Channel Board Replacement Control Kit

INSTALLATION INSTRUCTIONS

This kit is to replace an Emerson control board part number 1041648 to Channel Control Board part number 1046397. This kit will also replace UTEC board part number 1021573. The models affected are *G7S(A,K,C,D), MGC2, MG3P, MG2R and CMF95.

IMPORTANT SAFETY INFORMATION

Safety markings are used to designate a degree or level of seriousness and should not be ignored. **WARNING** indicates a potentially hazardous situation that if not avoided, could result in personal injury or death. **CAUTION** indicates a potentially hazardous situation that if not avoided, may result in minor or moderate injury or property damage.

⚠ WARNING:

RISK OR ELECTRICAL SHOCK

Shut off all electrical power to the unit before performing any maintenance or service on the system. Failure to follow this warning can cause serious injury, fire, electrical shock, or death.

⚠ CAUTION:

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

Kit Contents.

Qty (1) Control Board Part number 1046397
Qty (5) Quick Connect Plug Assemblies with quick connect terminals.
Qty (2) Wiring Diagrams 1049933 and 1051377
Qty (1) Installation Instructions

Removal of the Control Board.

1. Turn off the power to the furnace(s) and verify.
2. Remove the doors of the furnace.
3. In the blower compartment, release the 9 pin plug and set aside.
4. In the control compartment, release the 9 pin plug from the blower deck.
5. From this harness, trace all wires and remove, including the blower plug. This wire harness will not be used with the new control board.
6. Release the harnesses from the inducer and igniter to the control board. These wiring harnesses will not be used with the new control board.
7. Release the 12 pin (Emerson) or 9 pin (UTEC) plug from the control board. Trace all wires from this plug and remove. This wiring harness will not be used with the new control board.
8. Release the 4 pin plug from the transformer. The wiring harness will not be used with the new control board.
9. Remove the thermostat wires from the control board and set aside.
10. Remove the incoming power wires L1 and N from the control board and set aside. These two wires along with the ground wire will be used with the new control board.
11. Remove any accessory HUM or EAC wires and set aside.
12. Remove the control board from the control bracket. Note: The new 1046397 control board will have new standoffs.

Installation of the Channel control board 1046397 on *G7S(A,K,C,D), MGC2, and MG3P. Refer to Figure 2 for the correct wiring harnesses.

1. The standoff pattern from the old to new control board is the same. Attach the new board to the control bracket using the existing holes, ensuring the standoffs are fully inserted.
2. Ensure orientation of the board will allow easy access to the thermostat connections.
3. Attach the 6 pin blower motor plug to board. It will only attach fully in one direction. The red wire will be in the T1 position. See Figure 1.
4. Insert the opposite end of the blower motor harness 9 pin plug from step 3 into the blower deck. Note: Every space in the plug has a wire.
5. Insert the 6 pin igniter and inducer plug into the control board. Attach the opposite ends to the igniter and inducer. These plugs are not interchangeable and will only attach one way. Note: Match pin and socket for each plug.
6. Insert the 9 pin plug harness into the control board.
7. Insert the 4 pin plug into the transformers plug.
8. Connect all wires including L1 and N per wiring diagram 1049933 provided in this kit.
9. Attach the thermostat wires to the terminal strip.
10. In the blower compartment, attach the 9 pin blower plug to the blower deck plug.
11. Attach the provided wiring diagram 1049933 in place of the existing wiring diagram.

Blower Configuration

There are 5 blower configurations for the fan, heating and cool modes. The settings are L(LOW), ML(MEDIUM LOW), M(MEDIUM), MH(MEDIUM HIGH), and H(HIGH). Refer to the blower document provided with the unit for the correct settings. To change the HEAT and COOL setting, locate the speed selects on the control board. For HEAT and COOL, move the speed select switches up or down to the desired setting. For the FAN speed, there is jumper that will need to be moved. For instance, covering the last 2 pins(H and MH) will give a H(HIGH) fan setting. See Figure 4 for more detail.
Note: Channel board 1046397 is capable of 5 blower switch settings, only 4 wires are available at the blower. Position T3 M(Medium) does not have a wire connected and cannot be selected. If this position is selected, the blower motor will not operate.

*G7S(A,C,D), MGC2, and MG3P Blower Configuration Selection		
Board Plug	**Selector Switch**	**Factory Setting**
T1	L	Available
T2	ML	Available
T3	M	Do Not Use
T4	MH	Available
T5	H	Available

Table 1. G7S(A,C,D), MGC2, MG3P Blower Configuration Selection

Startup Section

12. Restore Power to the unit.
13. Review Blower Configuration.
14. Cycle through the HEAT, COOL and FAN modes to confirm selector switch settings.
15. Check the air temperature rise for proper airflow.

Note: The speed selector switches can be changed while the unit is operating.

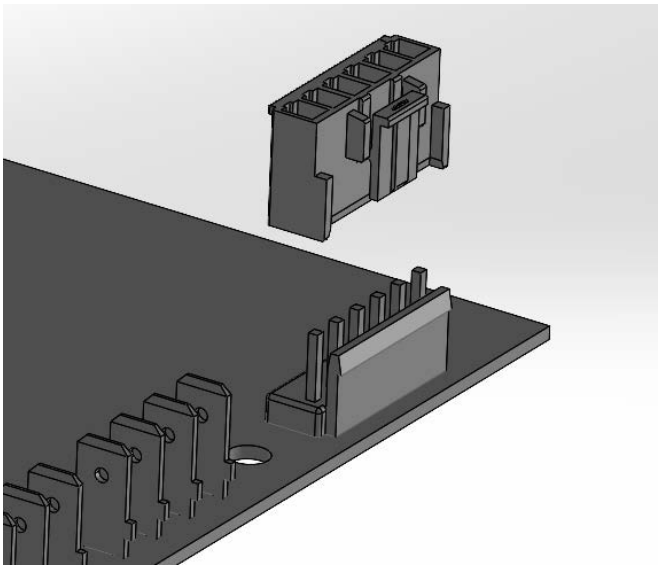


Figure 1. 6 pin blower plug to board

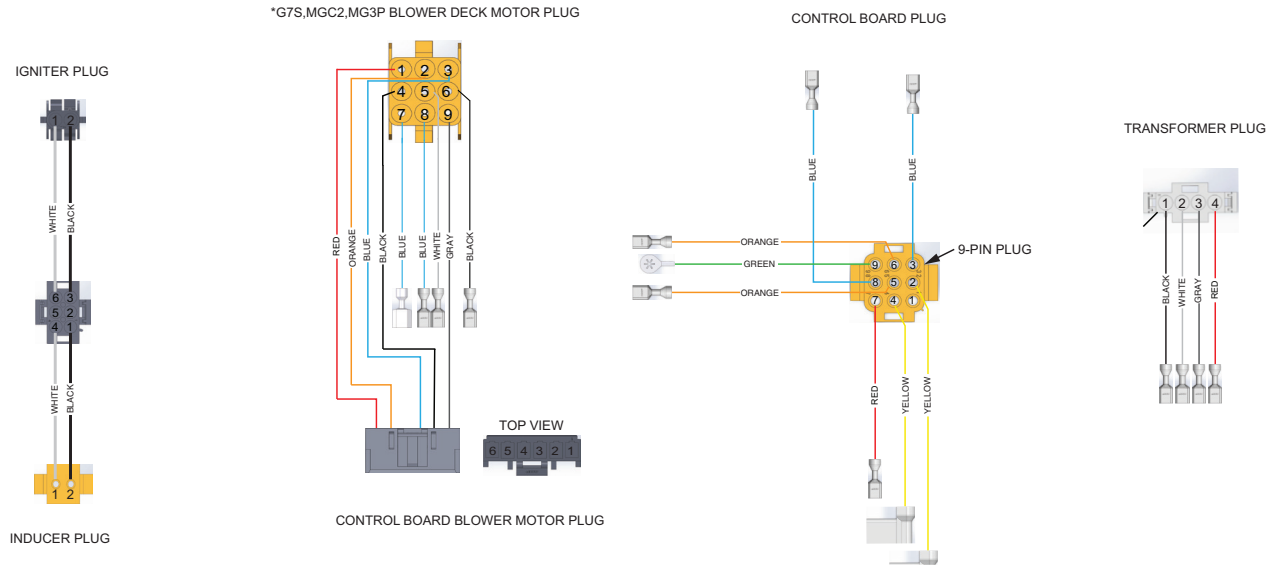
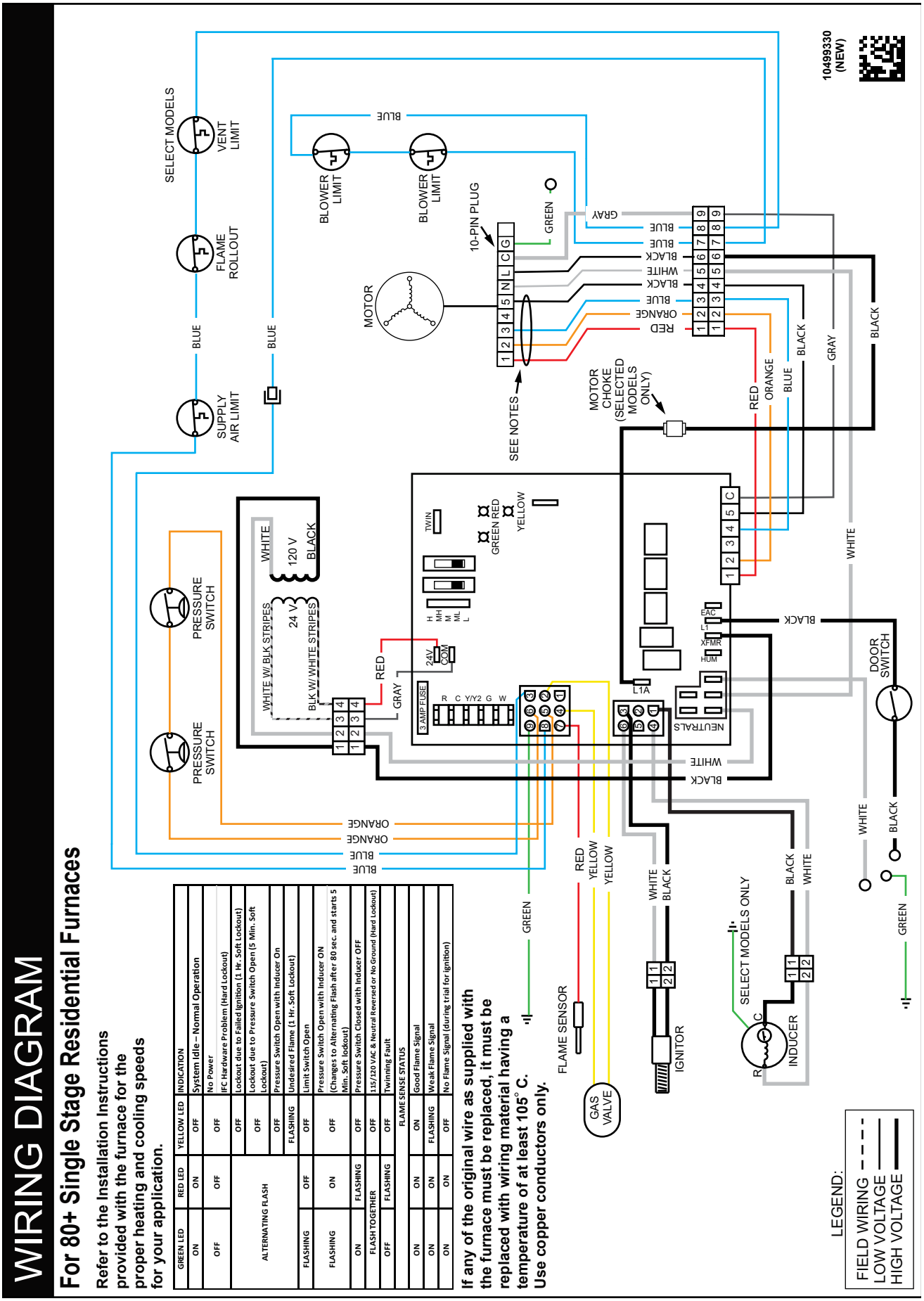


Figure 2. G7S(A,C,D), MGC2, MG3P Wiring Harness



GREEN LED	RED LED	YELLOW LED	INDICATION
ON	ON	OFF	System Idle – Normal Operation
OFF	OFF	OFF	No Power
			IFC Hardware Problem (Hard Lockout)
ALTERNATING FLASH		OFF	Lockout due to Failed Ignition (1 Hr. Soft Lockout)
		OFF	Lockout due to Pressure Switch Open (5 Min. Soft Lockout)
		OFF	Pressure Switch Open with Inducer On
		FLASHING	Undesired Flame (1 Hr. Soft Lockout)
FLASHING	OFF	OFF	Limit Switch Open
FLASHING	ON	OFF	Pressure Switch Open with Inducer ON (Changes to Alternating Flash after 80 sec. and starts 5 Min. Soft lockout)
ON	FLASHING	OFF	Pressure Switch Closed with Inducer OFF
FLASH TOGETHER		OFF	115/120 VAC & Neutral Reversed or No Ground (Hard Lockout)
OFF	FLASHING	OFF	Twinning Fault
FLAME SENSE STATUS			
ON	ON	ON	Good Flame Signal
ON	ON	FLASHING	Weak Flame Signal
ON	ON	OFF	No Flame Signal (during trial for ignition)

Figure 3. Wiring Diagram for 80+ Single Stage Diagram Residential Furnaces

Installation of the Channel control board 1046397 on CMF95 and MG2R. Refer to figure 5 for the correct wiring harnesses.

1. The standoff pattern from the old to new control board is the same. Attach the new board to the control bracket using the existing holes, ensuring the standoffs are fully inserted.
2. Ensure orientation of the board will allow easy access to the thermostat connections.
3. Attach the 6 pin blower motor plug to board. It will only attach fully in one direction. The red wire will be in the T1 position. See Figure 1.
4. Insert the opposite end of the blower motor harness 9 pin plug from step 3 into the blower deck. Note: The 9 pin plug DOES NOT have wires in #7 and #8.
5. Insert the 6 pin igniter and inducer plug into the control board. Attach the opposite ends to the igniter and inducer. These plugs are not interchangeable and will only attach one way. Note: Match pin and socket for each plug.
6. Insert the 9 pin plug harness into the control board.
7. Insert the 4 pin plug into the transformer plug.
8. Connect all wires including L1 and N per wiring diagram 1051377 provided in this kit.
9. Attach the thermostat wires to the terminal strip.
10. In the blower compartment, attach the 9 pin blower plug to the blower deck plug.
11. Attach the provided wiring diagram 1051377 in place of the existing wiring diagram.

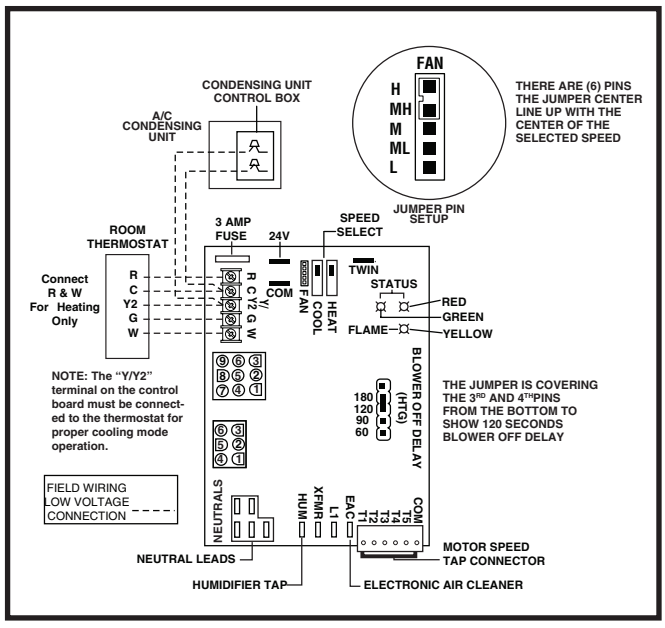


Figure 4. Nordyne Channel Board

Blower Configuration

There are 5 blower configurations for the fan, heating and cool speeds. The settings are L(LOW), ML(MEDIUM LOW), M(MEDIUM), MH(MEDIUM HIGH), and H(HIGH). See note below. Refer to the blower document provided with the unit for the correct settings. To change the HEAT and COOL setting, locate the speed selects on the control board. For HEAT and COOL, move the selector switch up or down to the desired setting. For the FAN speed, there is jumper that will need to be moved. For instance, covering the last 2 pins(H and MH) will give a H(HIGH) fan setting. See Figure 4 for more detail.

Note: Channel board 1046397 is capable of 5 blower configurations, only 4 wires are available at the blower. Position T3 M(Medium) does not have a wire connected and cannot be selected. If this position is selected, the blower motor will not operate.

CMF95 and MG2R Blower Configuration Selection		
Board Plug	**Selector Switch**	**Factory Setting**
T1	L	Available
T2	ML	Available
T3	M	Do Not Use
T4	MH	Available
T5	H	Available

Table 2. CMF95 and MG2R Blower Configuration Selection

Startup Section

12. Restore Power to the unit.
13. Review Blower Configuration.
14. Cycle through the HEAT, COOL and FAN modes to confirm selector switch settings.
15. Check the air temperature rise for proper airflow.

Note: The speed selector switches can be changed while the unit is operating.

Heating Blower Off Delay

There are 4 heating blower off delay settings, 60, 90, 120, and 180 seconds. The factory setting is 120 seconds. These can be changed by moving a jumper on the control board. For instance, moving the jumper to the first 2 pins will give a 60 second heating blower off delay.

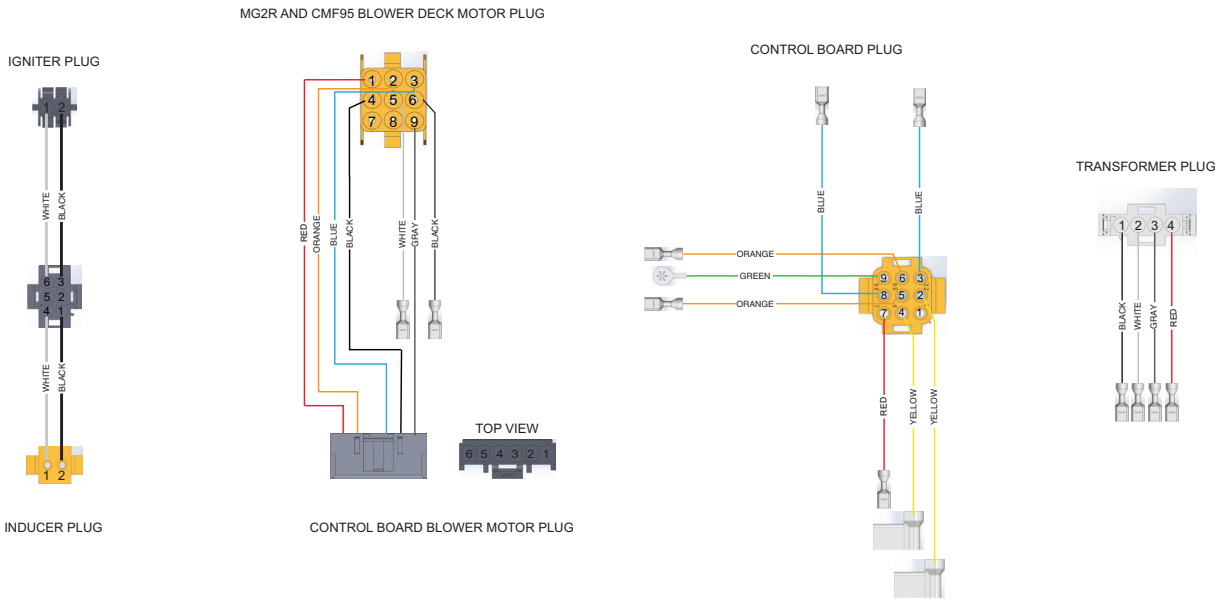


Figure 5. MG2R and CMF95 Wiring Harnesses

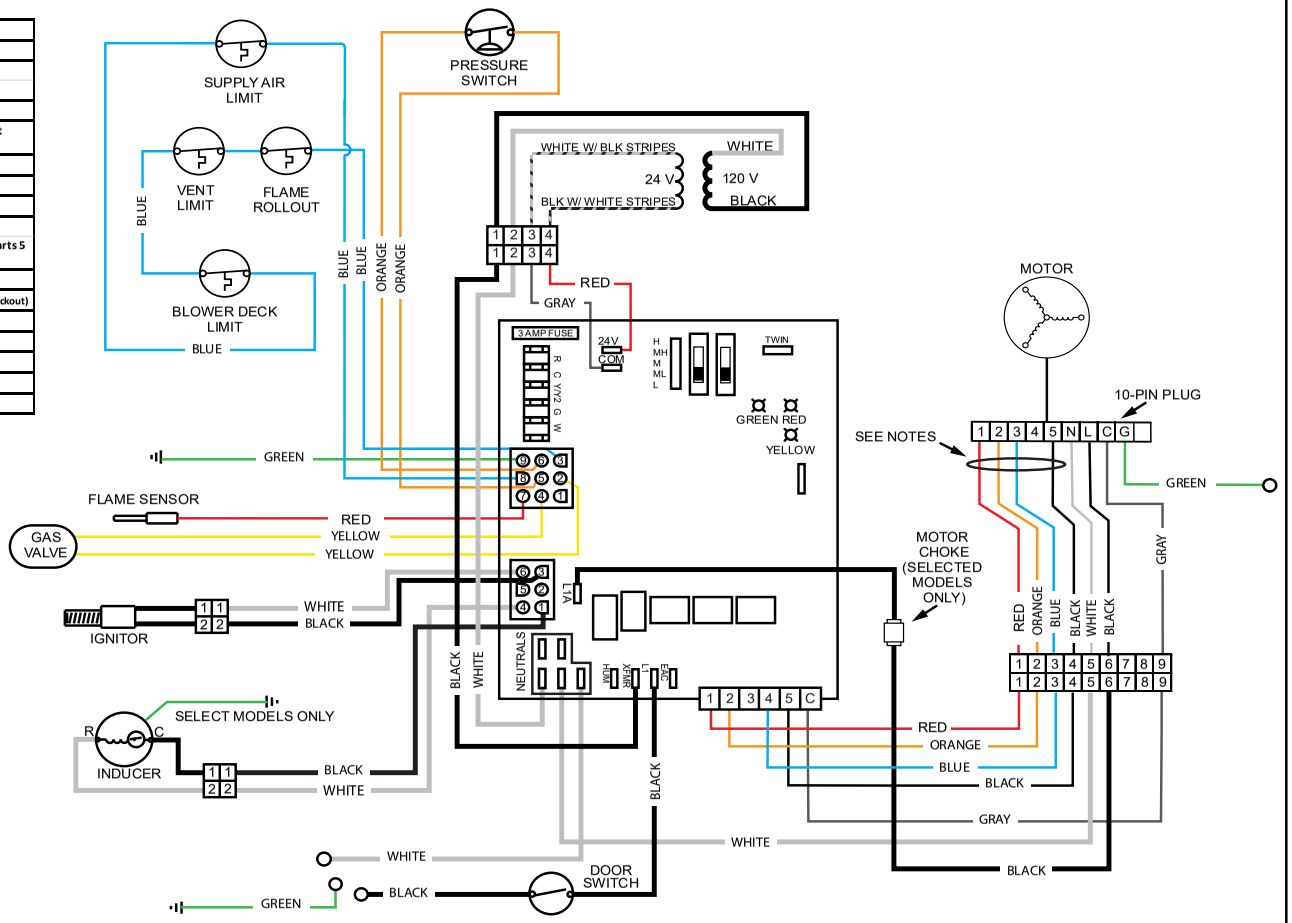
WIRING DIAGRAM

MG2R and CMF95 Single Stage Furnaces

Refer to the Installation Instructions provided with the furnace for the proper heating and cooling speeds for your application.

GREEN LED	RED LED	YELLOW LED	INDICATION
ON	ON	OFF	System Idle – Normal Operation
OFF	OFF	OFF	No Power
			IFC Hardware Problem (Hard Lockout)
ALTERNATING FLASH		OFF	Lockout due to Failed Ignition (1 Hr. Soft Lockout)
		OFF	Lockout due to Pressure Switch Open (5 Min. Soft Lockout)
		OFF	Pressure Switch Open with Inducer On
		FLASHING	Undesired Flame (1 Hr. Soft Lockout)
FLASHING	OFF	OFF	Limit Switch Open
FLASHING	ON	OFF	Pressure Switch Open with Inducer ON (Changes to Alternating Flash after 80 sec. and starts 5 Min. Soft lockout)
ON	FLASHING	OFF	Pressure Switch Closed with Inducer OFF
FLASH TOGETHER		OFF	115/120 VAC & Neutral Reversed or No Ground (Hard Lockout)
OFF	FLASHING	OFF	Twinning Fault
FLAME SENSE STATUS			
ON	ON	ON	Good Flame Signal
ON	ON	FLASHING	Weak Flame Signal
ON	ON	OFF	No Flame Signal (during trial for ignition)

If any of the original wire as supplied with the furnace must be replaced, it must be replaced with wiring material having a temperature of at least 105° C. Use copper conductors only.



LEGEND:

FIELD WIRING – – – –
LOW VOLTAGE ———
HIGH VOLTAGE ———

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Figure 6. Wiring Diagram for MG2R and CMF95 Single Stage Furnaces

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