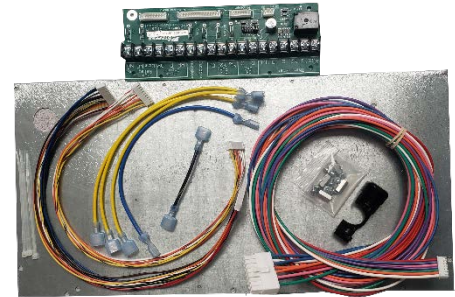


For use with Item #1302140 & 1302141

THIS KIT MUST BE INSTALLED BY A QUALIFIED TECHNICIAN.


KIT INCLUDES

- Low voltage circuit board
- Mounting plate, mounting screws and standoffs
- Strain relief for 7/8" Knockout
- Black/Yellow jumper wire to bypass high speed relay on Base I/O board
- Blue extension wire and yellow extension wire for circuit board "R" and "C" if needed.
- 2 Yellow extension wires for discharge air
- 9-pin & 15-pin wiring harnesses
- ECM motor harness
- Wire Ties



INSTALLATION

1. De-energize the heating system.
2. Remove existing supply air blower assembly by disconnecting the wiring harnesses at the blower and sliding the supply air blower assembly out of the plenum.
3. Replace the air plenum assembly re-using existing mounting bracket on the heater. (Figure 5)
4. Remove the electrical panel cover.
5. Disconnect the field wires connected to the 6 and 12-position low voltage terminal blocks. For ease of installation, label the wires with the terminal designation as they are disconnected.
6. Disconnect the blue and yellow wires (16 awg) coming from the "R" and "C" terminals at the quick disconnects shown in Figure 1.
7. At the processor control (display) board, disconnect the two low voltage wiring harnesses (one 9-pin and one 15-pin).
8. Disconnect the two brown wires at the quick disconnects. (Figure 2).
9. At the base I/O relay board (Figure 3), disconnect the two wires connected to the high-speed relay and install the black/yellow jumper wire with two male quick disconnects across these two wires.
10. Slide the new supply air blower assembly into the plenum. (Figure 4)

 **WARNING**

HAZARDOUS VOLTAGE: RISK OF ELECTRIC SHOCK. CAN CAUSE INJURY OR DEATH. DISCONNECT ALL REMOTE ELECTRIC POWER SUPPLIES BEFORE SERVICING.

FIGURE 1

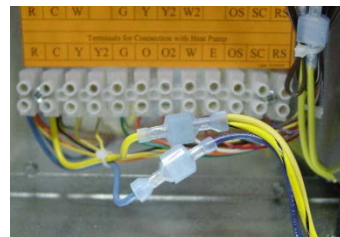


FIGURE 2



FIGURE 3



**High
Speed
Relay**

FIGURE 4



NOTE: Verify that the blower is installed in the plenum with the motor facing away from the system to ensure maximum air flow.

Variable Speed Motor Upgrade Continued...

11. Route the 9-pin wiring harness in the base of the furnace (Figure 5) to the 9-pin wiring harness from the blower and connect them.
12. Remove the existing mounting plate with 6 and 12-position low voltage terminal blocks. Be sure to remove the spare fuses so they can be left with the furnace.
13. Locate new mounting plate and remove the 7/8" knockout from the lower right corner.
14. Mount the low voltage circuit board to the new mounting plate with screws and standoffs provided.
15. Route the 7-pin wiring harness from the blower assembly into the electrical compartment through the knockout on the lower right corner of the mounting plate.
16. Attach the 7-pin wiring harness to the "Blower" terminal and install the strain relief (Figure 7) around the harness, securing it in the knockout on the mounting plate.
17. Secure the new mounting plate to the electric panel.
18. Connect EMC motor harness to motor.
19. Connect the two yellow discharge air sensor wires to the "Air" terminals (Figure 8).
20. Connect both the 9-pin and the 15-pin wiring harnesses included in the variable speed kit to the processor control (display) board and the ports labeled "To Control Board" on the LV circuit board.
21. Connect the blue transformer wire to LV circuit board "R" terminal and the yellow transformer wire to the "C" terminal. Use extension wires as needed.
22. Using the chart below and the blower speed selection jumper (Figure 8), select the desired blower speed.

FIGURE 5

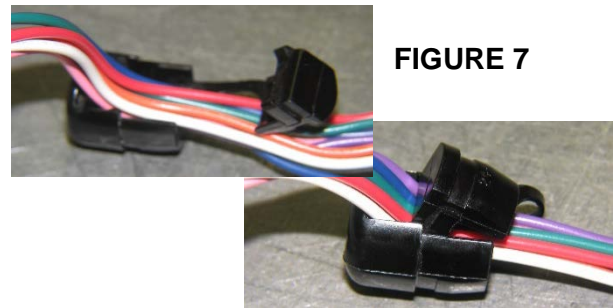
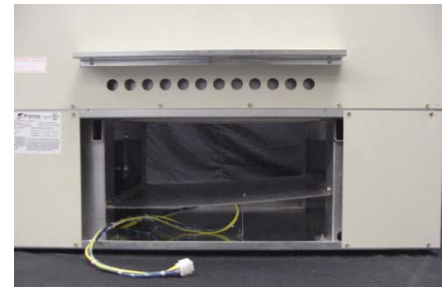
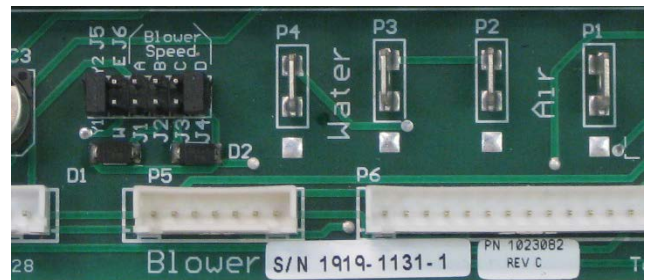


FIGURE 7

FIGURE 8



Jumper	½ HP Variable Speed CFM	1 HP Variable Speed CFM
A	1000	1200
B	1200	1400
C	1400	1600
D	1600	2000

Note: Generally, 400 CFM of air flow is recommended per ton of cooling. Therefore, a 3-ton heat pump or air conditioner would require 1200 CFM.

23. The "W/E" jumper (Figure 9) MUST be in the "ON" position.

Note: If the W/E jumper is in the "OFF" position when installed in a forced air heating system, the blower will NOT run with an "E" call from the thermostat and the core blower will cycle on and off on limit. If receiving a "G" and an "E" call from the thermostat, the system will operate at 400 CFM.

24. If installing the system with a two stage heat pump, the Y1/Y2 jumper (Figure 8) must be placed in the "OFF" position.

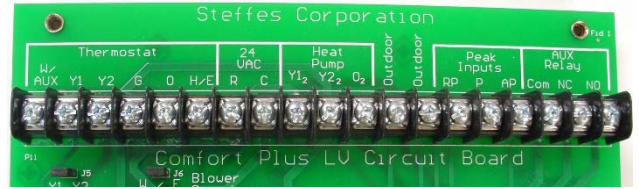
Note: When using a two stage heat pump, a "Y1" signal will yield ½ of the maximum CFM selected. A "Y2" signal will yield maximum CFM selected.

Jumper	No Heat Pump or Single Stage Heat Pump	Two Stage Heat Pump
Y1-Y2	ON	OFF

Variable Speed Motor Upgrade Continued...

25. If applicable, connect the outdoor sensor wires which used to be connected to "OS" and "SC" to the two terminals labeled "Outdoor" on the LV circuit board.
26. If applicable, connect the peak control device which used to be connected to "RP" and "P" to the Peak Inputs "RP" and "P" on the LV circuit board.
27. Re-connect the field thermostat wires removed from 12-position terminal block to the LV circuit board (Figure 9).

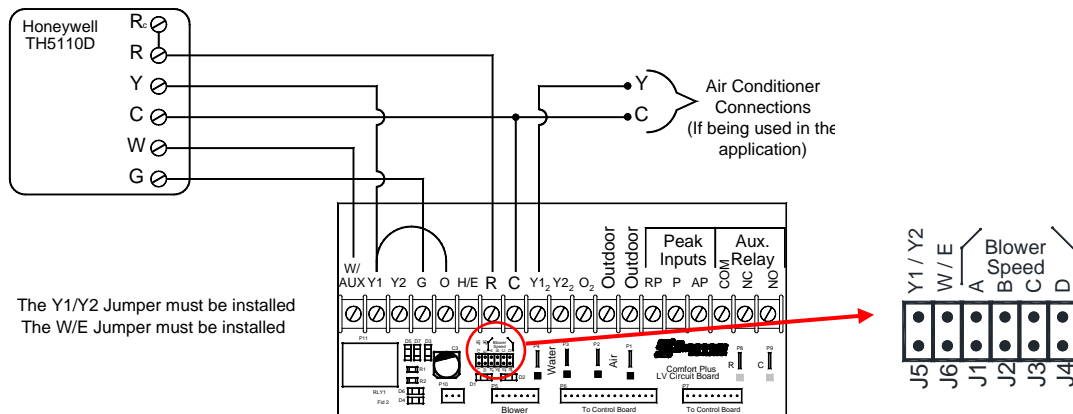
FIGURE 9



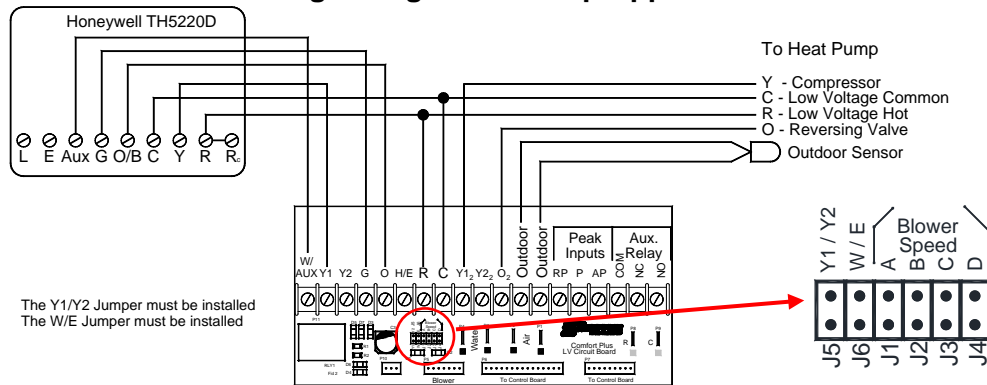
Note: *If utilizing a heat pump, connect the wire removed from "Y2" to the "Y1₂" under Heat Pump on the LV circuit board.*

28. If applicable, connect the auxiliary load control wires which used to be connected to "COM", "NC", and "NO" to the auxiliary relay contacts "Com", "NC", and "NO" on the LV board.

Stand Alone Furnace Application with Uncontrolled Air Conditioning



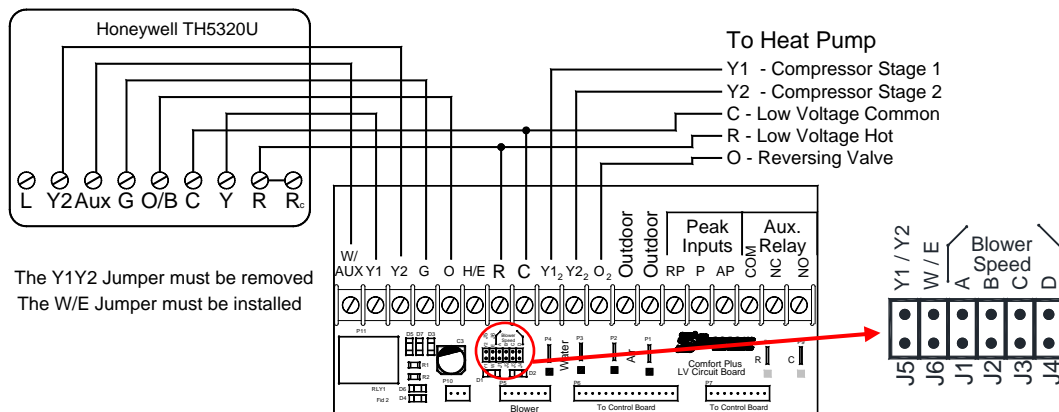
Single Stage Heat Pump Application



SINGLE STAGE HEAT PUMP					
Thermostat Stage	Thermostat Output	Heat Pump Stage	% of Selected CFM	Heat Call Status on Digital Display*	Discharge Air Temperature Target
1	Y1/G	1	100%	HC1	L048
2	Aux/Y1/G	1	100%	HC2	L049
Fan	G	0	400 cfm	HCF	N/A
Cool	Y1/G/O	1	100%	COOL	N/A
Emergency	H/E	0	100%	HC3	L049
Contractor Use Only					

* If multiple inputs are active, system will display highest Heat Call values.

Two Stage Heat Pump Application



TWO STAGE HEAT PUMP					
Thermostat Stage	Thermostat Output	Heat Pump Stage	% of Selected CFM	Heat Call Status on Digital Display*	Discharge Air Temperature Target
1	Y1/G	1	50% or 70%**	HC1	L048
2	Y1/Y2/G	2	100%	HC1	L048
3	Aux/Y1/Y2/G	2	100%	HC2	L049
Fan	G	0	400 cfm	HCF	N/A
Cool 1	Y1/G/O	1	50% or 70%**	COOL	N/A
Cool 2	Y1/Y2/G/O	2	100%	COOL	N/A
Emergency	H/E	0	100%	HC3	L049
Contractor Use Only					

* If multiple inputs are active, system will display highest Heat Call values.

** Systems built before 1/1/2011 are configured for 50% airflow in Stage 1. For more information, refer to