

- Circulator blower is energized on high heat speed following a fixed thirty second blower on delay. Electronic air cleaner terminals are energized with circulator blower.
- Furnace operates; integrated control module monitors safety circuits continuously.
- R and W thermostat contacts open, completing the call for heat.
- Gas valve closes, extinguishing flame.
- Induced draft blower is de-energized following a fifteen second post purge.
- The circulator blower remains at high heat speed for thirty seconds. The circulator blower then switches to low heat speed for the remainder of the selected heat off delay period. For example, the selected heat off delay period is 150 seconds. The circulator blower operates at high heat for 30 seconds and at low speed for $150 - 30 = 120$ seconds.

(MODE DIP SWITCH IS SET TO “2 STG” POSITION)

The normal operational sequence in sequence is as follows:

- R and W thermostat contacts close, initiating a call for heat.
- Integrated control module performs safety circuit checks.
- Induced draft blower is energized for 15 second prepurge period causing pressure switch contacts to close.
- Igniter warm up begins after 15 second prepurge expires.
- Low and high-stage gas valves open at end of igniter warm up period, delivering gas to burners and establishing flame.
- High-stage gas valve closes after five seconds; low-stage gas valve remains open.
- Integrated control module monitors flame presence. Gas valve will remain open only if flame is detected.
- Circulator blower is energized on low heat speed following a fixed thirty second blower on delay. Electronic air cleaner terminals are energized with circulator blower.
- Furnace is now operating in low-stage heating mode.
- Furnace operates; integrated control module monitors safety circuits continuously.
- If low-stage delay period expires, control will shift operation from low-stage heating mode operation to high-stage heating mode operation. Control will energize circulator blower high heat speed and high stage gas valve.
- Furnace is now operating in high-stage heating mode.
- R and W thermostat contacts open, completing the call for heat.
- Induced draft blower is de-energized following a fifteen second post purge.
- Circulator blower is de-energized following a heat off delay period (selectable 100 or 150 seconds; factory set at 150 seconds).

If the furnace is operating in the low-stage heating mode when thermostat contacts open, circulator remains at low heat speed for the selected delay off period.

If the furnace is operating in high-stage heating mode when the thermostat contacts open, the circulator blower remains at high heat speed for thirty seconds. The circulator blower then switches to low heat speed for the remainder of the selected heat off delay period. For example, the selected heat off delay period is 150 seconds. The circulator blower operates at high heat for 30 seconds and at low speed for $150 - 30 = 120$ seconds.

- Furnace awaits the next call from thermostat.

COOLING MODE

The normal operational sequence in cooling mode is as follows:

- R and Y thermostat contacts close, initiating a call for cool.
- Integrated control module performs safety circuit checks.
- Outdoor fan and compressor are energized.
- Circulator blower is energized on cool speed following a fixed five second on delay. Electronic air cleaner terminals are energized with circulator blower.
- Furnace circulator blower and outdoor cooling unit run, integrated control module monitors safety circuits continuously.
- R and Y thermostat contact open, completing the call for cool.
- Outdoor fan and compressor are de-energized.
- Circulator blower is de-energized following a fixed forty five second cool off delay period. Electronic air cleaner terminals are de-energized.
- Furnace awaits the next call from thermostat.

FAN ONLY MODE

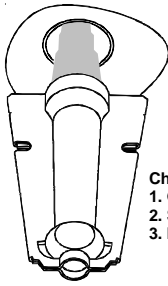
The normal operational sequence in fan only mode is as follows:

- R and G thermostat contacts close, initiating a call for fan.
- Integrated control module performs safety circuit checks.
- Circulator blower is energized on low heat speed. Electronic air cleaner terminals are energized.
- Circulator blower runs, integrated control module monitors safety circuits continuously.
- R and G thermostat contacts open, completing the call for fan.
- Circulator blower is de-energized. Electronic air cleaner terminals are de-energized.
- Furnace awaits the next call from thermostat.

XVI. OPERATIONAL CHECKS

BURNER FLAME

The burner flames should be inspected with the burner compartment door installed. A sight glass is provided for inspection purposes. Flames should be stable, quiet, soft, and blue (dust may cause orange tips but they must not be yellow). Flames should extend directly outward from the burners without curling, floating, or lifting off. Flames must not impinge on the sides of the heat exchanger firing tubes.



Check the burner flames for:
 1. Good adjustment
 2. Stable, soft and blue
 3. Not curling, floating, or lifting off.

Burner Flame

XVII. SAFETY CIRCUIT DESCRIPTION

GENERAL

A number of safety circuits are employed to ensure safe and proper furnace operation. These circuits serve to control any potential safety hazards and serve as inputs in the monitoring and diagnosis of abnormal function. These circuits are continuously monitored during furnace operation by the integrated control module.

INTEGRATED CONTROL MODULE

The integrated control module is an electronic device which, if a potential safety concern is detected, the module will take the necessary precautions and provide diagnostic information through an LED.

PRIMARY LIMIT

The primary limit control is located on the partition panel and monitors heat exchanger compartment temperatures. It is a normally-closed (electrically), automatic reset, temperature-activated sensor. The limit guards against the overheating as a result of insufficient conditioned air passing over the heat exchanger.

AUXILIARY LIMIT

The auxiliary limit control(s) are located on or near the circulator blower and monitors heat exchanger compartment temperatures. They are a normally-closed (electrically), manual-reset, temperature activated sensors. These limits guard against overheating as a result of insufficient conditioned air passing over the heat exchanger.

ROLLOUT LIMIT

The rollout limit control(s) are mounted on the burner/manifold assembly and monitor the burner flame. They are normally-closed (electrically), manual-reset, temperature-activated sensors. These limits guard against burner flames not being properly drawn into the heat exchanger.

PRESSURE SWITCHES

The pressure switches are normally-open (closed during operation), single-pole single-throw, negative air pressure-activated switches. They monitor the airflow (combustion air and flue products) through the heat exchanger via pressure taps located on the induced draft blower and the coil front cover. These switches guard against insufficient airflow (combustion air and flue products) through the heat exchanger and/or blocked condensate drain conditions.

FLAME SENSOR

The flame sensor is a probe mounted to the burner/manifold assembly which uses the principle of flame rectification to determine the presence or absence of flame.

XVIII. TROUBLESHOOTING



ELECTROSTATIC DISCHARGE (ESD) PRECAUTIONS

NOTE: Discharge body's static electricity before touching unit. An electrostatic discharge can adversely affect electrical components.

Use the following precautions during furnace installation and servicing to protect the integrated control module from damage. By putting the furnace, the control, and the person at the same electrostatic potential, these steps will help avoid exposing the integrated control module to electrostatic discharge. This procedure is applicable to both installed and uninstalled (ungrounded) furnaces.

1. Disconnect all power to the furnace. Do not touch the integrated control module or any wire connected to the control prior to discharging your body's electrostatic charge to ground.
2. Firmly touch a clean, unpainted, metal surface of the furnaces near the control. Any tools held in a person's hand during grounding will be discharged.
3. Service integrated control module or connecting wiring following the discharge process in step 2. Use caution not to recharge your body with static electricity; (i.e., do not move or shuffle your feet, do not touch ungrounded objects, etc.). If you come in contact with an ungrounded object, repeat step 2 before touching control or wires.
4. Discharge your body to ground before removing a new control from its container. Follow steps 1 through 3 if installing the control on a furnace. Return any old or new controls to their containers before touching any ungrounded object.

DIAGNOSTIC CHART

 WARNING	
<p>HIGH VOLTAGE! TO AVOID PERSONAL INJURY OR DEATH DUE TO ELECTRICAL SHOCK, DISCONNECT ELECTRICAL POWER BEFORE PERFORMING ANY SERVICE OR MAINTENANCE.</p>	

Refer to the *Troubleshooting Chart* at the end of this manual for assistance in determining the source of unit operational problems. The red diagnostic LED blinks to assist in troubleshooting the unit. The number of blinks refers to a specific fault code.

FAULT RECALL

The ignition control is equipped with a momentary pushbutton switch that can be used to display on the diagnostic LED the last five faults detected by the control. The control must be in Standby Mode (no thermostat inputs) to use the feature. Depress the pushbutton switch for approximately 2 seconds. Release the switch when the LED is turned off. The diagnostic LED will then display the flash codes associated with the last five detected faults. The order of display is the most recent fault to the least recent fault.

RESETTING FROM LOCKOUT

Furnace lockout results when a furnace is unable to achieve ignition after three attempts during a single call for heat. It is characterized by a non-functioning furnace and a one flash diagnostic LED code. If the furnace is in "lockout", it will (or can be) reset in any of the following ways.

1. Automatic reset. The integrated control module will automatically reset itself and attempt to resume normal operations following a one hour lockout period.
2. Manual power interruption. Interrupt 115 volt power to the furnace for 1 - 20 seconds.
3. Manual thermostat cycle. Lower the thermostat so that there is no longer a call for heat then reset to previous setting. Interrupt thermostat signal to the furnace for 1 - 20 seconds.

NOTE: If the condition which originally caused the lockout still exists, the control will return to lockout. Refer to *Section XVIII, Troubleshooting - Diagnostic Chart* for aid in determining the cause.

XIX. MAINTENANCE

WARNING

HIGH VOLTAGE!

TO AVOID PERSONAL INJURY OR DEATH DUE TO ELECTRICAL SHOCK, DISCONNECT ELECTRICAL POWER BEFORE PERFORMING ANY MAINTENANCE. IF YOU MUST HANDLE THE IGNITER, HANDLE WITH CARE. TOUCHING THE IGNITER ELEMENT WITH BARE FINGERS, ROUGH HANDLING OR VIBRATION COULD DAMAGE THE IGNITER RESULTING IN PREMATURE FAILURE. ONLY A QUALIFIED SERVICER SHOULD EVER HANDLE THE IGNITER.



ANNUAL INSPECTION

The furnace should be inspected by a qualified installer, or service agency at least once per year. This check should be performed at the beginning of the heating season. This will ensure that all furnace components are in proper working order and that the heating system functions appropriately. Pay particular attention to the following items. Repair or service as necessary.

- Flue pipe system. Check for blockage and/or leakage. Check the outside termination and the connections at and internal to the furnace.
- Heat exchanger. Check for corrosion and/or buildup within the heat exchanger passageways.
- Burners. Check for proper ignition, burner flame, and flame sense.
- Drainage system. Check for blockage and/or leakage. Check hose connections at and internal to furnace.
- Wiring. Check electrical connections for tightness and/or corrosion. Check wires for damage.
- Filters.

FILTERS

CAUTION

TO ENSURE PROPER UNIT PERFORMANCE, ADHERE TO THE FILTER SIZES GIVEN IN THE RECOMMENDED MINIMUM FILTER SIZE TABLE OR SPECIFICATION SHEET APPLICABLE TO YOUR MODEL*

*NOTE: Please contact your distributor or our website for the applicable Specification Sheet referred to in this manual.

MAINTENANCE

Improper filter maintenance is the most common cause of inadequate heating or cooling performance. Filters should be cleaned (permanent) or replaced (disposable) every two months or as required. When replacing a filter, it must be replaced with a filter of the same type and size.

FILTER REMOVAL

Depending on the installation, differing filter arrangements can be applied. Filters can be installed in either the central return register or a side panel external filter rack (upflow only). A media air filter or electronic air cleaner can be used as an alternate filter. Follow the filter sizes given in the Recommended Minimum Filter size table to ensure proper unit performance.

To remove filters from an external filter rack in an upright upflow installation, follow the directions provided with external filter rack kit.

HORIZONTAL UNIT FILTER REMOVAL

Filters in horizontal installations are located in the central return register or the ductwork near the furnace.

To remove:

1. Turn OFF electrical power to furnace.
2. Remove filter(s) from the central return register or ductwork.
3. Replace filter(s) by reversing the procedure for removal.
4. Turn ON electrical power to furnace.

MEDIA AIR FILTER OR ELECTRONIC AIR CLEANER REMOVAL

Follow the manufacturer's directions for service.

BURNERS

Visually inspect the burner flames periodically during the heating season. Turn on the furnace at the thermostat and allow several minutes for flames to stabilize, since any dislodged dust will alter the flames normal appearance. Flames should be stable, quiet, soft, and blue (dust may cause orange tips but they must not be yellow). They should extend directly outward from the burners without curling, floating, or lifting off. Flames must not impinge on the sides of the heat exchanger firing tubes.

INDUCED DRAFT AND CIRCULATOR BLOWERS

The bearings in the induced draft blower and circulator blower motors are permanently lubricated by the manufacturer. No further lubrication is required. Check motor windings for accumulation of dust which may cause overheating. Clean as necessary.

CONDENSATE TRAP AND DRAIN SYSTEM (QUALIFIED SERVICER ONLY)

Annually inspect the drain tubes, drain trap, and field-supplied drain line for proper condensate drainage. Check drain system for hose connection tightness, blockage, and leaks. Clean or repair as necessary.

FLAME SENSOR (QUALIFIED SERVICER ONLY)

Under some conditions, the fuel or air supply can create a nearly invisible coating on the flame sensor. This coating acts as an insulator causing a drop in the flame sense signal. If the flame sense signal drops too low the furnace will not sense flame and will lock out. The flame sensor should be carefully cleaned by a qualified servicer using emery cloth or steel wool. Following cleaning, the flame sense signal should be 1 to 6 microamps at 115 volts.

IGNITER (QUALIFIED SERVICER ONLY)

If the igniter and the surrounding air are at about 70°F and the igniter wires are not connected to any other electrical components, the resistance of the igniter should not exceed 75 ohms. If it does, the igniter should be replaced.

FLUE PASSAGES (QUALIFIED SERVICER ONLY)

The heat exchanger flue passageways should be inspected at the beginning of each heating season. If necessary, clean the passageways as outlined below.

1. Turn OFF the electrical power and gas supply to the furnace.
2. Disconnect the gas line and remove the burner/ manifold assembly by removing the screws securing the assembly to the partition panel.
3. Disconnect the flue pipe system from the induced draft blower.
4. Remove the induced draft blower and, drain and pressure tap hoses from the recuperator coil front cover.
5. Remove the recuperator coil front cover to expose the coil tubes and turbulators.
6. Remove the recuperator coil turbulators individually by slowly pulling each turbulator forward firmly.
7. Clean the recuperator coil tubes using a long handle wire brush, such as a gun cleaning brush.
8. Clean the primary heat exchanger tubes using a wire brush attached to a length of high grade stainless steel cable, such as drain cleanout cable. Attach a variable speed reversible drill to the other end of the cable. Slowly rotate the cable with the drill and insert it into one of the heat exchanger tubes. While reversing the drill, work the cable in and out several times to obtain sufficient cleaning. Repeat for each tube.
9. Clean residue from furnace using a vacuum cleaner.
10. Replace the parts removed in the previous steps in reverse order.

11. Turn on electrical power and gas to furnace. Check for leaks and proper unit operation.
12. Severe heat exchanger fouling is an indication of an operational problem. Perform the checks listed in *Section XIV, Startup Procedure and Adjustments* to reduce the chances of repeated fouling.

XX. BEFORE LEAVING AN INSTALLATION

- Cycle the furnace with the thermostat at least three times. Verify cooling and fan only operation.
- Review the Owner's Manual with the homeowner and discuss proper furnace operation and maintenance.
- Leave literature packet near furnace.





XXI. REPAIR & REPLACEMENT PARTS

- When ordering any of the listed functional parts, be sure to provide the furnace model, manufacturing, and serial numbers with the order.
- Although only functional parts are shown in the parts list, all sheet metal parts, doors, etc. may be ordered by description.
- Parts are available from your distributor.

Functional Parts List-

Gas Valve	Blower Motor
Gas Manifold	Blower Wheel
Natural Gas Orifice	Blower Mounting Bracket
Propane Gas Orifice	Blower Cutoff
Igniter	Blower Housing
Flame Sensor	Capacitor
Rollout Limit Switch	Heat Exchanger
Primary Limit Switch	Coil Front Cover
Auxiliary Limit Switch	Integrated Control Module
Pressure Switch	Transformer
Induced Draft Blower	
Door Switch	







TROUBLESHOOTING CHART

Symptoms of Abnormal Operation	Associated LED Code ²	Fault Description(s)	Possible Causes	Corrective Action	Cautions and Notes
<ul style="list-style-type: none"> Furnace fails to operate. Integrated control module diagnostic LED provides no signal. 	NONE	<ul style="list-style-type: none"> No 115 volt power to furnace, or no 24 volt power to integrated control module. Blown fuse or circuit breaker. Integrated control module has an internal fault. 	<ul style="list-style-type: none"> Manual disconnect switch OFF, door switch open, or 24 volt wires improperly connected or loose. Blown fuse or circuit breaker. Integrated control module has an internal fault. 	<ul style="list-style-type: none"> Assure 115 and 24 volt power to furnace integrated control module. Check integrated control module fuse (3A). Replace if necessary. Check for possible shorts in 115 and 24 volt circuits. Repair as necessary. Replace bad integrated control module. 	<ul style="list-style-type: none"> Turn power OFF prior to repair. Replace integrated control module fuse with 3A automotive fuse. Read precautions in "Electrostatic Discharge" section of manual.
<ul style="list-style-type: none"> LED is Steady On. 	 CONTINUOUS ON	<ul style="list-style-type: none"> Normal Operation 	<ul style="list-style-type: none"> Normal Operation 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Normal Operation
<ul style="list-style-type: none"> Furnace fails to operate. Integrated control module diagnostic LED is flashing ONE (1) flash. 	 1 FLASH	<ul style="list-style-type: none"> Furnace lockout due to an excessive number of ignition "retries" (3 total)¹. 	<ul style="list-style-type: none"> Failure to establish flame. Cause may be no gas to burners, front cover pressure switch stuck open, bad igniter or igniter alignment, improper orifices, or coated/oxidized or improperly connected flame sensor. Loss of flame after establishment. Cause may be interrupted gas supply, lazy burner flames (improper gas pressure or restriction in flue and/or combustion air piping), front cover pressure switch opening, or improper induced draft blower performance. 	<ul style="list-style-type: none"> Locate and correct gas interruption. Check front cover pressure switch operation (hose, wiring, contact operation). Correct if necessary. Replace or realign igniter. Check flame sense signal. Sand sensor if coated and/or oxidized. Check flue piping for blockage, proper length, elbows, and termination. Verify proper induced draft blower performance. 	<ul style="list-style-type: none"> Turn power OFF prior to repair. Igniter is fragile, handle with care. Sand flame sensor with emery cloth. See "Vent/Flue Pipe" section for piping details.
<ul style="list-style-type: none"> Furnace fails to operate. Integrated control module diagnostic LED is flashing TWO (2) flashes. 	 2 FLASHES	<ul style="list-style-type: none"> Pressure switch circuit is closed. Induced draft blower is not operating. 	<ul style="list-style-type: none"> Induced draft blower pressure switch contacts sticking. Shorts in pressure switch circuit. 	<ul style="list-style-type: none"> Replace induced draft blower pressure switch. Repair short. 	<ul style="list-style-type: none"> Turn power OFF prior to repair. Replace pressure switch with proper replacement part.
<ul style="list-style-type: none"> Induced draft blower runs continuously with no further furnace operation. Integrated control module diagnostic LED is flashing THREE (3) flashes. 	 3 FLASHES	<ul style="list-style-type: none"> Pressure switch circuit not closed. Induced draft blower is operating. 	<ul style="list-style-type: none"> Pressure switch hose blocked, pinched or connected improperly. Blocked flue and/or inlet air pipe, blocked drain system, or weak induced draft blower. Incorrect pressure switch setpoint or malfunctioning switch contacts. Loose or improperly connected wiring. 	<ul style="list-style-type: none"> Inspect pressure switch hose. Repair, if necessary. Inspect flue and/or inlet air piping for blockage, proper length, elbows, and termination. Check drain system. Correct as necessary. Correct pressure switch setpoint or contact motion. Tighten or correct wiring connection. 	<ul style="list-style-type: none"> Turn power OFF prior to repair. Replace pressure switch with proper replacement part.

¹Integrated control module will automatically attempt to reset from lockout after one hour.

²LED Flash code will cease if power to the control module is interrupted through the disconnect or door switch.

TROUBLESHOOTING CHART

Symptoms of Abnormal Operation	Associated LED Code ²	Fault Description(s)	Possible Causes	Corrective Action	Cautions & Notes
<ul style="list-style-type: none"> Circulator blower runs continuously. No furnace operation. Integrated control module diagnostic LED is flashing FOUR (4) flashes. 	 4 FLASHES	<ul style="list-style-type: none"> Primary limit circuit is open. 	<ul style="list-style-type: none"> Insufficient conditioned air over the heat exchanger. Blocked filters, restrictive ductwork, improper circulator blower speed, or failed circulator blower. Faulty primary limit switch. Loose or improperly connected wiring. 	<ul style="list-style-type: none"> Check primary limit. Replace if necessary. Check filters and ductwork for blockage. Clean filters or remove obstruction. Check circulator blower speed and performance. Correct speed or replace blower if necessary. Tighten or correct wiring connection. 	<ul style="list-style-type: none"> Turn power OFF prior to repair. Replace primary switch with proper replacement part. Replace blower with correct replacement part.
<ul style="list-style-type: none"> Induced draft blower and circulator blower runs continuously. No furnace operation. Integrated control module diagnostic LED is flashing FIVE (5) flashes. 	 5 FLASHES	<ul style="list-style-type: none"> Flame sensed with no call for heat. 	<ul style="list-style-type: none"> Short to ground in flame sense circuit. 	<ul style="list-style-type: none"> Correct short at flame sensor or in flame sensor wiring. 	<ul style="list-style-type: none"> Turn power OFF prior to repair.
<ul style="list-style-type: none"> Furnace fails to operate. Integrated control module diagnostic LED is flashing SIX (6) flashes. No furnace operation. 	 6 FLASHES	<ul style="list-style-type: none"> Rollout limit open. Integrated control module fuse is blown. 	<ul style="list-style-type: none"> Flame rollout. Misaligned burners, blocked flue and/or air inlet pipe, or failed induced draft blower. Loose or improperly connected wiring. Short in 24 volt AC control circuits or safety circuits. Faulty rollout limit. 	<ul style="list-style-type: none"> Check burners for proper alignment. Check flue and air inlet piping for blockage, proper length, elbows, and termination. Correct as necessary. Check rollout limit. Replace if necessary. Check induced draft blower for proper performance. Replace, if necessary. Tighten or correct wiring connection. Repair short in 24 volt AC control/safety circuit(s). Replace integrated control module fuse (3A). 	<ul style="list-style-type: none"> See "Vent/Flue Pipe" section for piping details. Replace induced draft blower with proper replacement part. Replace integrated control module fuse with 3A automotive fuse. Read precautions in "Electrostatic Discharge" section of manual. Replace rollout limit with correct replacement part.
<ul style="list-style-type: none"> Normal furnace operation. Integrated control module diagnostic LED is flashing SEVEN (7) flashes. 	 7 FLASHES	<ul style="list-style-type: none"> Flame sense microamp signal is low. 	<ul style="list-style-type: none"> Flame sensor is coated/oxidized. Flame sensor incorrectly positioned in burner flame. Lazy burner flame due to improper gas pressure or combustion air. 	<ul style="list-style-type: none"> Sand flame sensor. Inspect for proper sensor alignment. Compare current gas pressure to rating plate info. Adjust as needed. 	<ul style="list-style-type: none"> Turn power OFF prior to repair. Clean flame sensor with steel wool. See "Vent/Flue Pipe" section for piping details. See rating plate for proper gas pressure.
<ul style="list-style-type: none"> Furnace not operating. Integrated control module diagnostic LED is flashing EIGHT (8) flashes. 	 8 FLASHES	<ul style="list-style-type: none"> Problem with igniter circuit. 	<ul style="list-style-type: none"> Improperly connected igniter. Bad igniter. Poor unit ground. Poor burner ground. Faulty integrated control module. 	<ul style="list-style-type: none"> Check and correct wiring from integrated control module to igniter. Replace bad igniter. Check and correct unit ground wiring. Replace bad integrated control module. 	<ul style="list-style-type: none"> Turn power OFF prior to repair. Replace igniter with proper replacement part. Read precautions in "Electrostatic Discharge" section of manual.
<ul style="list-style-type: none"> Induced draft blower runs continuously. No furnace operation. Integrated control module diagnostic LED is flashing continuously. 	 CONTINUOUS FLASHING	<ul style="list-style-type: none"> Polarity of 115 or 24 volt power is reversed. 	<ul style="list-style-type: none"> Polarity of 115 volt AC power to furnace or integrated control module is reversed. Red and blue wires to transformer are reversed. Poor unit ground. 	<ul style="list-style-type: none"> Review wiring diagram to correct polarity. Verify proper ground. Correct if necessary. Reverse red and blue wires connected to transformer. 	<ul style="list-style-type: none"> Turn power OFF prior to repair.
<ul style="list-style-type: none"> LED is steady on 	STEADY ON	<ul style="list-style-type: none"> Normal operation. 			

² LED Flash code will cease if power to the control module is interrupted through the disconnect or door switch.

BLOWER PERFORMANCE DATA

GMH95

BLOWER PERFORMANCE (CFM & Temperature Rise vs. External Static Pressure)															
Model (Heating Speed As Shipped)	Motor Speed	Tons AC at 0.5" ESP	EXTERNAL STATIC PRESSURE (Inches Water Column)												
			0.1		0.2		0.3		0.4		0.5		0.6	0.7	0.8
			CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	CFM	CFM
GMH950453BXA* (MED-HI)	HIGH	3.0	1352	29	1318	30	1260	31	1202	33	1128	35	1044	955	853
	MED	2.5	1214	32	1172	34	1123	35	1064	37	1012	39	938	859	741
	MED-LO	2.0	997	40	994	40	960	41	923	43	884	45	817	741	611
	LOW	1.5	757	52	753	52	734	54	704	56	674	59	620	524	438
GMH950703BXA* (MED-HI)	HIGH	3.0	1449	41	1409	42	1326	45	1273	47	1201	49	1194	1136	1018
	MED	2.5	1192	50	1172	51	1141	52	1094	54	1046	57	973	904	793
	MED-LO	2.0	981	61	962	62	943	63	917	65	888	67	830	764	665
	LOW	1.5	750	79	730	81	714	83	692	86	657	90	620	570	502
GMH950704CXA* (MED-HI)	HIGH	4.0	2069	29	1965	30	1871	32	1756	34	1661	36	1549	1415	1275
	MED	3.5	1752	34	1724	34	1667	36	1603	37	1488	40	1402	1290	1082
	MED-LO	3.0	1437	41	1437	41	1417	42	1369	43	1320	45	1256	1140	984
	LOW	2.5	1184	50	1177	50	1161	51	1132	52	1095	54	1047	928	837
GMH950904CXA* (MED-HI)	HIGH	4.0	1970	40	1874	342	1757	45	1667	48	1566	51	1431	1334	1182
	MED	3.5	1713	46	1650	48	1572	50	1510	52	1418	56	1313	1211	1079
	MED-LO	3.0	1439	55	1412	56	1370	58	1327	60	1260	63	1166	1078	956
	LOW	2.5	1183	67	1155	69	1122	74	1108	72	1062	75	1011	931	816
GMH950905CXA* (MED-HI)	HIGH	5.0	2058	39	1997	40	1928	42	1852	43	1777	45	1682	1600	1487
	MED	4.0	1718	47	1685	48	1632	49	1586	51	1520	53	1458	1369	1281
	MED-LO	3.5	1502	54	1464	55	1429	56	1380	58	1319	61	1272	1200	1137
	LOW	3.0	1305	62	1277	63	1253	64	1212	66	1175	69	1127	1081	1010
GMH950905DXA* (MED-HI)	HIGH	5.0	2147	37	2114	37	2057	39	2030	39	1978	40	1889	1784	1713
	MED	4.0	1675	47	1686	47	1640	48	1623	49	1557	51	1501	1455	1360
	MED-LO	3.5	1489	53	1470	54	1436	55	1409	56	1361	58	1318	1243	1130
	LOW	3.0	1307	61	1265	63	1234	64	1203	66	1168	68	1096	1053	991
GMH951155DXA* (MED-HI)	HIGH	5.0	2134	46	2103	47	2029	48	1941	51	1906	51	1818	1733	1625
	MED	4.0	1678	58	1643	60	1643	60	1577	62	1527	64	1489	1423	1339
	MED-LO	3.5	1453	68	1440	68	1426	69	1363	72	1349	73	1314	1253	1205
	LOW	3.0	1259	78	1239	79	1220	80	1181	83	1159	85	1118	1082	1015

1. CFM in chart is without filters(s). Filters do not ship with this furnace, but must be provided by the installer. If the furnace requires two return filters, this chart assumes both filters are installed.
2. All furnaces ship as high speed cooling and medium-speed heating. Installer must adjust blower cooling & heating speed as needed.
3. For most jobs, about 400 CFM per ton when cooling is desirable.
4. INSTALLATION IS TO BE ADJUSTED TO OBTAIN TEMPERATURE RISE WITHIN THE RANGE SPECIFIED ON THE RATING PLATE.
5. The chart is for information only. For satisfactory operation, external static pressure must not exceed value shown on rating plate. The shaded area indicates ranges in excess of maximum external static pressure allowed when heating. The data for 0.6" w.c. to 0.8" w.c. is shown for air conditioning purposes only.
6. The above chart is for U.S. furnaces installed at 0-2000 feet. At higher altitudes, a properly de-rated unit will have approximately the same temperature rise at a particular CFM, while the ESP at that CFM will be lower.