LENNOX®

INSTALLATION INSTRUCTIONS

GAS & BLOWER UNIT KITS
AND ACCESSORIES

Technical Publications
Litho U.S.A.

503,154M
8/94
Supersedes 502,994M

ICM2+ REPLACEMENT MOTOR KIT

INSTALLATION INSTRUCTIONS FOR REPLACEMENT VARIABLE SPEED MOTOR KIT USED ON G21V, GSR21V, GSR21CV, CB21 AND CBH21 SERIES UNITS

SHIPPING AND PACKING LIST

Package 1 of 1 contains:

1- Circuit board (JPB1 jumper board)
1- Mounting bracket
1- Motor control harness
4- Wiring diagrams
1- Bag assembly containing:
  6-#10 x 6 x 5/8 SDST screws
  4-Wires (blue, red, orange, purple)
  4-Wire ties with screw hole mount
  2-Stickers
1- ICM2+ replacement motor
1- Motor power harness
1- PFC choke (V3 units only)

APPLICATION

TABLE 1
ICM2+ REPLACEMENT MOTOR KIT APPLICATION

FURNACE/ BLOWER UNIT	MOTOR KIT LB- NUMBER	MOTOR KIT PART NUMBER
G21V5, GSR21V5	LB-85899C	63J89
GSR21CV5	LB-85899D	63J90
G21V3, GSR21V3	LB-85899E	81J11
CB21/B21-41	LB-85899A	56J60
CB21/B21-51 CB21/B21-65	LB-85899B	56J61

This kit is used to replace the ICM1 variable speed blower motor with the ICM2+ motor used on G21V, GSR21V, GSR21CV, CB21-41, -51, -65 and B21-41, -51, -65 series units. Refer to table 1 for unit model number and corresponding kit part number.

G21V KIT INSTALLATION

⚠ WARNING

Disconnect power before servicing unit.

Motor Replacement

1- Remove both access panels from unit.
2- Unplug existing ICM1 motor power harness (P48) and control harness (P49).
3- Remove green ground wire from blower housing.
4- Remove 2 blower securing screws and remove blower assembly.
5- Loosen the motor shaft set screw and bracket securing screws. Remove existing ICM1 motor from blower assembly. See figure 1. Remove belly band screw to remove motor.

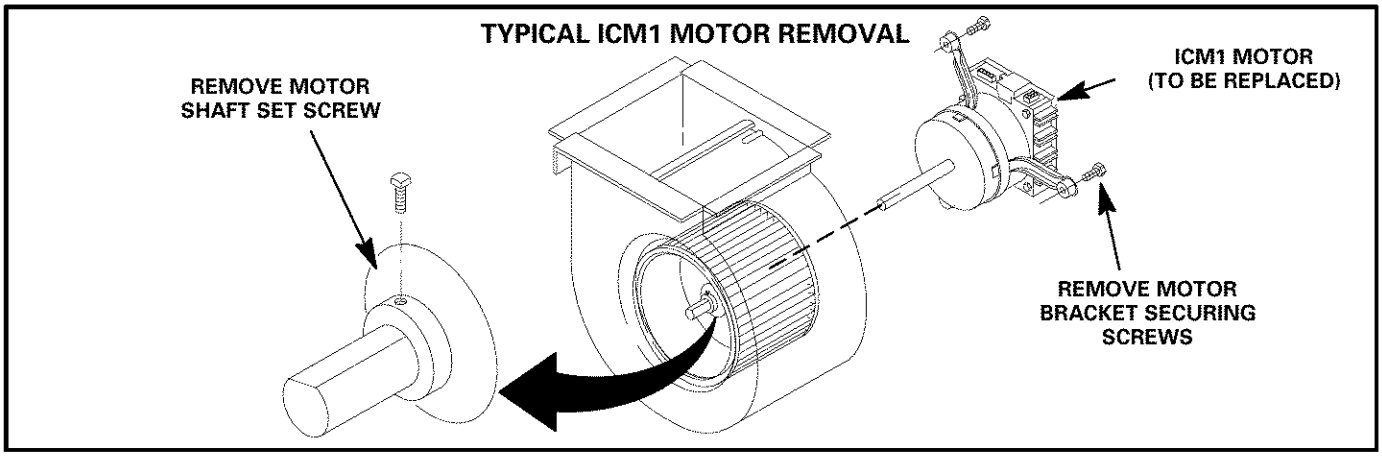
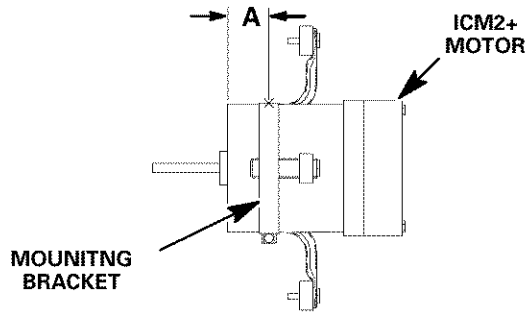


FIGURE 1

6- Place replacement motor (ICM2+) in motor bracket assembly according to the dimension shown in figure 2. Position motor/bracket assembly so that brackets align with holes in blower housing.

MOTOR / MOUNTING BRACKET DIMENSION



MODEL NUMBER	CB21V-41 CBH21V-41 G21V3 GSR21V3	CB21V-51/65 B21V-51/65	G21V5, GSR21V5, GSR21CV5
Dim. "A"	1"	3-1/2"	2-1/8"

FIGURE 2

7- Before tightening mounting bracket screws, belly band screw and motor shaft set screw, the embossed arrow on the ICM2+ motor must be pointing **UP** (perpendicular to the blower housing opening). In this position, the control and power plugs on the motor will face downward. See figure 3.

8- Install blower housing assembly in cabinet. Secure with screws previously removed.

9- Install the ground wire to blower housing.

10- Place one sticker on the blower housing close to the motor and the other sticker close to the unit nameplate.

G21V ICM2+ INSTALLATION

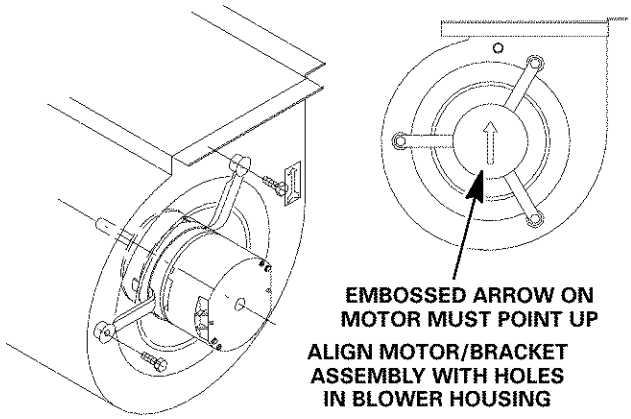


FIGURE 3

Circuit Board and Choke Installation

A field-installed, power factor correcting choke is provided for use only on G21V3 units. G21V5 units are factory equipped with the choke.

11- Determine a location on the blower housing to install the circuit board and mounting bracket. Location must allow for wiring through the blower deck strain relief to the control box, must not cover warning or information stickers, and must be accessible to service. See figure 4.

TYPICAL G21V CIRCUIT BOARD INSTALLATION AND WIRING

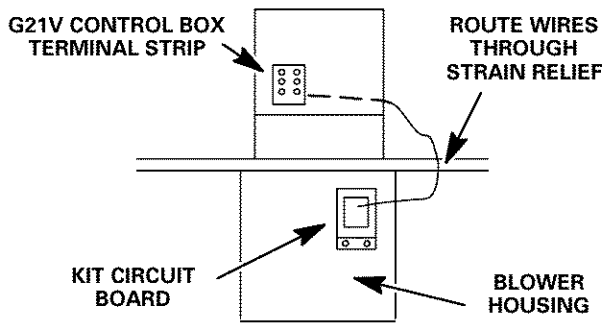


FIGURE 4

12- Drill two mounting bracket holes on the blower housing. See figure 4 for an example.

13- Install circuit board mounting bracket using two screws (provided).

14- Secure circuit board to mounting bracket with provided stand-offs.

15- *For G21V3 applications only-* Use two SDST screws, provided, to install choke on side of blower housing. See figure 5 for installation dimensions.

G21V3 AND GSR21V3 PFC CHOKE INSTALLATION LOCATION

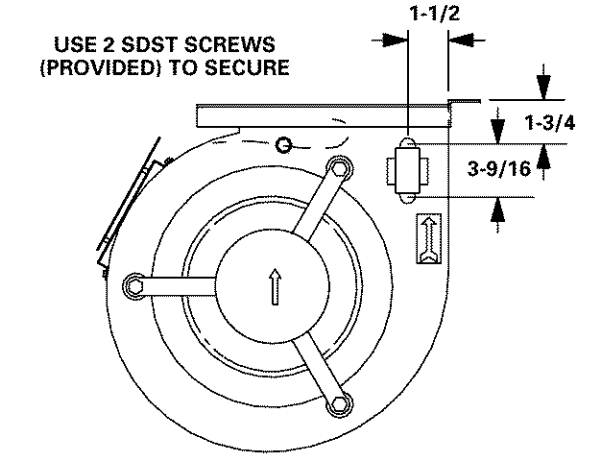


FIGURE 5

Electrical Connections (Figure 12)

16- Connect motor control harness, provided with kit, between circuit board (J97-harness to P95-board) and motor (P97-harness to J49-motor). See figure 6 for correct positioning of control harness to the circuit board.

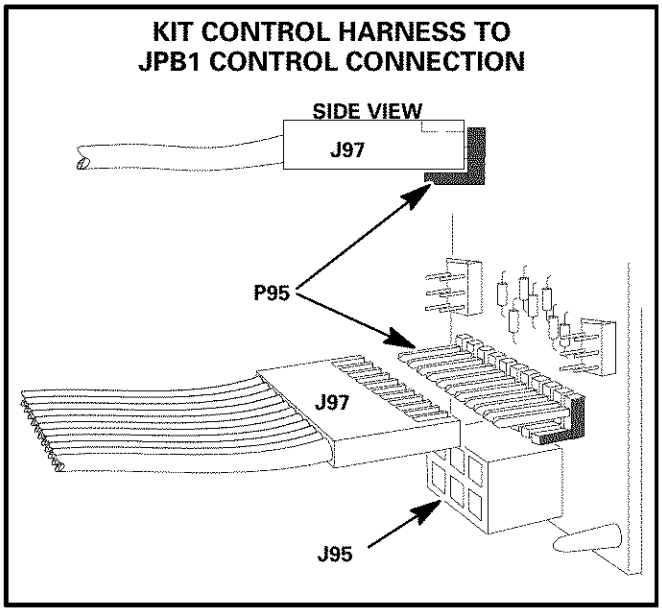


FIGURE 6

17- Connect motor power harness, provided with kit, between original power harness (J96-kit harness to P48-original harness) and the motor (P96-kit harness to J48-motor).

18- *For G21V3 applications only-* Connect two loose wires from kit power harness (J96/P48) to PFC choke terminals. Make sure insulation tubing covers connections. Tape over tubing and wire with electricians tape to ensure protection. See figure 7 for field wiring.

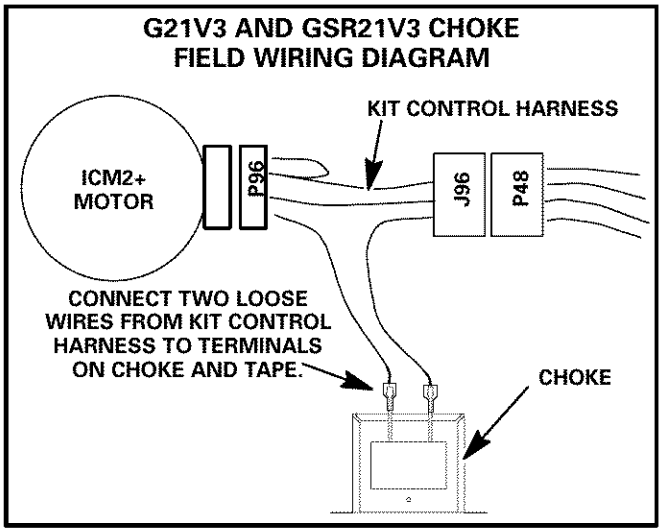


FIGURE 7

19- Remove control cover to expose back of terminal board. Locate the three wires attached to the terminals behind the fuse. See detail in figure 12.

20- Remove the single wire from the right side of the left set of fuse spade connections. Install the 1/4" piggy back end of orange wire to the spade connection. Attach the previously removed wire to the piggy back connection on the orange wire. Connections should be made so that the spades are facing away from the terminal strip mounting screw.

21- Route the orange wire from the control box strain relief hole through the blower deck strain to the original motor control harness (P49). Install terminal in either socket #3 or #6 of P49. Replace control box cover.

22- Connect original motor control harness (P49) to 6-pin plug on circuit board (J95).

23- Refer to Jumper Adjustment section for application specific jumper selections.

GSR21V AND GSR21CV KIT INSTALLATION

⚠ WARNING

Disconnect power before servicing unit.

Motor Replacement

1- Remove both access panels from unit.

2- Unplug existing ICM1 motor power harness (P48) and control harness (P49).

3- Unplug blower deck harness P98/J98.

4- Remove green ground wire from blower housing.

5- Remove 2 blower securing screws and remove blower assembly.

6- Loosen the motor shaft set screw and bracket securing screws. Remove existing ICM1 motor from blower assembly. See figure 1. Remove belly band screw to remove motor.

7- Place replacement motor (ICM2+) in motor bracket assembly according to the dimension shown in figure 2. Position motor/bracket assembly so that brackets align with holes in blower housing.

8- Before tightening mounting bracket screws, belly band screw and motor shaft set screw, the embossed arrow on the ICM2+ motor must be pointing **UP**. For horizontal applications, motor arrow must point to the top of the unit. For downflow applications, the arrow must point to the return air end of the furnace. In this position, the control and power plugs on the motor will face downward. See figure 8.

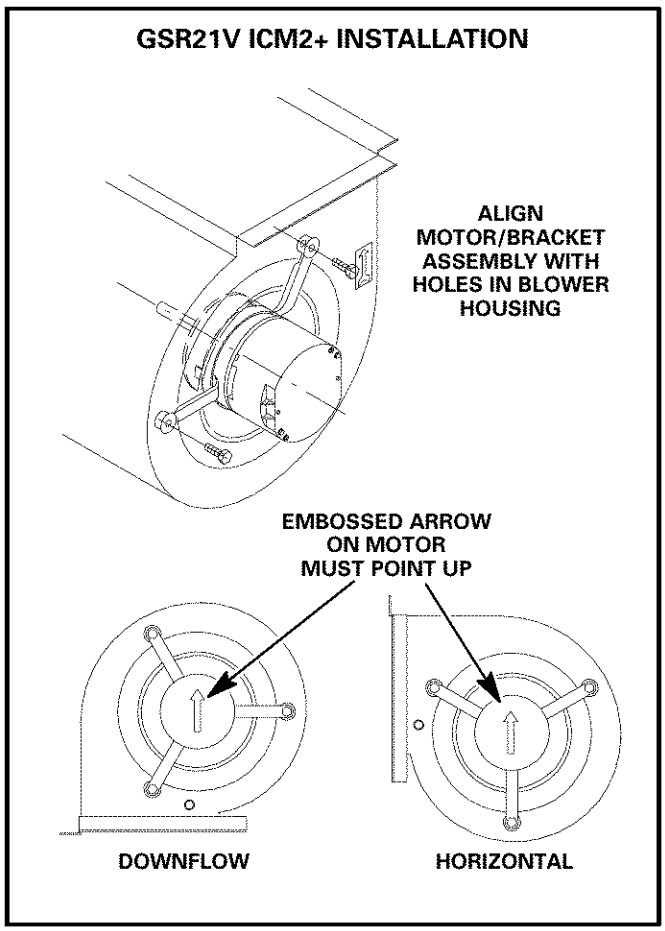


FIGURE 8

9- Install blower housing assembly in cabinet. Secure with screws previously removed.

10- Install the ground wire to blower housing.

11- Place one sticker on the blower housing close to the motor and the other sticker close to the unit nameplate.

Circuit Board and Choke Installation

A field-installed, power factor correcting choke is provided for use only on GSR21V3 units. GSR21V5 units are factory equipped with the choke.

12- Use mounting bracket as a template to mark two 7/32" mounting holes on the blower deck flange. Drill holes. See figure 9.

13- Place mounting bracket on the back side of the blower deck flange and align drilled holes with those in the mounting bracket.

14- Install two screws, provided, through the flange and into the bracket to secure. Mount bracket on side of the flange.

15- Secure circuit board to mounting bracket with provided stand-offs.

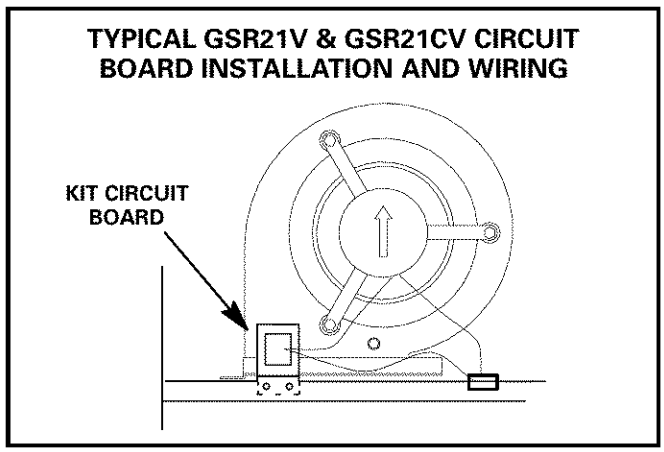


FIGURE 9

16- *For GSR21V3 applications only*- Use two SDST screws provided to install choke on side of blower housing. See figure 5 for installation dimensions.

Electrical Connections (Figures 13 and 14)

17- Select the blue and purple wires provided in the kit.

18- Install socket terminal of purple wire, provided in kit, into either socket #3 or #6 of the original motor control harness (P49).

19- Install pin terminal end of purple wire into socket #11 of the blower deck harness jack (J98).

20- Connect original motor control harness (P49) to 6-pin plug on circuit board (J95).

21- Trace the brown wire from the back side of the fuse located on the terminal strip to the wire bundle in the control box. See detail in figure 13. Unscrew wire nut from bundle and add the kit provided blue wire to it. Secure all wires together with wirenut. Route the opposite end of blue wire to control box side of blower deck harness and insert it into position #11 of the plug (P98).

22- Re-connect blower deck harness P98/J98.

23- Connect motor control harness, provided with kit, between circuit board (J97-harness to P95-board) and motor (P97-harness to J49-motor). See figure 6 for correct positioning of control harness to the circuit board.

24- Connect motor power harness, provided with kit, between original power harness (J96-kit harness to P48-original harness) and the motor (P96-kit harness to J48-motor).

25- *For G21V3 applications only*- Connect two loose wires from kit power harness (J96/P48) to PFC choke terminals. Make sure insulation tubing covers connections. Tape over tubing and wire with electrictians tape to ensure protection. See figure 7 for field wiring.

26- Refer to Jumper Adjustment section for application specific jumper selections.

CB21/B21-41, -51/65 KIT INSTALLATION

⚠ WARNING

Disconnect power before servicing unit.

Motor Replacement

1- Remove blower access panel from unit.
2- Unplug existing ICM1 motor power harness (P48) and control harness (P49).
3- Remove green ground wire from blower housing.
4- Remove two blower securing screws and remove blower assembly.
5- Loosen the motor shaft set screw and bracket securing screws. Remove existing ICM1 motor from blower assembly. See figure 1. Remove belly band screw to remove motor.
6- Place replacement motor (ICM2+) in motor bracket assembly according to the dimension shown in figure 2. Position motor/bracket assembly so that brackets align with holes in blower housing.
7- Before tightening mounting bracket screws, belly band screw and motor shaft set screw, the embossed arrow on the ICM2+ motor must be pointing **UP**. For upflow applications, motor arrow must point to the blower housing opening. For downflow applications, the arrow must point to the return air end of the furnace. In this position, the control and power plugs on the motor will face downward. For horizontal applications, motor arrow must point to the back of the unit with the power and control plugs toward the access panel side. See figure 10.

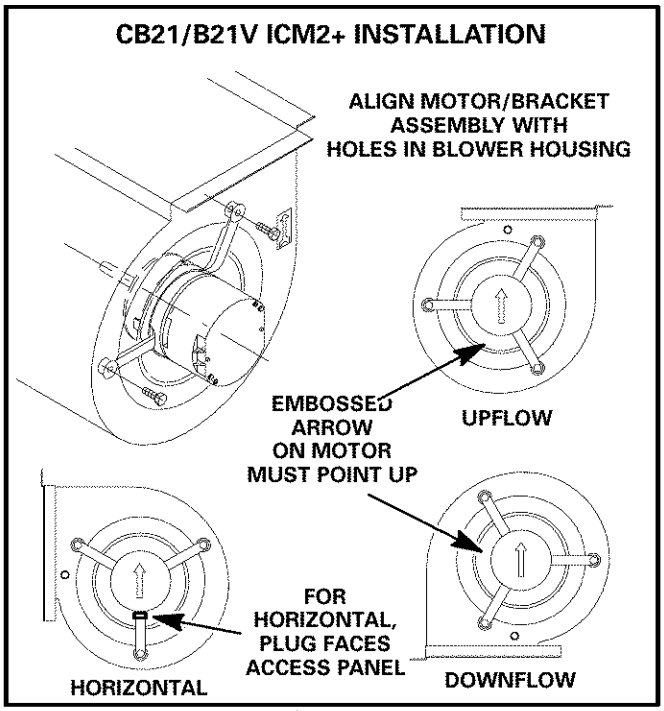


FIGURE 10

8- Install blower housing assembly in cabinet. Secure with screws previously removed.
9- Install the ground wire to hex screw on blower housing.
10- Place one sticker on the blower housing close to the motor and the other sticker close to the unit nameplate.

Circuit Board Installation

11- Determine a location on the blower housing to install the circuit board and mounting bracket. Location must allow for wiring to the control box, must not cover warning or information stickers, and must be accessible to service. See figure 11.

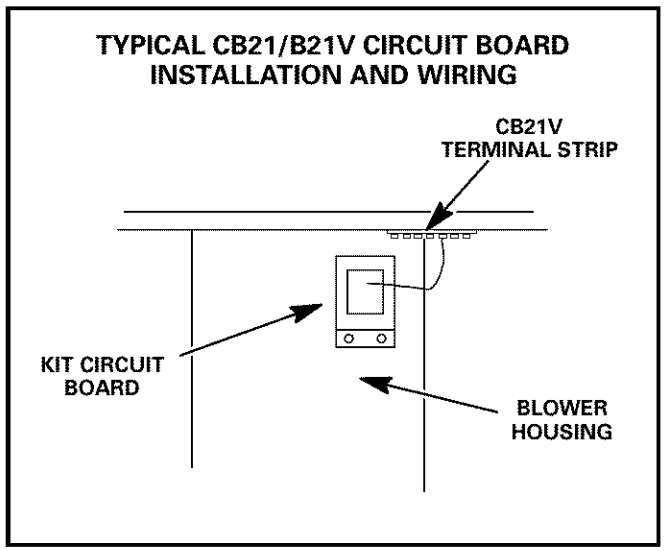


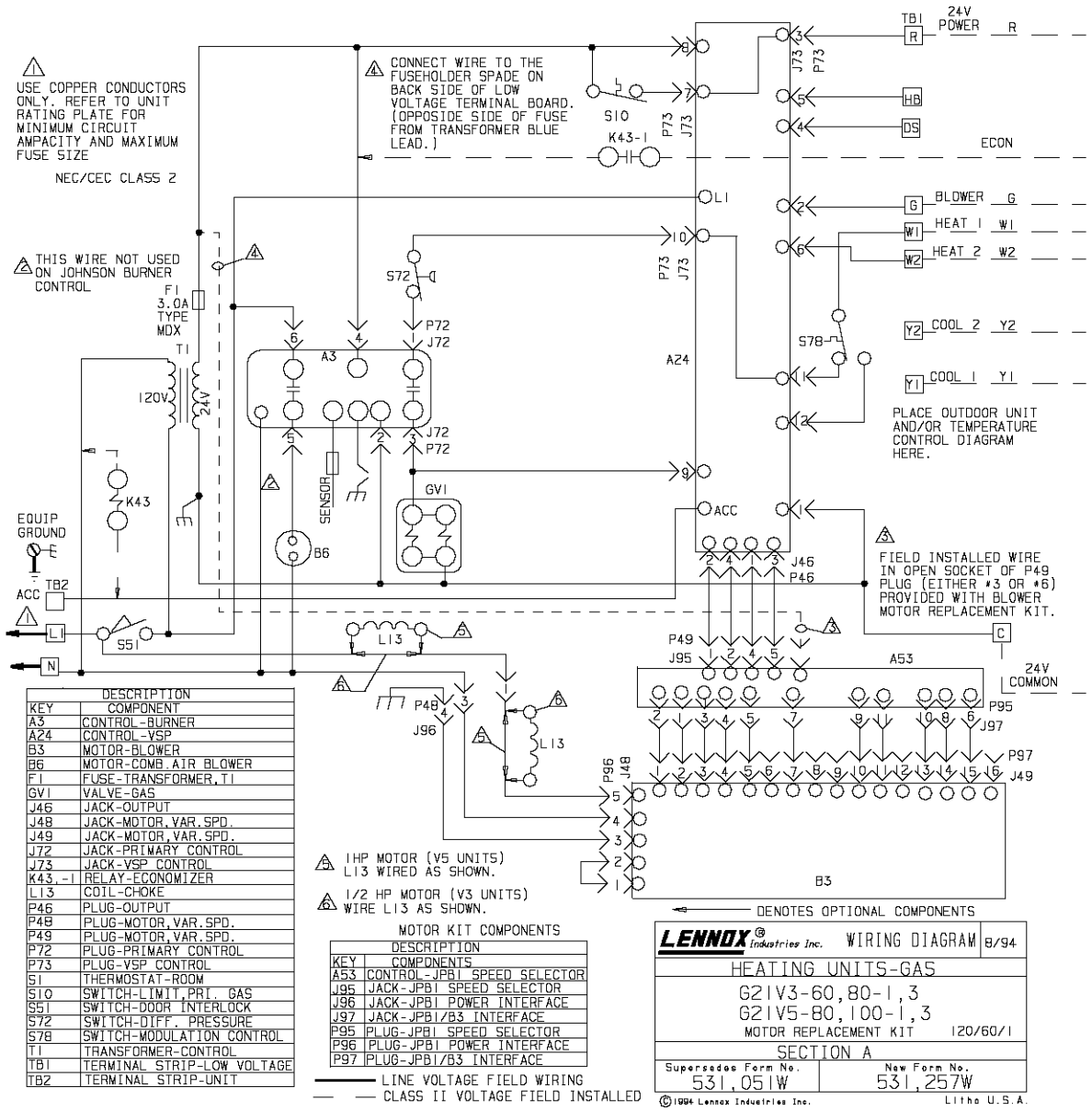
FIGURE 11

12- Use mounting bracket as a template to mark two 7/32" mounting holes on the blower housing. Drill holes and secure bracket to blower housing with two screws provided. See figure 11.
13- Secure circuit board to mounting bracket with provided stand-offs.

Electrical Connections (Figure 15)

14- Connect motor power harness, provided with kit, between original power harness (J96-kit harness to P48-original harness) and the motor (P96-kit harness to J48-motor).
15- Connect motor control harness, provided with kit, between circuit board (J97-harness to P95-board) and motor (P97-harness to J49-motor).
16- Connect original motor control harness (P49) to 6-pin plug on circuit board (J95).
17- Install red wire, provided in kit, into either socket #3 or #6 of the original motor control harness (P49).
18- Install opposite end of red wire (spade connection) to terminal "R" on the thermostat terminal strip.
19- Refer to Jumper Adjustment section for application specific jumper selections.

TYPICAL G21V ICM2+ WIRING DIAGRAM



DESCRIPTION	
KEY	COMPONENT
A3	CONTROL-BURNER
A24	CONTROL-VSP
B3	MOTOR-BLOWER
B6	MOTOR-COMB.AIR BLOWER
FI	FUSE-TRANSFORMER,TI
GVI	VALVE-GAS
J46	JACK-OUTPUT
J48	JACK-MOTOR,VAR.SPD.
J49	JACK-MOTOR,VAR.SPD.
J72	JACK-PRIMARY CONTROL
J73	JACK-VSP CONTROL
K43,-1	RELAY-ECONOMIZER
L13	COIL-CHOKE
P46	PLUG-OUTPUT
P48	PLUG-MOTOR,VAR.SPD.
P49	PLUG-MOTOR,VAR.SPD.
P72	PLUG-PRIMARY CONTROL
P73	PLUG-VSP CONTROL
S1	THERMOSTAT-ROOM
S10	SWITCH-LIMIT,PRI. GAS
S51	SWITCH-DOOR INTERLOCK
S72	SWITCH-DIFF. PRESSURE
S78	SWITCH-MODULATION CONTROL
TI	TRANSFORMER-CONTROL
TB1	TERMINAL STRIP-LOW VOLTAGE
TB2	TERMINAL STRIP-UNIT

MOTOR KIT COMPONENTS

DESCRIPTION	
KEY	COMPONENTS
A53	CONTROL-JPB1 SPEED SELECTOR
J95	JACK-JPB1 SPEED SELECTOR
J96	JACK-JPB1 POWER INTERFACE
J97	JACK-JPB1/B3 INTERFACE
P95	PLUG-JPB1 SPEED SELECTOR
P96	PLUG-JPB1 POWER INTERFACE
P97	PLUG-JPB1/B3 INTERFACE

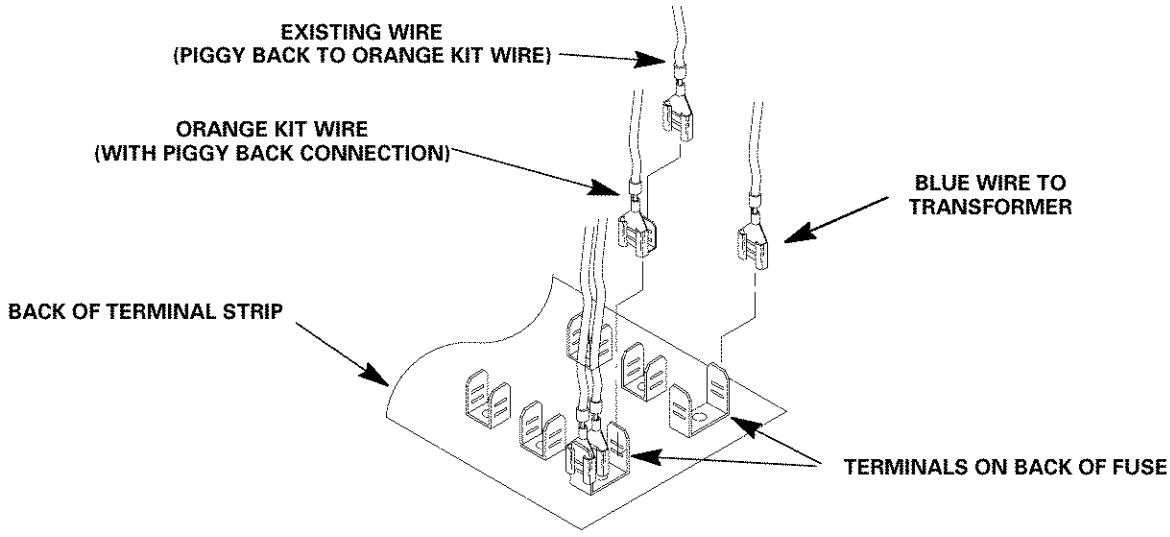
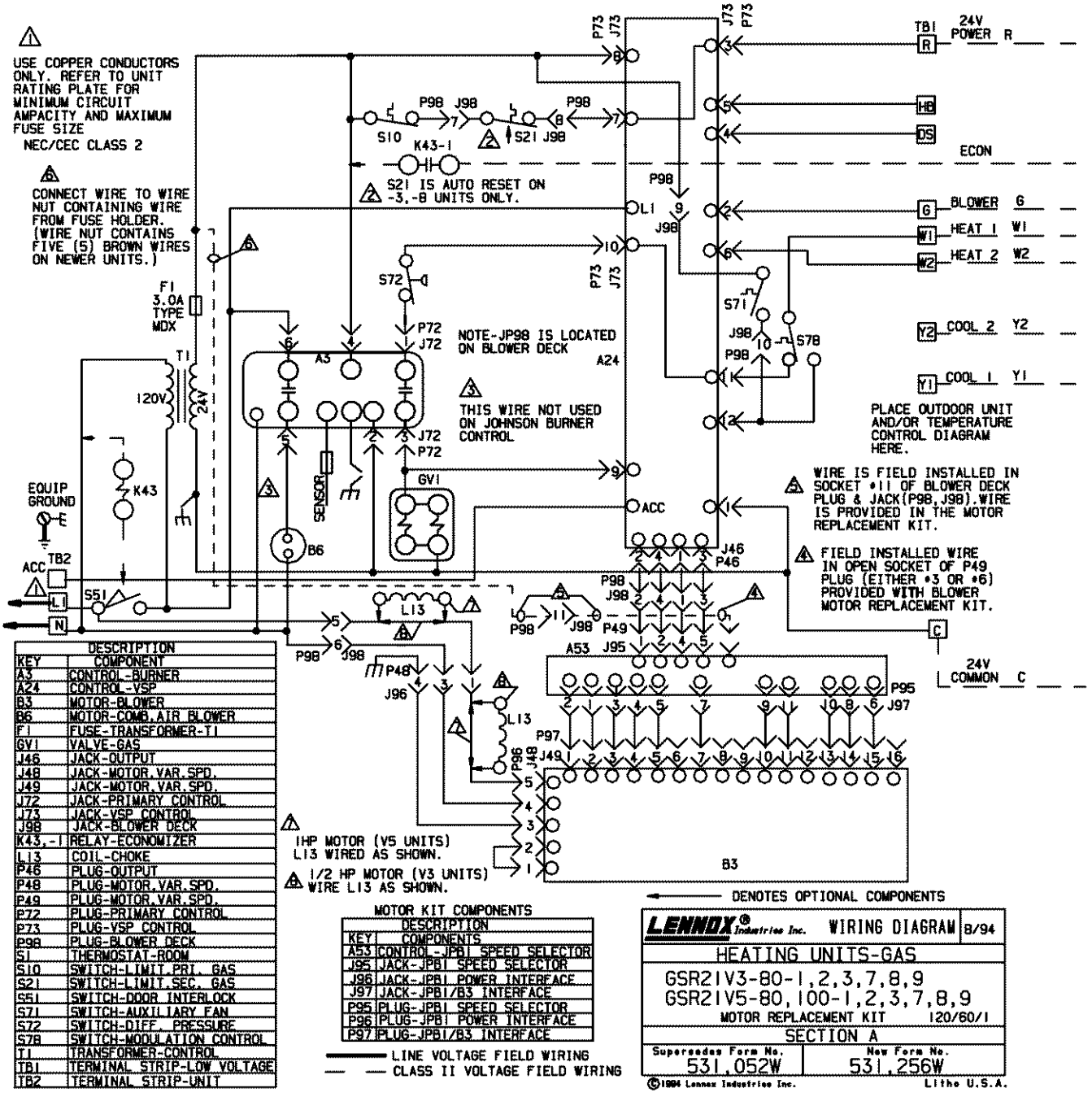


FIGURE 12

TYPICAL GSR21V ICM2+ WIRING DIAGRAM



KEY	DESCRIPTION COMPONENT
A3	CONTROL-BURNER
A24	CONTROL-VSP
B3	MOTOR-BLOWER
B6	MOTOR-COMB.AIR BLOWER
F1	FUSE-TRANSFORMER-T1
GV1	VALVE-GAS
J46	JACK-OUTPUT
J48	JACK-MOTOR,VAR.SPD.
J49	JACK-MOTOR,VAR.SPD.
J72	JACK-PRIMARY CONTROL
J73	JACK-VSP CONTROL
J98	JACK-BLOWER DECK
K43,-1	RELAY-ECONOMIZER
L13	COIL-CHOKE
P46	PLUG-OUTPUT
P48	PLUG-MOTOR,VAR.SPD.
P49	PLUG-MOTOR,VAR.SPD.
P72	PLUG-PRIMARY CONTROL
P73	PLUG-VSP CONTROL
P98	PLUG-BLOWER DECK
S1	THERMOSTAT-ROOM
S10	SWITCH-LIMIT,PRI. GAS
S21	SWITCH-LIMIT,SEC. GAS
S51	SWITCH-DOOR INTERLOCK
S71	SWITCH-AUXILIARY FAN
S72	SWITCH-DIFF. PRESSURE
S78	SWITCH-MODULATION CONTROL
T1	TRANSFORMER-CONTROL
TB1	TERMINAL STRIP-LOW VOLTAGE
TB2	TERMINAL STRIP-UNIT

MOTOR KIT COMPONENTS

KEY	DESCRIPTION COMPONENTS
A53	CONTROL-JPB1 SPEED SELECTOR
J95	JACK-JPB1 SPEED SELECTOR
J96	JACK-JPB1 POWER INTERFACE
J97	JACK-JPB1/B3 INTERFACE
P95	PLUG-JPB1 SPEED SELECTOR
P96	PLUG-JPB1 POWER INTERFACE
P97	PLUG-JPB1/B3 INTERFACE

LINE VOLTAGE FIELD WIRING
CLASS II VOLTAGE FIELD WIRING

LENNOX Industries Inc. WIRING DIAGRAM 8/94

HEATING UNITS-GAS

GSR21V3-80-1,2,3,7,8,9
GSR21V5-80,100-1,2,3,7,8,9

MOTOR REPLACEMENT KIT 120/60/1

SECTION A

Supersedes Form No.	New Form No.
531,052W	531,256W

 Litho U.S.A.

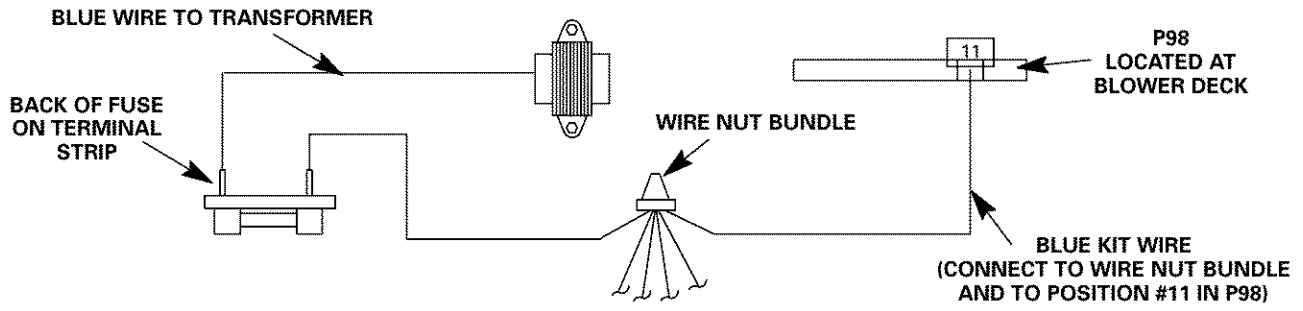
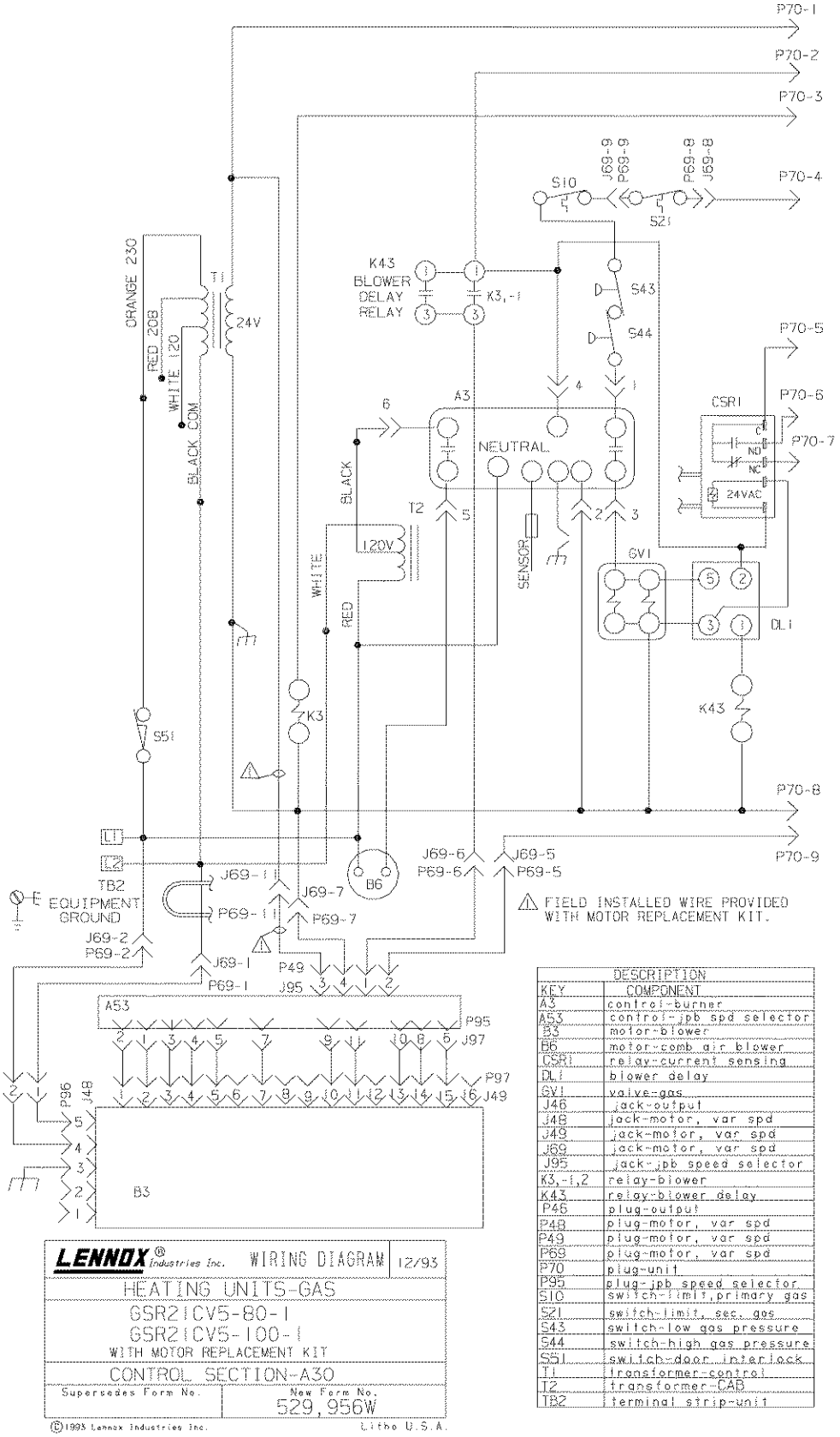


FIGURE 13

TYPICAL GSR21CV ICM2+ WIRING DIAGRAM



DESCRIPTION	
KEY	COMPONENT
A3	control-burner
A53	control-jpb spd selector
B3	motor-blower
B6	motor-comb air blower
CSR1	relay-current sensing
DL1	blower delay
GV1	valve-gas
J46	jack-output
J48	jack-motor, var spd
J49	jack-motor, var spd
J69	jack-motor, var spd
J95	jack-jpb speed selector
K3,-1,2	relay-blower
K43	relay-blower delay
P46	plug-output
P48	plug-motor, var spd
P49	plug-motor, var spd
P69	plug-motor, var spd
P70	plug-unit
P95	plug-jpb speed selector
S10	switch-limit,primary gas
S21	switch-limit, sec. gas
S43	switch-low gas pressure
S44	switch-high gas pressure
S51	switch-door interlock
T1	transformer-control
T2	transformer-CAB
TB2	terminal strip-unit

LENNOX® Industries Inc. WIRING DIAGRAM 12/93

HEATING UNITS-GAS

GSR21CV5-80-1

GSR21CV5-100-1

WITH MOTOR REPLACEMENT KIT

CONTROL SECTION-A30

Supersedes Form No.	New Form No.
	529,956W

FIGURE 14

TYPICAL CB21/B21-41 & CB21/B21-51/65 ICM2+ WIRING DIAGRAM

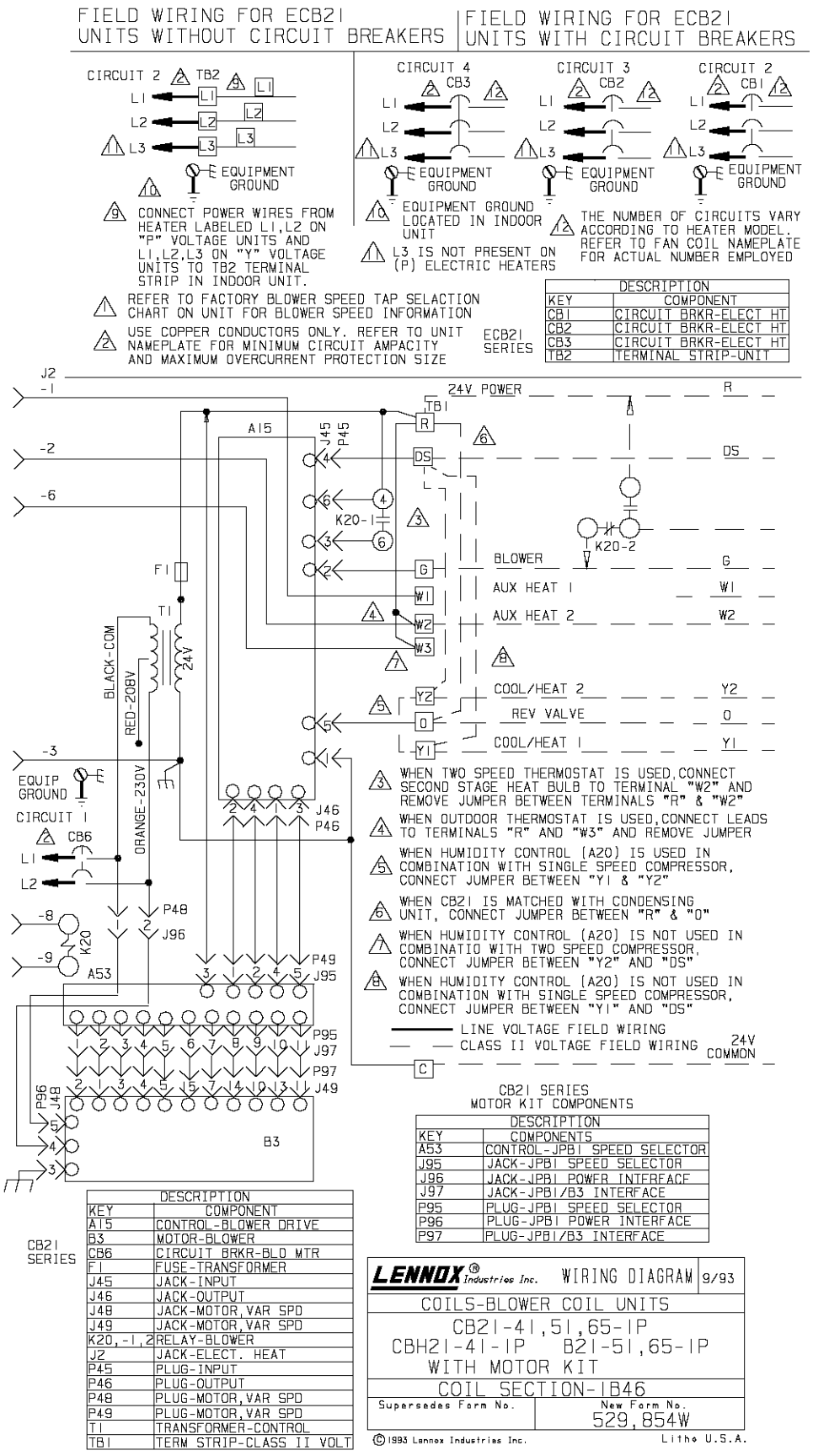


FIGURE 15

JUMPER ADJUSTMENT

"ADJUST"

The **ADJUST** pins allow the motor to run at normal speed, approximately 10% higher, or approximately 10% lower than normal speed. Table 9 gives three rows (+, NORMAL, and -) with their respective CFM volumes. Notice that the normal adjustment setting for heat speed position #3 is 2000 CFM. The + adjustment setting for that position is 2180 CFM and for the - adjustment setting is 1800 CFM. After the adjustment setting has been determined, chose the remainder speed jumper settings from those offered in the table.

The TEST pin is available to bypass the JPB1 control and run the motor at approximately 70% to test that the motor is operational. This is beneficial primarily in troubleshooting. G must be energized for motor to run.

"HEAT"

The **HEAT** jumper is used to set the blower speed to obtain the required CFM for heating. G21V and GSR21V unit require a jumper between HB and W2 to allow HEAT to control heating speed.

For G21V and GSR21V units - If a lower heating speed (than one that is listed in HEAT SPEED section) is required, the **LOW** jumper may be used to set the heating speed. This is done by first placing the **LOW** jumper in the desired CFM position and then removing a jumper between HB and W2 on the unit terminal strip. Doing so will activate the low speed jumper setting when W1 is energized. The heat speed is not operable on GSR21CV units.

"HIGH"

The **HIGH** jumper is used to determine the CFM during cooling speed. These jumper selections are activated when G and DS terminals are energized for G21V, GSR21V or GSR21CV and when G, DS and O are energized for the CB21.

"LOW"

The **LOW** jumper is used to determine CFM during low speed cooling. These jumper selections are activated when G is energized. The **LOW** jumper may also be used for low speed heating for G21V and GSR21V units only. See the "HEAT" section for details.

⚠ IMPORTANT

Before changing jumper setting, make sure the motor has completely stopped. Any jumper setting change will not take place while the motor is running.

To change jumper positions, gently pull the jumper off the pins and place it on the desired set of pins. The following section outlines the different jumper selections available and conditions associated with each one. Refer to figure 16 for identification.

Adjust circuit board jumpers for High, Low, Heat and Adjust according to tables 2, 3, and 4 for G21V, GSR21V and GSR21CV units, table 5 for CB21V-41 and CBH21V-41 units, and table 6 for CB21V-51, CBH21V-51, CB21V-65, CBH21V-65 and B21V-51/65 units. The entire group of CFM options are shown in table 9 for G21V, table 10 for GSR21V, table 11 for GSR21CV units, table 12 for CB21V-41 and CBH21V-41 units, and table 13 for CB21V-51, CBH21V-51, CB21V-65, CBH21V-65 and B21V-51/65 units. **Note that speeds selected must all come from the same row because the Adjust jumper position determines the speeds available.**

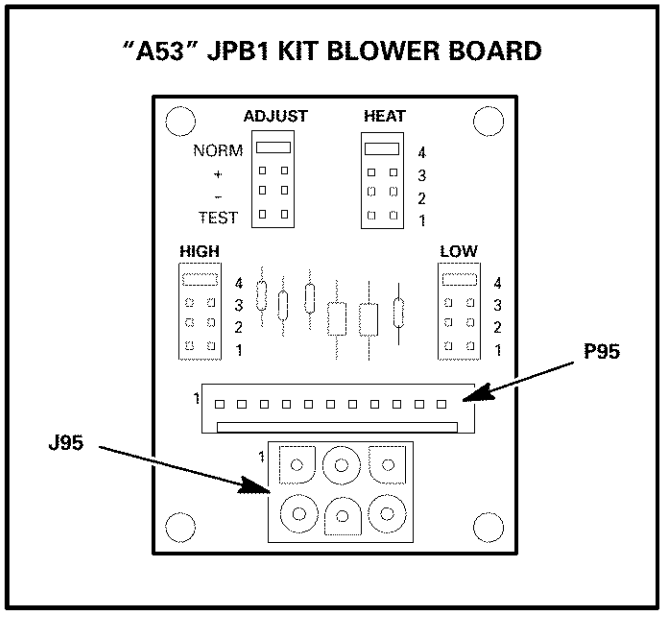


FIGURE 16

ICM1 SPEED TAPS TO ICM2+ JUMPER SELECTIONS TABLES

TABLE 2
G21V3 and GSR21V3 SERIES UNITS
ICM1 SPEED TAP TO ICM2+ JUMPER SELECTIONS
(For Static Pressure 0.0" to 0.8" w.g.)

ORIGINAL MOTOR SPEED TAP POSITION	ORIGINAL MOTOR APPROXI-MATE CFM	CIRCUIT BOARD JUMPER POSITION	ADJUSTMENT JUMPER POSITION
2	490	LOW 1*	NORM
3	635	LOW 2*	NORM
4	760	LOW 3*	NORM
5	880	LOW 4*	NORM
6	1030	HEAT 1 / HIGH 1	NORM
7	1140	HEAT 2 / HIGH 2	NORM
8	1220	HEAT 3 / HIGH 3	NORM
9	1345	HEAT 3 / HIGH 3	"+"
10	1420	HEAT 4 / HIGH 4	"+"
11	1420	HEAT 4 / HIGH 4	"+"

**HEAT will be the heating speed if a jumper is present between terminals HB and W2 on the unit terminal strip. For LOW to be the heating speed, remove the jumper between terminals HB and W2 on unit terminal strip, if present.*

TABLE 3
G21V5 and GSR21V5 SERIES UNITS
ICM1 SPEED TAP TO ICM2+ JUMPER SELECTIONS
(For Static Pressure 0.0" to 0.8" w.g.)

ORIGINAL MOTOR SPEED TAP POSITION	ORIGINAL MOTOR APPROXI-MATE CFM	CIRCUIT BOARD JUMPER POSITION	ADJUSTMENT JUMPER POSITION
2	770	LOW 1*	NORM
3	1015	LOW 2*	NORM
4	1305	LOW 3*	NORM
5	1510	LOW 4*	NORM
6	1685	HEAT 2 / HIGH 2	"-"
7	1820	HEAT 2 / HIGH 2	NORM
8	2010	HEAT 2 / HIGH 2	"+"
9	2050	HEAT 3 / HIGH 3	NORM
10	2100	HEAT 3 / HIGH 3	NORM
11	2100	HEAT 3 / HIGH 3	NORM

**HEAT will be the heating speed if a jumper is present between terminals HB and W2 on the unit terminal strip. For LOW to be the heating speed, remove the jumper between terminals HB and W2 on unit terminal strip, if present.*

TABLE 4
GSR21CV5 SERIES UNITS
ICM1 SPEED TAP TO ICM2+ JUMPER SELECTIONS
(For Static Pressure 0.0" to 1.2" w.g.)

ORIGINAL MOTOR SPEED TAP POSITION	ORIGINAL MOTOR APPROXI-MATE CFM	CIRCUIT BOARD JUMPER POSITION	ADJUSTMENT JUMPER POSITION
2	905-1020	LOW 2	NORM
3	945-1030	LOW 2	NORM
4	1170-1330	LOW 3	NORM
5	1345-1500	LOW 4 / HIGH 1	NORM
6	1510-1700	HIGH 2	"-"
7	1700-1850	HIGH 2	NORM
8	1885-2000	HIGH 2	"+"
9	2010-2100	HIGH 3	NORM
10	2000-2200	HIGH 4	NORM
11	2000-2200	HIGH 4	NORM

**HEAT is not used on GSR21CV units.*

TABLE 5
CB21V/CBH21V-41 SERIES UNITS
ICM1 SPEED TAP TO ICM2+ JUMPER SELECTIONS
(For Static Pressure 0.0" to 0.6" w.g.)

ORIGINAL MOTOR SPEED TAP POSITION	ORIGINAL MOTOR APPROXI-MATE CFM	CIRCUIT BOARD JUMPER POSITION	ADJUSTMENT JUMPER POSITION
1	675	LOW 1	NORM
2	750	LOW 1	NORM
3	850	LOW 2	NORM
4	925	LOW 3	NORM
5	1025	LOW 4 / HIGH 1	NORM
6	1125	HEAT 1 / HIGH 2	NORM
7	1225	HEAT 2 / HIGH 3	NORM
8	1325	HEAT 3 / HIGH 3	NORM
9	1400	HEAT 4 / HIGH 4	NORM
10	1550	HEAT 4 / HIGH 4	"+"
11	1550	HEAT 4 / HIGH 4	"+"

TABLE 6
CB21V / CBH21V / B21V-51/65 SERIES UNITS
ICM1 SPEED TAP TO ICM2+ JUMPER SELECTIONS
(For Static Pressure 0.0" to 0.6" w.g.)

ORIGINAL MOTOR SPEED TAP POSITION	ORIGINAL MOTOR APPROXI-MATE CFM	CIRCUIT BOARD JUMPER POSITION	ADJUSTMENT JUMPER POSITION
1	750	LOW 1	NORM
2	850	LOW 1	NORM
3	950	LOW 2	NORM
4	1150	LOW 3	NORM
5	1300	LOW 4	NORM
6	1500	HEAT 1 / HIGH 1	NORM
7	1650	HEAT 2 / HIGH 2	NORM
8	1800	HEAT 3 / HIGH 3	NORM
9	1950	HEAT 4 / HIGH 4	NORM
10	2100	HEAT 4 / HIGH 4	"+"
11	2100	HEAT 4 / HIGH 4	"+"

ICM2+ BLOWER MOTOR PERFORMANCE TABLES

TABLE 7
G21V3-60/80 ICM2+ BLOWER MOTOR PERFORMANCE
(For Static Pressure 0.0" to 0.8" w.g.)

ADJUST JUMPER SETTING	LOW SPEED				HIGH (COOL) SPEED				HEAT SPEED			
	JPB1 JUMPER POSITION				JPB1 JUMPER POSITION				JPB1 JUMPER POSITION			
	1	2	3	4	1	2	3	4	1	2	3	4
+	540	700	830	1000	1150	1260	1400	1410	1150	1250	1350	1400
NORM	490	630	740	880	1040	1140	1240	1265	1030	1140	1220	1300
-	440	560	670	800	940	1030	1140	1160	920	1020	1100	1190

NOTE: ADJUST position on JPB1 ("NORM", "+", or "-") determines the row of CFM available to use.

TABLE 8
GSR21V3-80 ICM2+ BLOWER MOTOR PERFORMANCE
(For Static Pressure 0.0" to 0.8" w.g.)

ADJUST JUMPER SETTING	LOW SPEED				HIGH (COOL) SPEED				HEAT SPEED			
	JPB1 JUMPER POSITION				JPB1 JUMPER POSITION				JPB1 JUMPER POSITION			
	1	2	3	4	1	2	3	4	1	2	3	4
+	520	670	800	960	1110	1220	1340	1420	1110	1210	1310	1420
NORM	480	600	740	880	1070	1160	1270	1300	1000	1100	1200	1280
-	420	550	650	770	950	1040	1150	1170	900	1000	1100	1160

NOTE: ADJUST position on JPB1 ("NORM", "+", or "-") determines the row of CFM available to use.

TABLE 9
G21V5-80/100 ICM2+ BLOWER MOTOR PERFORMANCE
(For Static Pressure 0.0" to 0.8" w.g.)

ADJUST JUMPER SETTING	LOW SPEED				HIGH (COOL) SPEED				HEAT SPEED			
	JPB1 JUMPER POSITION				JPB1 JUMPER POSITION				JPB1 JUMPER POSITION			
	1	2	3	4	1	2	3	4	1	2	3	4
+	800	1050	1410	1620	1710	2030	2270*	2270*	1900	2140	2270*	2270*
NORM	720	950	1280	1500	1570	1850	2100	2220	1700	1940	2080	2200
-	620	850	1120	1310	1420	1650	1860	1990	1520	1730	1860	1940

NOTE: ADJUST position on JPB1 ("NORM", "+", or "-") determines the row of CFM available to use.

**2300 CFM @ 0.2" w.g.; 2250 CFM @ 0.5" w.g.; 2200 CFM @ 0.8" w.g.*

TABLE 10
GSR21V5-80/100 ICM2+ BLOWER MOTOR PERFORMANCE
(For Static Pressure 0.0" to 0.8" w.g.)

ADJUST JUMPER SETTING	LOW SPEED				HIGH (COOL) SPEED				HEAT SPEED			
	JPB1 JUMPER POSITION				JPB1 JUMPER POSITION				JPB1 JUMPER POSITION			
	1	2	3	4	1	2	3	4	1	2	3	4
+	860	1100	1460	1740	1800	2090	2100*	2100*	1930	2100*	2100*	2100*
NORM	770	1020	1390	1580	1720	1990	2100*	2100*	1800	2000	2100*	2100*
-	680	900	1180	1400	1450	1690	1940	2040	1580	1780	1920	2010

NOTE: ADJUST position on JPB1 ("NORM", "+", or "-") determines the row of CFM available to use.

**2200 CFM @ 0.2" w.g.; 2100 CFM @ 0.5" w.g.; 2000 CFM @ 0.8" w.g.*

TABLE 11
GSR21CV5-80/100 ICM2+ BLOWER MOTOR PERFORMANCE
(For Static Pressure 0.0" to 1.2" w.g.)

ADJUST JUMPER SETTING	STATIC	LOW SPEED				HIGH (COOL) SPEED				HEAT SPEED			
		JPB1 JUMPER POSITION				JPB1 JUMPER POSITION				JPB1 JUMPER POSITION			
		1	2	3	4	1	2	3	4	1	2	3	4
+	1.2	750	1080	1440	1670	1790	2000	2000	2000	---	---	---	---
	1.0	790	1090	1450	1660	1800	2080	2070	2080	---	---	---	---
	0.5	840	1130	1460	1640	1770	2100	2230	2210	---	---	---	---
NORM	1.2	680	940	1340	1510	1490	1870	2020	2000	---	---	---	---
	1.0	700	960	1350	1510	1500	1880	2110	2070	---	---	---	---
	0.5	750	1030	1360	1520	1500	1840	2130	2220	---	---	---	---
-	1.2	590	790	1160	1330	1410	1670	1920	1980	---	---	---	---
	1.0	610	830	1180	1350	1420	1660	1940	2010	---	---	---	---
	0.5	670	900	1200	1360	1440	1640	1920	2010	---	---	---	---

NOTE: HEAT speed tap is not used on GSR21CV units. ADJUST position on JPB1 ("NORM", "+", or "-") determines the row of CFM available to use.

TABLE 12
CB21V-41 AND CBH21V-41 BLOWER PERFORMANCE
(Operating at 0.00 through 0.60 in. w.g. External Static Pressure)

ADJUST JUMPER SETTING	LOW SPEED				HIGH (COOL) SPEED				HEAT SPEED			
	JPB1 JUMPER POSITION				JPB1 JUMPER POSITION				JPB1 JUMPER POSITION			
	1	2	3	4	1	2	3	4	1	2	3	4
+	850	950	1060	1150	1150	1250	1490	1600	1230	1340	1480	1600
NORM	750	850	950	1025	1025	1125	1325	1425	1125	1225	1325	1425
-	650	730	830	900	900	1000	1190	1260	980	1080	1190	1260

NOTE: ADJUST position on BDC-2 ("NORM", "+", or "-") determines the row of CFM available to use.

TABLE 13
CB21V-51, CBH21V-51, CB21V-65, CBH21V-65 AND B21V-51/65 BLOWER PERFORMANCE
(Operating at 0.00 through 0.60 in. w.g. External Static Pressure)

ADJUST JUMPER SETTING	LOW SPEED				HIGH (COOL) SPEED				HEAT SPEED			
	JPB1 JUMPER POSITION				JPB1 JUMPER POSITION				JPB1 JUMPER POSITION			
	1	2	3	4	1	2	3	4	1	2	3	4
+	935	1060	1265	1425	1650	1780	1955	2160	1650	1800	2000	2200
NORM	850	950	1150	1300	1500	1650	1800	1950	1500	1650	1800	1950
-	750	850	1025	1110	1350	1485	1560	1760	1340	1480	1630	1760

NOTE: ADJUST position on BDC-2 ("NORM", "+", or "-") determines the row of CFM available to use.

ICM2+ CHECK-OUT

To check-out the ICM2+ refer to figure 17 and follow the check-out procedure as outlined. If the blower fails any of these tests, do not attempt to repair the motor.

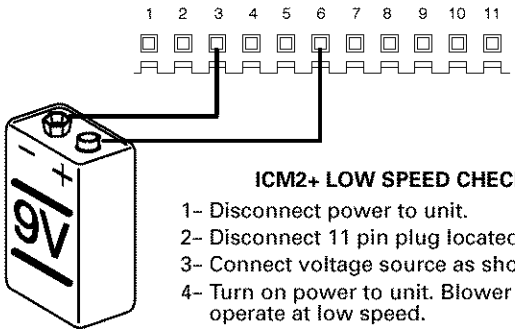
There are no field serviceable parts in this component. Replace the motor and repeat the check-out procedure.

ICM2+ CHECK-OUT

A kit is available from the Lennox parts center to use in testing the variable speed motor. The kit 70J11 includes a test plug harness to facilitate vsm check-out. **Follow testing procedures outlined in the instructions provided with the kit. The testing procedures are different than those listed below.** If not using the kit to test the motor, follow the procedure below.

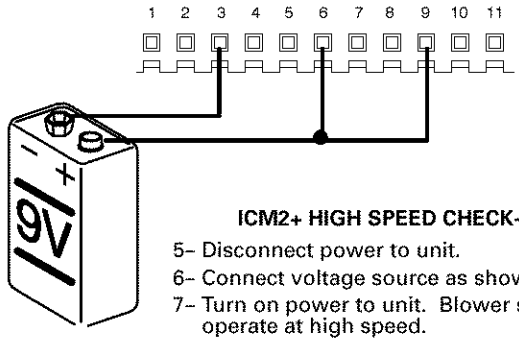
NOTE-Any A.C. voltage source less than 30 volts or any D.C. voltage source less than 20 volts may be used to check out the motor. An ordinary 9 volt battery is recommended. Unit transformer T1 secondary may be used in lieu of a battery. A 9 volt battery will last for about one day of normal operation. If transformer T1 is used, double check all wiring connections before placing unit back in operation.

CHECK-OUT PROCEDURE



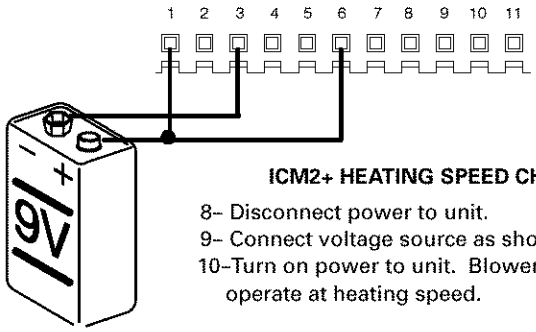
ICM2+ LOW SPEED CHECK-OUT

1- Disconnect power to unit.
2- Disconnect 11 pin plug located on JPB1.
3- Connect voltage source as shown above.
4- Turn on power to unit. Blower should operate at low speed.



ICM2+ HIGH SPEED CHECK-OUT

5- Disconnect power to unit.
6- Connect voltage source as shown above.
7- Turn on power to unit. Blower should operate at high speed.



ICM2+ HEATING SPEED CHECK-OUT

8- Disconnect power to unit.
9- Connect voltage source as shown above.
10-Turn on power to unit. Blower should operate at heating speed.

FIGURE 17