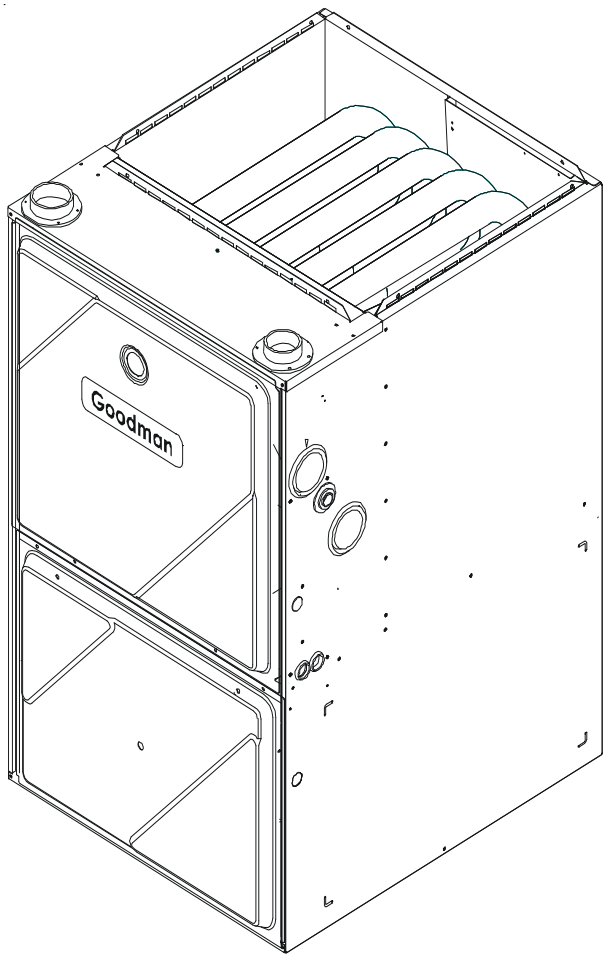
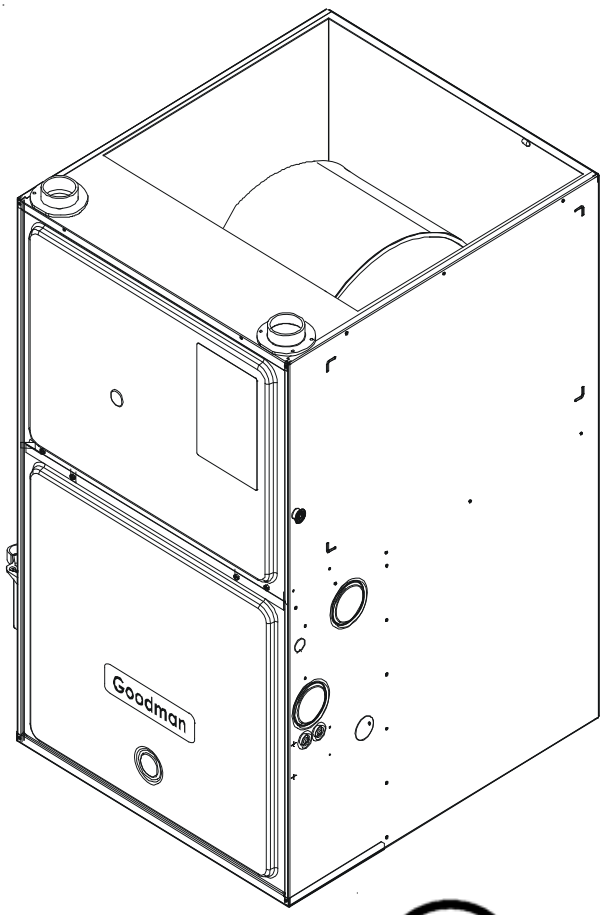
# TECHNICAL INFORMATION MANUAL

## GMV95 40" 95% Gas Furnace Units
## GCV9 40" 90% Gas Furnace Units

Models listed on page 2.

- Refer to Service Manual RS6610004* for installation, operation, and troubleshooting information.
- All safety information must be followed as provided in the Service Manual.
- Refer to the appropriate Parts Catalog for part number information.



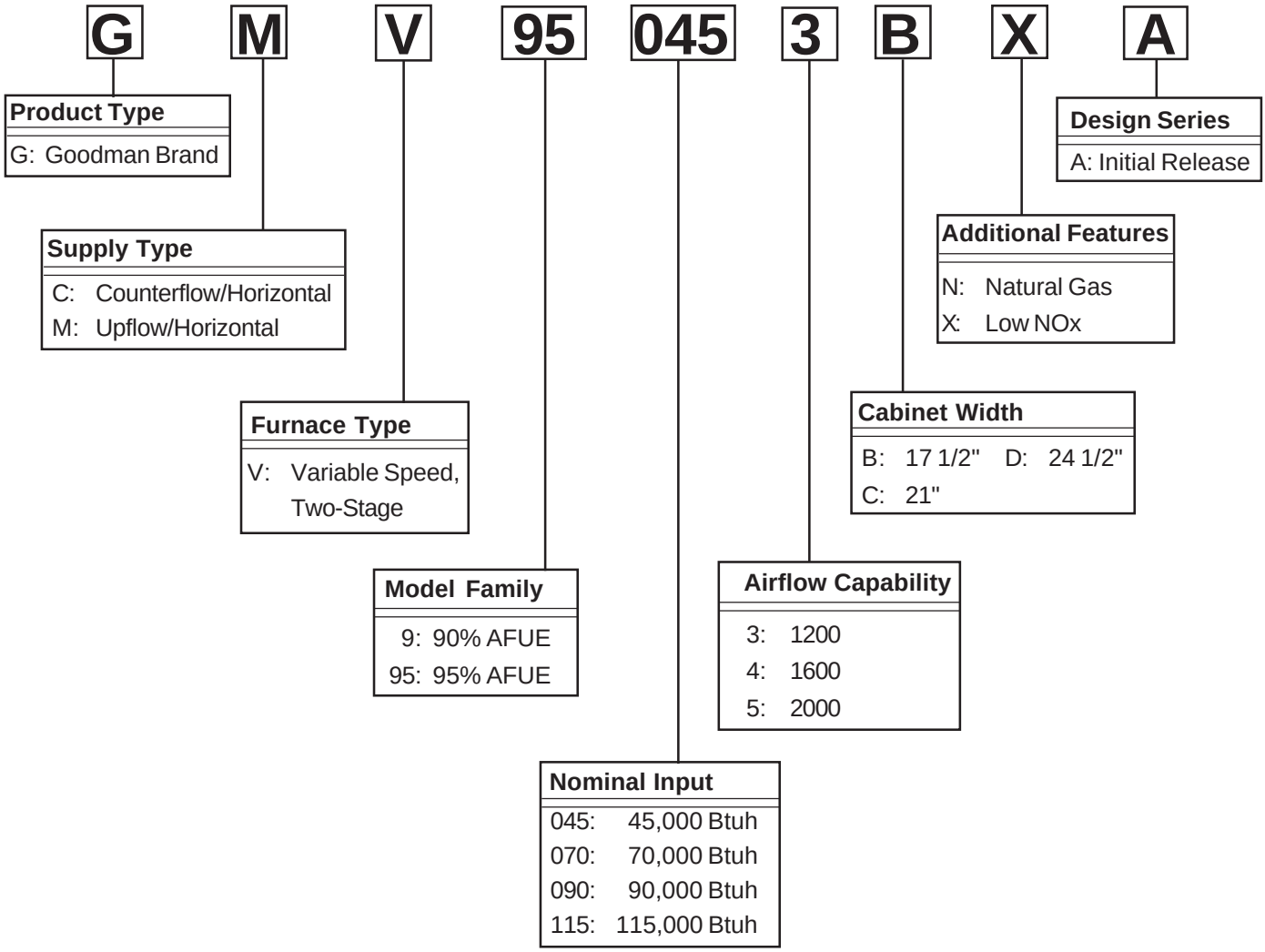

Goodman®

This manual is to be used by qualified, professionally trained HVAC technicians only. Goodman does not assume any responsibility for property damage or personal injury due to improper service procedures performed by an unqualified person.

RT6612012 Rev. 2
July 2008

# PRODUCT IDENTIFICATION

The model and manufacturing number are used for positive identification of component parts used in manufacturing. Please use these numbers when requesting service or parts information.




**WARNING**

**HIGH VOLTAGE!**
**Disconnect ALL power before servicing or installing this unit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.**

**WARNING**

**Installation and repair of this unit should be performed ONLY by individuals meeting the requirements of an "entry level technician" as specified by the the Air-Conditioning, Heating and Refrigeration Institute (AHRI). Attempting to install or repair this unit without such background may result in product damage, personal injury or death.**

**WARNING**

**Goodman will not be responsibile for any injury or property damage arising from improper service or service procedures. If you install or perform service on this unit, you assume responsibility for any personal injury or property damage which may result. Many jurisdictions require a license to install or service heating and air conditioning equipment.**

# PRODUCT IDENTIFICATION

The model and manufacturing number are used for positive identification of component parts used in manufacturing. Please use these numbers when requesting service or parts information.

GMV950453BX*
GMV950704CX*
GMV950905DX*
GMV951155DX*

GCV90704CX*
GCV90905DX*
GCV91155DX*

**⚠ WARNING**

**The United States Environmental Protection Agency (“EPA”) has issued various regulations regarding the introduction and disposal of refrigerants introduced into this unit. Failure to follow these regulations may harm the environment and can lead to the imposition of substantial fines. These regulations may vary by jurisdiction. Should questions arise, contact your local EPA office.**

**⚠ WARNING**

**To prevent the risk of property damage, personal injury, or death, do not store combustible materials or use gasoline or other flammable liquids or vapors in the vicinity of this appliance.**

**⚠ WARNING**

**Do not connect or use any device that is not design certified by Goodman for use with this unit. Serious property damage, personal injury, reduced unit performance and/or hazardous conditions may result from the use of such non-approved devices.**

# PRODUCT DESIGN

***General Operation***

The GMV95 and GCV9 furnaces are equipped with an electronic ignition device to light the burners and an induced draft blower to exhaust combustion products.

An interlock switch prevents furnace operation if the blower door is not in place. Keep the blower access doors in place except for inspection and maintenance.

This furnace is also equipped with a self-diagnosing electronic control module. In the event a furnace component is not operating properly, the control module LED will flash on and off in a factory-programmed sequence, depending on the problem encountered. This light can be viewed through the observation window in the blower access door. Refer to the Troubleshooting Chart for further explanation of the LED codes and Abnormal Operation - Integrated Ignition Control section in the Service Instructions for an explanation of the possible problem.

The rated heating capacity of the furnace should be greater than or equal to the total heat loss of the area to be heated. The total heat loss should be calculated by an approved method or in accordance with “ASHRAE Guide” or “Manual J-Load Calculations” published by the Air Conditioning Contractors of America.

*Obtain from: American National Standards Institute 1430 Broadway New York, NY 10018

***Location Considerations***

- The furnace should be as centralized as is practical with respect to the air distribution system.
- Do not install the furnace directly on carpeting, tile, or combustible material other than wood flooring.
- When suspending the furnace from rafters or joists, use 3/8" threaded rod and 2” x 2” x 1/8” angle as shown in the Installation and Service Instructions. The length of the rod will depend on the application and clearance necessary.
- When installed in a residential garage, the furnace must be positioned so the burners and ignition source are located not less than 18 inches (457 mm) above the floor and protected from physical damage by vehicles.

**Notes:**

1. Installer must supply one or two PVC pipes: one for combustion air (optional) and one for the flue outlet (required). Vent pipe must be either 2” or 3” in diameter, depending upon furnace input, number of elbows, length of run and installation (1 or 2 pipes). The optional Combustion Air Pipe is dependent on installation/code requirements and must be 2” or 3” diameter PVC.
2. Line voltage wiring can enter through the right or left side of the furnace. Low voltage wiring can enter through the right or left side of furnace.
3. Conversion kits for propane gas and high altitude natural and propane gas operation are available. See High Altitude Derate chart for details.
4. Installer must supply the following gas line fittings, depending on which entrance is used:
   **Left** -- Two 90° Elbows, one close nipple, straight pipe
   **Right** -- Straight pipe to reach gas valve.

***Accessibility Clearances (Minimum)***

| GMV95 MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS (INCHES) | | | | | | |
|---|---|---|---|---|---|---|
| **POSITION*** | **FRONT** | **SIDES** | **REAR** | **TOP** | **FLUE** | **FLOOR** |
| Upflow | 1 | 0 | 0 | 1 | 0 | C |
| Horizontal | Alcove | 6 | 0 | 4 | 0 | C |

*= All positioning is determined as installed unit is viewed from the front.

C= If placed on combustible floor, floor MUST be wood only.

NC= For instalaltion on non-combustible floors only. A combustible subbase must be used for installations on combustible flooring.

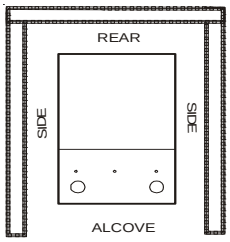
| GCV9 MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS (INCHES) | | | | | | |
|---|---|---|---|---|---|---|
| **POSITION*** | **FRONT** | **SIDES** | **REAR** | **TOP** | **FLUE** | **FLOOR** |
| Downflow | 1 | 0 | 0 | 1 | 0 | NC |
| Horizontal | Alcove | 6 | 0 | 4 | 0 | C |

*= All positioning is determined as installed unit is viewed from the front.

C= If placed on combustible floor, floor MUST be wood only.

NC= For instalaltion on non-combustible floors only. A combustible subbase must be used for installations on combustible flooring.

***Alcove Illustration***




24" at front is required for servicing or cleaning.

Note: In all cases accessibility clearance shall take precedence over clearances from the enclosure where accessibility clearances are greater. All dimensions are given in inches.

# PRODUCT DESIGN

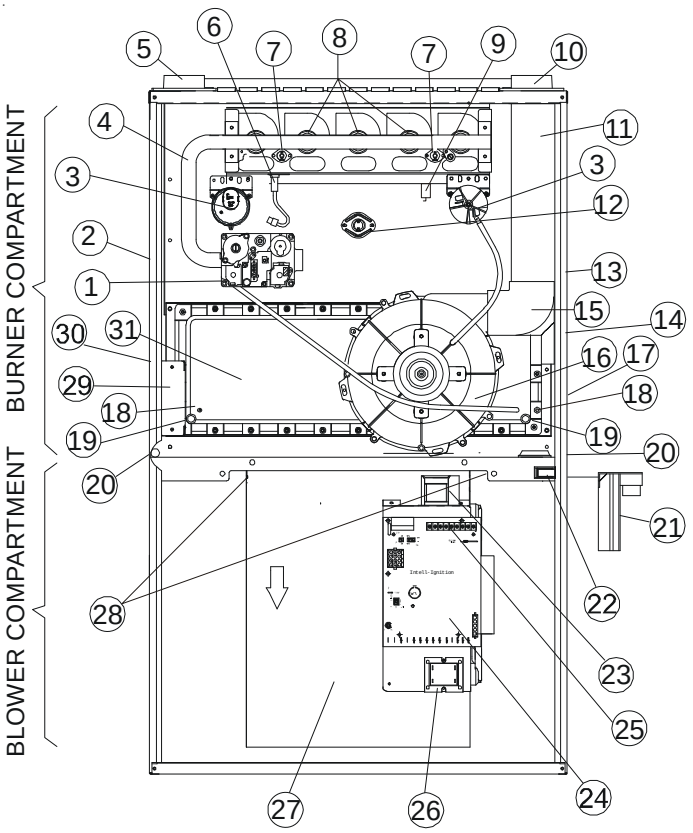
***High Altitude Derate***

When this furnace is installed at high altitude, the appropriate High Altitude orifice kit must be installed. This is required due to the natural reduction in the density of both the gas fuel and combustion air as altitude increases. The kit will provide the proper design certified input rate within the specified altitude range.

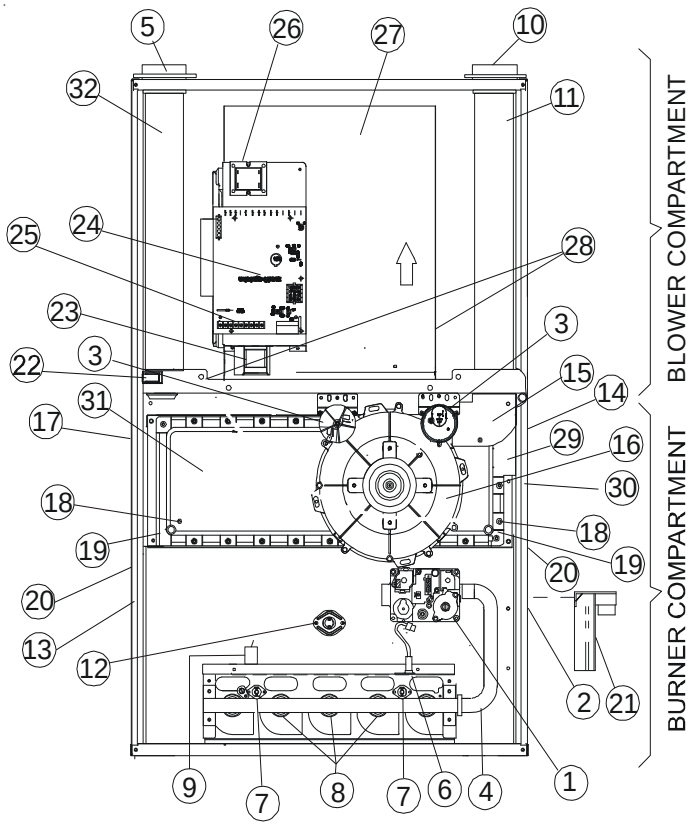
| | "STANDARD" and "HIGH ALTITUDE" KITS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 0 - 7,000 Feet (Standard Altitude) | | | 7,001 - 9,000 Feet | | | 9,001 - 11,000 Feet | | |
| Furnace | Gas Orifices | | ID Blwr Pressure Switch | Gas Orifices | | ID Blwr Pressure Switch | Gas Orifices | | ID Blwr Pressure Switch |
| | Natural | Propane | | Natural | Propane | | Natural | Propane | |
| GMV950453BX*<br>GMV950704CX* | *No Change* | LPM-05*<br>#55 Orifice | *No Change* | HANG13<br>#44<br>Orifice | HALP11<br>#56 Orifice | HAPS28 | HANG14<br>#45<br>Orifice | HALP11<br>#56<br>Orifice | HAPS28 |
| GMV950905DX*<br>GMV951155DX* | *No Change* | LPM-05*<br>#55 Orifice | *No Change* | HANG13<br>#44<br>Orifice | HALP11<br>#56<br>Orifice | HAPS29 | HANG14<br>#45<br>Orifice | HALP11<br>#56<br>Orifice | HAPS29 |
| GCV90704CX*<br>GCV90905DX*<br>GCV91155DX* | *No Change* | LPM-05*<br>#55 Orifice | *No Change* | HANG13<br>#44<br>Orifice | HALP11<br>#56<br>Orifice | HAPS29 | HANG14<br>#45<br>Orifice | HALP11<br>#56<br>Orifice | HAPS31 |

High altitude kits are purchased according to the installation altitude and usage of either natural or propane gas. Refer to the chart above for a tabular listing of appropriate altitude ranges and corresponding manufacturer's high altitude Natural Gas and Propane Gas kits. For a tabular listing of appropriate altitude ranges and corresponding manufacturer's High Altitude Pressure

# COMPONENT IDENTIFICATION




Upflow/Horizontal

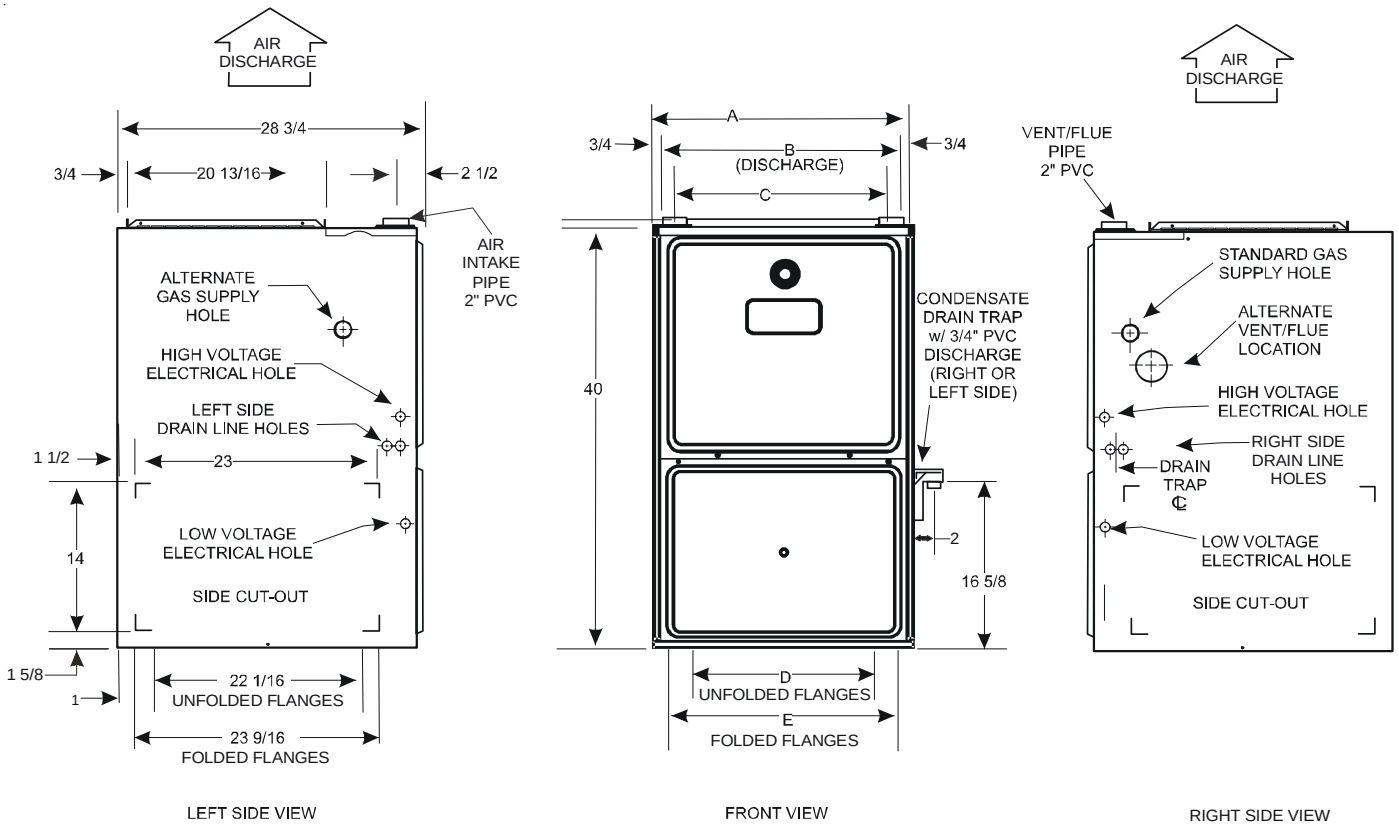



Counterflow /Horizontal

| | |
|---|---|
| 1 | Two-Stage Gas Valve |
| 2 | Gas Line Entrance (Alternate) |
| 3 | Pressure Switch(es) |
| 4 | Gas Manifold |
| 5 | Combustion Air Intake Connection |
| 6 | Hot Surface Igniter |
| 7 | Rollout Limit |
| 8 | Burners |
| 9 | Flame Sensor |
| 10 | Flue Pipe Connection |
| 11 | Flue Pipe |
| 12 | Primary Limit |
| 13 | Gas Line Entrance |
| 14 | Flue Pipe Connection (Alternate) |
| 15 | Rubber Elbow |
| 16 | Two-Speed Induced Draft Blower |
| 17 | Electrical Connection Inlets (Alternate) |
| 18 | Coil Front Cover Pressure Tap |
| 19 | Coil Front Cover Drain Port |
| 20 | Drain Line Penetrations |
| 21 | Drain Trap |
| 22 | Blower Door Interlock Switch |
| 23 | Inductor (Not All Models) |
| 24 | Two-Stage Integrated Control Module (with fuse and diagnostic LED) |
| 25 | 24 Volt Thermostat Connections |
| 26 | Transformer (40 VA) |
| 27 | ECM Variable Speed Circulator Blower |
| 28 | Auxiliary Limits |
| 29 | Junction Box |
| 30 | Electrical Connection Inlets |
| 31 | Coil Front Cover |
| 32 | Combustion Air Inlet Pipe (GCV9 only) |

# PRODUCT DIMENSIONS

## GMV95___XA



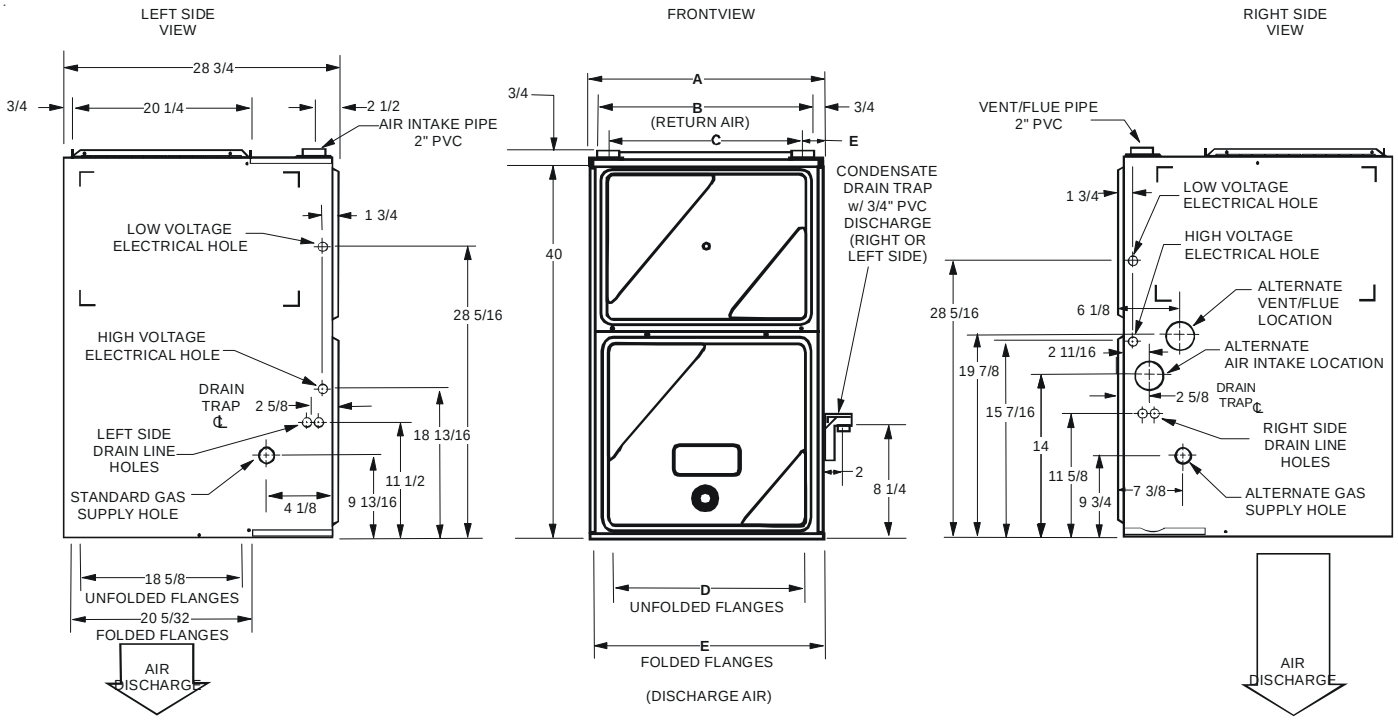

| Cabinet Size | A | B | C | D | E |
|---|---|---|---|---|---|
| GMV950453BX* | 17-1/2 | 16 | 12-15/16 | 12-1/8 | 13-5/8 |
| GMV950704CX* | 21 | 19-1/2 | 15-15/16 | 16 | 17-1/2 |
| GMV950905DX*<br>GMV951155DX* | 24-1/2 | 23 | 20-7/16 | 19-3/8 | 20-7/8 |

All dimensions are in inches.

***NOTE:*** *Airflow area will be reduced by approximately 18% if duct flanges are not unfolded. This could cause performance issues and noise issues.*

# PRODUCT DIMENSIONS

## GCV9_____XA




| Cabinet Size | A | B | C | D | E |
|---|---|---|---|---|---|
| GCV90704CX* | 21 | 19-1/2 | 15-15/16 | 18 | 19-1/2 |
| GCV90905DX*<br>GCV91155DX* | 24-1/2 | 23 | 20-7/16 | 21-1/2 | 23 |

All dimensions are in inches.

***NOTE:*** *Airflow area will be reduced by approximately 18% if duct flanges are not unfolded. This could cause performance issues and noise issues.*

# PRODUCT DESIGN

| PRESSURE SWITCH TRIP POINTS AND USAGE CHART | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| MODEL | NEGATIVE PRESSURE ID BLOWER WITH FLUE NOT FIRING TYPICAL SEA LEVEL DATA[1] | | NEGATIVE PRESSURE ID BLOWER WITH FLUE FIRING TYPICAL SEA LEVEL DATA[2] | | NEGATIVE PRESSURE COIL COVER WITH FLUE NOT FIRING TYPICAL SEA LEVEL DATA[1] | | NEGATIVE PRESSURE COIL COVER WITH FLUE FIRING TYPICAL SEA LEVEL DATA[2] | |
| | LOW FIRE | HIGH FIRE | LOW FIRE | HIGH FIRE | LOW FIRE | HIGH FIRE | LOW FIRE | HIGH FIRE |
| GMV950453BX* GMV950704CX* | -0.45 | -0.90 | -0.50 | -0.95 | -0.25 | -0.25 | -0.25 | -0.25 |
| GMV950905DX* GMV951155DX* | -0.65 | -1.20 | -0.70 | -1.25 | -0.25 | -0.25 | -0.25 | -0.25 |
| GCV90704CX* | -0.35 | -0.70 | -0.20 | -0.55 | -0.52 | -0.52 | -0.37 | -0.37 |
| GCV90904DX* | -0.35 | -0.70 | -0.20 | -0.55 | -0.52 | -0.52 | -0.37 | -0.37 |
| GCV91155DX* | -0.35 | -0.70 | -0.20 | -0.55 | -0.52 | -0.52 | -0.37 | -0.37 |

(1) Data given is least negative pressure required for pressure switch to close.

(2) Data given is least negative pressure required for pressure switch to remain closed.

Note: The typical sea level negative pressure data represents the minimum pressures expected. Shorter length of flue pipe or single pipe systems compared to dual pipe systems should show higher (greater negative) pressures.

| PRESSURE SWITCH TRIP POINTS AND USAGE CHART | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MODEL | 0 to 7,000 ft. | | | | | | 7,001 ft. to 11,000 ft. | | | | |
| | TRIP POINT COIL COVER PRESSURE SWITCH | | COIL COVER PRESSURE SWITCH PART # | TRIP POINT ID BLOWER PRESSURE SWITCH | | ID BLOWER PRESSURE SWITCH PART # | TRIP POINT COIL COVER PRESSURE SWITCH | | TRIP POINT ID BLOWER PRESSURE SWITCH | | HIGH ALTITUDE KIT |
| | LOW FIRE | HIGH FIRE | | LOW FIRE | HIGH FIRE | | LOW FIRE | HIGH FIRE | LOW FIRE | HIGH FIRE | |
| GMV950453BX* GMV950704CX* | -0.10 | -0.10 | 20197308 | -0.30 | -0.75 | 11177113 | -0.10 | -0.10 | -0.22 | -0.55 | HAPS28 11177115 |
| GMV950905DX* GMV951155DX* | -0.10 | -0.10 | 20197308 | -0.50 | -1.10 | 11177114 | -0.10 | -0.10 | -0.38 | -0.82 | HAPS29 11177116 |
| GCV90704CX* | -0.37 | -0.37 | 20197313 | -0.20 | -0.55 | 11177118 | -0.37 | -0.37 | -0.15 | -0.30 | HAPS31 |
| GCV90905DX* | -0.37 | -0.37 | 20197313 | -0.20 | -0.55 | 11177118 | -0.37 | -0.37 | -0.15 | -0.30 | HAPS31 |
| GCV91155DX* | -0.37 | -0.37 | 20197313 | -0.20 | -0.55 | 11177118 | -0.37 | -0.37 | -0.15 | -0.30 | HAPS31 |

**Note:** All installations above 7,000 ft. require a pressure switch change. For installations in Canada the GMV95 & GCV9 furnaces are certified only to 4500 ft.

**Note:** Replacement pressure switch number is listed below high altitude kit number.

**Note:** All negative pressure readings are in inches of water column (" w.c.).

# PRODUCT DESIGN

| PRIMARY LIMIT | | | | | |
|---|---|---|---|---|---|
| **Part Number** | **20162903** | **20162904** | **20162905** | **20162907** | **20162908** |
| **Open Setting (°F)** | 160 | 150 | 145 | 155 | 170 |
| **GMV950453BX*** | --- | --- | 1 | --- | --- |
| **GMV950704CX*** | --- | --- | --- | 1 | --- |
| **GMV950905DX*** | --- | --- | 1 | --- | --- |
| **GMV951155DX*** | --- | 1 | --- | --- | --- |
| **GCV90704CX*** | 1 | --- | --- | --- | --- |
| **GCV90905DX*** | --- | --- | --- | --- | 1 |
| **GCV91155DX*** | --- | --- | 1 | --- | --- |

| ROLLOUT LIMIT SWITCHES | | | | | | |
|---|---|---|---|---|---|---|
| **Part Number** | **10123512** | **10123517** | **10123518** | **10123533** | **10123534** | **10123537** |
| **Open Setting (°F)** | 325 | 210 | 170 | 200 | 220 | 190 |
| **GMV950453BX*** | --- | --- | 1 | --- | --- | --- |
| **GMV950704CX*** | --- | --- | --- | 2 | --- | --- |
| **GMV950905DX*** | --- | --- | --- | --- | --- | 2 |
| **GMV951155DX*** | --- | --- | --- | 2 | --- | --- |
| **GCV90704CX*** | --- | --- | --- | --- | 2 | --- |
| **GCV90905DX*** | --- | 2 | --- | --- | --- | --- |
| **GCV91155DX*** | --- | 2 | --- | --- | --- | --- |

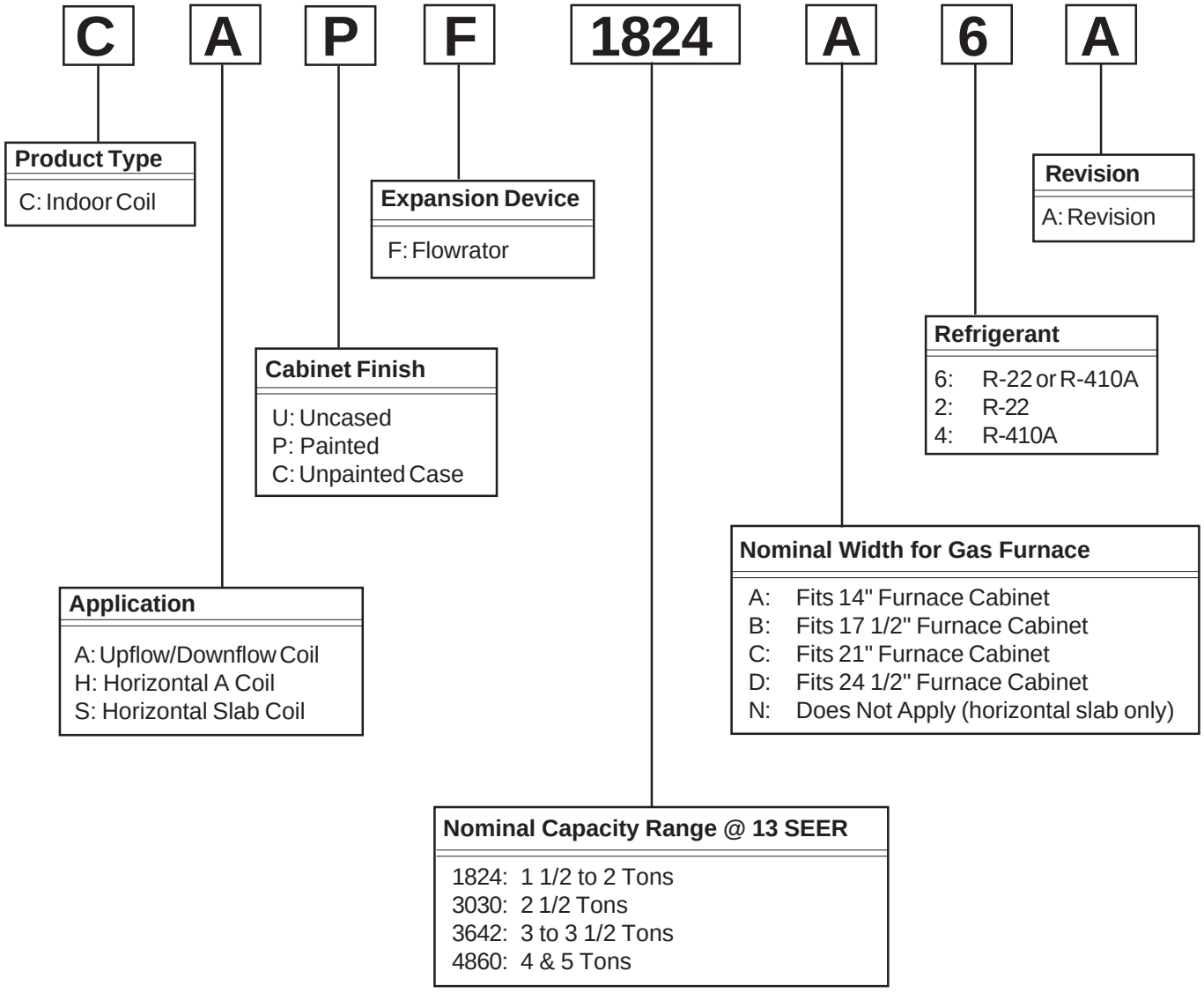
| AUXILIARY LIMIT SWITCHES | | | | | |
|---|---|---|---|---|---|
| **Part Number** | **10123534** | **10123535** | **10123537** | **10123536** | **10123533** |
| **Open Setting (°F)** | 220 | 150 | 190 | 180 | 200 |
| **GMV950453BX*** | --- | 2 | --- | --- | --- |
| **GMV950704CX*** | --- | --- | 2 | --- | --- |
| **GMV950905DX*** | --- | --- | --- | 2 | --- |
| **GMV951155DX*** | --- | --- | --- | --- | 2 |
| **GCV90704CXA** | 2 | --- | --- | --- | --- |
| **GCV90905DXA** | --- | --- | --- | 2 | --- |
| **GCV90905DXA** | --- | --- | --- | 2 | --- |

# PRODUCT DESIGN

## Coil Matches:

A large array of Goodman® brand coils are available for use with the GMV95 & GCV9 model furnaces, in either upflow or horizontal applications. These coils are available in both cased and uncased models, with or without a TXV expansion device. These 90% - 95%+ furnaces match up with the existing Goodman® brand coils as shown in the chart below.

## Coil Matches (for Goodman® units using R22 and R-410A):




- All CAPF coils in B, C, & D widths have insulated blank off plates for use with one size smaller furnaces.
- All CAPF coils have a CAUF equivalent.
- All CHPF coils in B, C & D heights have an insulated Z bracket for use with one size smaller furnace.
- All proper coil combinations are subject to being AHRI rated with a matched outdoor unit.

# PRODUCT DESIGN

## Thermostats:

The following 2-stage thermostats are recommended for use with GMV95 & GCV9 Furnace Models:

| THERMOSTATS | |
|---|---|
| **Thermostat** | **Mechanical / Digital** |
| **CHT90-120** | Cooling/Heating, Mechanical |
| **CH70TG** | Cooling/Heating, Digital, Non-programmable |
| **CHSATG** | Cooling/Heating, Mechanical |
| **H20TWR** | Heating Only, Mechanical |

## Filters:

Filters are required with this furnace and must be provided by the installer. The filters used must comply with UL900 or CAN/ULCS111 standards. Installing this furnace without filters will void the unit warranty

## Upflow Filters

This furnace has provisions for the installation of return air filters at the side and/or bottom return. The furnace will accommodate the following filter sizes depending on cabinet size:

| Side Return(s) | | |
|---|---|---|
| Cabinet Width (in.) | Nominal Filter Size (in.) | Approx. Flow Area ($in^2$) |
| All | 16 x 25 x 1 | 400 |

| Bottom Return | | |
|---|---|---|
| Cabinet Width (in.) | Nominal Filter Size (in.) | Approx. Flow Area ($in^2$) |
| 17-1/2 | 14 x 25 x 1 | 350 |
| 21 | 16 x 25 x 1 | 400 |
| 24-1/2 | 20 x 25 x 1 | 500 |

Refer to Minimum Filter Area tables to determine filter area requirement. **NOTE:** Filters can also be installed elsewhere in the duct system such as a central return.

# PRODUCT DESIGN

| | | UPFLOW COOLING AIRFLOW REQUIREMENT (CFM) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 600 | 800 | 1000 | 1200 | 1400 | 1600 | 2000 |
| Input__Airflow | 0453__X* | 415* | 415* | 480 | 576 | --- | --- | --- |
| | 0704__X* | --- | --- | 636* | 636* | 672 | 768 | |
| | 0905__X* | --- | --- | --- | 826* | 826* | 826* | 960 |
| | 1155__X* | --- | --- | --- | 875* | 875* | 875* | 960 |

| | | COUNTERFLOW COOLING AIRFLOW REQUIREMENT (CFM) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 600 | 800 | 1000 | 1200 | 1400 | 1600 | 2000 |
| Input Airflow | 0704__X* | --- | --- | 634* | 634* | 672 | 768 | --- |
| | 0905__X* | --- | --- | --- | 819* | 819* | 819* | 960 |
| | 115__X* | --- | --- | --- | 860* | 860* | 860* | 960 |

*Minimum filter area dictated by heating airflow requirement.

### Disposable Minimum Filter Area ($in^2$)

[*Based on a 300 ft/min filter face velocity]*

| | | UPFLOW COOLING AIRFLOW REQUIREMENT (CFM) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 600 | 800 | 1000 | 1200 | 1400 | 1600 | 2000 |
| Input__Airflow | 0453__X* | 207* | 207* | 240 | 288 | --- | --- | --- |
| | 0704__X* | --- | --- | 318* | 318* | 336 | 384 | --- |
| | 0905__X* | --- | --- | --- | 413* | 413* | 413* | 480 |
| | 1155__X* | --- | --- | --- | 437* | 437* | 437* | 480 |

| | | COUNTERFLOW COOLING AIRFLOW REQUIREMENT (CFM) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 600 | 800 | 1000 | 1200 | 1400 | 1600 | 2000 |
| Input Airflow | 0704__X* | --- | --- | 316* | 316* | 336 | 384 | --- |
| | 0905__X* | --- | --- | --- | 409* | 409* | 409* | 480 |
| | 1155__X* | --- | --- | --- | 430* | 430* | 430* | 480 |

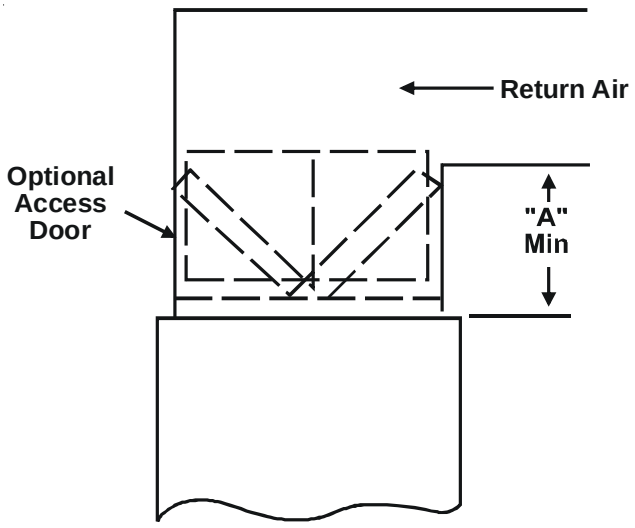
*Minimum filter area dictated by heating airflow requirement.

### Permanent Minimum Filter Area ($in^2$)

*[Based on 600 ft/min filter face velocity]*

## Counterflow Filters

This furnace has provisions for the installation of return air filters at the counterflow top return. The furnace will accommodate the following filter sizes depending on cabinet size:




| Counterflow Top Return | | | | |
|---|---|---|---|---|
| Cabinet Width | Filter Area ($in^2$) | Qty | Filter Size (in) | Dimension "A" (in) |
| 17 1/2 | 600 | 2 | 15 X 20 X 1 | 14.2 |
| 21 | | | | 13.0 |
| 24 1/2 | | | | 11.3 |
| 17 1/2 | 800 | 2 | 20 X 20 X 1 | 19.7 |
| 21 | | | | 18.8 |
| 24 1/2 | | | | 17.7 |
| 17 1/2 | 1000 | 2 | 25 X 20 X 1 | 25.0 |
| 21 | | | | 24.3 |
| 24 1/2 | | | | 23.4 |

Refer to Minimum Filter Area tables to determine filter area requirement. **NOTE:** Filters can also be installed elsewhere in the duct system such as a central return.

# FURNACE SPECIFICATIONS GMV95

| MODEL | GMV950453BX* | GMV950704CX* | GMV950905DX* | GMV951155DX* |
|---|---|---|---|---|
| Btuh Input (US) High Fire | 46,000 | 69,000 | 92,000 | 115,000 |
| Output (US) High Fire | 44,300 | 66,900 | 88,800 | 111,100 |
| Btuh Input (US) Low Fire | 32,000 | 48,000 | 64,000 | 80,000 |
| Output (US) Low Fire | 30,800 | 46,400 | 61,700 | 77,400 |
| A.F.U.E. | 95.0% | 95.0% | 95.0% | 95.0% |
| Rated External Static (" w.c.) | .10 - .50 | .10 - .50 | .10 - .50 | .10 - .50 |
| Temperature Rise (°F) | 30 - 60 | 30 - 60 | 30 - 60 | 35 - 65 |
| High Stage Pressure Switch Trip Point (" w.c.) | -0.75 | -0.75 | -1.10 | -1.10 |
| Low Stage Pressure Switch Trip Point (" w.c.) | -0.30 | -0.30 | -0.50 | -0.50 |
| Front Cover Pressure Switch Trip Point (" w.c) | -0.10 | -0.10 | -0.10 | -0.10 |
| Blower Wheel (D" x W") | 10 x 7 | 10 x 10 | 11 x 10 | 11 x 10 |
| Blower Horsepower | 1/2 | 3/4 | 1 | 1 |
| Blower Speeds<br>Max CFM @ 0.5 E.S.P. | Refer to airflow charts on pages 16-18. | | | |
| Power Supply | 115-60-1 | 115-60-1 | 115-60-1 | 115-60-1 |
| Minimum Circuit Ampacity (MCA) | 10.4 | 12.8 | 14.6 | 14.6 |
| Maximum Overcurrent Device | 15 | 15 | 15 | 15 |
| Transformer (VA) | 40 | 40 | 40 | 40 |
| Heat Anticipator (Amps) | 0.7 | 0.7 | 0.7 | 0.7 |
| Primary Limit Setting (°F) | 145 | 155 | 145 | 150 |
| Auxiliary Limit Setting (°F) | 150 | 190 | 180 | 200 |
| Rollout Limit Setting (°F) | 170 | 200 | 190 | 200 |
| Fan Delay On Heating | 30 secs. | 30 secs. | 30 secs. | 30 secs. |
| Off Heating * | 150 secs. | 150 secs. | 150 secs. | 150 secs. |
| Fan Delay On Cooling | 5 secs. | 5 secs. | 5 secs. | 5 secs. |
| Off Cooling | 45 secs. | 45 secs. | 45 secs. | 45 secs. |
| Fan Delay On - Fan Only | 5 secs. | 5 secs. | 5 secs. | 5 secs. |
| Gas Supply Pressure (Natural/Propane) (" w.c.) | 7 / 11 | 7 / 11 | 7 / 11 | 7 / 11 |
| Manifold Pressure (Natural/Propane) High Stage (" w.c.) | 3.5 / 10 | 3.5 / 10 | 3.5 /10 | 3.5 /10 |
| Manifold Pressure (Natural/Propane) Low Stage ("w.c.) | 1.9 / 6.0 | 1.9 / 6.0 | 1.9 / 6.0 | 1.9 / 6.0 |
| Orifice Size (Natural/Propane) | #43 / #55 | #43 / #55 | #43 / #55 | #43 / #55 |
| Number of Burners | 2 | 3 | 4 | 5 |
| Vent Connector Diameter (inches) | 2 | 2 | 3 | 3 |
| Combustion Air Connector Diameter (inches) | 2 | 2 | 3 | 3 |
| Shipping Weight (lbs.) | 133 | 135 | 172 | 175 |

(1) Wire size should be determined in accordance with National Electrical Codes. Extensive wire runs will require larger wire sizes.
(2) Maximum Overcurrent Protection Device: May use Time Delay Fuse or HACR type Circuit Breaker of the same size as noted.
(3) Off Heating - this fan delay timing is adjustable (90, 120, 150 and 180 seconds). Furnaces are shipped with 150 second off delay.
(4) See Installation Instructions for appropriate vent diameter, length and number of elbows.
(5) See Installation Instructions for appropriate combustion air pipe diameter, length and number of elbows.

1. These furnaces are manufactured for natural gas operation. Optional kits are available for conversion to propane operation.
2. For elevations above 2000 feet the rating should be reduced by 4% for each 1000 feet above sea level. The furnace must not be derated, orifice changes should only be made if necessary for altitude.
3. The total heat loss from the structure as expressed in TOTAL BTU/HR must be calculated by the manufacturers method or in accordance with the "A.S.H.R.A.E. GUIDE" or "MANUAL J-LOAD CALCULATIONS" published by the AIR CONDITIONING CONTRACTORS OF AMERICA. The total heat loss calculated should be equal to or less than the heating capacity. Output based on D.O.E. test procedures.
4. Minimum Circuit Ampacity calculated as: (1.25 x Circulator Blower Amps) + I.D. Blower Amps.

Unit specifications are subject to change without notice. **ALWAYS** refer to the units serial plate for the most up-to-date general and electrical information.

# FURNACE SPECIFICATIONS



| MODEL | GCV90704CX* | GCV90905DX* | GCV91155DX* |
|---|---|---|---|
| Btuh Input (US) High Fire | 69,000 | 92,000 | 115,000 |
| Output (US) High Fire | 64,200 | 84,000 | 109,000 |
| Btuh Input (US) Low Fire | 48,000 | 64,000 | 80,000 |
| Output (US) Low Fire | 45,000 | 60,100 | 77,400 |
| A.F.U.E. | 93% | 93% | 93% |
| Rated External Static (" w.c.) | .10 - .50 | .10 - .50 | .10 - .50 |
| Temperature Rise (°F) | 30 - 60 | 30 - 60 | 30 - 60 |
| High Stage Pressure Switch Trip Point (" w.c.) | -0.55 | -0.55 | -0.55 |
| Low Stage Pressure Switch Trip Point (" w.c.) | -0.20 | -0.20 | -0.20 |
| Front Cover Pressure Switch Trip Point (" w.c) | -0.37 | -0.37 | -0.37 |
| Blower Wheel (D" x W") | 10 x 10 | 11 x 10 | 11 x 10 |
| Blower Horsepower | 3/4 | 1 | 1 |
| Blower Speeds<br>Max CFM @ 0.5 E.S.P. | Refer to airflow charts on pages 19-22. | | |
| Power Supply | 115-60-1 | 115-60-1 | 115-60-1 |
| Minimum Circuit Ampacity (MCA) | 12.8 | 14.6 | 14.6 |
| Maximum Overcurrent Device | 15 | 15 | 15 |
| Transformer (VA) | 40 | 40 | 40 |
| Heat Anticipator (Amps) | 0.7 | 0.7 | 0.7 |
| Primary Limit Setting (°F) | 160 | 170 | 145 |
| Auxiliary Limit Setting (°F) | 220 | 180 | 180 |
| Rollout Limit Setting (°F) | 220 | 210 | 210 |
| Fan Delay On Heating | 30 secs. | 30 secs. | 30 secs. |
| Off Heating * | 150 secs. | 150 secs. | 150 secs. |
| Fan Delay On Cooling | 5 secs. | 5 secs. | 5 secs. |
| Off Cooling | 45 secs. | 45 secs. | 45 secs. |
| Fan Delay On - Fan Only | 5 secs. | 5 secs. | 5 secs. |
| Gas Supply Pressure (Natural/Propane) (" w.c.) | 7 / 11 | 7 / 11 | 7 / 11 |
| Manifold Pressure (Natural/Propane) High Stage (" w.c.) | 3.5 / 10 | 3.5 /10 | 3.5 /10 |
| Manifold Pressure (Natural/Propane) Low Stage ("w.c.) | 1.9 / 6.0 | 1.9 / 6.0 | 1.9 / 6.0 |
| Orifice Size (Natural/Propane) | #43 / #55 | #43 / #55 | #43 / #55 |
| Number of Burners | 3 | 4 | 5 |
| Vent Connector Diameter (inches) | 2 | 3 | 3 |
| Combustion Air Connector Diameter (inches) | 2 | 2 | 2 |
| Shipping Weight (lbs.) | 135 | 172 | 175 |

* Off Heating - This fan delay timing is adjustable (90, 120, 150 or 180 seconds), 150 seconds as shipped.

(1) Wire size should be determined in accordance with National Electrical Codes. Extensive wire runs will require larger wire sizes.
(2) Maximum Overcurrent Protection Device: May use Time Delay Fuse or HACR type Circuit Breaker of the same size as noted.
(3) Off Heating - this fan delay timing is adjustable (90, 120, 150 and 180 seconds). Furnaces are shipped with 150 second off delay.
(4) See Installation Instructions for appropriate vent diameter, length and number of elbows.
(5) See Installation Instructions for appropriate combustion air pipe diameter, length and number of elbows.

1. These furnaces are manufactured for natural gas operation. Optional kits are available for conversion to propane operation.
2. For elevations above 2000 feet the rating should be reduced by 4% for each 1000 feet above sea level. The furnace must not be derated, orifice changes should only be made if necessary for altitude.
3. The total heat loss from the structure as expressed in TOTAL BTU/HR must be calculated by the manufacturers method or in accordance with the "A.S.H.R.A.E. GUIDE" or "MANUAL J-LOAD CALCULATIONS" published by the AIR CONDITIONING CONTRACTORS OF AMERICA. The total heat loss calculated should be equal to or less than the heating capacity. Output based on D.O.E. test procedures.
4. Minimum Circuit Ampacity calculated as: (1.25 x Circulator Blower Amps) + I.D. Blower Amps.

Unit specifications are subject to change without notice. **ALWAYS** refer to the units serial plate for the most up-to-date general and electrical information.

# BLOWER PERFORMANCE SPECIFICATIONS

## GMV95 Heating Speed Charts

| GMV950453BX* (Rise Range: 30 - 60°F) | | | | |
|---|---|---|---|---|
| Heating Speed Tap | Adjust Tap | Low Stage CFM at .1" - .5" W.C. ESP | High Stage CFM at .1" - .5" W.C. ESP | Rise (°F) |
| A | Minus(-) | 495 | 713 | 57 |
| | Normal | 550 | 792 | 51 |
| | Plus (+) | 605 | 871 | 46 |
| B | Minus(-) | 540 | 778 | 52 |
| | Normal | 600 | 864 | 47 |
| | Plus (+) | 660 | 950 | 43 |
| C | Minus(-) | 585 | 842 | 48 |
| | Normal | 650 | 936 | 43 |
| | Plus (+) | 715 | 1030 | 39 |
| D | Minus(-) | 630 | 907 | 45 |
| | Normal | 700 | 1008 | 40 |
| | Plus (+) | 770 | 1109 | 36 |

| GMV950704CX* (Rise Range: 30 - 60°F) | | | | |
|---|---|---|---|---|
| Heating Speed Tap | Adjust Tap | Low Stage CFM at .1" - .5" W.C. ESP | High Stage CFM at .1" - .5" W.C. ESP | Rise (°F) |
| A | Minus(-) | 756 | 1089 | 56 |
| | Normal | 840 | 1210 | 50 |
| | Plus (+) | 924 | 1331 | 46 |
| B | Minus(-) | 828 | 1192 | 51 |
| | Normal | 920 | 1325 | 46 |
| | Plus (+) | 1012 | 1457 | 42 |
| C | Minus(-) | 900 | 1296 | 47 |
| | Normal | 1000 | 1440 | 42 |
| | Plus (+) | 1100 | 1584 | 38 |
| D | Minus(-) | 972 | 1400 | 43 |
| | Normal | 1080 | 1555 | 39 |
| | Plus (+) | 1188 | 1711 | 35 |

| GMV950905DX* (Rise Range: 30 - 60°F) | | | | |
|---|---|---|---|---|
| Heating Speed Tap | Adjust Tap | Low Stage CFM at .1" - .5" W.C. ESP | High Stage CFM at .1" - .5" W.C. ESP | Rise (°F) |
| A | Minus(-) | 1013 | 1458 | 56 |
| | Normal | 1125 | 1620 | 50 |
| | Plus (+) | 1238 | 1782 | 45 |
| B | Minus(-) | 1076 | 1549 | 52 |
| | Normal | 1195 | 1721 | 47 |
| | Plus (+) | 1315 | 1893 | 43 |
| C | Minus(-) | 1139 | 1639 | 49 |
| | Normal | 1265 | 1822 | 44 |
| | Plus (+) | 1392 | 2004 | 40 |
| D | Minus(-) | 1202 | 1730 | 47 |
| | Normal | 1335 | 1922 | 42 |
| | Plus (+) | 1469 | 2115 | 38 |

| GMV951155DX* (Rise Range: 30 - 60°F) | | | | |
|---|---|---|---|---|
| Heating Speed Tap | Adjust Tap | Low Stage CFM at .1" - .5" W.C. ESP | High Stage CFM at .1" - .5" W.C. ESP | Rise (°F) |
| A | Minus(-) | 1107 | 1594 | 63 |
| | Normal | 1230 | 1771 | 57 |
| | Plus (+) | 1353 | 1948 | 52 |
| B | Minus(-) | 1139 | 1639 | 62 |
| | Normal | 1265 | 1822 | 56 |
| | Plus (+) | 1392 | 2004 | 50 |
| C | Minus(-) | 1170 | 1685 | 60 |
| | Normal | 1300 | 1872 | 54 |
| | Plus (+) | 1430 | 2059 | 49 |
| D | Minus(-) | 1202 | 1730 | 58 |
| | Normal | 1335 | 1922 | 53 |
| | Plus (+) | 1469 | 2115 | 48 |

1. Units are shipped without filter(s). CFM in chart is without filter(s).
2. All furnaces shipped with heating speed set at "B" and cooling speed set at "D". Installer should adjust blower speed as needed. The first task is to determine the proper aiflow for the cooling system.
3. For most cooling applications, about 400 CFM per ton is desirable.
4. The chart is for information only. For satisfactory operation, external static pressure not to exceed value shown on rating plate.
5. Do not operate above 0.5" w.c. ESP in heating mode. Operating between 0.5" w.c. and 0.8" w.c. is tabulated for cooling purposes only.
6. * Motor CFM minimum.

# BLOWER PERFORMANCE SPECIFICATIONS

## GMV95 High (Single) Stage Cooling Speed Charts

| GMV950453BX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 540 |
| | Normal | 600 |
| | Plus (+) | 660 |
| B | Minus(-) | 720 |
| | Normal | 800 |
| | Plus (+) | 880 |
| C | Minus(-) | 900 |
| | Normal | 1000 |
| | Plus (+) | 1100 |
| D | Minus(-) | 1080 |
| | Normal | 1200 |
| | Plus (+) | 1320 |

| GMV950704CX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 540 |
| | Normal | 600 |
| | Plus (+) | 660 |
| B | Minus(-) | 720 |
| | Normal | 800 |
| | Plus (+) | 880 |
| C | Minus(-) | 990 |
| | Normal | 1100 |
| | Plus (+) | 1210 |
| D | Minus(-) | 1286 |
| | Normal | 1429 |
| | Plus (+) | 1572 |

| GMV950905DX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 720 |
| | Normal | 800 |
| | Plus (+) | 880 |
| B | Minus(-) | 990 |
| | Normal | 1100 |
| | Plus (+) | 1210 |
| C | Minus(-) | 1260 |
| | Normal | 1400 |
| | Plus (+) | 1540 |
| D | Minus(-) | 1620 |
| | Normal | 1800 |
| | Plus (+) | 1980 |

| GMV951155DX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 720 |
| | Normal | 800 |
| | Plus (+) | 880 |
| B | Minus(-) | 990 |
| | Normal | 1100 |
| | Plus (+) | 1210 |
| C | Minus(-) | 1260 |
| | Normal | 1400 |
| | Plus (+) | 1540 |
| D | Minus(-) | 1620 |
| | Normal | 1800 |
| | Plus (+) | 1980 |

## GMV95 Low Stage Cooling Speed Charts

| GMV950453BX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 380* |
| | Normal | 390 |
| | Plus (+) | 429 |
| B | Minus(-) | 468 |
| | Normal | 520 |
| | Plus (+) | 572 |
| C | Minus(-) | 585 |
| | Normal | 650 |
| | Plus (+) | 715 |
| D | Minus(-) | 702 |
| | Normal | 780 |
| | Plus (+) | 858 |

| GMV950704CX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 378* |
| | Normal | 390 |
| | Plus (+) | 429 |
| B | Minus(-) | 468 |
| | Normal | 520 |
| | Plus (+) | 572 |
| C | Minus(-) | 644 |
| | Normal | 715 |
| | Plus (+) | 787 |
| D | Minus(-) | 836 |
| | Normal | 929 |
| | Plus (+) | 1022 |

| GMV950905DX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 513* |
| | Normal | 520 |
| | Plus (+) | 572 |
| B | Minus(-) | 644 |
| | Normal | 715 |
| | Plus (+) | 787 |
| C | Minus(-) | 819 |
| | Normal | 910 |
| | Plus (+) | 1001 |
| D | Minus(-) | 1053 |
| | Normal | 1170 |
| | Plus (+) | 1287 |

| GMV951155DX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 514* |
| | Normal | 520 |
| | Plus (+) | 572 |
| B | Minus(-) | 644 |
| | Normal | 715 |
| | Plus (+) | 787 |
| C | Minus(-) | 819 |
| | Normal | 910 |
| | Plus (+) | 1001 |
| D | Minus(-) | 1053 |
| | Normal | 1170 |
| | Plus (+) | 1287 |

1. Units are shipped without filter(s). CFM in chart is without filter(s).
2. All furnaces shipped with heating speed set at "B" and cooling speed set at "D". Installer should adjust blower speed as needed. The first task is to determine the proper aiflow for the cooling system.
3. For most cooling applications, about 400 CFM per ton is desirable.
4. The chart is for information only. For satisfactory operation, external static pressure not to exceed value shown on rating plate.
5. Do not operate above 0.5" w.c. ESP in heating mode. Operating between 0.5" w.c. and 0.8" w.c. is tabulated for cooling purposes only.
6. * Motor CFM minimum.

# BLOWER PERFORMANCE SPECIFICATIONS

## GMV95 Continuous Fan Speed Chart

| GMV950453BXC* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 380* |
| | Normal | 380* |
| | Plus (+) | 380* |
| B | Minus(-) | 403 |
| | Normal | 448 |
| | Plus (+) | 493 |
| C | Minus(-) | 504 |
| | Normal | 560 |
| | Plus (+) | 616 |
| D | Minus(-) | 505 |
| | Normal | 672 |
| | Plus (+) | 739 |

| GMV950704CX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 380* |
| | Normal | 380* |
| | Plus (+) | 380* |
| B | Minus(-) | 403 |
| | Normal | 448 |
| | Plus (+) | 493 |
| C | Minus(-) | 554 |
| | Normal | 616 |
| | Plus (+) | 678 |
| D | Minus(-) | 720 |
| | Normal | 800 |
| | Plus (+) | 880 |

| GMV950905DX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 513* |
| | Normal | 513* |
| | Plus (+) | 513* |
| B | Minus(-) | 554 |
| | Normal | 616 |
| | Plus (+) | 678 |
| C | Minus(-) | 706 |
| | Normal | 784 |
| | Plus (+) | 862 |
| D | Minus(-) | 907 |
| | Normal | 1008 |
| | Plus (+) | 1109 |

| GMV951155DX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 514* |
| | Normal | 514* |
| | Plus (+) | 514* |
| B | Minus(-) | 554 |
| | Normal | 616 |
| | Plus (+) | 678 |
| C | Minus(-) | 706 |
| | Normal | 784 |
| | Plus (+) | 862 |
| D | Minus(-) | 907 |
| | Normal | 1008 |
| | Plus (+) | 1109 |

1. Units are shipped without filter(s). CFM in chart is without filter(s).
2. All furnaces shipped with heating speed set at "B" and cooling speed set at "D". Installer should adjust blower speed as needed. The first task is to determine the proper aiflow for the cooling system.
3. For most cooling applications, about 400 CFM per ton is desirable.
4. The chart is for information only. For satisfactory operation, external static pressure not to exceed value shown on rating plate.
5. Do not operate above 0.5" w.c. ESP in heating mode. Operating between 0.5" w.c. and 0.8" w.c. is tabulated for cooling purposes only.
6. * Motor CFM minimum.

# BLOWER PERFORMANCE SPECIFICATIONS

## GCV9 Heating Speed Charts

| GCV90704CX* (Rise Range: 30 - 60°F) | | | | |
|---|---|---|---|---|
| Heating Speed Tap | Adjust Tap | Low Stage CFM at .1" - .5" w.c. ESP | High Stage CFM at .1" - .5" w.c. ESP | Rise (°F) |
| A | Minus(-) | 747 | 1076 | 56 |
| | Normal | 830 | 1195 | 50 |
| | Plus (+) | 913 | 1315 | 46 |
| B | Minus(-) | 824 | 1186 | 51 |
| | Normal | 915 | 1318 | 46 |
| | Plus (+) | 1007 | 1449 | 42 |
| C | Minus(-) | 900 | 1296 | 47 |
| | Normal | 1000 | 1440 | 42 |
| | Plus (+) | 1100 | 1584 | 38 |
| D | Minus(-) | 978 | 1408 | 43 |
| | Normal | 1085 | 1562 | 39 |
| | Plus (+) | 1194 | 1719 | 35 |

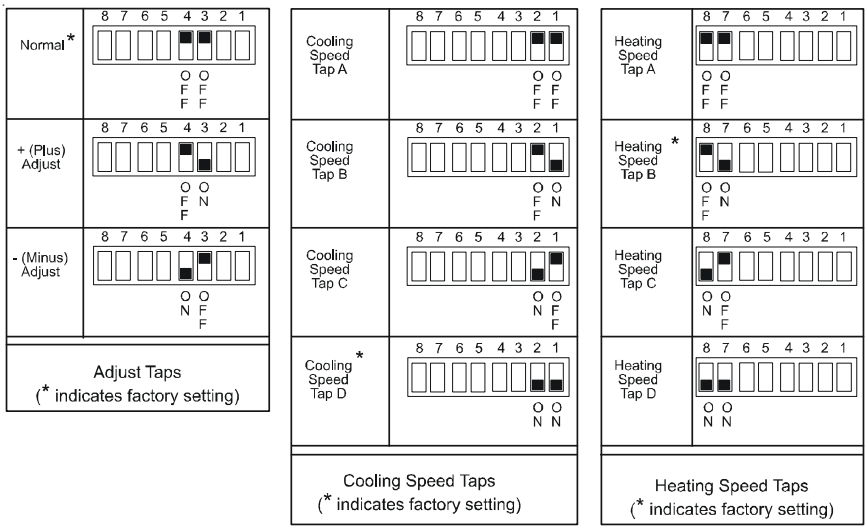
| GCV90905DX* (Rise Range: 30 - 60°F) | | | | |
|---|---|---|---|---|
| Heating Speed Tap | Adjust Tap | Low Stage CFM at .1" - .5" w.c. ESP | High Stage CFM at .1" - .5" w.c. ESP | Rise (°F) |
| A | Minus(-) | 999 | 1439 | 56 |
| | Normal | 1110 | 1598 | 50 |
| | Plus (+) | 1221 | 1758 | 46 |
| B | Minus(-) | 1067 | 1536 | 52 |
| | Normal | 1185 | 1706 | 47 |
| | Plus (+) | 1303 | 1876 | 43 |
| C | Minus(-) | 1134 | 1633 | 49 |
| | Normal | 1260 | 1814 | 44 |
| | Plus (+) | 1386 | 1996 | 40 |
| D | Minus(-) | 1202 | 1730 | 46 |
| | Normal | 1335 | 1922 | 42 |
| | Plus (+) | 1469 | 2115 | 38 |

| GCV91155DX* (Rise Range: 30 - 60°F) | | | | |
|---|---|---|---|---|
| Heating Speed Tap | Adjust Tap | Low Stage CFM at .1" - .5" w.c. ESP | High Stage CFM at .1" - .5" w.c. ESP | Rise (°F) |
| A | Minus(-) | 1093 | 1583 | 63 |
| | Normal | 1214 | 1759 | 56 |
| | Plus (+) | 1335 | 1935 | 51 |
| B | Minus(-) | 1106 | 1612 | 61 |
| | Normal | 1229 | 1791 | 55 |
| | Plus (+) | 1352 | 1970 | 50 |
| C | Minus(-) | 1166 | 1654 | 60 |
| | Normal | 1296 | 1838 | 54 |
| | Plus (+) | 1426 | 2022 | 49 |
| D | Minus(-) | 1172 | 1690 | 59 |
| | Normal | 1302 | 1878 | 53 |
| | Plus (+) | 1432 | 2066 | 48 |

1. Units are shipped without filter(s). CFM in chart is without filter(s).
2. All furnaces shipped with heating speed set at "B" and cooling speed set at "D". Installer should adjust blower speed as needed. The first task is to determine the proper aiflow for the cooling system.
3. For most cooling applications, about 400 CFM per ton is desirable.
4. The chart is for information only. For satisfactory operation, external static pressure not to exceed value shown on rating plate.
5. Do not operate above 0.5" w.c. ESP in heating mode. Operating between 0.5" w.c. and 0.8" w.c. is tabulated for cooling purposes only.
6. * Motor CFM minimum.

# BLOWER PERFORMANCE SPECIFICATIONS

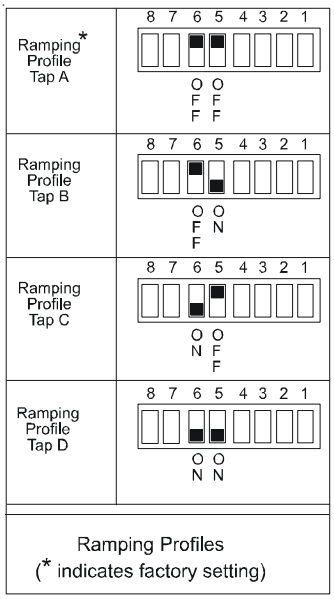
## GMV95/GCV9
## Circulator Blower Speed Adjustment Switches




**Note:** There is a green LED adjacent to the integrated control module fuse which is used to verify airflow volume. The green CFM LED blinks once for each 100 CFM of airflow.
Example: 10 blinks = 1,000 CFM

**Note:** Continuous fan speed will be *56%* of high stage cooling speed.
Example: 1,000 CFM of cooling speed will be reduced to 560 CFM when fan selector switch is set to on, and no call for cooling.

## GMV95/GCV9
## Ramping Profile




**Note:** The multi-speed circulator blower also offers several custom ON/OFF ramping profiles. These profiles may be used to enhance cooling performance and increase comfort level. The ramping profiles are selected using DIP switches 5 and 6.

Verify profile selection by counting the green CFM LED blinks and timing each step of the ramping profile.

1. Units are shipped without filter(s). CFM in chart is without filter(s).
2. All furnaces shipped with heating speed set at "B" and cooling speed set at "D". Installer should adjust blower speed as needed. The first task is to determine the proper aiflow for the cooling system.
3. For most cooling applications, about 400 CFM per ton is desirable.
4. The chart is for information only. For satisfactory operation, external static pressure not to exceed value shown on rating plate.
5. Do not operate above 0.5" w.c. ESP in heating mode. Operating between 0.5" w.c. and 0.8" w.c. is tabulated for cooling purposes only.
6. * Motor CFM minimum.

# BLOWER PERFORMANCE SPECIFICATIONS

## GCV9 Continuous Fan Speed Chart

| GCV90704CX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 380* |
| | Normal | 380* |
| | Plus (+) | 380* |
| B | Minus(-) | 403 |
| | Normal | 448 |
| | Plus (+) | 493 |
| C | Minus(-) | 554 |
| | Normal | 616 |
| | Plus (+) | 678 |
| D | Minus(-) | 720 |
| | Normal | 800 |
| | Plus (+) | 880 |

| GCV90905DX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 513* |
| | Normal | 513* |
| | Plus (+) | 513* |
| B | Minus(-) | 554 |
| | Normal | 616 |
| | Plus (+) | 678 |
| C | Minus(-) | 706 |
| | Normal | 784 |
| | Plus (+) | 862 |
| D | Minus(-) | 907 |
| | Normal | 1008 |
| | Plus (+) | 1109 |

| GCV91155DX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 500* |
| | Normal | 500* |
| | Plus (+) | 500* |
| B | Minus(-) | 550 |
| | Normal | 611 |
| | Plus (+) | 672 |
| C | Minus(-) | 709 |
| | Normal | 787 |
| | Plus (+) | 866 |
| D | Minus(-) | 912 |
| | Normal | 1013 |
| | Plus (+) | 1114 |

## GCV9 High (Single) Stage Cooling Speed Charts

| GCV90704CX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 540 |
| | Normal | 600 |
| | Plus (+) | 660 |
| B | Minus(-) | 720 |
| | Normal | 800 |
| | Plus (+) | 880 |
| C | Minus(-) | 990 |
| | Normal | 1100 |
| | Plus (+) | 1210 |
| D | Minus(-) | 1286 |
| | Normal | 1429 |
| | Plus (+) | 1572 |

| GCV90905DX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 720 |
| | Normal | 800 |
| | Plus (+) | 880 |
| B | Minus(-) | 990 |
| | Normal | 1100 |
| | Plus (+) | 1210 |
| C | Minus(-) | 1260 |
| | Normal | 1400 |
| | Plus (+) | 1540 |
| D | Minus(-) | 1620 |
| | Normal | 1800 |
| | Plus (+) | 1980 |

| GCV91155DX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 705 |
| | Normal | 483 |
| | Plus (+) | 861 |
| B | Minus(-) | 982 |
| | Normal | 1091 |
| | Plus (+) | 1200 |
| C | Minus(-) | 1265 |
| | Normal | 1406 |
| | Plus (+) | 1547 |
| D | Minus(-) | 1628 |
| | Normal | 1809 |
| | Plus (+) | 1990 |

1. Units are shipped without filter(s). CFM in chart is without filter(s).
2. All furnaces shipped with heating speed set at "B" and cooling speed set at "D". Installer should adjust blower speed as needed. The first task is to determine the proper aiflow for the cooling system.
3. For most cooling applications, about 400 CFM per ton is desirable.
4. The chart is for information only. For satisfactory operation, external static pressure not to exceed value shown on rating plate.
5. Do not operate above 0.5" w.c. ESP in heating mode. Operating between 0.5" w.c. and 0.8" w.c. is tabulated for cooling purposes only.
6. * Motor CFM minimum.

# BLOWER PERFORMANCE SPECIFICATIONS

## GCV9 Low Stage Cooling Speed Charts

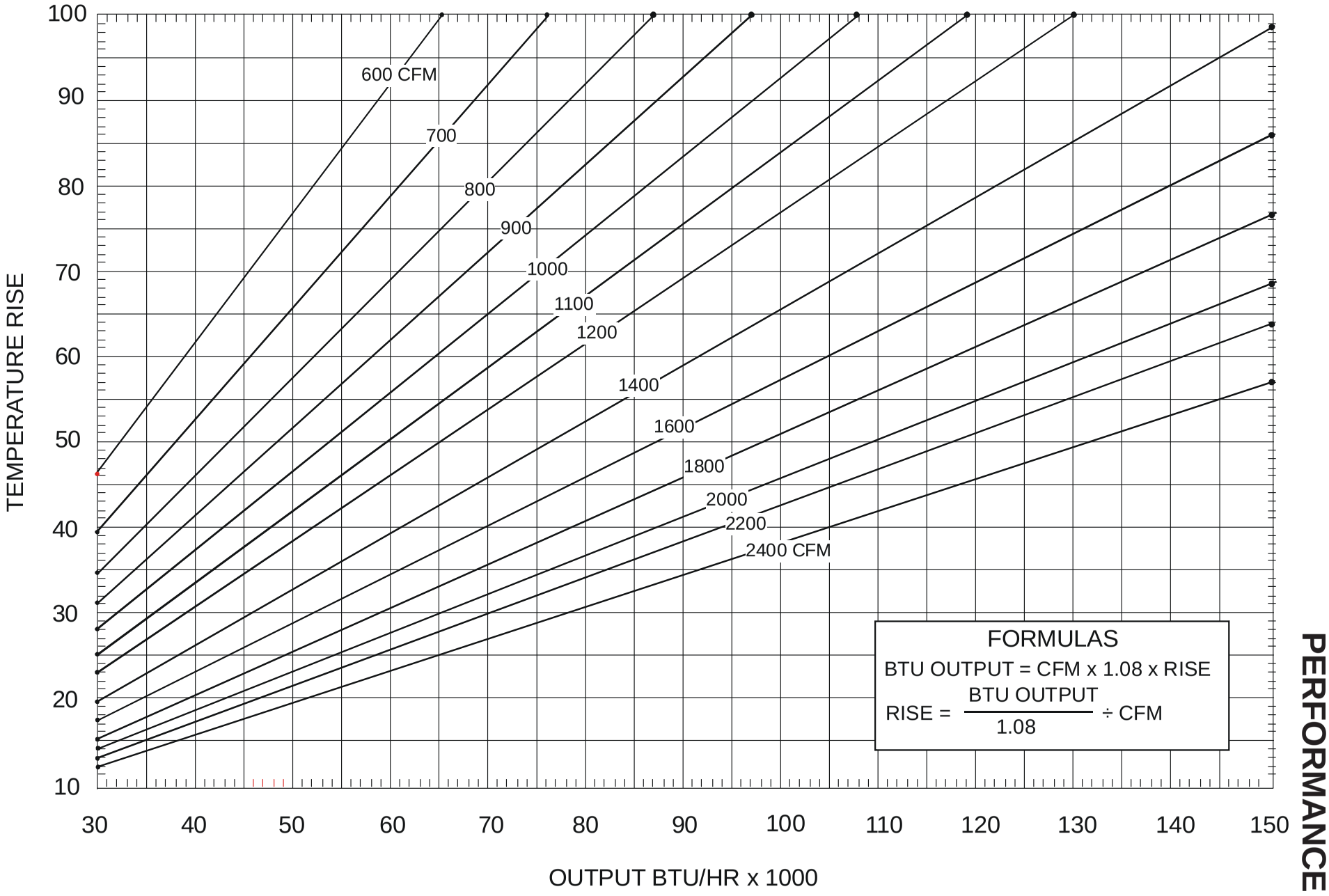
| GCV90704CX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 378* |
| | Normal | 390 |
| | Plus (+) | 429 |
| B | Minus(-) | 468 |
| | Normal | 520 |
| | Plus (+) | 572 |
| C | Minus(-) | 644 |
| | Normal | 715 |
| | Plus (+) | 787 |
| D | Minus(-) | 836 |
| | Normal | 929 |
| | Plus (+) | 1022 |

| GCV90905DX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 513* |
| | Normal | 520 |
| | Plus (+) | 572 |
| B | Minus(-) | 644 |
| | Normal | 715 |
| | Plus (+) | 787 |
| C | Minus(-) | 819 |
| | Normal | 910 |
| | Plus (+) | 1001 |
| D | Minus(-) | 1053 |
| | Normal | 1170 |
| | Plus (+) | 1287 |

| GCV91155DX* | | |
|---|---|---|
| Cooling Speed Tap | Adjust Tap | CFM at .1" - .8" w.c. ESP |
| A | Minus(-) | 500* |
| | Normal | 508 |
| | Plus (+) | 559 |
| B | Minus(-) | 621 |
| | Normal | 690 |
| | Plus (+) | 759 |
| C | Minus(-) | 815 |
| | Normal | 906 |
| | Plus (+) | 997 |
| D | Minus(-) | 1049 |
| | Normal | 1165 |
| | Plus (+) | 1282 |

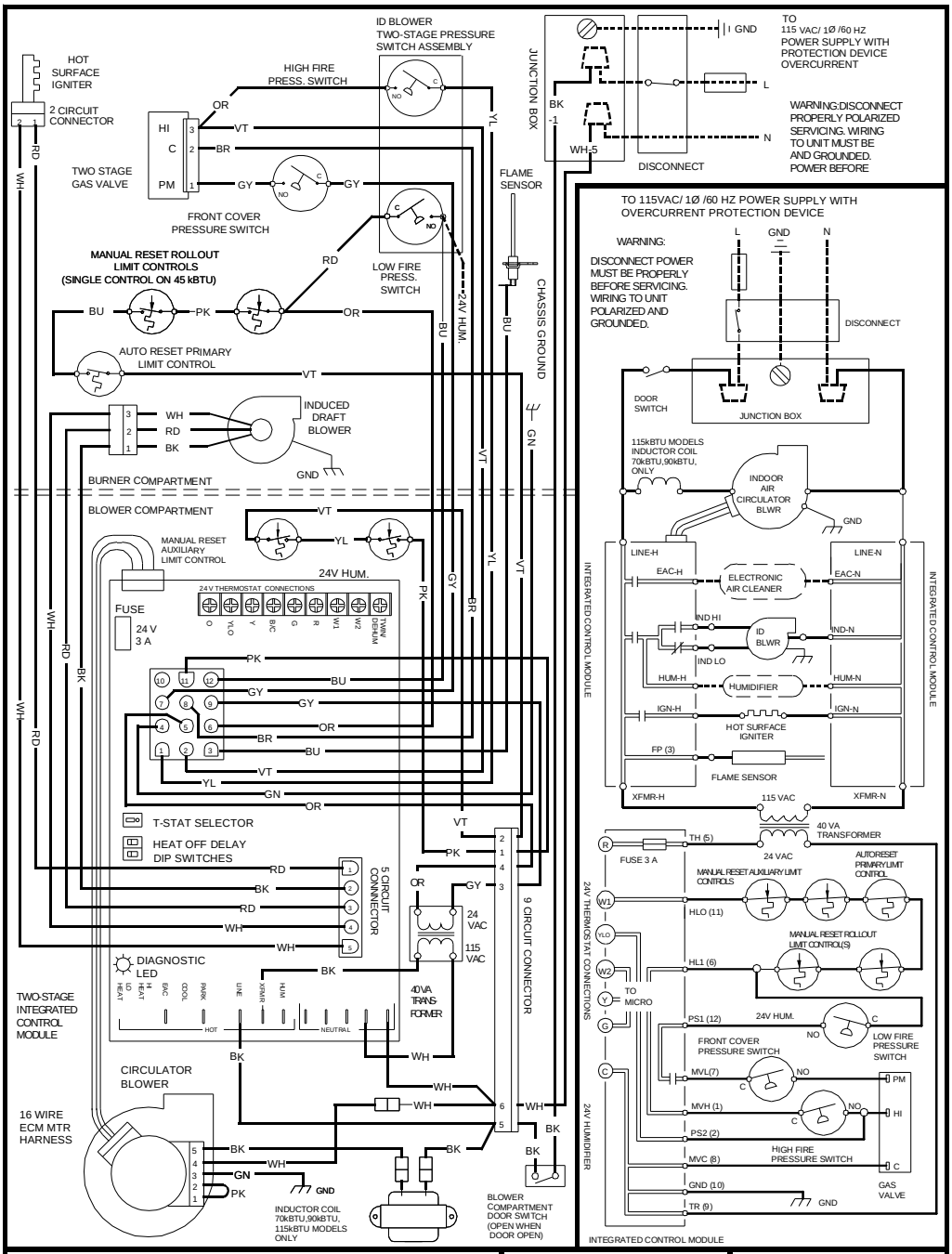
1. Units are shipped without filter(s). CFM in chart is without filter(s).
2. All furnaces shipped with heating speed set at "B" and cooling speed set at "D". Installer should adjust blower speed as needed. The first task is to determine the proper aiflow for the cooling system.
3. For most cooling applications, about 400 CFM per ton is desirable.
4. The chart is for information only. For satisfactory operation, external static pressure not to exceed value shown on rating plate.
5. Do not operate above 0.5" w.c. ESP in heating mode. Operating between 0.5" w.c. and 0.8" w.c. is tabulated for cooling purposes only.
6. * Motor CFM minimum.

# BTU OUTPUT vs TEMPERATURE RISE CHART



**WARNING**

**HIGH VOLTAGE!**
**DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.**




- STEADY ON = NORMAL OPERATION
- 1 FLASH = SYSTEM LOCKOUT (RETRIES/RECYCLES EXCEEDED)
- 2 FLASHES = LOW FIRE PRESSURE SWITCH STUCK CLOSED
- 3 FLASHES = LOW FIRE PRESSURE SWITCH STUCK OPEN
- 4 FLASHES = THERMAL PROTECTIVE DEVICE OPEN
- 5 FLASHES = FLAME SENSED WITH GAS VALVE DE-ENERGIZED
- 7 FLASHES = LOW FLAME SENSE SIGNAL
- 8 FLASHES = CHECK IGNITER OR IMPROPER GROUNDING
- 9 FLASHES = HIGH FIRE PRESSURE SWITCH STUCK OPEN
- CONTINUOUS FLASHES = 115 VOLT AC POWER REVERSED

- LOW VOLTAGE (24V)
- LOW VOLTAGE FIELD
- HI VOLTAGE (115V)
- HI VOLTAGE FIELD
- JUNCTION
- TERMINAL
- INTERNAL TO INTEGRATED CONTROL
- PLUG CONNECTION

- EQUIPMENT GND
- FIELD GND
- FIELD SPLICE
- SWITCH (TEMP.)
- IGNITER
- SWITCH (PRESS.)
- OVERCURRENT PROT. DEVICE

COLOR CODES:

| | |
|---|---|
| YL YELLOW | PK PINK |
| OR ORANGE | BR BROWN |
| VT VIOLET | WH WHITE |
| GN GREEN | BU BLUE |
| BK BLACK | GY GRAY |
| | RD RED |

NOTES:

1. SET HEAT ANTICIPATOR ON ROOM THERMOSTAT AT 0.7 AMPS.
2. MANUFACTURER'S SPECIFIED REPLACEMENT PARTS MUST BE USED WHEN SERVICING.
3. IF ANY OF THE ORIGINAL WIRE AS SUPPLIED WITH THE FURNACE MUST BE REPLACED, IT MUST BE REPLACED WITH WIRING MATERIAL HAVING A TEMPERATURE RATING OF AT LEAST 105°C. USE COPPER CONDUCTORS ONLY.
4. UNIT MUST BE PERMANENTLY GROUNDED AND CONFORM TO N.E.C. AND LOCAL CODES.

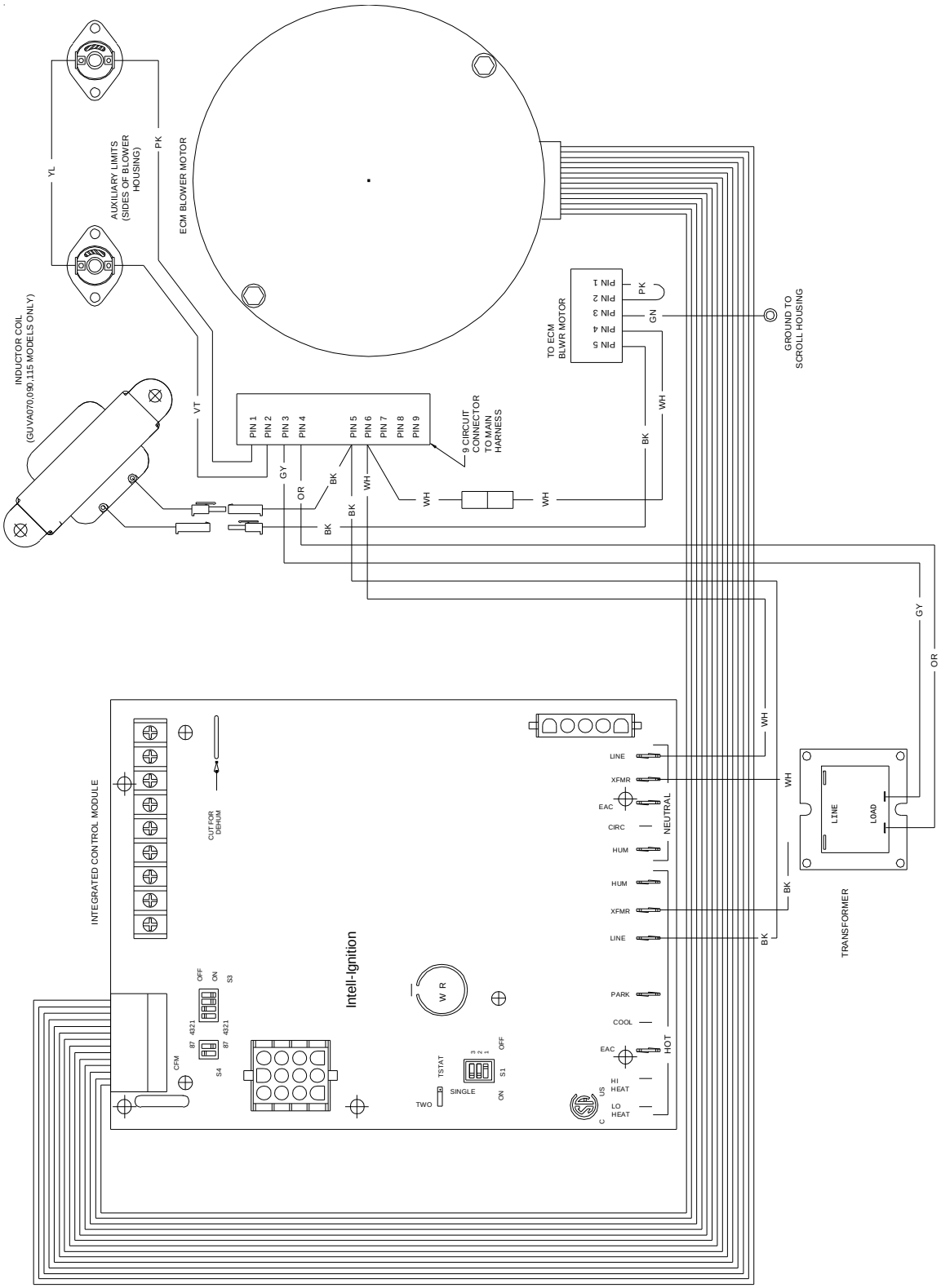
22314701 REV.00

Wiring is subject to change. Always refer to the wiring diagram on the unit for the most up-to-date wiring.

# SCHEMATICS

**WARNING**

**HIGH VOLTAGE!**
**DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.**



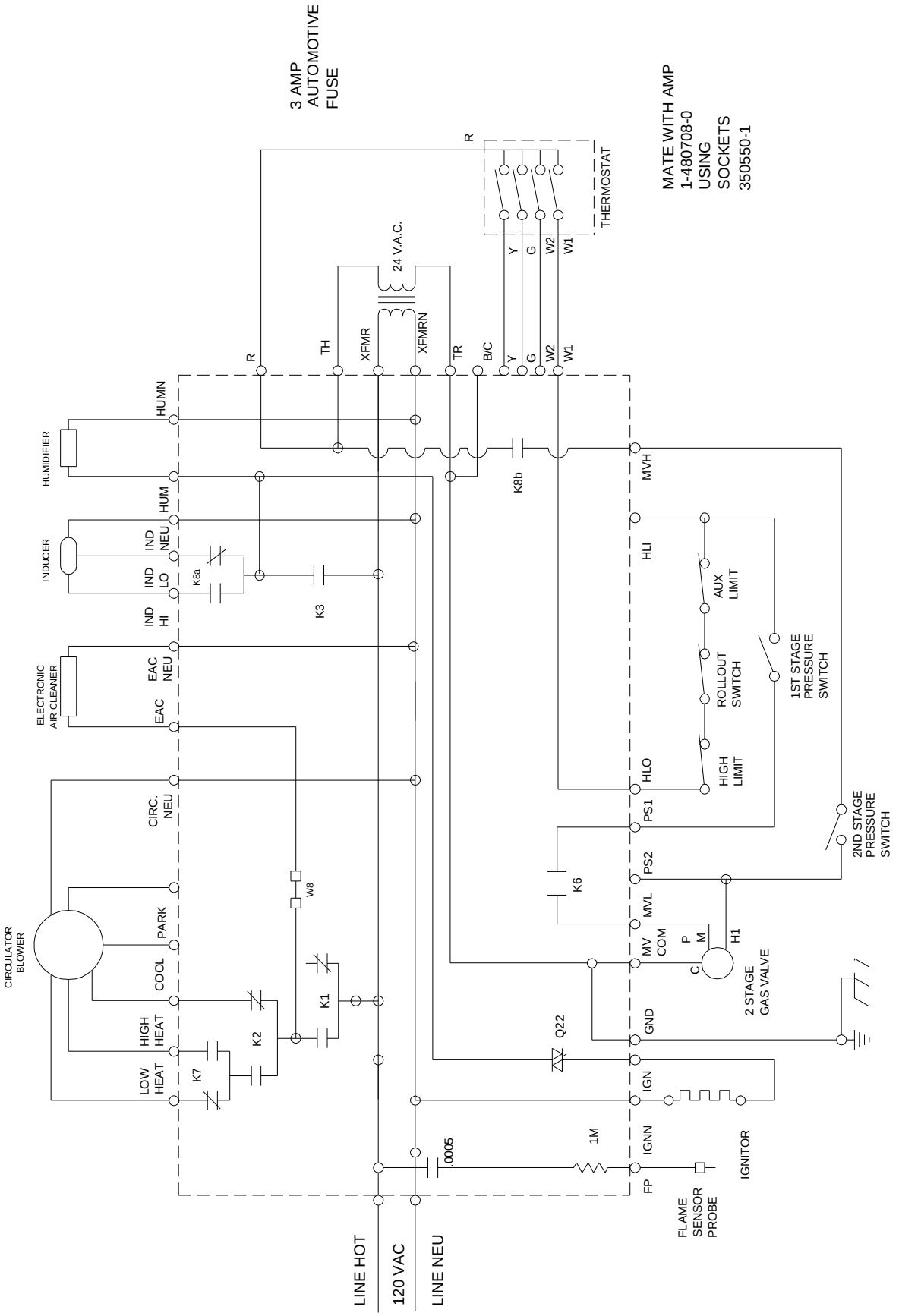

**BLOWER ASSEMBLY SCHEMATIC**
**GMV95/GCV9____X* MODEL FURNACES**

This schematic is for reference only. Not all wiring is as shown above, refer to the appropriate wiring diagram for the unit being serviced.

# SCHEMATICS

**WARNING**

**HIGH VOLTAGE!**
**DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.**




**TYPICAL SCHEMATIC**
**GMV95/GCV9____X* MODEL FURNACES**
**WR 50V61-289 INTEGRATED IGNITION CONTROL**

This schematic is for reference only. Not all wiring is as shown above. Refer to the appropriate wiring diagram for the unit being serviced.