Suburban Manufacturing Company

SUBURBAN MANUFACTURING COMPANY
Post Office Box 399
Dayton, Tennessee 37321

DYNALINE™ MODELS
DL II-0912E • DL II-0912ET
DL II-1220EA • DL II-1220ETA

LISTED

PACKAGED TERMINAL AIR CONDITIONER

OWNER'S MANUAL
INSTALLATION, OPERATING AND SERVICE INSTRUCTIONS

This book contains instructions for installation and operation of your unit. Keep it in a safe place for ready reference. Should you require further information, contact your dealer.

FOR YOUR SAFETY

IF YOU SMELL GAS:
1. OPEN ALL WINDOWS.
2. DON'T TOUCH ANY ELECTRICAL SWITCHES.
3. EXTINGUISH ANY OPEN FLAMES.
4. IMMEDIATELY CALL YOUR GAS SUPPLIER OR QUALIFIED SERVICE TECHNICIAN FOR REPAIRS.

FOR YOUR SAFETY

DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

WARNING! Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Refer to the installation instructions and/or owners manual provided with this appliance. Installation and service must be performed by a qualified installer, service agency or the gas supplier.

FOREWORD

You have just purchased a Suburban Packaged Terminal Air Conditioner. This design is UL listed. The unit is also certified by the Canadian Gas Association to comply with the latest edition of National Standard of Canada CAN1-2.19.

To simplify the proper installation and to assure that the unit will operate in conformity with generally accepted safety requlations, it requires that you read carefully and fully understand the step-by-step instructions outlined in this manual.

NOTE: Do not deviate from the instructions as outlined in this manual. Failure to follow the installation, operating and maintenance instructions will void the responsibility of Suburban Manufacturing Company.

INSPECTING FOR FREIGHT DAMAGES

Your unit was carefully packed in a container which complies with the National Safe Transit Test. This means that the packaged product, with normal handling, will withstand the load conditions encountered in normal transit and in handling.

Your unit should be inspected immediately after unpacking to determine if any damage is present due to shipping or handling. If any damage is discovered, **do not install the unit.** Notify the transportation company immediately and file a damage claim.

The manufacturer can bear no responsibility for damages which occur in transit or for improper operation of the unit as a result of shipping damages.

For future reference, you should record the following information from the units:

MODEL NUMBER _____

SERIAL NUMBER _____

STOCK NUMBER _____

DATE OF PURCHASE _____

UNIT SPECIFICATIONS

Do not operate this unit during construction as this may violate your warranty.

HEATING		
	MODEL DLII-0912E DLII-0912ET	DLII-1220EA DLII-1220ETA
BTU INPUT	12,000	18,000
VOLTS	208/230	208/230
WATTS	444	370
GAS CONNECTION	3/8" IPS	3/8" IPS
COOLING		
	MODEL DLII-0912E DLII-0912ET	DLII-1220EA DLII-1220ETA
COOLING CAPACITY	9,520	12,160
VOLTS	208/230	208/230
WATTS	1090/1135	1340/1380
REFRIGERANT	FREON R-22	FREON R-22
REFRIGERANT CHARGE	SEE INFORMATION STICKER ON UNIT	SEE INFORMATION STICKER ON UNIT

Form No. 2098-B
3-95

INTRODUCTION

This manual is intended to familiarize the installer, serviceman and user with the installation, operation and maintenance of the heating and cooling unit.

The Dynaline II is designed for a wall thickness of 1" minimum to 14-1/2" maximum. NOTE: Maximum wall thickness cannot exceed 12-5/8" if rear gas hook-up is to be used. The wall sleeves must be installed as illustrated in Figures 5 or 6 so that the DL II unit chassis when slid into the sleeve is vented to the outside atmosphere.

Do not install in an alcove or recess. Special sleeve and grille applications must be brought to the attention of Suburban as they may impair the operation of the unit.

IMPORTANT: Installation of the rear grille must be made prior to installing the chassis as it secures from inside the wall sleeve.

In the U.S.A.,this appliance must be installed in accordance with local codes and regulations. In the absence of local codes and regulations, installation must comply with the latest edition of:

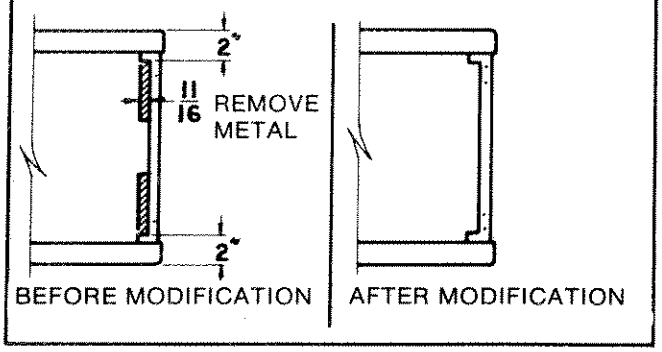
1. National Fuel Gas Code ANSI Z223.1.
2. National Electrical Code ANSI/NFPA No. 70.

In Canada, the installation must be in accordance with local codes or in the absence of local codes with the current CANI-B149 Installation Code.

PRE-INSTALLATION TIPS AND CONSIDERATION

WARNING

THIS UNIT IS NOT DESIGNED FOR INSTALLATION IN AN OLDER MODEL STANDARD WALL SLEEVE (14 3/4" DEPTH) UNLESS OLD SLEEVE IS CUT AWAY (AS ILLUSTRATED) IN RIGHT REAR AREA AS VIEWED FROM OUTSIDE BUILDING.
DO NOT INSTALL THIS UNIT IN ANY EXTENDED WALL SLEEVE UNLESS EXTENDED SLEEVE IS DESIGNED FOR DLII "E" SERIES.



Minimum Operational Clearances

The following minimum outside clearance from rear grille must be maintained:

Rear of unit to nearest obstruction - 36"
Side of unit to nearest obstruction - 0"

Bottom of unit to obstruction and/or ground - This requirement is determined by local climate and environmental conditions. The unit must be above ground and high enough off of the ground to prevent snow, water, leaves or any other obstruction from blocking rear of unit.

The following minimum inside clearances from cabinet front must be maintained:

The flow of discharge air must not be obstructed for a minimum of 12"
Side of cabinet to nearest obstruction - 1"
Top of unit to ceiling - 12"
Cabinet front to nearest obstruction - 12"*.
*Obstruction must be removable for service of unit.
**May be 3/4" if bottom of obstruction in front of unit is a minimum of 3" off floor.
Otherwise a minimum clearance of 36" is required.
Bottom of cabinet front to finished floor - 0"

Minimum Clearances to Combustible Construction

Units are approved for 0" clearance to combustible construction top, sides and bottom. Front and rear clearances not applicable as there can be no construction combustible or non-combustible to the front or rear of the opening. Keep burner and control compartment clean. See installation and operating instructions accompanying appliance.

1. When choosing a location for the sleeve, remember that the unit chassis must be vented to the outside atmosphere, therefore, the sleeve must be mounted in the outside wall of the room. A location should be selected with consideration for circulation of discharge (room) air. Generally, the location which provides the most effective circulation is midway along the wall of the room the unit is to serve and away from a stairwell or other openings. Do not locate sleeve behind a door or at a point where a door, if left open, would tend to obstruct the unit when installed into the sleeve.

2. In choosing a location for the sleeve, one must consider the minimum operation clearances as specified in Table 1. These clearances assure adequate accessibility for servicing and proper operation of the unit and therefore, must be maintained.

3. The wall sleeve may be installed directly on finished floor as illustrated in Figure 2; however, considerations should be given to the location of gas lines and electrical service. NOTE: If mounted on top of floor, the gas connection should be made from rear of unit. For the best finished results, Suburban suggests the wall sleeve be mounted a minimum of 3-1/2" off of the finished floor, as illustrated in Figure 3. This allows sufficient space for the gas and electrical connections to be made below the wall case. An accessory base panel, Suburban Kit #520601, may then be attached to the cabinet front to conceal these service connections. NOTE: This base panel is non-loading bearing.

4. If the DL II unit chassis is to be installed under a window, the top of the wall sleeve must be a minimum of 2-3/4" below the bottom edge of the window in order to comply with NFPA 54/ANSI Z223.1. When installing below a window, the installer should consider the possibility of curtains interfering with discharge air and/or accessory air discharge package and take steps to eliminate these restrictions.

5. The installer should allow for drywall or other interior wall finishes when locating sleeve during rough-in. (See Figures 5 or 6.)

6. Prior to installing the wall sleeve, one must consider the method to be used to drain the condensate from the wall sleeve. Two methods may be used:

a. Free Drain (External) - A general acceptable alternative where the condensate drains from the wall sleeve through three exterior drain holes and drops to open ground. (See Figure 4.) The chassis slinger wheel is designed to pick up normal condensate and evaporate it off the condensor coil.

b. Drain Kits - A condensate drain kit is recommended for positive drainage when specified or code requires or when condensate is heavy under conditions of extreme humidity for extended periods of time. Two drain kits are available. Drain Kit #520598 may be installed externally on rear of wall sleeve either at right of left corner. Drain Kit #520599, mounts underneath sleeve. Drain kits are illustrated in Figure 7. The condensate can be freely drained to ground level or routed in tubing to a disposable location. Drain tube kits are designed for 1/2" O.D. copper tubing.

NOTE: Excessive rain water entering the unit through the outside grille may not be entirely removed by the slinger wheel. Excessive rain water will drain through the raised weep holes provided on the rear of the wall sleeve.

7. If rear gas hook-up (Kit #520751) is to be used (suggested method when sleeve installed at 0" floor clearance) the sleeve must protrude 1-5/8" beyond finished surface of outside wall (clearing "U" shaped notch in wall sleeve as illustrated in Figure 4) to allow for rear gas connection.

8. After selecting a location for wall sleeve, inspect the wall and floor areas to determine that there are no hidden electrical wires, propane or other flammable gas-liquid piping or tubing, ducts, girders or wall studs that will interfere with the proper installation and safe operation of the unit or the proper installation of gas supply lines and electrical service.

9. The cabinet front is shipped with the DL II chassis. Side flanges on chassis are secured to sleeve from inside room to insure proper security and mounting.

INSTALLATION

Before beginning the installation it is suggested that the cabinet front and air filter be removed to avoid damage during installation of the unit.

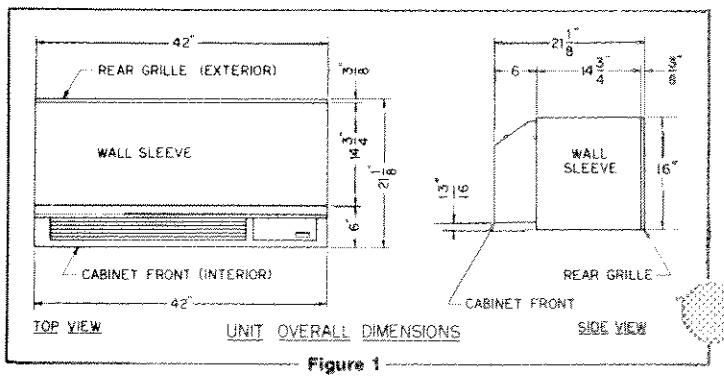
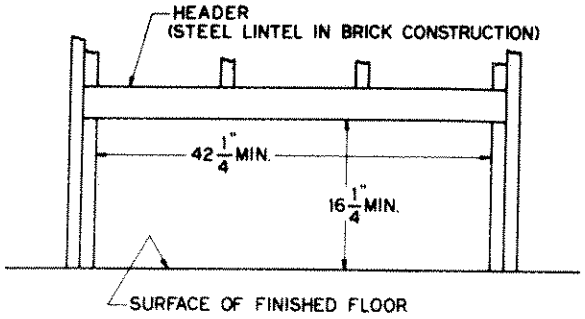


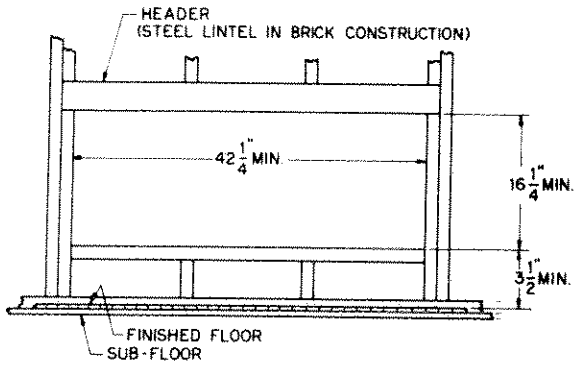
Figure 1



WALL SLEEVE FRAMING DIMENSIONS

NOTE Units approved for 0" clearance to combustible construction top, sides and bottom. Front and rear not applicable as there can be no construction combustible or non-combustible to the front or rear of opening. Show minimum off Floor 0". *See Paragraph 3. under Pre-Installation.

Figure 2



WALL SLEEVE FRAMING DIMENSIONS

NOTE: Units approved for 0" clearance to combustible constructions top, sides and bottom. Front and rear clearance not applicable as there can be no construction combustible or non-combustible to the front or rear of the opening.

Figure 3

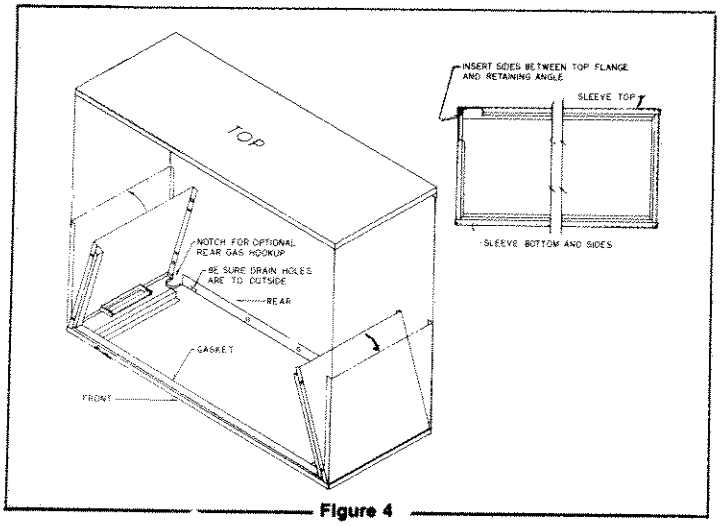


Figure 4

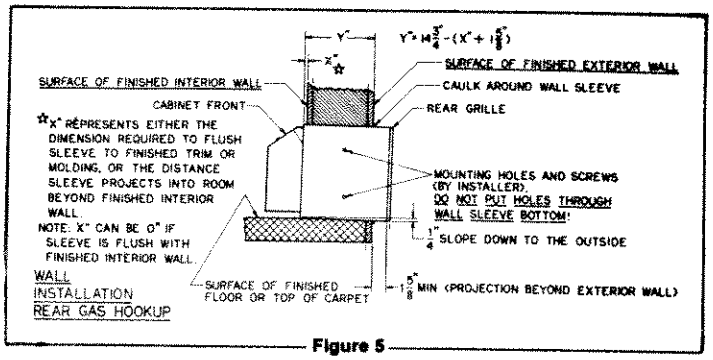


Figure 5

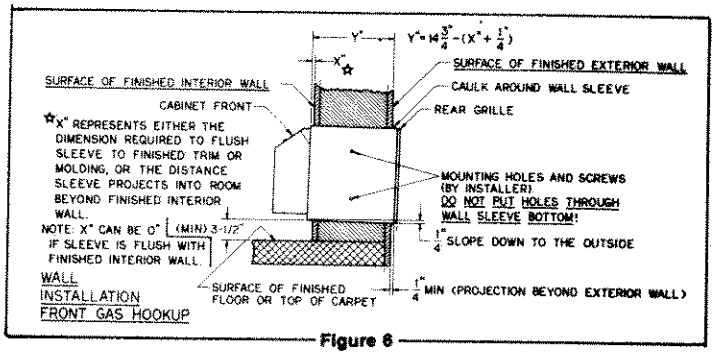


Figure 6

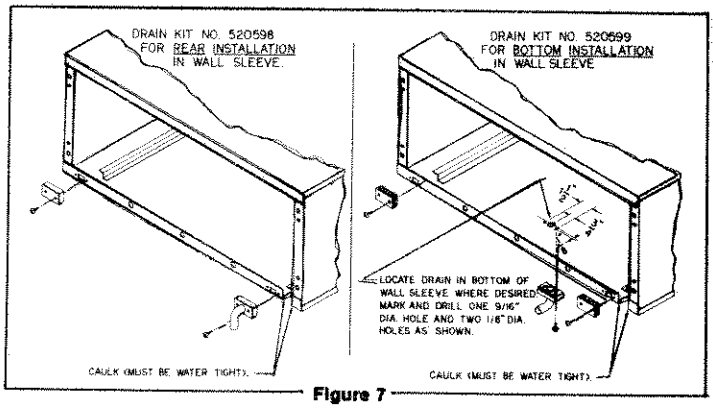


Figure 7

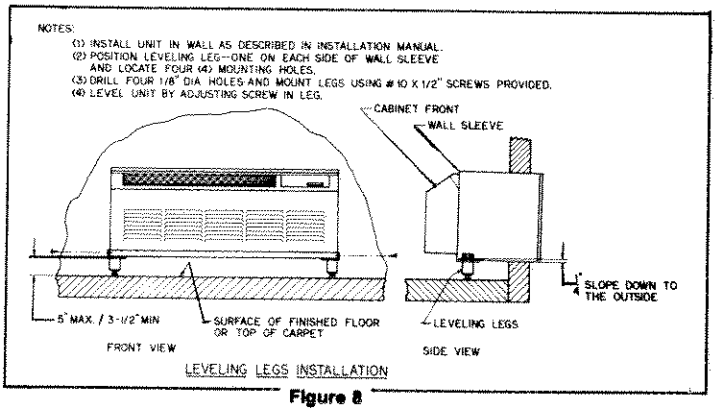


Figure 8

1. Cut an opening in the outside wall and frame to the minimum opening as illustrated in Figures 2 or 3. Refer to Table 1 for minimum clearances to obstruction. Use conventional construction methods to frame opening. **Do not use wall sleeve as a lintel.** The framed opening should allow for the sloping of the sleeve toward outside wall as illustrated in Figures 5 or 6, in order to assure proper drainage. **Do not install wall sleeve level or slope toward room.**

2. Unfold the sides of the wall sleeve and assemble the top, being sure that the sides wedge between the top flange on the top and the retaining angle as illustrated in Figure 4.

3. Install wall sleeve into framed opening with the three drain holes to the outside. Minimum projection of wall sleeve into the room is flush with finished wall or molding, as illustrated by "x" diminsion in Figures 5 or 6.

CAUTION: Be sure sleeve protrudes far enough into the room to allow for any interior wall studding, insulation and dry wall or finished wall to be added during construction.

Do not install sleeve flush with finished exterior wall.

If sleeve installed with floor clearance from 0" to less than 3-1/2", the sleeve must protrude a minimum of 1-5/8" beyond finished surface of exterior wall. (See Figure 5.) This is to allow for rear gas hook-up. If sleeve is installed with floor clearance of 3-1/2" or greater, the sleeve must protrude a minimum of 1/4" beyond finished surface of exterior wall. (See Figure 6.)

NOTE: For installations in wall thickness of 4" or less, Suburban recommends the use of Leg Leveling Kit #520600 or other means of supporting wall sleeve. (See Figure 8.)

For installations in windows and/or curtain or panel walls of 2", it is suggested that a minimum of two field supports be installed under wall sleeve since no screws can be used in bottom of sleeve to the wall.

Field supplied wall sleeve angles 1" x 1" x .065/.055 are to be used on top, sides and bottom of wall sleeve. (See Figure 9.)

CAUTION: Do not drill holes in bottom of sleeve. Bottom angle is for support only and is to be secured to wall.

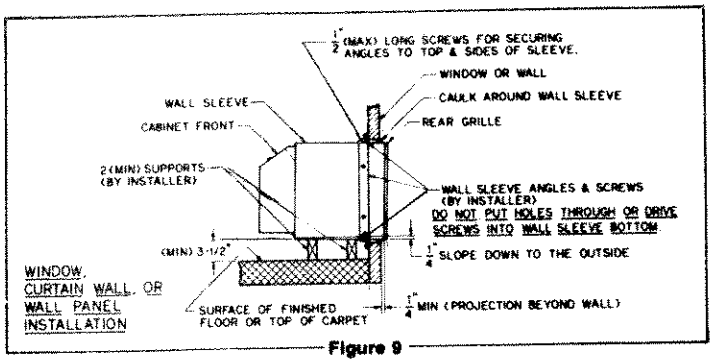


Figure 9

4. Secure wall sleeve to wall as illustrated in Figures 5 or 6. Be sure wall case is level (side to side-parallel to floor) and sloped 1/4" from front to rear. **Do not put holes in bottom of sleeve, water damage to wall and floor will occur.**

5. Caulk around wall sleeve between the sleeve and building to form a weather tight seal against rain and snow. **Use only weather proof caulking.** (See Figures 5 or 6.)

6. Seal around sleeve between finished interior wall and sleeve to minimize heat/cooling loss around sleeve. Seal may be caulking, or if preferred, installer may trim around sleeve with molding or other suitable materials.

IMPORTANT: Installation of the rear grille must be made prior to installing the chassis as it secures from inside the wall sleeve.

7. Slide unit into wall sleeve and secure it to sleeve using the four #10 x 1/2 screws provided.

8. Connect gas and electrical supply. NOTE: If front gas hook-up is to be used, refer to Figure 10 for centerline location of gas connection when unit is installed into wall sleeve.

9. If your unit is a remote thermostat model (DLII-0912ET or DLII-1220ETA) connect the thermostat according to the manufacturers instructions. NOTE: Set thermostat anticipator at .2.

CAUTION: Be sure thermostat wiring and connections are not shorted. A short will result in the transformer being burned out.

NOTE: The terminal block for thermostat connections is located in front of the air inlet to the room air blower. There are two auxiliary terminals on this block, x and z. These are to control the compressor cut-out relay.

If your unit is a built-in thermostat model (DLII-0912E or DLII-1220EA) neglect this step. The black and brown wires on these units to control the compressor cut-out relay are marked with a tag and are located behind the electrical box and room air blower.

10. Reinstall air filter.

11. Reinstall cabinet front. Do not operate unit with cabinet front removed.

MAKING GAS CONNECTIONS

The unit is factory equipped with a 3/8" NPT gas connection located at the bottom left front corner of the unit. Gas piping used to make the gas connection to the unit must be purchased locally. The size of the pipe should be computed according to the type of gas and the length of the run. Table 1 gives a reasonably accurate size for the service line. The quantities given in the table are for cubic feet per hour. To convert BTU capacity to cubic feet, divide total BTU load by the BTU value of the gas being used. The table is for natural gas only. To convert to liquefied petroleum (LP) gas, multiply by .633. The pressure drop caused by other gas appliances being served by any portion of the line provided for this installation must be considered. If the new line is takeoff from an existing line to another appliance, pressure drop computation with the table must include the demand of the other appliance.

CAUTION: Suburban does not recommend the use of flex tubing to make the gas connections to the unit unless the flex tubing is a high quality stainless certified by AGA and approved for use by local codes.

Minimum gas supply pressure for purposes of input adjustment:

	Minimum	Maximum
Natural Gas	5" W.C.*	7" W.C.
Liquefied Petroleum (LP) Gas	11" W.C.	13" W.C.

(*Water Column)

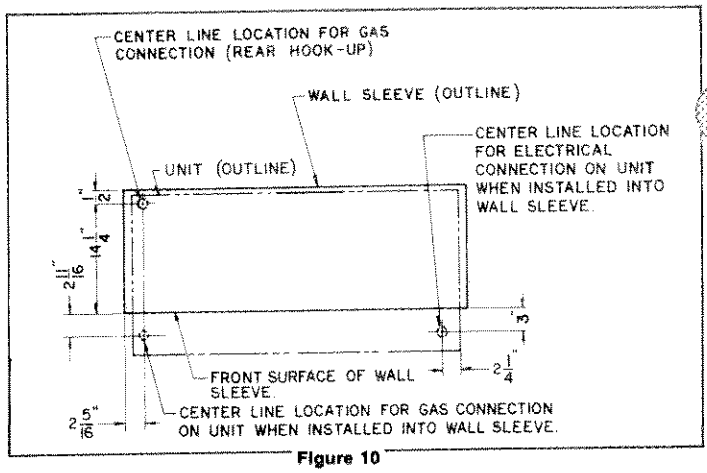


Figure 10

Operating Pressure

All units for burning natural gas are equipped with a valve having a built-in regulator preset at 3.5" W.C. pressure. All units for burning liquefied petroleum (LP) gas are equipped with a valve having a built-in regulator preset at 10.5" W.C. pressure. Do not adjust the regulator set screw on the valve. Overfiring of the unit may occur.

It is recommended that a manual shut-off valve be installed in the gas supply line to the unit. It is also recommended that a ground joint union be installed between the unit and this shut-off valve. NOTE: Manual shut-off valve to be supplied by installer.

A condensate trap should also be installed in the gas supply line as close to the unit as possible.

In order to maintain a check on gas supply pressure to the unit, Suburban advises the installer to provide a 1/8" NPT plug tap for test gauge connection immediately upstream of the gas supply connection to the unit.

The unit and its individual shut-off valve must be disconnected from the gas supply piping system during any pressure testing of the gas system at test pressures in excess of 1/2 PSIG. The unit must be isolated from the gas supply piping system by closing its individual manual shut-off valve during any pressure testing of the gas supply system at test pressures equal to or less than 1/2 PSIG.

WARNING! A pipe thread compound resistant to the action of liquefied petroleum (LP) and natural gas must be used on all pipe joints.

All gas piping should be tested with a soap and water solution to assure gas-tight connections.

WARNING! Do not use an open flame to check for leaks!

MAKING ELECTRICAL CONNECTIONS (208 - 230 Volts)

If local codes permit, the service cord as supplied with the unit may be used. The service cord is added at the factory for testing during production. If local codes do not permit the use of a service cord, it must be removed and the electrical connections made in the junction box.

All external wiring must comply with local codes or national electrical codes.

It is recommended that the wiring be on a separate permanent line electrical circuit. The electrical circuit must be protected using dual 15 amp fuse or HACR type circuit breaker.

In the U.S.A. the unit, when installed, must be electrically grounded in accordance with local codes or, in the absence of local codes, with the latest edition of National Electrical Code ANSI/NFPA No. 70. Proper operation of this unit is dependent on adequate earth ground. If the installation is made using gas piping of any material other than metal pipe, then adequate steps must be taken to assure adequate earth ground.

Maximum Capacity of Pipe in Cubic Feet of Gas per Hour for Gas Pressures of 0.5 Psig or Less and a Pressure Drop of 0.3 Inch Water Column

(Based on a 0.60 Specific Gravity Gas)

TABLE 1

Nominal Iron Pipe Size, Inches	Internal Diameter, Inches	Length of Pipe, Feet													
		10	20	30	40	50	60	70	80	90	100	125	150	175	200
¼	.364	32	22	18	15	14	12	11	11	10	9	8	8	7	6
⅜	.493	72	49	40	34	30	27	25	23	22	21	18	17	15	14
½	.622	132	92	73	63	56	50	46	43	40	38	34	31	28	26
¾	.824	278	190	152	130	115	105	96	90	84	79	72	64	59	55
1	1.049	520	350	285	245	215	195	180	170	160	150	130	120	110	100
1¼	1.380	1,050	730	590	500	440	400	370	350	320	305	275	250	225	210
1½	1.610	1,600	1,100	890	760	670	610	560	530	490	460	410	380	350	320
2	2.067	3,050	2,100	1,650	1,450	1,270	1,150	1,050	990	920	870	780	710	650	610
2½	2.469	4,800	3,300	2,700	2,300	2,000	1,850	1,700	1,600	1,500	1,400	1,250	1,130	1,050	960
3	3.068	8,500	5,900	4,700	4,100	3,600	3,250	3,000	2,800	2,600	2,500	2,200	2,000	1,850	1,700
4	4.026	17,500	12,000	9,700	8,300	7,400	6,800	6,200	5,800	5,400	5,100	4,500	4,100	3,800	3,500

In Canada, the unit must be electrically connected and grounded in accordance with local codes or in the absence of local codes with the current CSA C22.1 Canadian Electrical Code.

OPERATING INSTRUCTIONS
DLII-0912E • DLII-1220EA

A. HEAT MODE

Initial Lighting Instructions (See Figure 11)

NOTE: During initial firing of this furnace a burn-off of excess paint and oils remaining from the manufacturing process may cause "smoking" for 5-10 minutes.

1. Open the manual shut-off valve. The valve is fully open when the handle is level or parallel to the gas line. Never attempt to operate unit with manual valve partially closed.

2. Set thermostat to desired setting.

3. Rotate knob on blower control switch to either "High Heat" or "Low Heat" position.

4. If the thermostat circuit is closed at the setting chosen in Step 2, the ignition sequence begins. After approximately 40-45 seconds, the main burner flame should be established. NOTE: The air shutter on the burner was pre-set at the factory to give consistant ignition and a proper burner flame. However, due to elevation, voltage, gas variances, etc., it may be necessary to re-adjust the air shutter. For air shutter access and for proper flame characteristics, see Figure 14.

5. After ignition, the operation of the furnace will be controlled automatically by the thermostat.

To Shut Down for an Extended Period of Time

1. Rotate knob on blower control switch to "Stop".

2. Close manual shut-off valve.

Sequence of Normal Operation - Heat Cycle

1. When heat is required, the thermostat closes and energizes the transformer and the combustion air motor.

2. As the blower reaches approximately 90% of the normal RPM, the pressure created by the combustion air motor causes the diaphram in the pressure switch to move, closing the contacts. This completes the electrical circuit to the input of the module board and a 34 second warm-up period for the glo-bar is established.

3. At the end of the warm-up cycle, a 24 volt circuit is completed through the module board to the main gas valve. The valve opens allowing gas to flow to the burner.

4. The valve will remain open for 8 seconds and the glo-bar will remain under full power for half the valve cycle or 4 seconds after which it is de-energized.

5. If the main burner flame is sensed, the main burner will remain on until the thermostat is satisfied and opens. If flame is not sensed, the gas valve closes. The above sequence of ignition attempts will be repeated three times before lock-out occurs. If lock-out should occur, break the thermostat circuit, wait 30 seconds and re-set thermostat. The unit will again repeat the ignition as outlined above. NOTE: Should repeated lock-out occur, shut furnace down and contact your gas service agency.

6. Simultaneously with the closing of the contacts in the thermostat, a circuit is completed through the coil of the time delay relay. After approximately 15-30 seconds, the contacts close and the room air blower comes on.

7. The fan switch, when heated to its operating temperature, will close and complete a circuit parallel to the time delay relay.

8. When the thermostat is satisfied, the circuit is broken to the transformer and the combustion air motor. The motor goes off, the module board is de-energized and the valve closes. The room air (fan) motor will continue to operate until the time delay relay times out or the fan switch cools at which time the circuit is opened and the room air blower goes off.

B. COOLING MODE

Normal Operation

1. Rotate knob on blower control switch to either "High Cool" or "Low Cool" position.

2. Set thermostat dial to desired setting.

Whenever the outside temperature is below 65° and the humidity is high, frost could form on the evaporator coil during extended cooling operation. To eliminate frost formation, a de-ice switch in the compressor circuit will sense a frost condition and open the compressor circuit. Upon temperature rise, the switch will close and the compressor will again come on provided the thermostat is still calling for cooling.

CAUTION: If unit is manually shut off when compressor is operating, do not restart unit immediately. Wait at least five (5) minutes to permit refrigerant system pressure to equalize; otherwise, damage to the compressor can occur.

C. OPERATING TIPS - HEAT MODE OR COOLING MODE

1. At times it may be desirable to reduce the operating sound level. This is possible by selecting "Low Cool" position. At this setting, the cooling capacity is not reduced - only the blower speed and air movement is reduced.

2. Circulation of room air with no heat or cooling may be obtained if desired. To accomplish this, select the "Fan Only" position.

3. Rocker Switch - Function of this switch is to allow for continuous blower operation in conjunction with thermostat control of the heat or cooling cycle. If you desire this type operation, push switch on. The switch is located underneath unit in the lower right corner. (Item 38 on Parts List.)

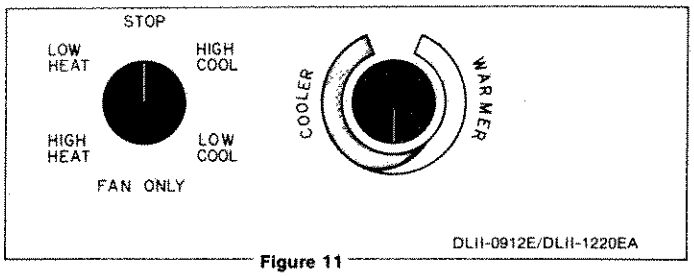


Figure 11

OPERATING INSTRUCTIONS
DLII-0912ET • DLII-1220ETA

A. HEAT MODE

Initial Lighting Instructions

NOTE: During initial firing of this furnace a burn-off of excess paint and oils remaining from the manufacturing process may cause "smoking" for 5-10 minutes.

1. Select Auto/Fan operation on thermostat.

2. Set wall thermostat to "Heat Mode".

3. Open the manual shut-off valve. The valve is fully open when the handle is level or parallel to the gas line. Never attempt to operate unit with manual valve partially closed.

4. Select blower speed (See Figure 12.)

5. Set wall thermostat at desired setting.

6. If the thermostat circuit is closed at the setting chosen in Step 2, the ignition sequence begins. After approximately 40-45 seconds, the main burner flame should be established. NOTE: The air shutter on the burner was pre-set at the factory to give consistant ignition and a proper burner flame. However, due to elevation, voltage, gas variances, etc., it may be necessary to re-adjust the air shutter. For air shutter access and for proper flame characteristics, see Figure 6.

7. After ignition, the operation of the furnace will be controlled automatically by the thermostat.

To Shut Down for an Extended Period of Time

1. Move selector on thermostat to "Stop" or "Off" position.

2. Close manual shut-off valve.

Sequence of Normal Operation - Heat Cycle

1. When the thermostat calls for heat, the 230/24 volt transformer is energized completing a 24 volt circuit through the coil of the combustion air motor relay. The contacts in the relay close and the combustion air motor comes on.

2. As the blower reaches approximately 90% of the normal RPM, the pressure created by the combustion air motor causes the diaphram in the pressure switch to move closing the contacts. This completes the electrical circuit to the input of the module board and a 34 second warm-up period for the glo-bar is established.

3. At the end of the warm-up cycle, a 24-volt circuit is completed through the module board to the main gas valve. The valve opens allowing gas to flow to the burner.

4. The valve will remain open for 8 seconds and the glo-bar will remain under full power for half the valve cycle or 4 seconds after which it is de-energized.

5. If main burner flame is sensed, the main will remain on until the thermostat is satisfied and opens. If flame is not sensed, the gas valve closes. The above sequence of ignition attempts will be repeated three times before lock-out occurs. If lock-out should occur, break the thermostat circuit, wait 30 seconds and re-set thermostat. The unit will again repeat the ignition as outlined aboved. NOTE: Should repeated lock-out occur, shut furnace down and contact your gas service agency.

6. Simultaneously with the closing of the contacts in the pressure switch, a circuit is completed through the coil of the time delay relay. After approximately 15-30 seconds, the contacts close and the room air blower comes on.

7. The fan switch, when heated to its operating temperature, will close and complete a circuit parallel to the time delay relay.

8. When the thermostat is satisfied, the circuit is broken to the transformer and the combustion air motor. The motor goes off, the module board is de-energized and the valve closes. The room air (fan) motor will continue to operate until the time delay relay times out or the fan switch cools at which time the circuit is opened and the room air blower goes off.

B. COOLING MODE

Normal Operation

1. Select Auto/Fan operation on the thermostat.

2. Set wall thermostat to "Cool Mode".

3. Select blower speed (See Figure 12).

4. Set thermostat at desired setting.

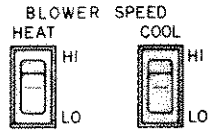
Whenever the outside temperature is below 65° and the humidity is high, frost could form on the evaporator coil during extended cooling operation. To eliminate frost formation a de-ice switch in the compressor circuit will sense a frost condition and open the compressor circuit. Upon temperature rise, the switch will close and the compressor will again come on provided the thermostat is still calling for cooling.

CAUTION: If unit is manually shut off when compressor is operating, do not restart unit immediately. Wait at least five (5) minutes to permit refrigerant pressure to equalize; otherwise, damage to the compressor can occur.

C. OPERATING TIPS - HEAT MODE OR COOLING MODE

1. At times it may be desirable to reduce the operating sound level. This is possible by setting the High-Low switches located under the control box cover to the low setting. (See Figure 12.) NOTE: Heating or cooling capacity is not reduced - only the blower speed and air movement are reduced.

2. Circulation of room air with no heat or cooling may be obtained if desirable. To accomplish this, set wall thermostat to "Fan Only".



DL II-0912ET/DL II-1220ETA

Figure 12

UNIT CONTROLS AND THEIR FUNCTION

Fan Switch/Time Delay Relay - The purpose of these controls is to control the operation of the room air (fan) blower. Current is supplied to the room air (fan) motor through the contacts of the relay and the fan switch. When the thermostat is satisfied, the room air (fan) motor will continue operating because of the direct power source through these components. Blower override will continue until the time delay relay times out and the fan switch cools.

Limit Switch - The purpose of the limit control is to turn off the gas to the main burner if, for any reason, the heating section of the unit becomes hotter than that which is safe. Cycling on limit does not always indicate a defective limit switch. If the circulating air is blocked or only partially so, the limit control will function and cause the main burner to go off. Cycling on limit is not always undesirable - if it happens only occasionally. This is a good indication of safe operation and will most likely happen on a warm day. If cycling happens too often or for an extended period, the circulating air system should be thoroughly cleaned. (See "Maintenance and Cleaning.")

If for any reason, the limit switch is found to be defective, it must be replaced. There is no recommended method of repairing it. Because of the importance of the limit switch, for safety reasons, never shunt the limit switch - even for only temporary operation.

Pressure Switch - The purpose of the pressure switch is to sense the air pressure generated by the combustion air blower. When the pressure is adequate to support combustion, the contacts in the switch close. This completes the circuit to the input of the module board and the ignition sequence begins. If for some reason the pressure is not sufficient to support combustion, the switch will not operate. Reasons for insufficient pressure: 1) slow combustion air motor 2) restriction in intake and 3) loose hose or blockage in connecting hose.

Fresh Air Vent - The purpose of the fresh air vent is to provide a means of introducing outside air into the living area during unit operation. The control lever is located behind the air filter. NOTE: Operating unit with the vent open will reduce efficiency of the unit in both the heat and cooling modes.

Overload Protection - These units are equipped with an electrical safety overload which stops the compressor in the event of electrical overload. If repeated overload cycling occurs, call your dealer or a local repair agency equipped to service air conditioning equipment.

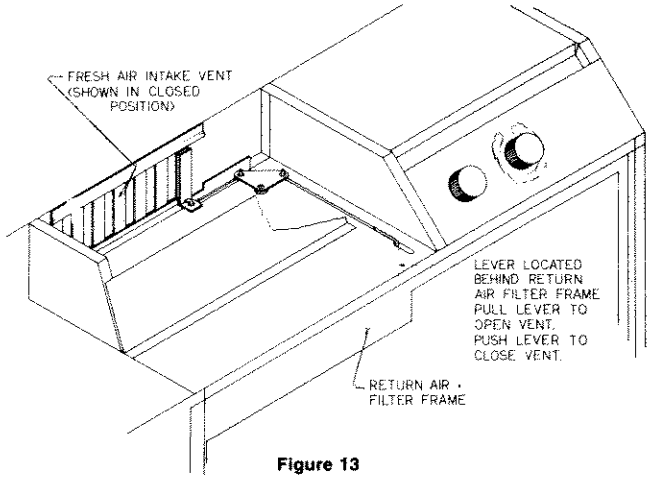


Figure 13

REMOVING UNIT FOR SERVICE

1. Shut off gas supply to unit.

2. Break electrical circuit to unit at fuse box if wired permanently. Disconnect wiring in junction box on unit. If service cord is used, unplug from wall receptacle.

3. Disconnect inlet gas line to unit.

4. Disconnect thermostat wiring at terminal block on unit.

5. Pull unit from wall case.

6. To reinstall, reverse above procedure.

7. Check gas connections for leaks using a soap and water solution. Do not use an open flame to check for leaks. Correct **any** gas leaks immediately.

PREVENTIVE MAINTENANCE

WARNING! Always disconnect electrical supply before cleaning unit or performing any maintenance.

The unit should be inspected by a qualified service person yearly before turning the unit on heat for the winter. Particular attention should be given to the following:

1. Inspect all gaskets. If any gaskets show signs of leakage or deterioration, they must be replaced. Safe operation of the unit depends on all gaskets being tight.

2. Inspect combustion chamber and venting to assure that these components are physically sound without holes or excessive corrosion. Replace if found to be defective.

3. Inspect exhaust and intake for restrictions and for adequate sealing of any mating parts. (See "Minimum Outside Clearances".)

WARNING! It is imperative that the products of combustion be properly vented to the outside atmosphere and that all combustion air supplied to the burner be drawn from the outside atmosphere.

4. Check outside grille to be sure it is clean and free of any obstructions.

5. Check the control compartment, burner and circulating air passageways of the unit. These areas must be kept clean. NOTE: More frequent cleaning may be required due to excessive lint from carpeting, bedding material, etc.

6. Check burner for proper operation. Flame should be characterized by a hard blue flame with well defined burner ports. (See Figure 14.) If flame cannot be adjusted to achieve desired burner flame, the surface of the burner and each burner port should be cleaned using a steel wire brush and the burner blown clean using compressed air.

7. Check all gas connections and gas controls (electrical valves, manual shut-off valves, regulators, etc.) for leaks.

8. This inspection should include a complete operational check of the unit including all electrical and mechanical components. Note: If cabinet front was removed in order to inspect the unit and controls, it must be reinstalled prior to operating the unit.

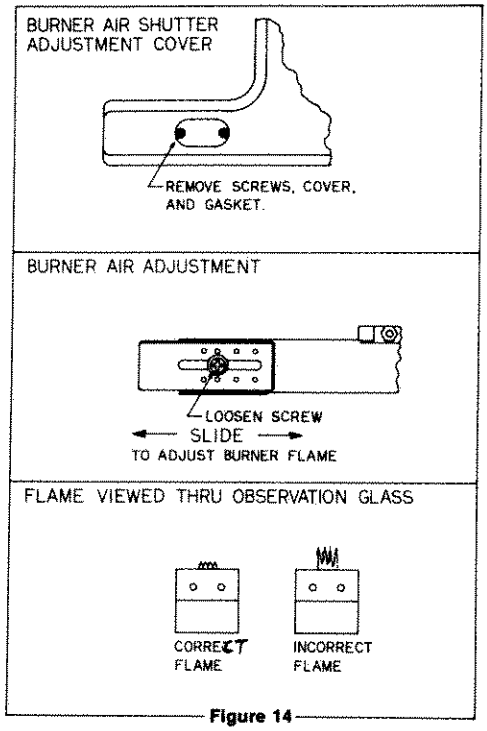


Figure 14

You as the owner/user should inspect the unit periodically during the heating season. Particular attention should be given to the following:

A. Periodically observe the main burner flame to assure it is burning with a hard blue flame with well-defined burner ports. (See Figure 14.) Adjust air shutter to achieve desired burner flame. If flame appears yellow or burner has a lazy flame and adjusting air shutter will not correct, shut furnace down and contact a qualified service person.

B. Periodically inspect the vent for obstructions or presence of soot. Soot is formed whenever combustion is incomplete. This is your visual warning that the furnace is operating in an unsafe manner. If soot is present, immediately shut furnace down and contact your dealer or a qualified service person.

C. Circulating air through the front grille must not be blocked. Keep filter clean to assure adequate air flow.

The removable, washable type filter should be cleaned or replaced several times during the year. This will depend upon the usage and location of the unit. A dirty filter will reduce the air flow and the efficiency of the unit. Filter may be washed in a soapy solution and rinsed in clean water. Let the filter dry before reinstalling it on the unit.

The filter is located behind the cabinet front. The cabinet front pivots forward for easy access to the filter. To remove the filter, pull straight up and slide it out of the filter retainer frame.

Listed below are several safety related items that you should follow during the heating season to assure continued safe operation of the furnace.

1. Never operate the unit if you smell gas. Do not assume that the smell of gas is normal. Any time you detect the odor of gas, it is to be considered life threatening and corrected immediately. (See safety notice on front cover of this manual.)

2. Immediately shut unit down and call a service agency if unit cycles erratically or delays on ignition.

WARNING! Should overheating occur, or the gas supply fail to shut off, shut off the manual gas valve to the appliance before shutting off the electrical supply.

3. Do not restrict the flow of combustion air or the warm air circulation to the unit. To do so could cause personal injury and or death.

WARNING! Do not install screens over the vent for any reason. Screens will become restricted and cause unsafe furnace operation.

4. Keep unit clean. More frequent cleaning may be required due to excessive lint from carpeting, bedding material, etc. It is imperative that control compartments, burners and circulating air passageways of the appliance be kept clean.

5. Keep the furnace area clear of any combustible materials, gasoline or other flammable vapor and liquids.

6. Do not use this appliance if any part has been submerged under water. Immediately call a qualified service techician to inspect the appliance and to replace any part of the control system and any gas control that has been submerged under water.

7. Always follow the operating instructions. Do not deviate from the step-by-step procedures.

8. Never attempt to repair damaged parts. Always have them replaced by a qualified service agency.

9. Never attempt to repair the furnace yourself. Seek the help of a qualified service person.

10. The room/condensor air motor and the combustion air motor are maintenance free motors and require no oiling.

GENERAL NOTES

The efficiency rating of this unit is a product thermal efficiency rating determined under continuous operating conditions and was determined independent of any installed system.

Children and adults should be alerted to the hazards of high surface temperatures and should stay away to avoid burns or clothing ignition.

Young children should be carefully supervised when they are in the same room as the unit.

Clothing or other flammable material should not be placed on or near the unit.

Any safety screen or guard removed for servicing the unit must be replaced prior to operating the unit.

Installation and repairs should be done by a qualified service person. The appliance should be inspected before use and at least annually by a qualified service person. More frequent cleaning may be required due to excessive lint from carpeting, bedding material, etc. It is imperative that control compartments, burners and circulating air passageways of the appliance be kept clean.

Never operate unit with filter removed. Evaporator coil and/or drain pan may become restricted.

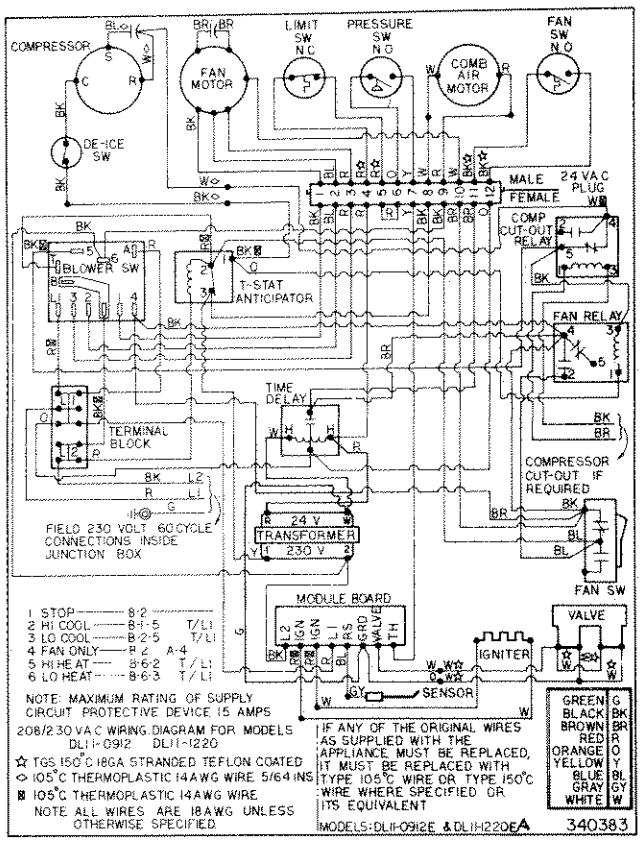


Figure 15

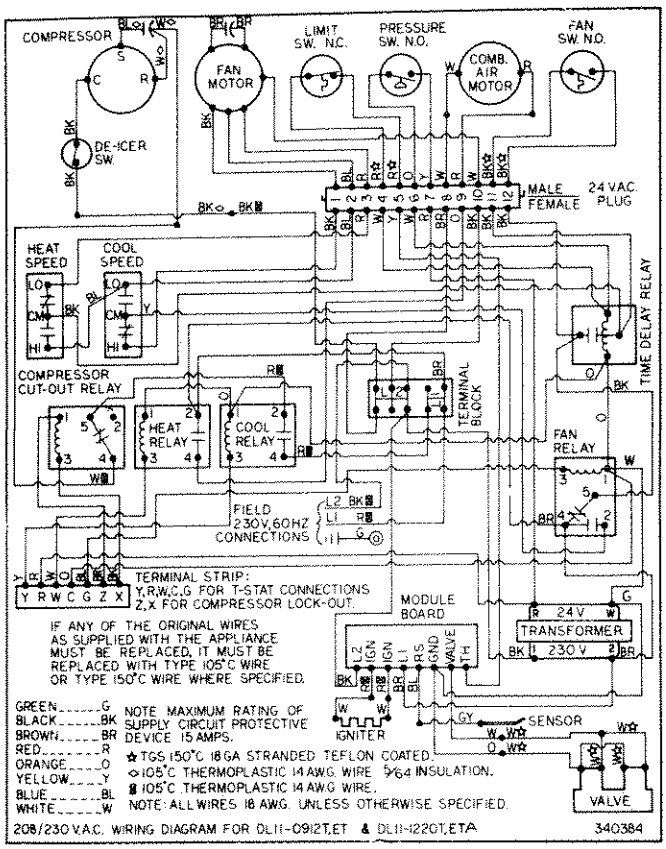


Figure 16

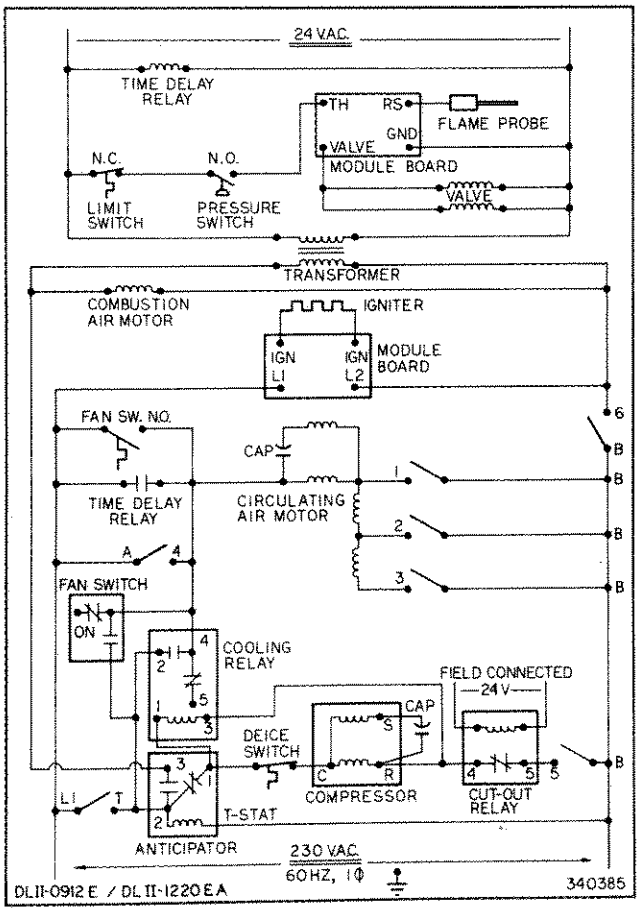


Figure 17

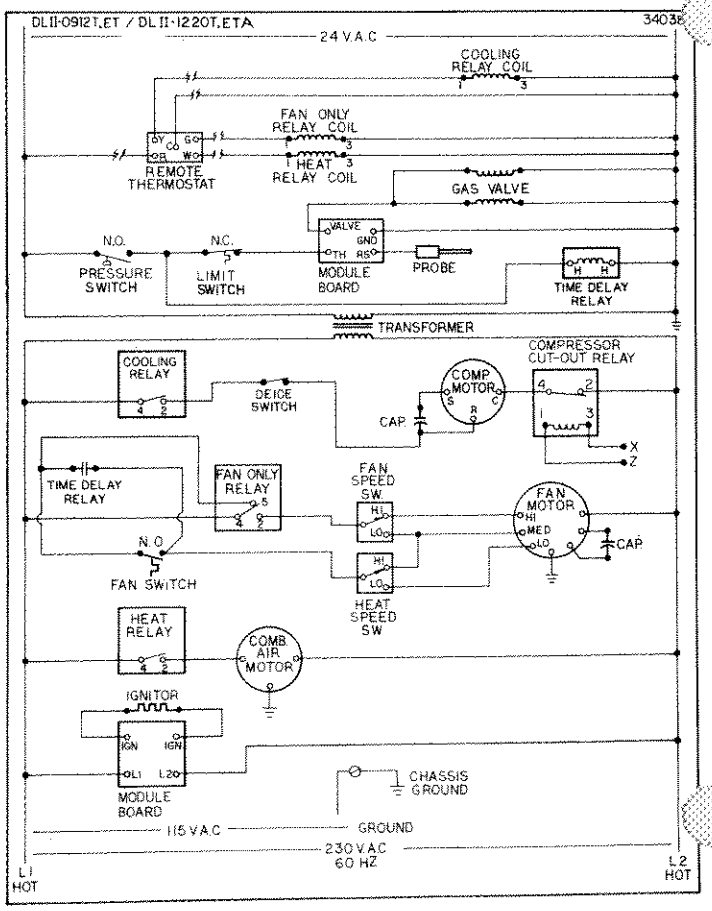


Figure 18

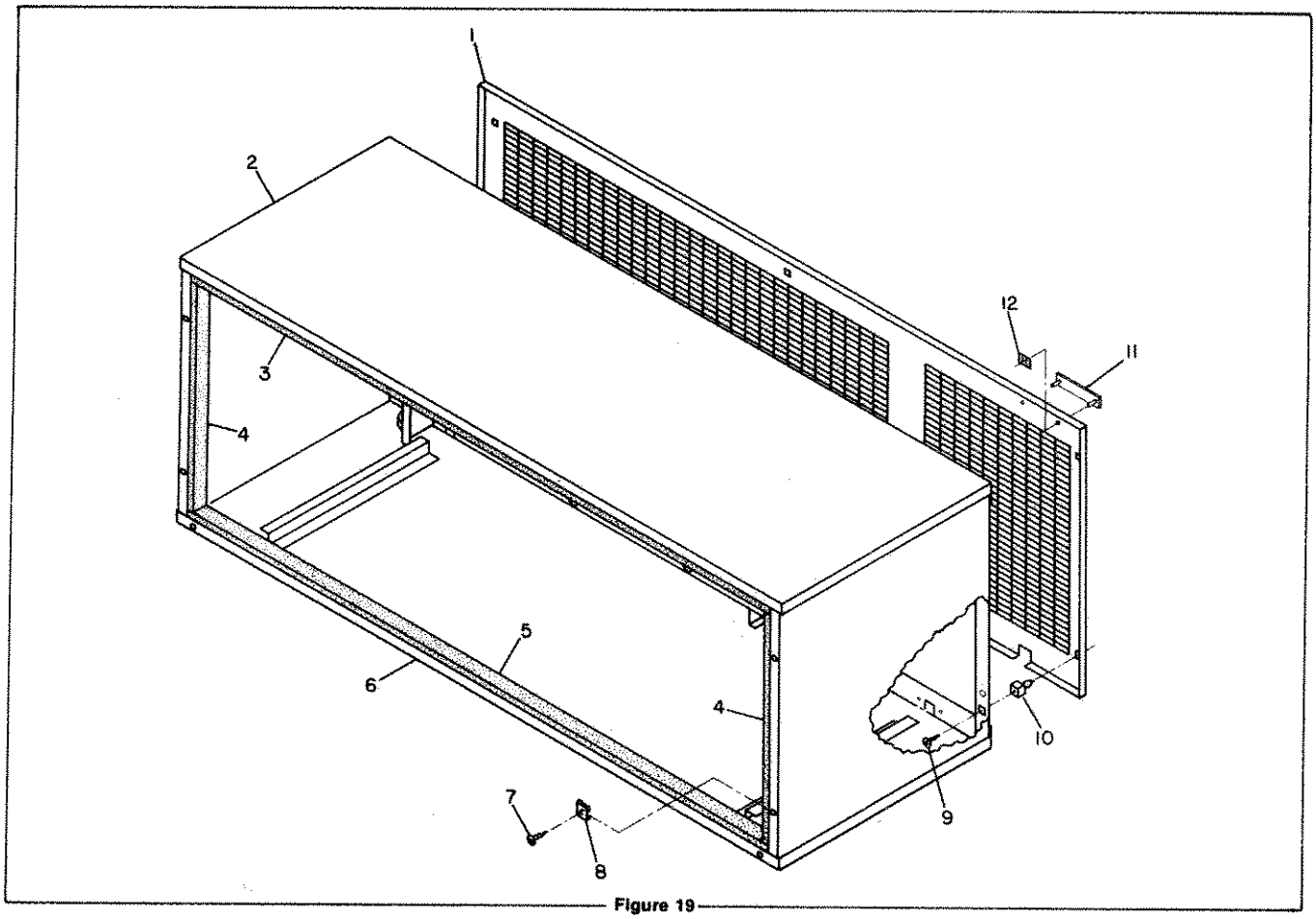


Figure 19

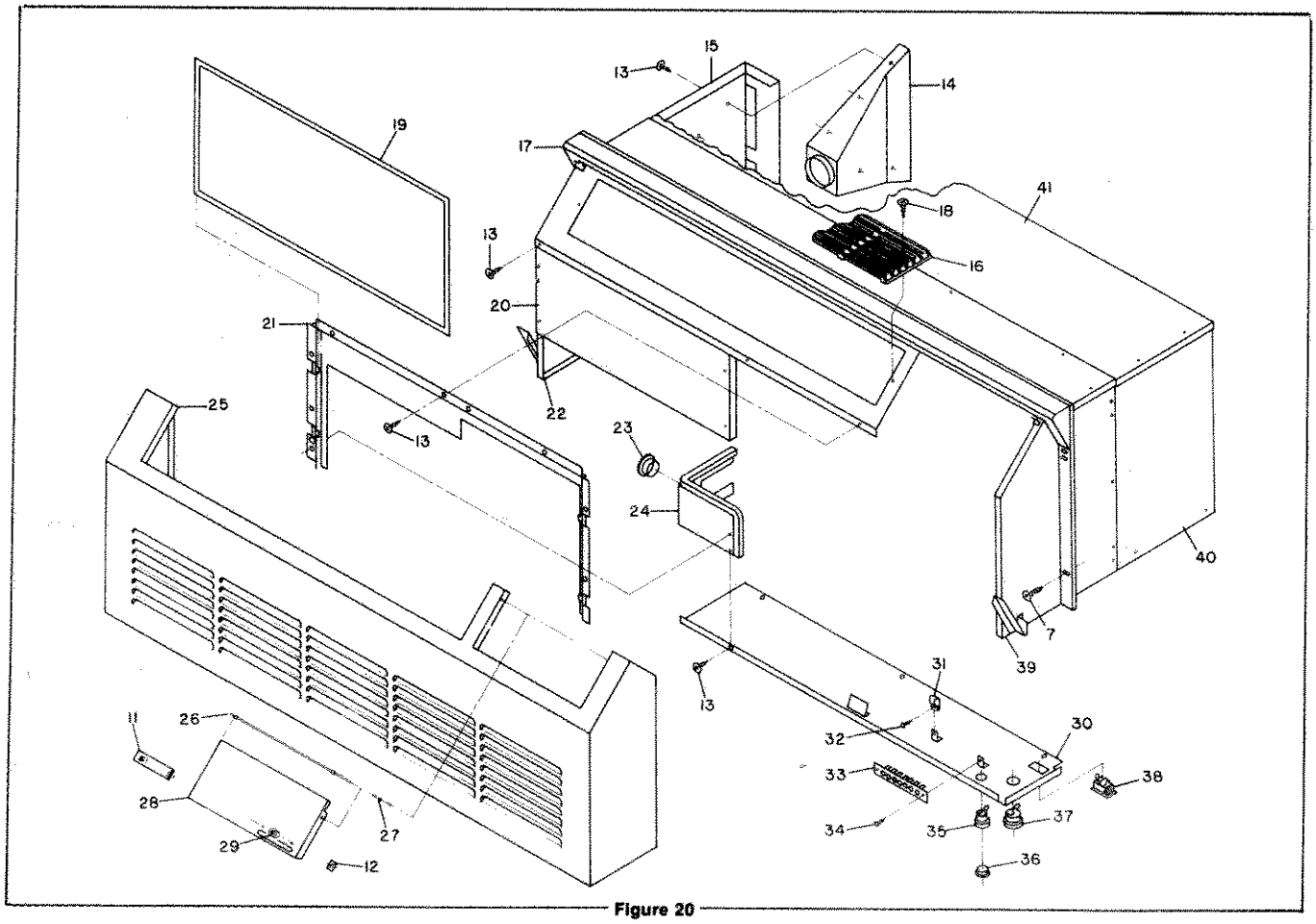


Figure 20

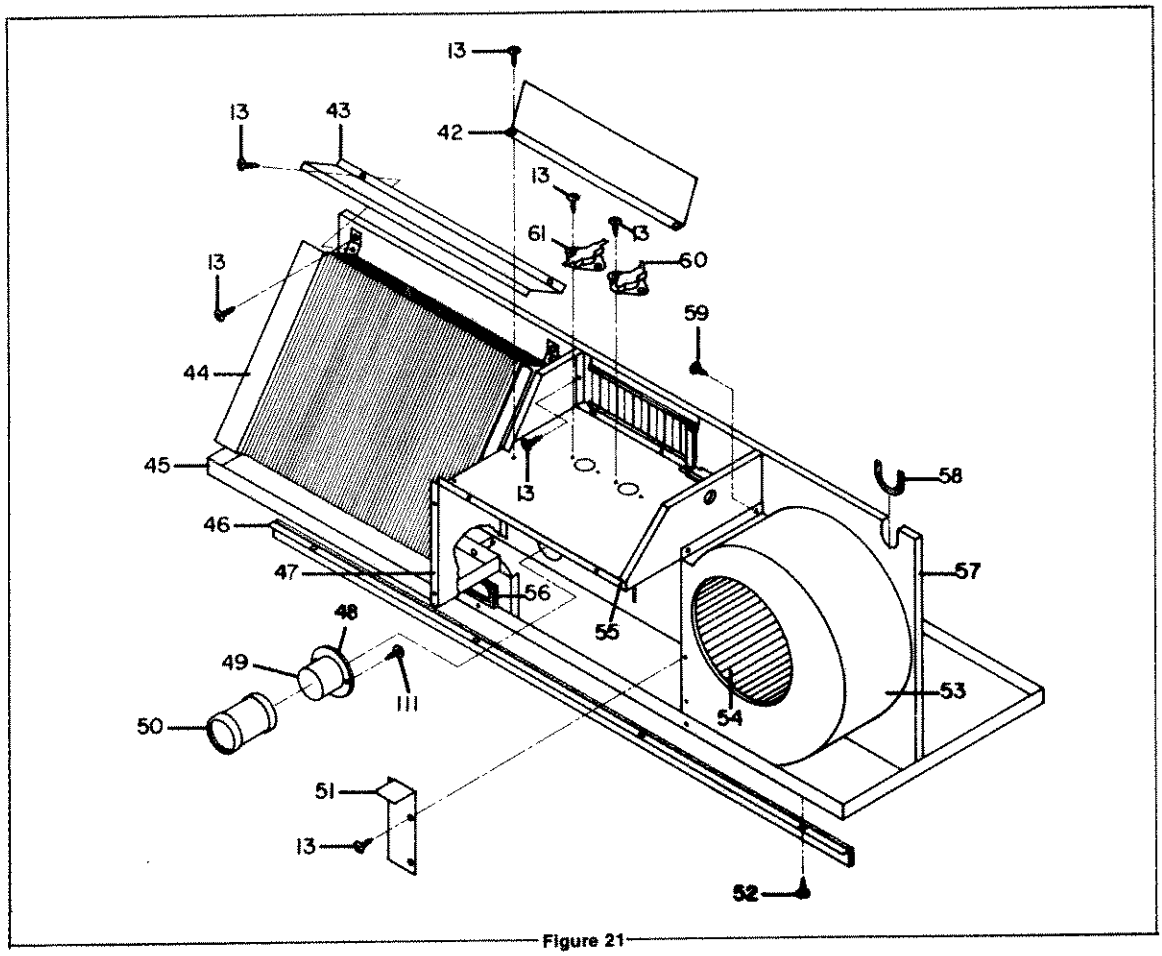


Figure 21

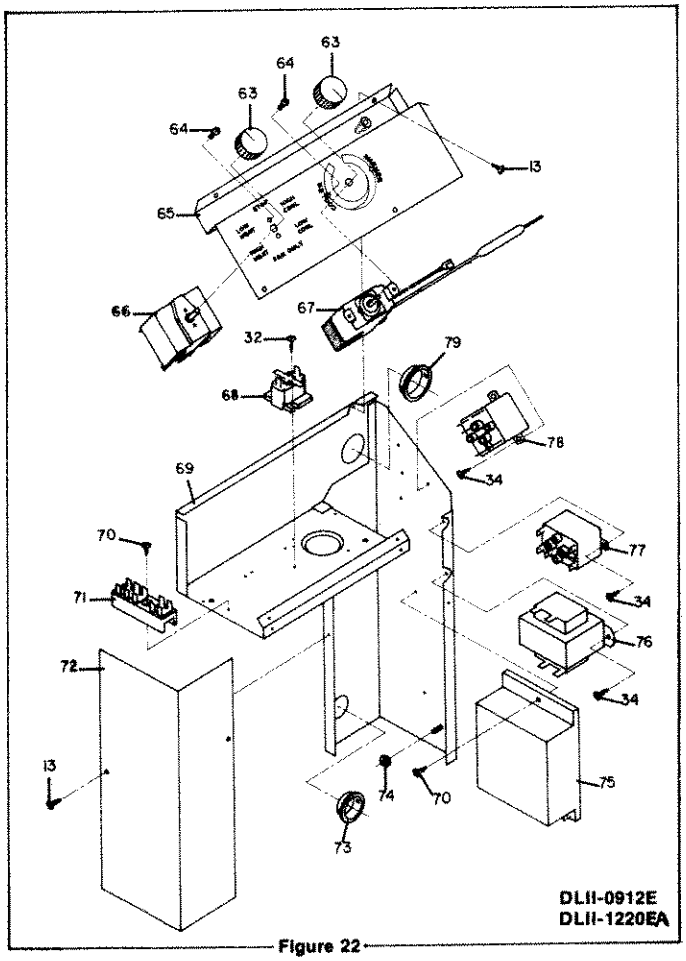


Figure 22

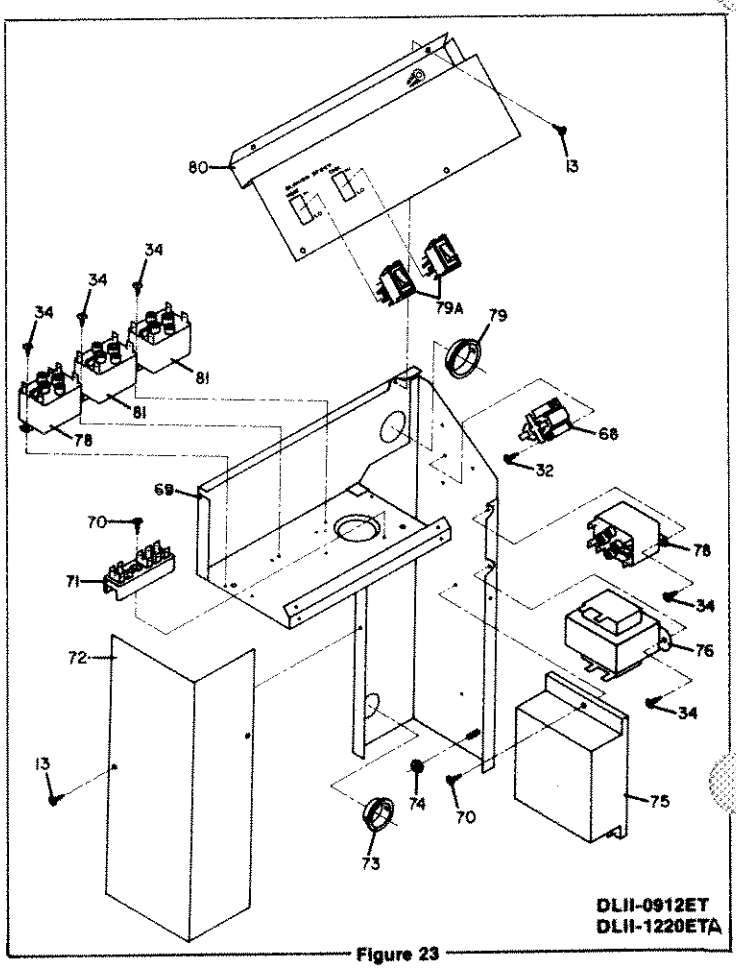


Figure 23

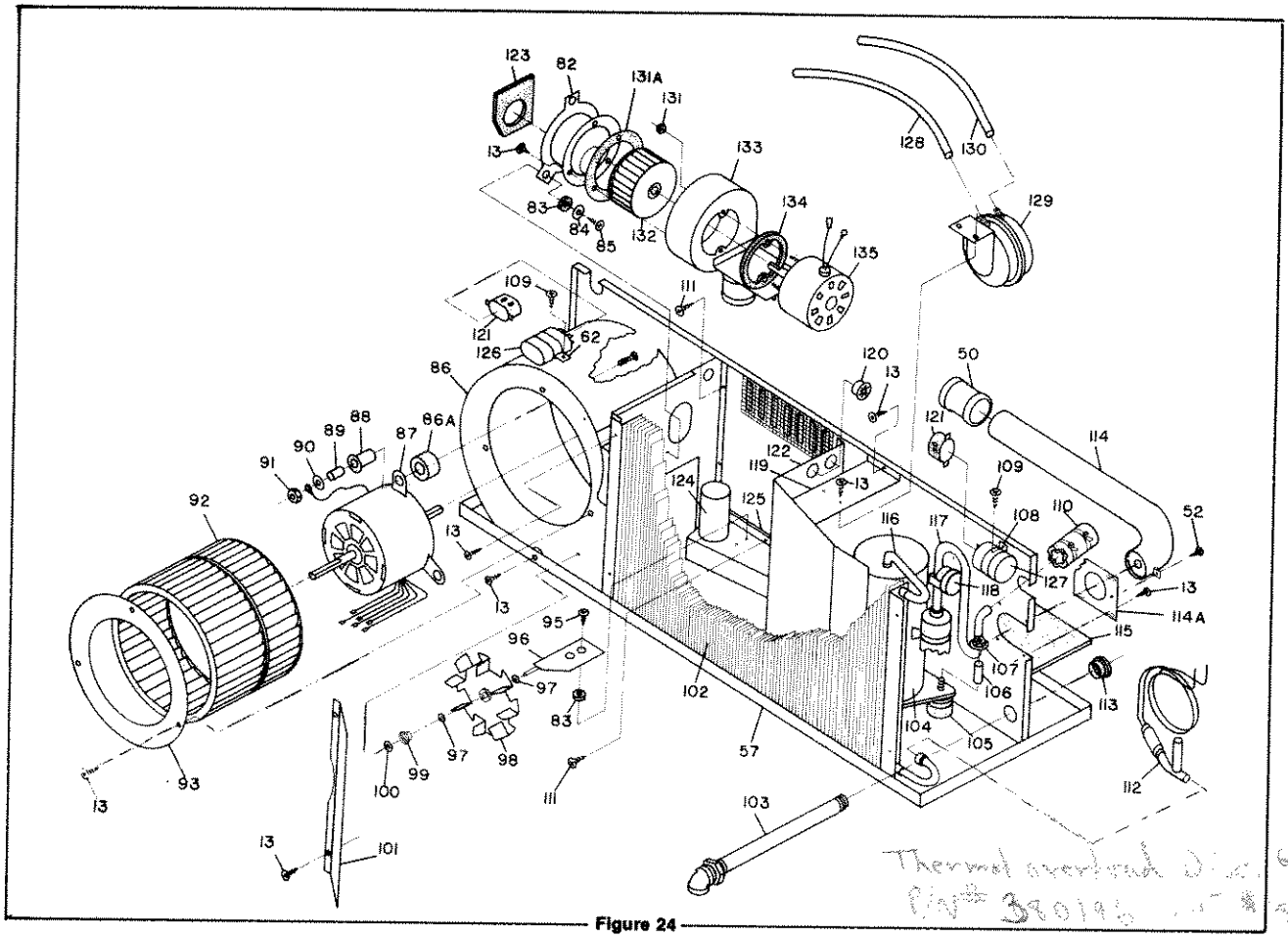


Figure 24

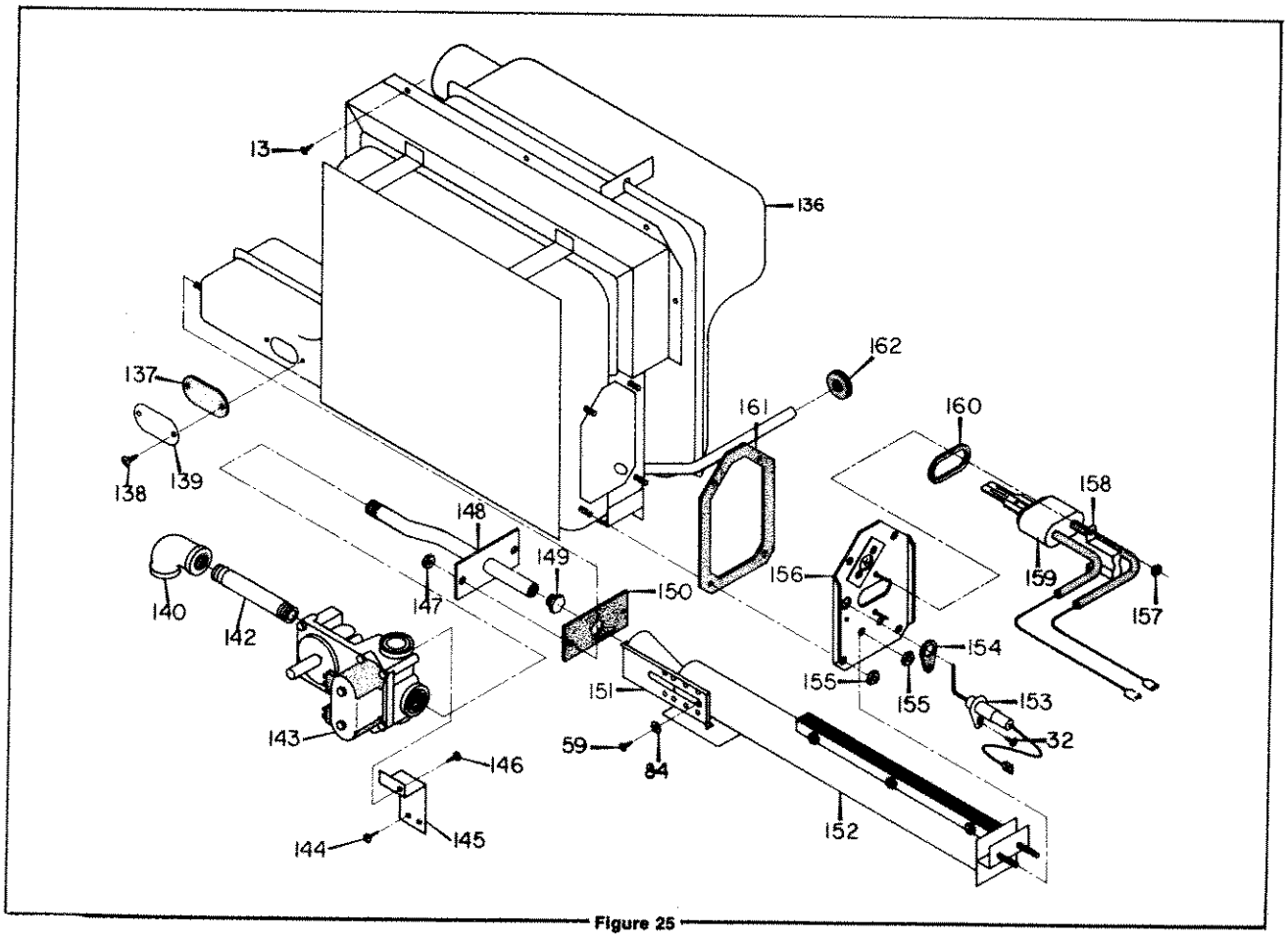


Figure 25

ORDERING REPAIR PARTS

Do not attempt to repair damaged parts. Only factory authorized parts are to be used.

This manual should be used when ordering repair parts. Keep it is a safe place for future reference.

When ordering parts from your dealer or distributor, always give the following information:

1. Part Number (Not item Number)
2. Part Description
3. Model No., Serial No. and Stock No. of unit
4. Quantity

Item No.	Description	Part Number DLII-0912E	DLII-0912ET	DLII-1220EA	DLII-1220ETA
1	Grille	030945	030945	030945	030945
2	Top, Wall Case with Gasket	101621CB	101621CB	101621CB	101621CB
3	Gasket, Wall Case Top	070887	070887	070887	070887
4	Gasket, Wall Case End	070885	070885	070885	070885
5	Gasket, Wall Case Bottom	070883	070883	070883	070883
6	Wall Case Bottom and Sides with Gaskets	101549CB	101549CB	101549CB	101549CB
7	Screw #10 x 1"	121591	121591	121591	121591
8	Tinnerman	121378	121378	121378	121378
9	#8 Shoulder Screw	121869	121869	121869	121869
10	Fastener Panel	121727	121727	121727	121727
11	Name Plate	530026	530026	530026	530026
12	Tinnerman	121442	121442	121442	121442
13	Screw #8 x 3/8	120158	120158	120158	120158
14	Exhaust Pan Assembly	051232	051232	051232	051232
15	Cabinet Left Side (Rear Half)	101527CB	101527CB	101527CB	101527CB
16	Grille, Room Air Discharge	030656	030656	030656	030656
17	Cabinet Top Assembly Final (Front Half)	101403CB	101403CB	101403CB	101403CB
18	Screw #8 x 3/8 - 410 Stainless	121649	121649	121649	121649
19	Filter	030534	030534	030534	030534
20	Panel, Evaporator Front Assembly	101404	101404	101404	101404
21	Filter Retainer Assembly	030666	030666	030666	030666
22	Cabinet Left Side Assembly Complete (Front Half)	101399CB	101399CB	101399CB	101399CB
23	Bushing, Universal	070486	070486	070486	070486
24	End Assembly Return Air Enclosure	101148	101148	101148	101148
25	Cabinet Front Assembly	101381CB	101381CB	101381CB	101381CB
26	Rod, Control Door Hinge	150089	150089	150089	150089
27	Spring	150090	150090	150090	150090
28	Door, Controls Access	030973	030968	030973	030968
29	Washer, Nylon	121726	121726	121726	121726
30	Base, Return Air Enclosure Assembly	101380	101380	101380	101380
31	Clamp, Wire	061663	-----	061663	-----
32	Screw #6 x 3/8	121502	121502	121502	121502
33	Terminal Board	-----	231824	-----	231824
34	Screw #6 x 1/4	121244	121244	121244	121244
35	Bushing, Strain Relief	-----	230216	-----	230216
36	Bushing, Universal	070362	-----	070362	-----
37	Bushing, Strain Relief	510405	510405	510405	510405
38	Switch, Rocker	231823	-----	231823	-----
39	Cabinet Right Side Assembly Complete (Front Half)	101401CB	101401CB	101401CB	101401CB
40	Cabinet Right Side (Rear Half)	101370CB	101370CB	101370CB	101370CB
41	Cabinet Top (Back Half) Assembly Complete	101536CB	101536CB	101536CB	101536CB
42	Shield, Grille	110559	110559	110559	110559
43	Cap Evaporator Coil (Cover)	380100	380100	380100	380100
44	Coil Evaporator	380204	380204	380204	380204
45	Evaporator Pan Assembly Complete	380206	380206	380206	380206
46	Bottom Angle Seal Assembly	062991CB	062991CB	062991CB	062991CB
47	Shield, Side Radiation Assembly	110513	110513	110513	110513
48	Gasket, Crossover Tube	070662	070662	070662	070662
49	Crossover Tube Assembly	050850	050850	050850	050850
50	Coupling Assembly Crossover Tube	050851	050851	050851	050851
51	Plate, Room Air Housing Extension	062608	062608	062608	062608
52	Screw 8-18 x 1/2	121701	121701	121701	121701
53	Blower Assembly Final (Room Air)	390571CB	390571CB	390571CB	390571CB
54	Wheel Room Air	350096	350096	350096	350096
55	Top Radiation Shield Assembly Final	110692	110692	110692	110692
56	Gasket Burner Tunnel	070660	070660	070660	070660
57	Cabinet Base Assembly Complete	101532CB	101532CB	101532CB	101532CB
58	Channel, Rubber	070890	070890	070890	070890
59	Screw #10 x 1/4 (No Substitute)	121577	121577	121577	121577
60	Switch, Fan	231084	231084	231084	231084
61	Switch, Limit	231415	231415	231415	231415
62	Clamp, Capacitor	062925	062925	062925	062925
63	Knob	140187	-----	140187	-----
64	Screw #6-32 x 1/4	121725	---	121725	-----
65	Controls Panel Assembly	063174CB	-----	063174CB	-----
66	Switch, Blower Speed	231829	-----	231829	-----
67	Thermostat	161102	Buy Local	161102	Buy Local
68	Relay Time Delay	230625	230625	230625	230625
69	Controls Box Assembly	090456	090456	090456	090456
70	Screw #8 x 1/2	120615	120615	120615	120615
71	Terminal Block	230944	230944	230944	230944
72	Cover, Module Board	090359	090359	090359	090359
73	Bushing Snap	231827	231827	231827	231827
74	Nut, 10-24 Keps (Green)	121576	121576	121576	121576
75	Board, Module	231645	231645	231645	231645
76	Transformer	231899	231899	231899	231899
77	Relay	231019	-----	231019	-----
78	Relay, Fan	231032	231032	231032	231032
79	Bushing Snap	070569	070569	070569	070569
79A	Switch, Rocker (2 Required)	-----	231823	-----	231823

Item No.	Description	Part Number DLII-0912E	DLII-0912ET	DLII-1220EA	DLII-1220ETA
80	Controls Panel Assembly	-----	063175CB	-----	063175CB
81	Relay	-----	231826	-----	231826
82	Cover Assembly, Combustion Air Housing	051284	051284	051221	051221
83	Grommet	070241	070241	070241	070241
84	Washer #10 Flat	120759	120759	120759	120759
85	Screw #10 x 3/4	121224	121224	121224	121224
86	Condensor Air Blower Assembly	390742CB	390742CB	390742CB	390742CB
86A	Grommet, Washer (3 Required)	070961	070961	070961	070961
87	Motor (Room and Condensor Air)	232198	232198	232199	232199
88	Grommet, Tube (3 Required)	070960	070960	070960	070960
89	Spacer, TR Ferrule (3 Required)	121849	121849	121849	121849
90	Washer, Flat	120479	120479	120479	120479
91	Nut, 1/4-20 Hex Lock	121531	121531	121531	121531
92	Wheel, Condenser Air	350102	350102	350102	350102
93	Ring, Orifice	390562	390562	390562	390562
95	Screw #8 x 3/4 - 410 Stainless	121648	121648	121648	121648
96	Bracket Assembly, Water Slinger Wheel	062682	062682	062682	062682
97	Washer, Flat (Nylon)	121565	121565	121565	121565
98	Wheel Assembly, Water Slinger	350108	350108	350108	350108
99	Spring, Compression	150063	150063	150063	150063
100	Tinnerman	121642	121642	121642	121642
101	Partition Wall Case	063195	063195	063195	063195
102	Coil, Condensor	380203	380203	380203	380203
103	Pipe, Gas Inlet (Units with Rear Hook-Up)	171334	171334	171334	171334
104	Compressor	380185	380185	380194	380194
105	Isolator, Compressor Mounting	380191	380191	380191	380191
106	Sleeve, Compressor Mounting	380192	380192	380192	380192
107	Nut, 5/16-18 Hex Whiz Lock	121495	121495	121495	121495
108	Clamp, Capacitor	062925	062925	062925	062925
109	Screw 8-18 x 1/2	121857	121857	121857	121857
110	Insulation, Suction Line	071029	071029	071029	071029
111	Screw 8 x 3/8 Stainless (No Substitute)	121649	121649	121649	121649
112	Capillary Tube Assembly Final	171344	171344	171343	171343
113	Bushing, Universal	070486	070486	070486	070486
114	Exhaust Tube Assembly	051233	051233	051281	051281
114A	Bracket Exhaust Tube	063227	063227	063227	063227
115	Insulation Cabinet Base	070700	070700	070700	070700
116	Tube Discharge	171337	171337	171337	171337
117	Tube Suction	171418	171418	171418	171418
118	Switch Assembly, De-Icer	231666	231666	231666	231666
119	Bracket Spacer	063193	063193	063193	063193
120	Bushing, Universal	070486	070486	070486	070486
121	Boot Capacitor	231231	231231	231231	231231
122	Condensor Air Deflector	040424	040424	040424	040424
123	Gasket, Cover (Combustion Air Housing)	070908	070908	070908	070908
124	Combustion Air Tunnel Assembly Final	051141CB	051141CB	051141CB	051141CB
125	Gasket, Combustion Air Tunnel	070770	070770	070770	070770
126	Capacitor 7.5 UF	230738	230738	230738	230738
127	Capacitor 25 UF	230830	230830	230830	230830
128	Tube Pressure Switch (Hi-Side)	050929	050929	050929	050929
129	Switch, Pressure	232284	232284	232284	232284
130	Tube, Pressure Switch (Lo-Side)	051252	051252	051252	051252
131	Nut, 8-32 Hex Lock	121402	121402	121402	121402
131A	Gasket, Air Intake Cup	070967	070967	070967	070967
132	Wheel, Combustion Air	350130	350130	350130	350130
133	Blower Housing Assembly (Combustion Air)	390359CB	390359CB	390359CB	390359CB
134	Gasket, Motor	070490	070490	070490	070490
135	Motor Assembly Combustion Air	231854	231854	231854	231854
136	Combustion Chamber Assembly	021055	021055	021055	021055
137	Gasket, Air Adjustment Cover	070999	070999	070999	070999
138	Screw 8 x 3/8 Stainless (No Substitute)	121649	121649	121649	121649
139	Cover Air Adjustment	290122	290122	290122	290122
140	Elbow 90°	170082	170082	170082	170082
142	Nipple	171390	171390	171390	171390
143	Valve LP	161108	161108	161108	161108
	Valve, Natural	161107	161107	161107	161107
144	Screw 8 x 3/8	120158	120158	120158	120158
145	Bracket Valve Mounting	063124	063124	063124	063124
146	Screw 8 - 32 x 3/8	121855	121855	121855	121855
147	Nut 10-24 Keps	120717	120717	120717	120717
148	Manifold Assembly	171276	171276	171276	171276
149	Orifice, LP	180225	180225	180296	180296
	Orifice, Natural	180222	180222	180295	180295
150	Gasket, Manifold	070771	070771	070771	070771
151	Air Shutter Assembly	010713	010713	010713	010713
152	Burner Assembly LP (Includes 59,84,151)	010741	010741	010813	010813
	Burner Assembly Nat. (Includes 59,84,151)	010717	010717	010814	010814
153	Flame Probe	231449	231449	231449	231449
154	Gasket, Flame Probe	070893	070893	070893	070893
155	Nut, 10-24 Keps	120717	120717	120717	120717
156	Door Assembly with MICA	030996	030996	030996	030996
157	Nut 6-32 Hex	120744	120744	120744	120744
158	Retainer, Ignitor	062986	062986	062986	062986
159	Ignitor	231844	231844	231844	231844
160	Gasket, Ignitor	071000	071000	071000	071000
161	Gasket, Burner Access Door	071001	071001	071001	071001
162	Grommet	070243	070243	070243	070243

OPTIONAL ACCESSORIES

ALUMINUM GRILLE
STOCK NO. 1423

INTRODUCTION

This grille was specially designed for the "E" Series Dynaline Models. Do not attempt to bend or alter the design of the grille or the venting system of the Dynaline unit.

The grille will also work, as designed, for those models with rear gas hook-up. **IMPORTANT: Installation of the rear grille must be made prior to installing the chassis as it secures from inside the wall sleeve.**

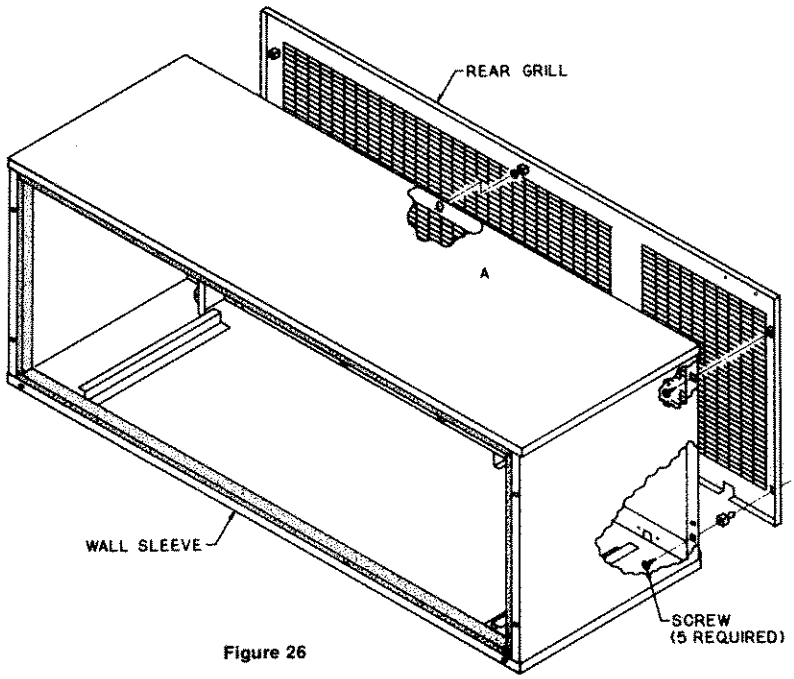


Figure 26

GRILLE, DARK BRONZE ARCHITECTURAL STYLE - STOCK NO. 1418
GRILLE, ALUMINUM ARCHITECTURAL STYLE - STOCK NO. 1420

INTRODUCTION

These architectural grilles are designed to be used as an optional/alternate for the standard aluminum grille #1423. They are to be installed so that the angle of the grille is in the downward position. Remember, these are special grilles designed for the "E" Series Dynaline. Do not attempt to bend or alter the design of the grille or the venting system or the Dynaline unit.

These grilles will also work, as designed, for those models with rear gas hook-up. **IMPORTANT: Installation of the rear grille must be made prior to installing the chassis as it secures from inside the wall sleeve.**

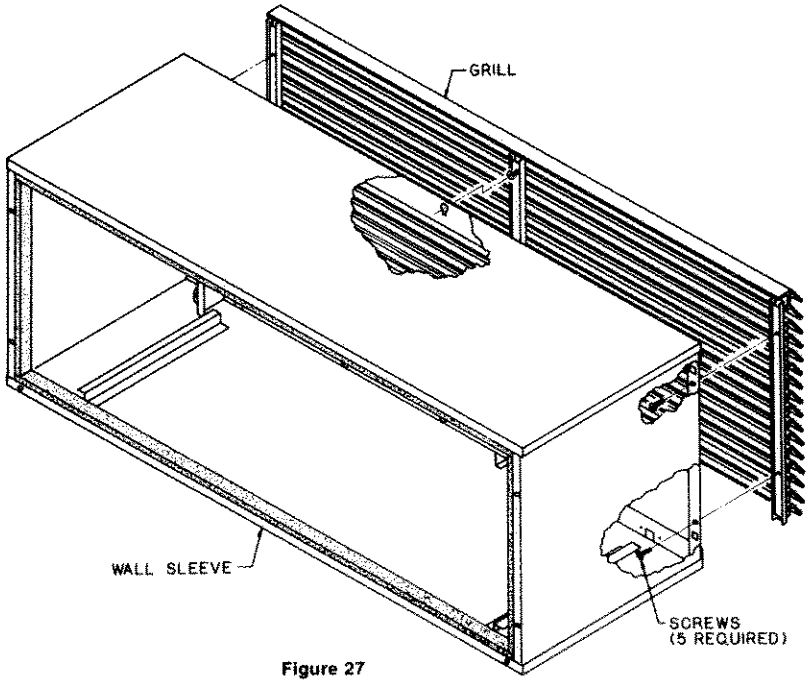


Figure 27

DL II AIR DISCHARGE PACKAGE

Stock No. 1421 - Adaptor
Stock No. 1422 - Extension
Stock No. 1382 - Connector

INTRODUCTION

This optional package allows for distribution of air into an adjacent zone requiring a controlled temperature. This assembly will discharge the conditioned air to either the right or left depending upon which end the cap is placed. (See Figure 28.)

This package when installed on a DLII-0912 Series cannot be lengthened. Maximum length not including adaptor is 43-1/4". On DLII-1220 Series, additional length may be added.

If additional length is required, connector assembly (No. 1382) may be used. No more than two (2) connectors may be used. Maximum length not including the adaptor is 130" (10.8 Feet). NOTE: Installer must provide wall support brackets for the connector and extension.

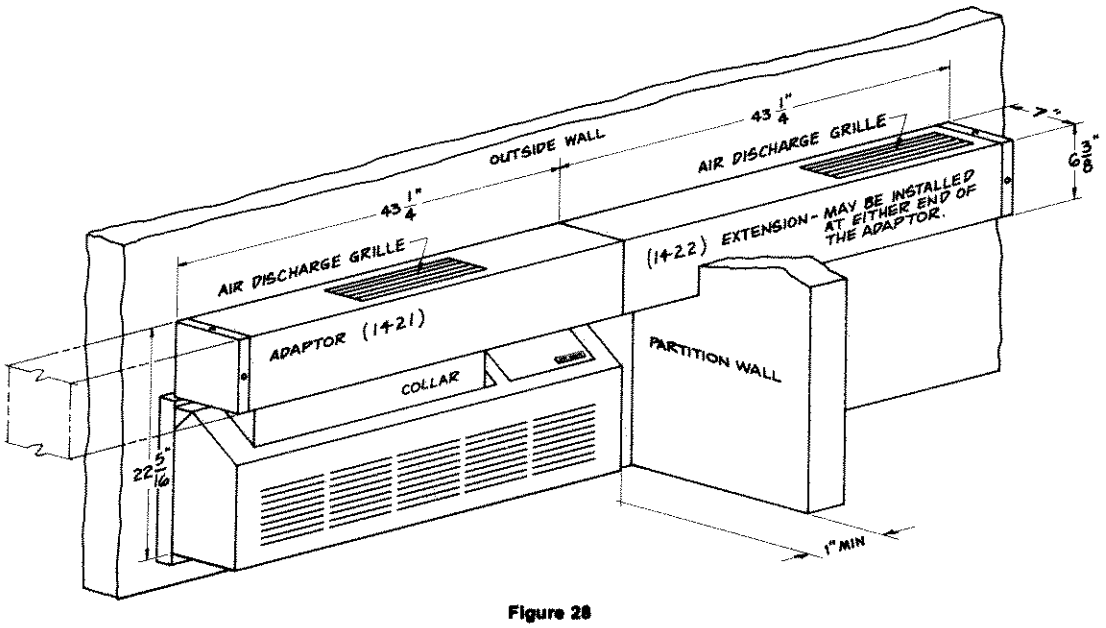


Figure 28

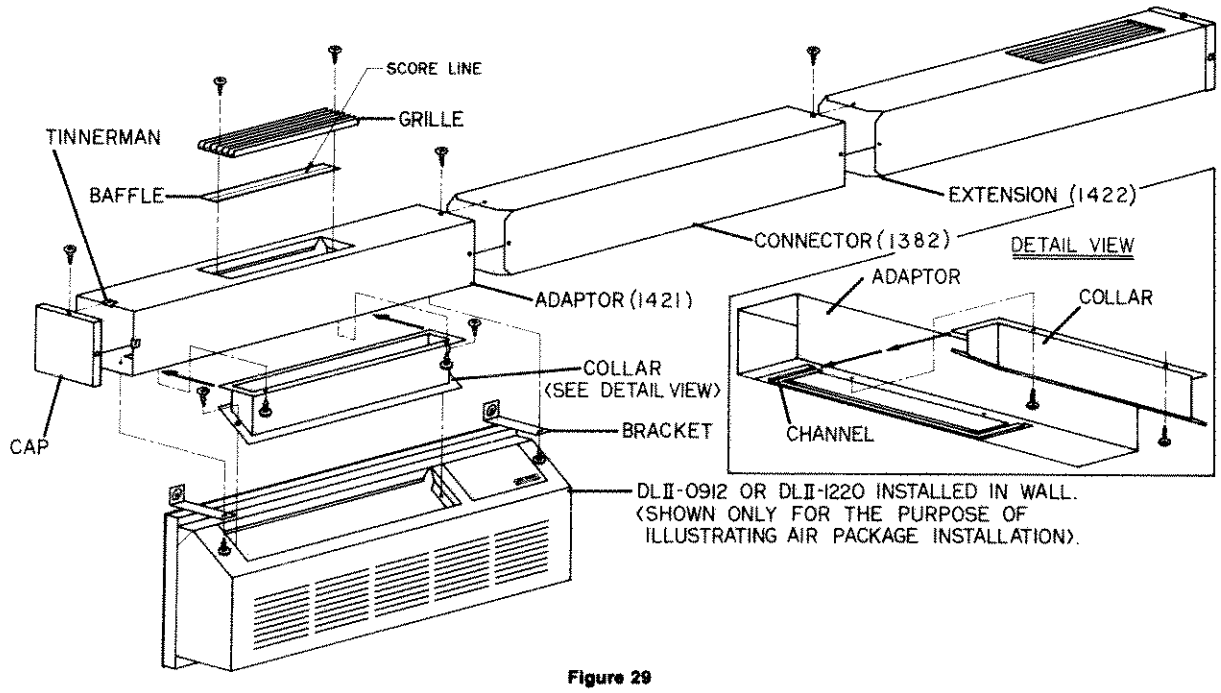


Figure 29

REAR GAS HOOK-UP
KIT NO. 520751

INTRODUCTION

This kit allows you to convert from standard front connection to a rear gas connection. It is suggested that the rear gas connection be used when sleeve is installed at 0" floor clearance. In order to make a rear gas connection, wall sleeve must protrude 1-5/8" beyond finished surface of outside wall allowing for clearance of "U" shaped notch in bottom of wall sleeve. The illustration shown is a typical installation using a field supplied union and shut-off valve (1/2 PSI). Both are exterior to chassis and sleeve. Connections are made at rear bottom right corner.

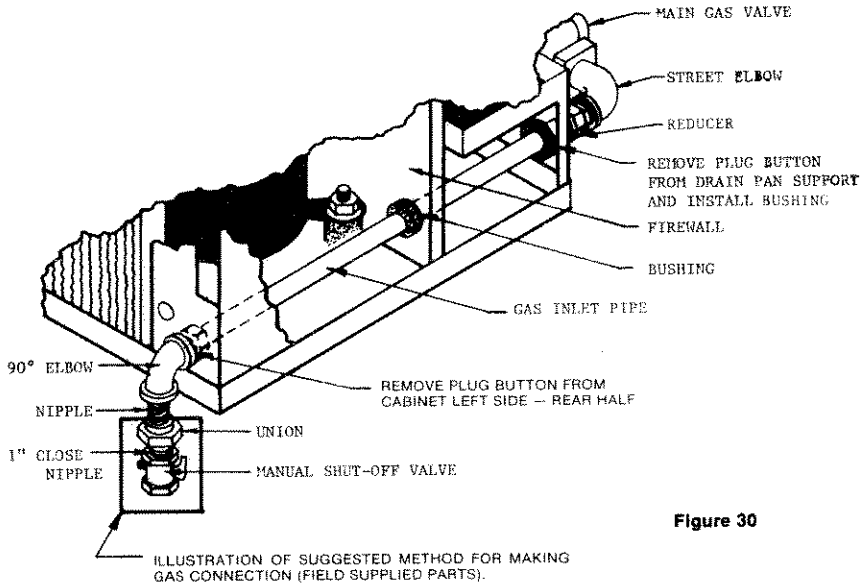


Figure 30

2 PSIG REGULATOR
KIT NO. 520457

INTRODUCTION

Kit allows installation on 2 lb. gas piping.

NOTE: Applicable to natural gas models only!

INSTALLATION INSTRUCTIONS

Regulator specifications as stated by Maxitrol:
- Ambient temperature limits (-40° to 205° F)
- Maximum inlet pressure (10 PSI)
- Emergency exposure limits (65 PSI)

NOTE: Installation must be external to unit.

1. Install regulator with gas flow indicating arrow, on back of regulator, pointing toward unit.

2. The illustrations are a TYPICAL installation. The piping method you use may vary from the method shown and would be acceptable provided it was in compliance with local codes or the National Fuel Gas Code ANSIZ223.1-1988.

3. A pipe joint compound should be used on all pipe joints. The compound used must be resistant to the action of natural gas.

WARNING! Check all gas connections for leaks using a soap and water solution. Never use an open flame to check for leaks. Correct even the smallest leak immediately.

4. A shut-off valve is to be installed up stream of the regulator. It must be a high pressure shut-off valve. (This valve to be supplied by installer.)

5. CAUTION: This regulator is equipped with an automatic vent limiting device. For proper operation it must be mounted in the upright, horizontal position as illustrated.

WARNING! These regulators provide no downstream overpressure protection in the event of failure.

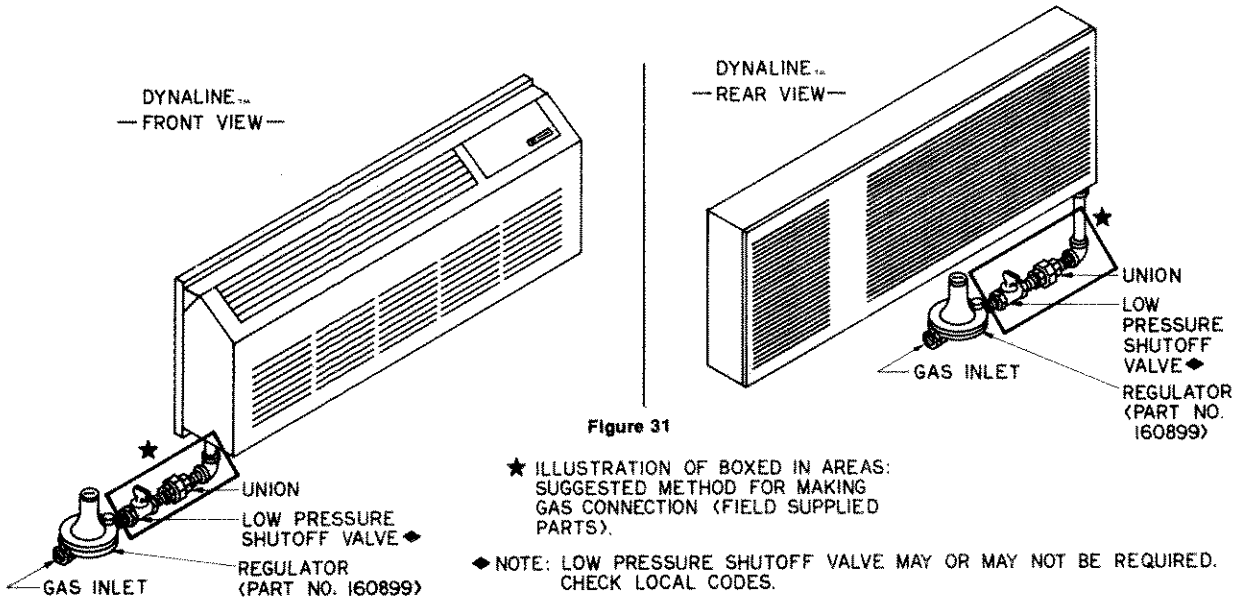


Figure 31

★ ILLUSTRATION OF BOXED IN AREAS: SUGGESTED METHOD FOR MAKING GAS CONNECTION (FIELD SUPPLIED PARTS).

◆ NOTE: LOW PRESSURE SHUTOFF VALVE MAY OR MAY NOT BE REQUIRED. CHECK LOCAL CODES.

DECORATIVE BASE
KIT NO. 520601

INTRODUCTION

An accessory decorative base panel may be selected to conceal electrical and/or gas connections.

NOTE: This base panel is non-load bearing. In order to use the decorative base, the clearance between the wall sleeve and finished floor (including carpet) must be 3-1/2".

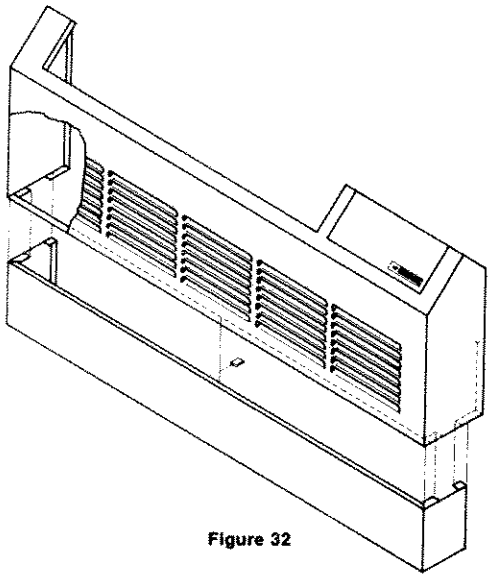


Figure 32

SUBURBAN

DYNALINE LIMITED WARRANTY

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 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. Parts or accessories not supplied by Suburban.

6. Costs incurred in gaining access to the equipment.

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 replacement.

9. Suburban products installed outside the Continental U.S.A., Alaska and Canada.

10. Suburban products whose serial number has been altered, defaced or removed.

11. Fuel or electricity costs or increases in such costs from any reason whatsoever.

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:

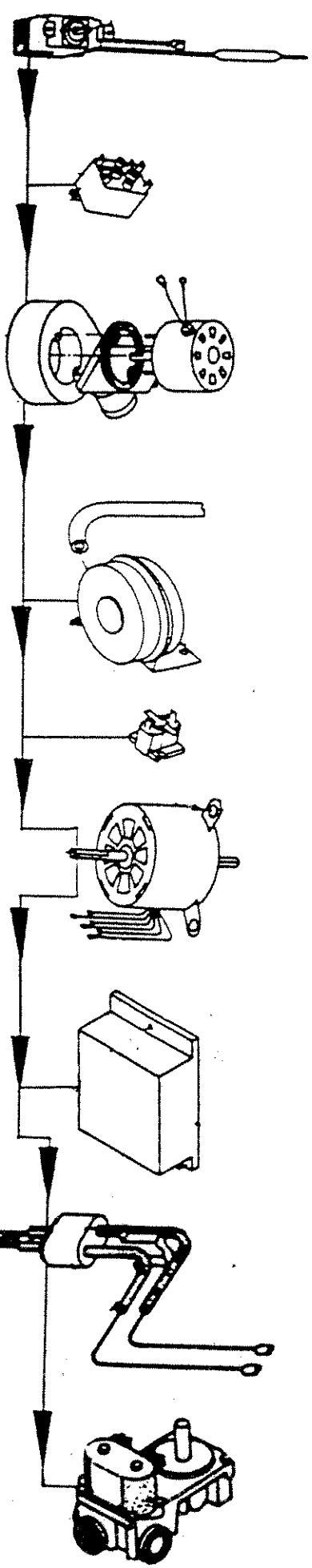
Contact: Suburban Manufacturing Company
Customer Service Department
PO Box 399
Dayton, Tennessee 37321
Telephone: 615-775-2131
Fax: 615-775-7015

Litho U.S.A.

Part Number 202289

Sequence of Operation

DYNALINE™ MODELS



The thermostat controls the operating circuit to the furnace by reacting to room temperature to open and close a relay. (Built in or wall thermostat).

The relay receives power and sends 230vac to the combustion air motor. When the positive static pressure reaches approximately .4 inches of water column, the pressure switch will close.

The pressure switch allows 24vac to flow from the limit switch over to the delay relay and then to the module board.

After approximately 8 seconds the delay relay will close allowing 230 vac to be sent to the room air motor.

When the module board has received 24vac to the TH connection, the normal sequence of the module will take place.

1. It will begin a 34 second warm-up of the glow bar.

2. After exactly 30 seconds the valve will open and at 38 seconds the valve will close if no flame sense has taken place.

3. If the burner ignites, flame sense is accomplished through "Flame Ionization". After flame sense has taken place, the valve will remain in the open position until the thermostat is satisfied.

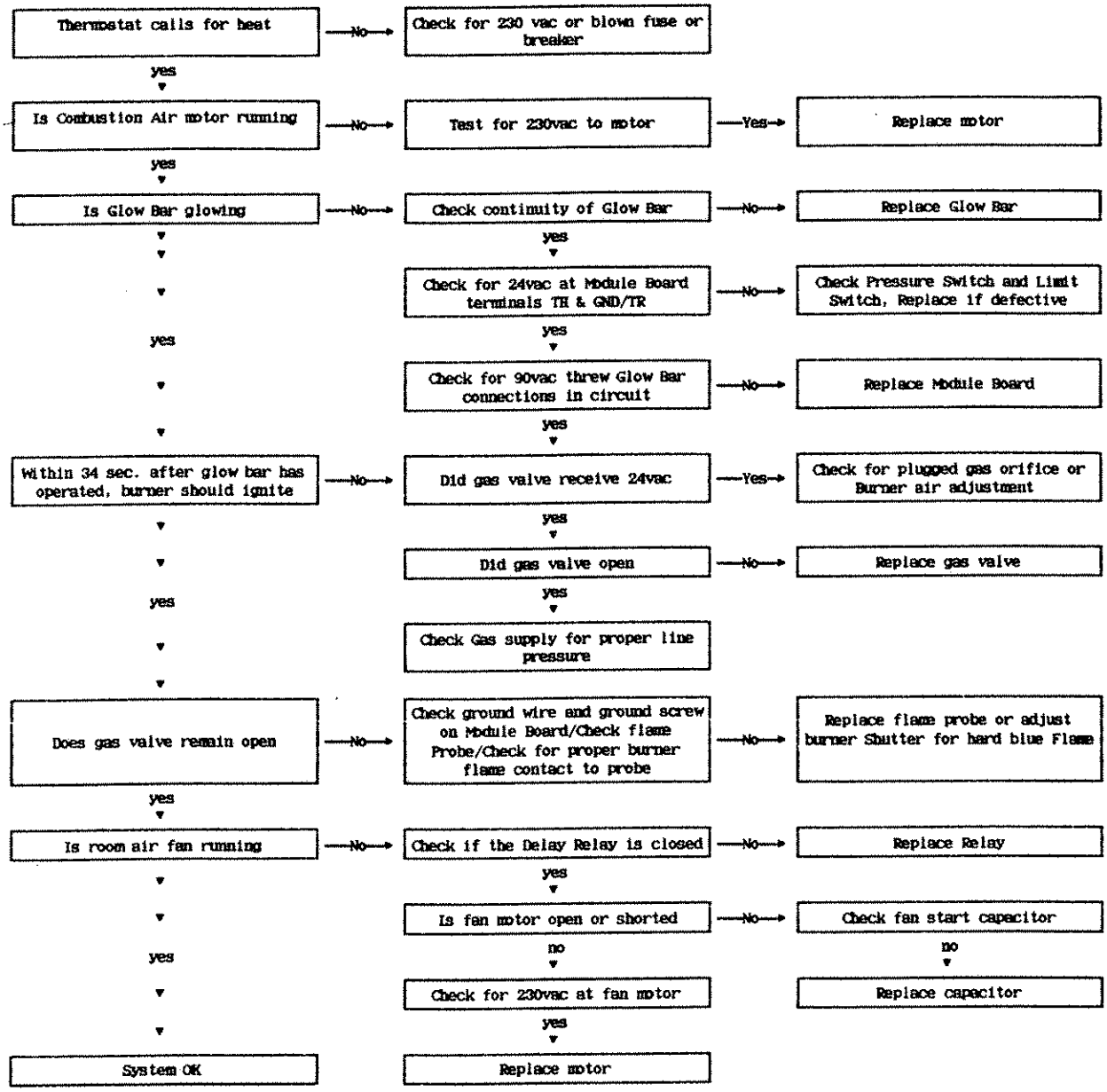
At this time the 24vac is removed from the delay relay and will allow the fan to run approximately 2 minutes for a cool down cycle.

Suburban Manufacturing Company

TROUBLE SHOOTING GUIDE

SUBURBAN MODELS DLII 0912 and 1220

Heating SECTION



Note: this unit has a continuous blower switch (on off rocker) located underneath unit in the lower right hand corner. the function of this switch is to allow for continuous blower operation in conjunction with the thermostat control of the heat or cooling mode.