRODUCT IN ITS ORIGINAL INSTALLATION LOCATION AND IS VOIDED IF THE PRODUCT IS REINSTALLED ELSEWHERE.

LIMITED TWO YEAR WARRANTY ON CO DETECTOR

During the second through third year after the date of original installation, Suburban further warrants the CO Detector against defects in material and workmanship under normal use and maintenance. A replacement CO Detector will be provided under the same conditions as stated in the one year warranty EXCEPT no labor reimbursement will be provided.

LIMITED FOUR YEAR WARRANTY ON HEAT EXCHANGER AND COMPRESSOR

During the second through fifth years after the date of original installation, Suburban further warrants the heat exchanger against defects in material and workmanship under normal use and maintenance. A replacement heat exchanger will be provided under the same conditions as stated in the one year warranty EXCEPT no labor reimbursement will be provided.

During the second through fifth years after the date of original installation, Suburban further warrants the compressor against defects in material or workmanship under normal use and maintenance. A new or remanufactured compressor will be provided at Suburban's sole option under the same conditions as stated in the one year warranty EXCEPT no labor reimbursement will be provided.

LIMITATION OF WARRANTIES

ALL IMPLIED WARRANTIES (INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY) ARE HEREBY LIMITED IN DURATION TO THE PERIOD FOR WHICH EACH LIMITED WARRANTY IS GIVEN. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. THE EXPRESSED WARRANTIES MADE IN THIS WARRANTY ARE EXCLUSIVE AND MAY NOT BE ALTERED, ENLARGED, OR CHANGED BY ANY DISTRIBUTOR, DEALER OR OTHER PERSON WHOMSOEVER.

ALL WORK UNDER THE TERMS OF THIS WARRANTY SHALL BE PERFORMED DURING NORMAL WORKING HOURS. ALL REPLACEMENT PARTS ASSUME AS THEIR WARRANTY PERIOD ONLY THE REMAINING TIME PERIOD OF THIS WARRANTY.

SUBURBAN WILL NOT BE RESPONSIBLE FOR:

1. Normal maintenance as outlined in the owner's installation, operating and service instructions manual including cleaning of component parts; such as, orifices and burners.
2. Failure to start and/or operate due to voltage or gas conditions, blown fuses, open circuit breakers, loose or disconnected wires, low gas pressure or other damages due to inadequacy or interruption of electrical service or gas supply.
3. Damage or repairs required as a consequence of faulty or incorrect installation not in conformance with Suburban instructions.
4. Damage as a result of floods, winds, lightning, accidents, corrosive atmosphere or other conditions beyond the control of Suburban.
5. Costs incurred in gaining access to the furnace.
6. Parts or accessories not supplied by Suburban.
7. Damage or repairs needed as a consequence of any misapplication, abuse, unreasonable use, unauthorized alteration, improper service, improper operation or failure to provide reasonable and necessary maintenance.
8. Freight charges incurred from parts replacements.
9. Fuel or electricity costs or increases in such costs from any reason whatsoever.
10. Suburban products whose serial number has been altered, defaced or removed.
11. Suburban products installed or warranty claims originating outside the Continental U.S.A., Alaska, Hawaii and Canada.
12. ANY SPECIAL, INDIRECT OR CONSEQUENTIAL PROPERTY, ECONOMIC OR COMMERCIAL DAMAGE OF ANY NATURE WHATSOEVER. Some states do not allow the exclusion of incidental or consequential damages, so the above limitation may not apply to you.

NO REPRESENTATIVE, DEALER OR OTHER PERSON IS AUTHORIZED TO ASSUME FOR SUBURBAN MANUFACTURING COMPANY ANY ADDITIONAL, DIFFERENT OR OTHER LIABILITY IN CONNECTION WITH THE SALE OF THIS SUBURBAN PRODUCT.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

IF YOU HAVE A PRODUCT PROBLEM

FIRST:

Contact the installer of the equipment or the selling dealer for warranty service. You may find his name on the product or with your homeowners manual. If his name is not known, call your builder or general contractor if yours is a new structure.

SECOND:

Contact the Suburban distributor who supplied the product to the installer/dealer.

THIRD:

Contact: Suburban Manufacturing Company
Customer Service Department
676 Broadway Street
Dayton, Tennessee 37321
(423) 775-2131
Fax: (423) 775-7015

All information published in this manual is subject to change without notice.



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Dayton, Tennessee 37321
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DYNALINE-Service / Warranty
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