



# HC4009 Retro Control Board Installation



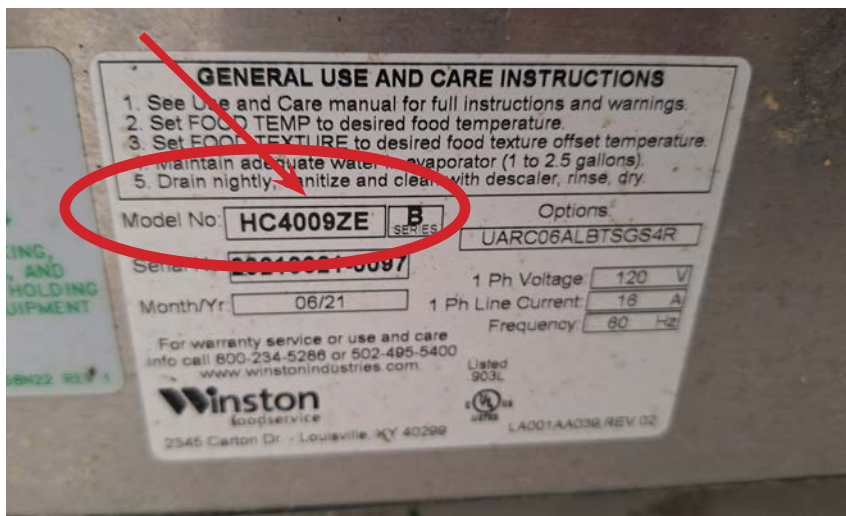
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## HC4009 Retro Control Board Installation

**Tools Required:** Phillips Screwdriver      Hammer  
Flat-tipped Screwdriver      Needle-nosed Pliers  
3/8" Nut driver      9/16" Wrench  
3/8" Wrench      SV1211Kit

This instruction guide covers the retro control board installation for HC4009 series CVaps. Refer to the serial tag for model information.



**Do not plug the new control board into the unit until the new relay panel is installed. The new control board runs on 24V and the line voltage will cause damage to new control board.**

**\*\*The air probe, and the water probe must be replaced. The new control board will not operate correctly with the old probes.**

## HC4009 Retro Control Board Installation

1. Power the unit off and disconnect from power source. (Fig.1-2)



Fig.1



Fig.2

### Air Probe Replacement

2. Locate the air probe access panel on the right side of the cabinet. Using a Phillips screwdriver, remove the panel. (Fig.3-4) \* **Unit right side may have to be removed to access Molex connection.\***



Fig.3



Fig.4

3. Locate the two pin molex connection and disconnect the two pin connection. (Fig.5-6)



Fig.5



Fig.6

## HC4009 Retro Control Board Installation

4. Pull back the insulation and locate the air probe. Using a 3/8" nut-driver, remove the two retaining nuts. (Fig.7-8)



Fig.7



Fig.8

5. Pull retaining bracket up and off of the mounting studs. Next remove the air probe, back retainer, and orange washer. (Fig.9-10)



Fig.9



Fig.10

6. Locate the replacement air probe in the kit. Thread the mounting bracket, followed by the back bracket, and finally the orange washer. (Fig.11-12)

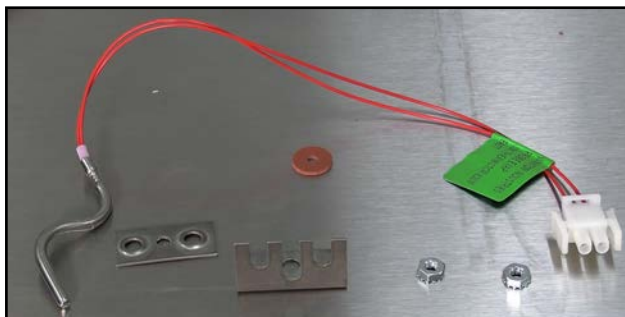


Fig.11



Fig.12

## HC4009 Retro Control Board Installation

7. Insert air probe into opening and rotate until probe tip inside the unit is pointing down. (Fig.13-14)



Fig.13



Fig.14

8. Start the two retaining nuts and tighten them using a 3/8" nut driver or socket. (Fig.15-16)



Fig.15



Fig.16

9. Reconnect the Molex connection and using a Phillips screwdriver or screw gun, replace the access panel. (Fig.17-18)



Fig.17



Fig.18

## HC4009 Retro Control Board Installation

### Water Probe Replacement

10. Drain the water from the unit. Using a Phillips screwdriver or screw gun, remove the lower access panel on the right side.(Fig.19-20)



Fig.19



Fig.20

11. Locate the water probe connection. And disconnect the probe wire.(Fig.21-22)

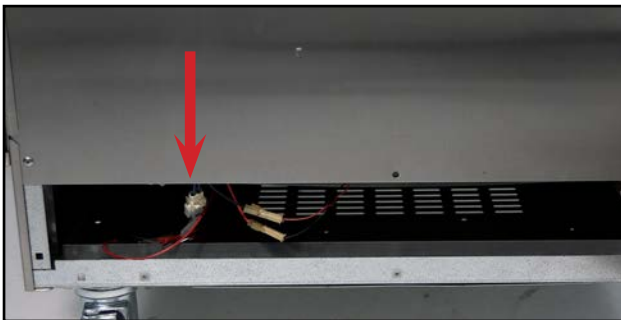


Fig.21



Fig.22

12. Locate the water probe compression nut. Using a 9/16" wrench loosen and remove the water probe compression nut. (Fig.23-24)

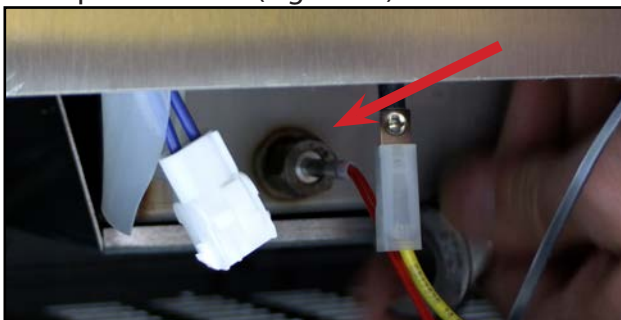


Fig.23

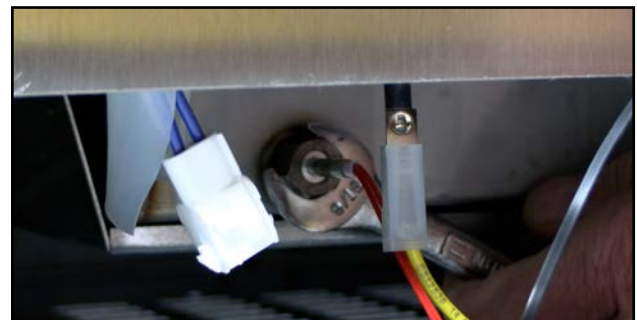


Fig.24

## HC4009 Retro Control Board Installation

13. Gently tap the water probe with a hammer, then ,using pliers pull the water probe out of the water pan. (Fig.25-26)



Fig.25

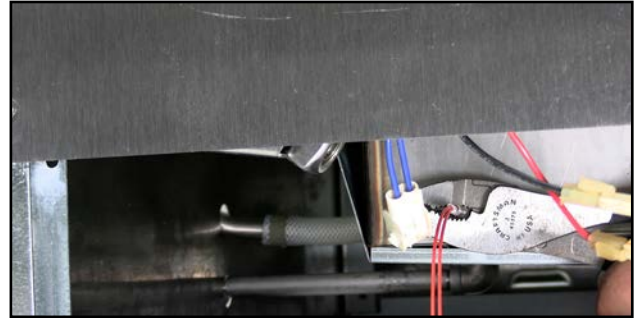


Fig.26

14. Locate the new water probe in the kit and thread on the compression nut and ferrule. The ferrule needs to be 2-1/4" from the probe tip.(Fig.27-28)



Fig.27

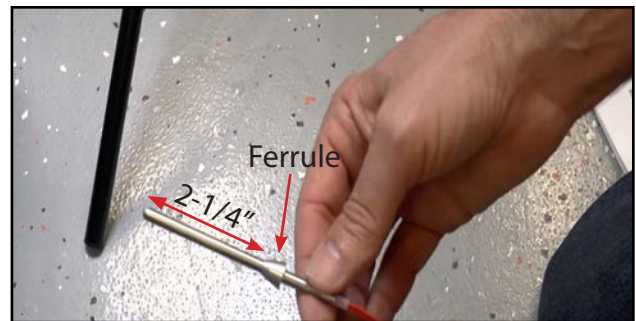


Fig.28

- 15 Insert the water probe into the probe opening. Thread the compression nut on and tighten the compression nut using a 9/16" wrench. Tighten the compression nut until the probe will no longer slide in or out. Reconnect the two pin molex connection.(Fig.29-30)



Fig.29

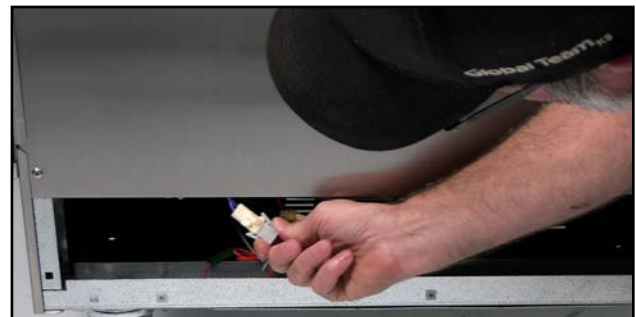


Fig.30

## HC4009 Retro Control Board Installation

### Relay Panel Installation

16. Remove the unit shelves and the evaporator cover if present.(Fig.31-32)



Fig.31



Fig.32

17. Remove the cabinet door and lay the unit on it's back. (Fig.33-34)



Fig.33



Fig.34

18. Remove the left side lower access panel and then remove the left cabinet side. (Fig.35-36)



Fig.35



Fig.36



## HC4009 Retro Control Board Installation

19. Using a Phillips screwdriver, remove the cabinet bottom. (Fig.37-38)



Fig.37

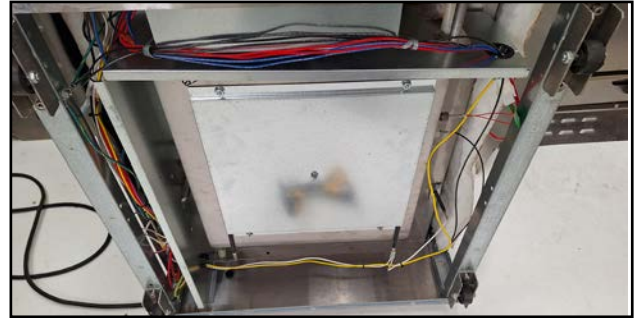


Fig.38

20. Using a Phillips screwdriver or screw gun, remove the control board retaining screws. Pull the control board away from the opening.(Fig.39-40)



Fig.39



Fig.40

21. Disconnect the nine pin and the six pin Molex connections and remove the control board. (Fig.41)



Fig.41

## HC4009 Retro Control Board Installation

22. Using a flat tip screwdriver, depress the tabs on the control housing female nine pin Molex connection. Push the connection back into the cabinet side. (Fig.42-43)

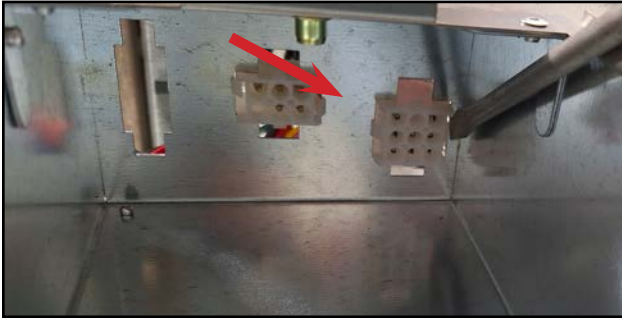


Fig.42

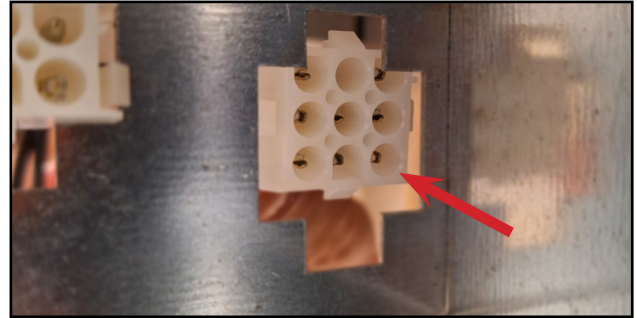


Fig.43

23. Locate the relay board in the kit and untie the relay wires. Locate the signal wire 9 pin Molex connection( thinner wires). Locate the capped green wire coming from the cabinet grounding lug.(Fig.44-45)

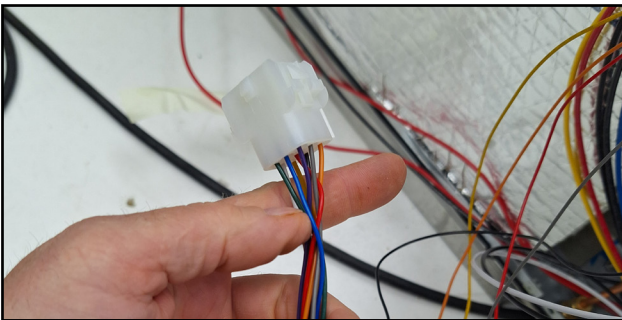


Fig.44

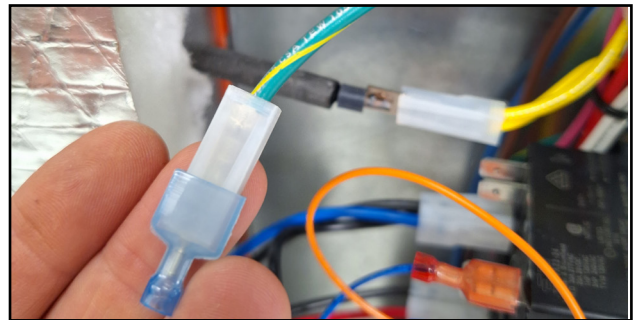


Fig.45

24. Remove the wire cap and plug the male green wire coming from the signal wire connections into the green ground wire.(Fig.46-47)

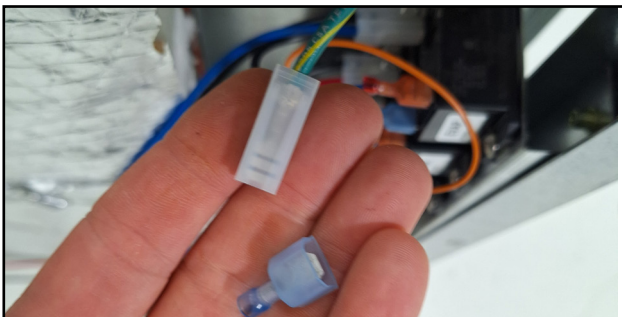


Fig.46

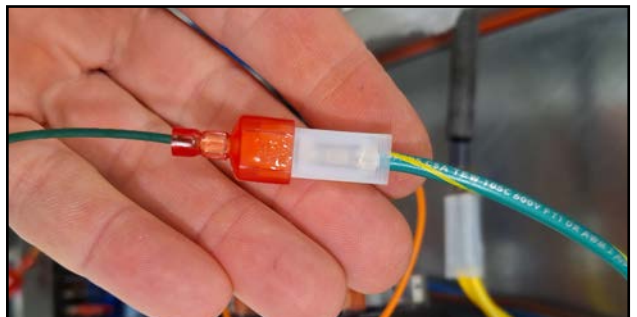


Fig.47

## HC4009 Retro Control Board Installation

25. Insert the signal wire 9 pin Molex connection into the slot where the previous 9 pin Molex connection was. Ensure the connection is firmly seated.(Fig.48-49)

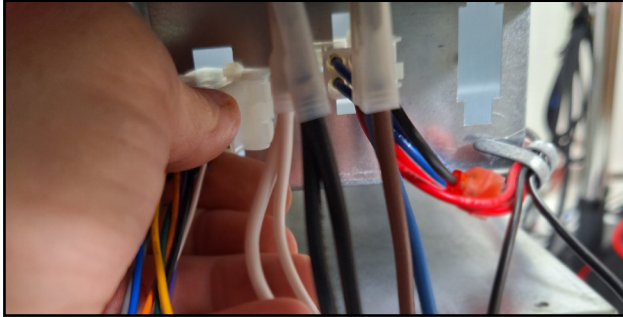


Fig.48

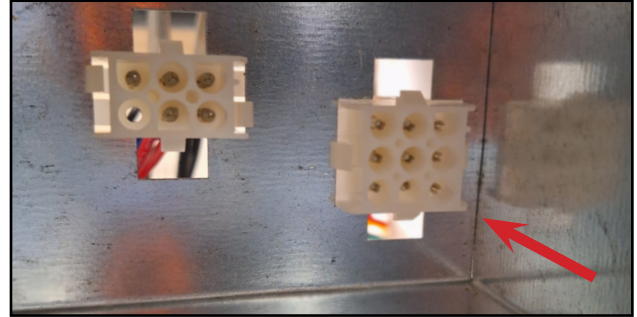


Fig.49

26. Locate the power wire 9 pin Molex connection coming from the relay board (thicker wires). Next, locate the power wire 9 pin Molex connection that was push through the control board housing.(Fig.50-51)

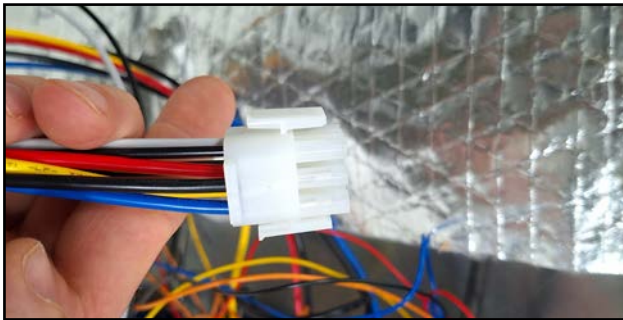


Fig.50

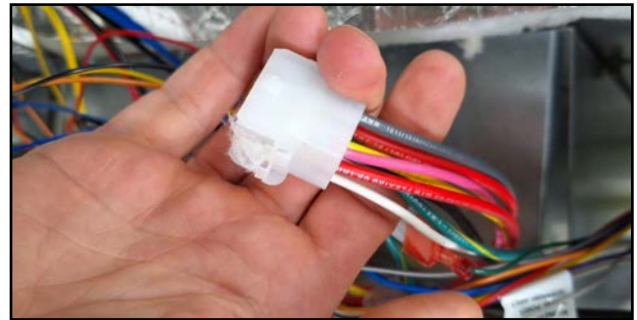


Fig.51

27. Connect the two 9 pin Molex connections together. Ensure the connection is behind air heater terminal.(Fig.52-53)

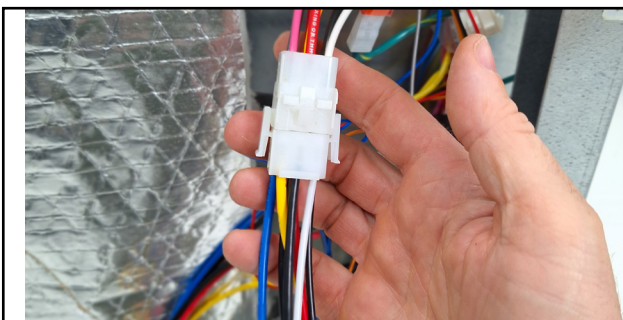


Fig.52



Fig.53

## HC4009 Retro Control Board Installation

28. Secure the excess wire in the relay panel wire straps. Remove the bottom middle screw grommet from the cabinet bottom rail.(Fig.54-55)



Fig.54



Fig.55

29. Set the relay panel into the bottom rail. Ensure all existing wires are tucked above the panel leading edge. (Fig.56-57)



Fig.56

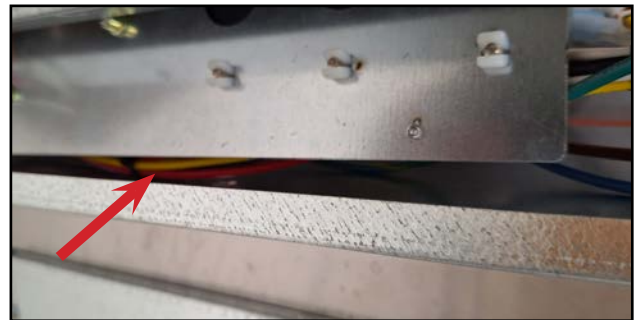


Fig.57

30. Align the square hole on the relay panel with the square hole where the grommet was removed and replace the grommet to secure the panel. (Fig. 58-59)



Fig.58



Fig.59

## HC4009 Retro Control Board Installation

31. Locate the two bottom grommets on the cabinet left side and remove. (Fig. 60-61)

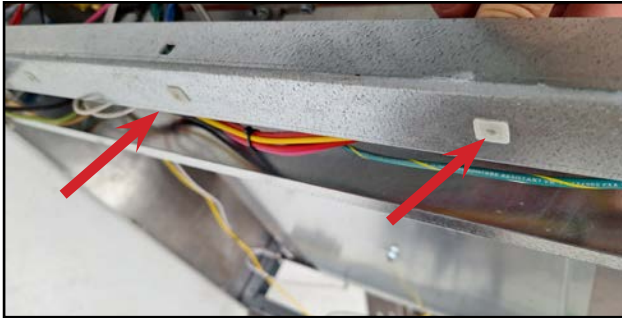


Fig.60

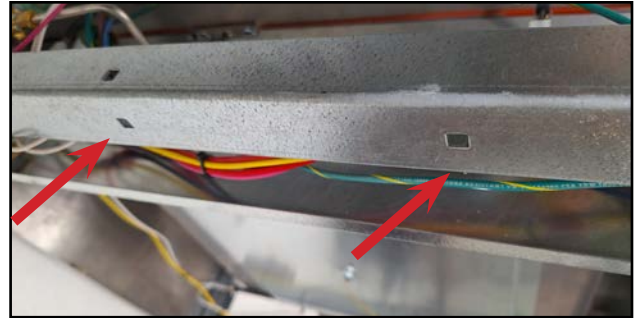


Fig.61

32. Locate unit bottom and replace. Locate the two 10-32 x .50 machine screws in the kit and insert into the bottom and the holes where the grommets were removed. (Fig.62-63)



Fig.62



Fig.63

33. Using a Phillips screwdriver, continue securing the unit bottom. (Fig.64-65)



Fig.64



Fig.65

## HC4009 Retro Control Board Installation

34. Using a Phillips screwdriver, replace the unit side. (Fig.66-67)



Fig.66



Fig.67

35. Locate the new control board in the kit and connect the 6 pin Molex connection and then the 9 pin connection.(Fig.68-69)

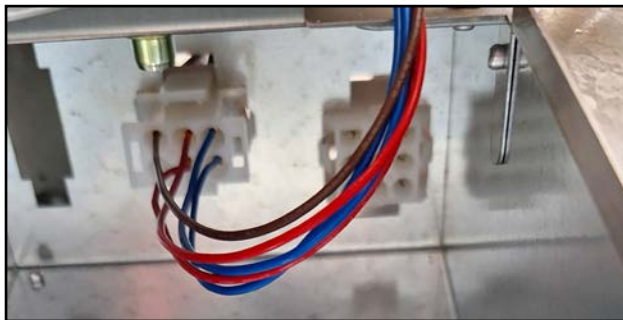


Fig.68



Fig.69

36. Insert the new control board into the housing. Using a Phillips screwdriver, secure the new control board(Fig.70-71)



Fig.70



Fig.71

## HC4009 Retro Control Board Installation

37. Set the unit upright and fill the evaporator with water. Verify the unit is not leaking around the new water probe area. (Fig.72-73)



Fig.72



Fig.73

38.If no leak is detected, replace both of the lower access panels. Plug the unit in.(Fig.74-75)



Fig.74



Fig.75

39. Turn the unit on and verify that it is operating correctly.(Fig.76-77)



Fig.76



Fig.77

## HC4009 Retro Control Board Installation

40. Replace the unit evaporator cover, if present. Replace the unit shelves.(Fig.78-79)



Fig.78



Fig.79

41. Replace the unit door. (Fig.80-81)



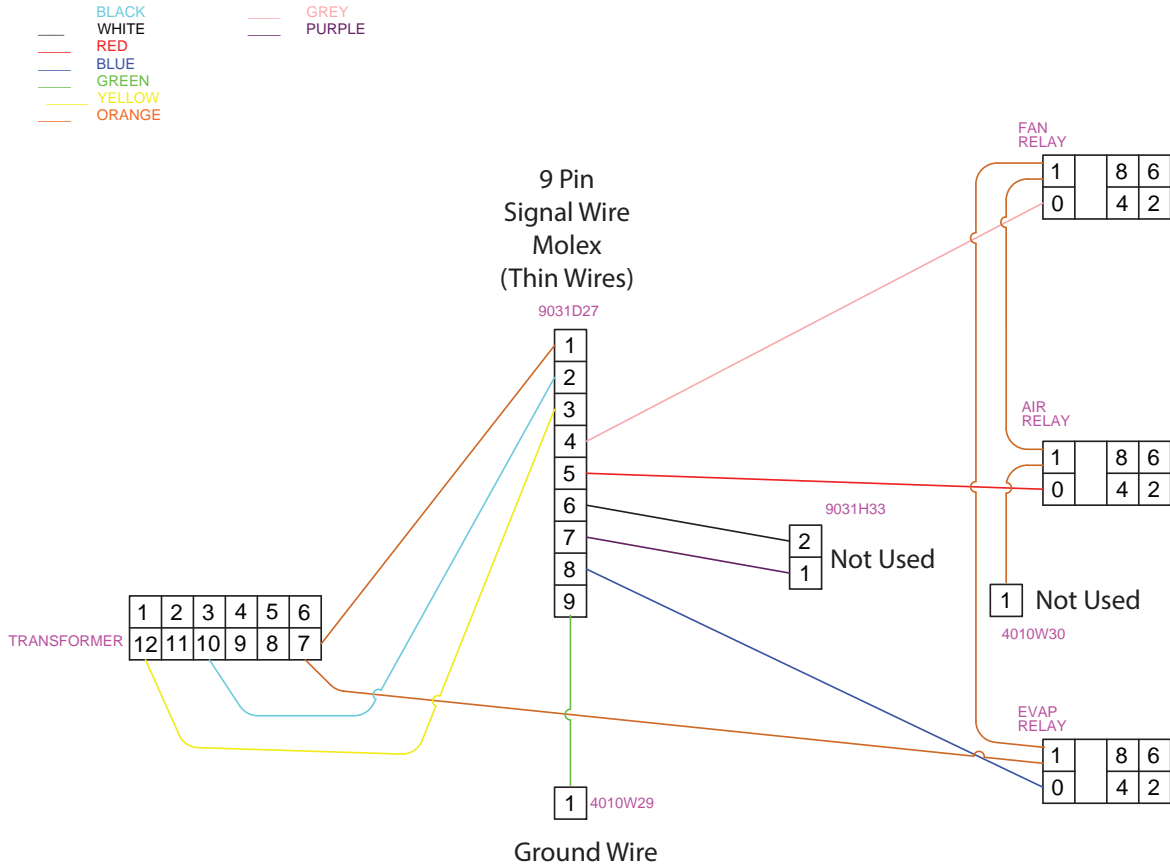
Fig.80



Fig.81



**Wiring Diagrams**



**Wiring Diagrams**

