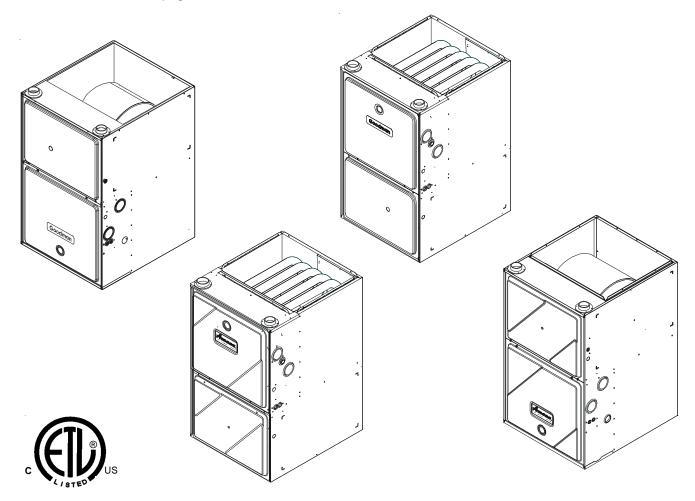
TECHNICAL MANUAL

ConfortNet ACVC9/AMVC95 GCVC9/GMVC95 90%-95% Gas Furnace Units

- Refer to Service Manual RS6200004 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.
- Models listed on page 3.

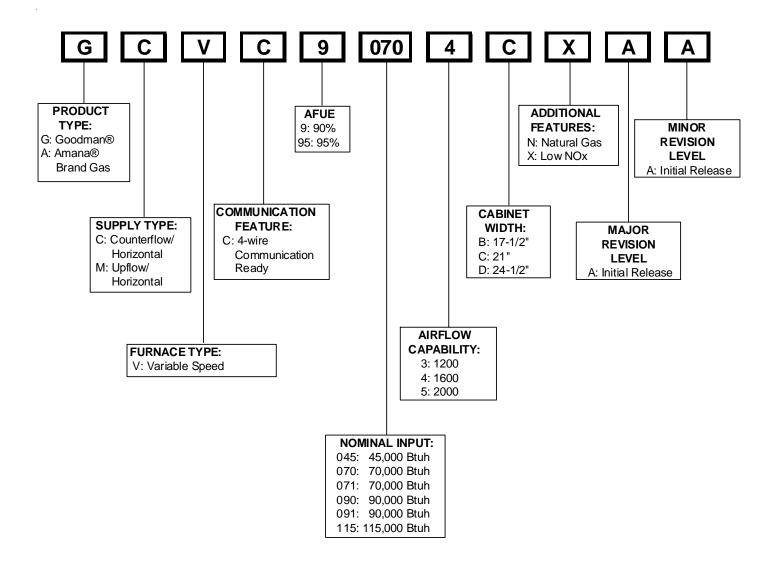


This manual is to be used by qualified, professionally trained HVAC technicians only. Goodman does not assume any responsibility for property damage or personal injury due to improper service procedures performed by an unqualified person.

RT6612021 Rev. 4 December 2010

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.



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.



Goodman will not be responsible 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. WARNING Installation and repair of this unit should be performed <u>ONLY</u> by individuals meeting the requirements of an "entry level technician", at a minimum, as specified by 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.

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.

GMVC950453BXAA GMVC950704CXAA	AMVC950453BXAA AMVC950704CXAA
GMVC950905CXAA	AMVC950905CXAA
GMVC950905DXAA	AMVC950905DXAA
•••••••••••••••	
GMVC951155DXAA	AMVC951155DXAA
GCVC90704CXAA	ACVC90704CXAA
GCVC90905DXAA	ACVC90905DXAA
GCVC91155DXAA	
	AMVC950453BXAB
GMVC950453BXAB	AMVC950704CXAB
GMVC950704CXAB	AMVC950905DXAB
GMVC950905DXAB	AMVC951155DXAB
GMVC951155DXAB	
	ACVC90704CXAB
GCVC90704CXAB	ACVC90905DXAB
GCVC90905DXAB	
GCVC91155DXAB	ACVC950714CXAA
	ACVC950915DXAA
GCVC950714CXAA	
GCVC950915DXAA	

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

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.

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.

General Operation

Models covered by this manual come with a new 4-wire communicating PCB. When paired with a compatible communicating indoor unit and a CTK01AA communicating thermostat, these models can support 4-wire communication protocol and provide more troubleshooting information. These models are also backward compatible with the legacy thermostat wiring.

The GCVC9, GCVC95, GMVC95, AMVC95, ACVC9 and ACVC95 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.

These furnaces are also equipped with a self-diagnosing electronic control module. In the event a furnace component is not operating properly, the control module's dual 7-segment LED's will display an alpha-numeric code, depending upon the problem encountered. These LED's may 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:

 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)

MVC95 MII			CES TO (NCHES)	COMBUS	TIBLE M/	ATERIALS
POSITION*	FRONT	SIDES	REAR	TOP	FLUE	FLOOR
Upflow	3	0	0	1	0	С

		Horizontal	Alcove	6	0	4	0	С
--	--	------------	--------	---	---	---	---	---

*= 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.

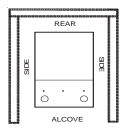
*CVC9 MIN	IMUM CL	-	ES TO CO NCHES)	OMBUST	ible Ma	TERIALS
POSITION* FRONT SIDES REAR TOP FLUE FLOOR						
Upflow 1 0 0 1 0 NC						
Horizontal	Alcove	6	0	4	0	С

*= 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 instalation 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.

High Altitude Derate

When this furnace is installed at high altitude, the appropriate High Altitude orifice kit must be installed. This is re-

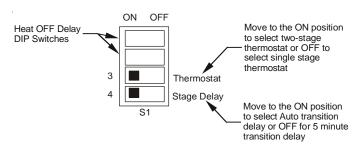
quired due to the natural reduction in the density of both the gas fuel and combustion air as altitude increases. The kit will provide the proper design certified input rate within the specified altitude range.

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 Switch kits, refer to either the *Pressure Switch Trip Points & Usage Chart* in this manual or the *Accessory Charts* in Service Instructions.

Single Stage Thermostat

A single-stage thermostat with only one heating stage may be used to control this furnace. The application of a singlestage thermostat does not offer "true" thermostat-driven twostage operation, but provides a *timed* transition from low to high fire. The furnace will run on low stage for a fixed period of time before stepping up to high stage to satisfy the thermostat's call for heat. The delay period prior to stepping up can be set at either a fixed 5 minute time delay or a load based variable time between 1 and 12 minutes (AUTO mode). If the AUTOmode is selected, the control averages the cycle times of the previous three cycles and uses the average to determine the time to transition from low stage to high stage.

To use a single-stage thermostat, turn off power to the furnace, move the thermostat selection DIP switch to the OFF position. Set the desired transition time by setting the transition delay DIP switch to the desired ON/OFF position. Turn power back on. Refer to the following figure.

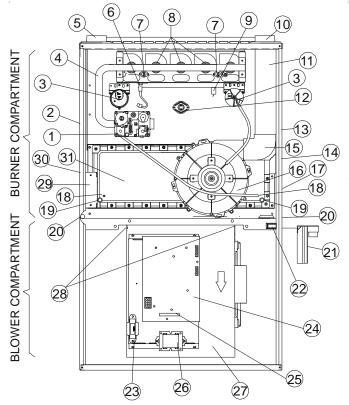


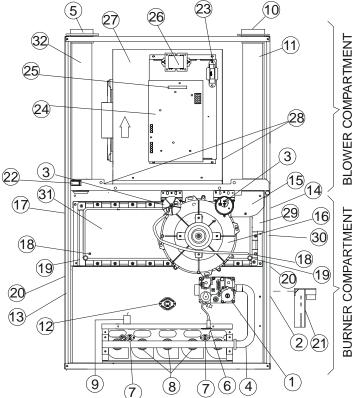
			"STANI	DARD" and	d "HIGH A	LTITUDE"	кітѕ		
		0 - 7,000 Fe andard Alti		7,0	01 - 9,000	Feet	9,001 - 11,000 Feet		
	Gas	Orifices	ID Blwr	Gas O	rifices	ID Blwr	Gas O	rifices	ID Blwr
Furnace	Natural	Propane	Pressure Switch	Natural	Propane	Pressure Switch	Natural	Propane	Pressure Switch
GMVC950453BX* GMVC950704CX* AMVC950453BX* AMVC950704CX*	No Change	LPM-05* ⁽¹⁾ LPM-06* ⁽²⁾ #55 Orifice	No Change	HANG13 #44 Orifice	HALP11 #56 Orifice	HAPS28	HANG14 #45 Orifice	HALP11 #56 Orifice	HAP S28
GMVC950905CX* AMVC950905CX*	No Change	LPM-05 ^{*(1)} LPM-06 ^{*(2)} #55 Orifice	No Change	N/A	N/A	N/A	N/A	N/A	N/A
GM VC 9509 05D X* GM VC 9511 55D X* AMV C95 0905 DX* AMV C95 1155 DX*	No Change	LPM-05 ^{*(1)} LPM-06 ^{*(2)} #55 Orifice	No Change	HANG13 #44 Orifice	HALP11 #56 Orifice	HAPS29	HANG14 #45 Orifice	HALP11 #56 Orifice	HAPS29
GCVC90704CX* GCVC90905DX* GCVC91155DX* ACVC90704CX* ACVC90905DX*	No Change	LPM-05 ^{*(1)} LPM-06 ^{*(2)} #55 Orifice	No Change	HANG13 #44 Orifice	HALP11 #56 Orifice	HAPS29	HANG14 #45 Orifice	HALP11 #56 Orifice	HAPS31
GCVC950714CX* GCVC950915DX* ACVC950714CX* ACVC950915DX*	No Change	LPM-05 ^{*(1)} LPM-06 ^{*(2)} #55 Orifice	No Change	N/A	N/A	N/A	N/A	N/A	N/A

¹ LPM-05* supports White-Rodgers 2-stage valves only

² LPM-06* supports Honeywell and White-Rodgers 2-stage valves

COMPONENT IDENTIFICATION



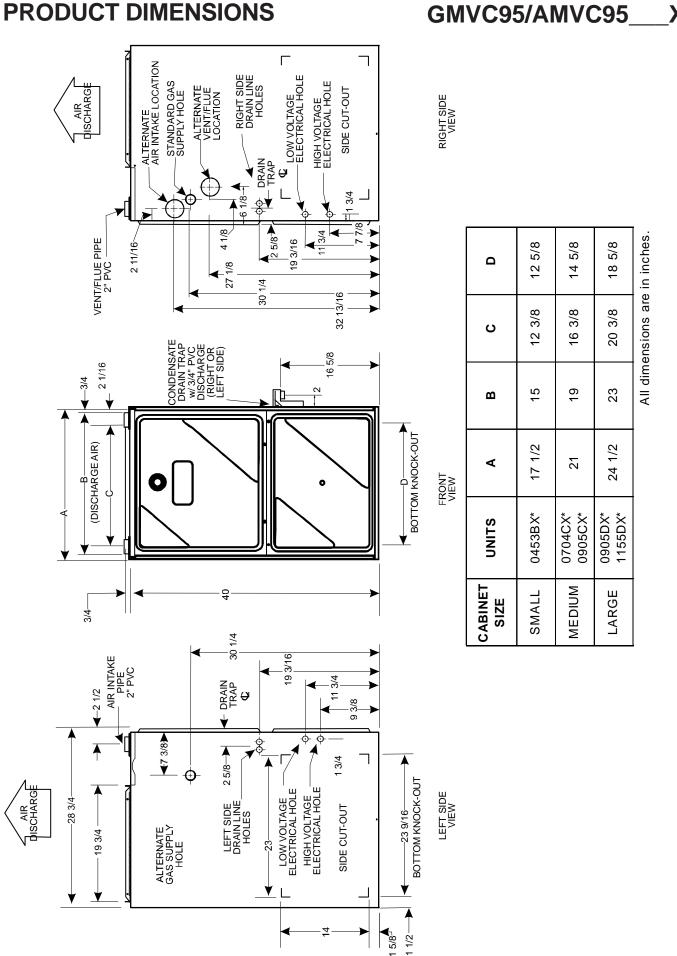


Upflow/Horizontal

Counterflow /Horizontal

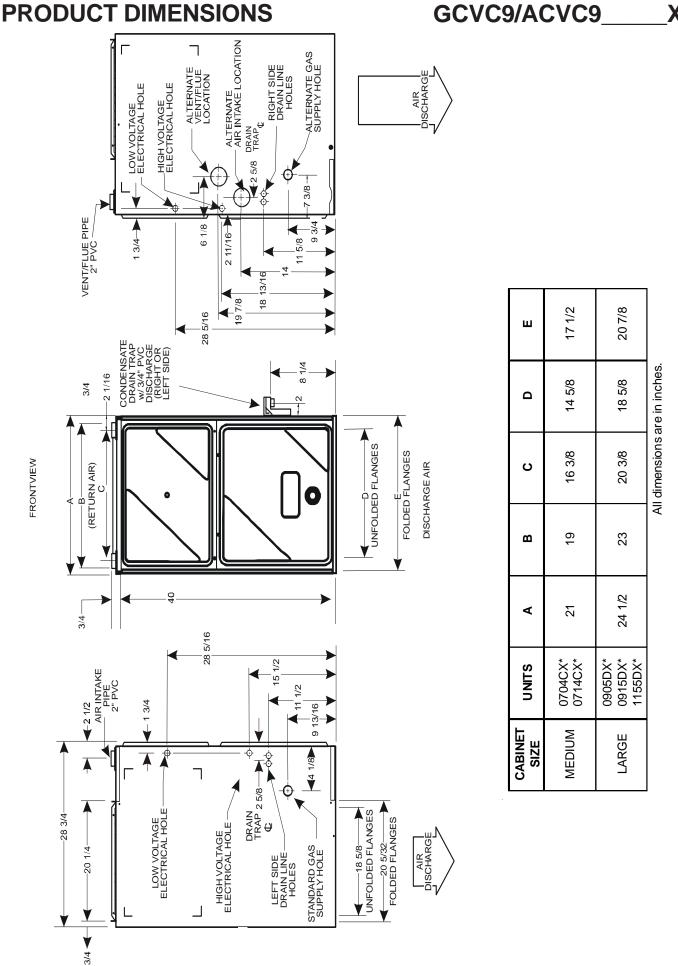
- 1 Two-Stage Gas Valve
- 2 Gas Line Entrance (Alternate)
- 3 Pressure Switch(es)
- 4 Gas Manifold
- 5 Combustion Air Intake Connection
- 6 Hot Surface Igniter
- 7 Rollout Limit
- 8 Burners
- 9 Flame Sensor
- 10 Flue Pipe Connection
- 11 Flue Pipe
- 12 Primary Limit
- 13 Gas Line Entrance
- 14 Flue Pipe 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 Limit
- 29 Junction Box
- 30 Electrical Connection Inlets
- 31 Coil Front Cover
- 32 Combustion Air Inlet Pipe (*CVC9/95 only)



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

X*



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

X*

		PRESSUR	E SWITCH TRI	P POINTS ANI	D USAGE CHA	RT		
MODEL	ID BLO WITH NOT F TYPICAL S	PRESSURE OWER FLUE FIRING SEA LEVEL FA ⁽¹⁾	NEGATIVE PRESSURE ID BLOWER WITH FLUE FIRING TYPICAL SEA LEVEL DATA ⁽²⁾		COIL C WITH NOT F TYPICAL S	PRESSURE COVER FLUE FIRING SEA LEVEL FA ⁽¹⁾	COIL (WITH FIR TYPICAL S	PRESSURE COVER FLUE ING SEA LEVEL FA ⁽²⁾
	LOW FIRE	HIGH FIRE	LOW FIRE	HIGH FIRE	LOW FIRE	HIGH FIRE	LOW FIRE	HIGH FIRE
GMVC950453BX* GMVC950704CX* AMVC950453BX* AMVC950704CX*	-0.45	-0.90	-0.50	-0.95	-0.25	-0.25	-0.25	-0.25
GMV C95 0905 CX* AM VC 9509 05 CX*	-0.75	-1.85	060	-1.70	-0.10	-0.10	-0.10	-0.10
GMVC950905DX* GMVC951155DX* AMVC950905DX* AMVC951155DX*	-0.65	-1.20	-0.70	-1.25	-0.25	-0.25	-0.25	-0.25
GCVC90704CX* ACVC90704CX*	-0.35	-0.70	-0.20	-0.55	-0.52	-0.52	-0.37	-0.37
GCVC950714CX* ACVC950714CX*	-0.95	-1.75	-1.00	-1.80	-0.10	-0.10	-0.10	-0.10
GCVC90905DX* ACVC90905DX*	-0.35	-0.70	-0.20	-0.55	-0.52	-0.52	-0.37	-0.37
GCVC950915DX* ACVC950915DX*	-0.95	-1.75	-1.00	-1.80	-0.10	-0.10	-0.10	-0.10
GCVC91155DX*	-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 T	RIP POINT	JRE SWITCH TRIP POINTS AND USAGE CHART	SE CHART				
			0 to 7,000 ft.)00 ft.				7,00	7,001 ft. to 11,000 ft.	0 ft.	
MODEL	TRIP COIL (PRESSUR	TRIP POINT COIL COVER PRESSURE SWITCH	COIL COVER PRESSURE SWITCH	TRIP ID BL(PRESSUR	TRIP POINT ID BLOWER PRESSURE SWITCH	ID BLOWER PRESSURE SWITCH	TRIP POINT COIL COVER PRESSURE SWITCH	OINT OVER E SWITCH	TRIP POINT ID BLOWER PRESSURE SWITCH	POINT DWER E SWITCH	HIGH ALTITUDE
	LOW FIRE	HIGH FIRE	PART #	LOW FIRE	HIGH FIRE	PART #	LOW FIRE	HIGH FIRE	LOW FIRE	HIGH FIRE	КІТ
GM VC 950453BX* GM VC 950704CX* AMV C950453BX* AMV C950704 CX*	-0.10	-0.10	20197308	-0.30	-0.75	11177113	-0.10	-0.10	-0.22	-0.55	HAPS28 11177115
GM VC 95 0905 CX*	-0.10	-0.10	0130F00070	09.0-	-1.70	0130F00111	N/A	N/A	N/A	A/N	N/A
GM VC 950905DX* GM VC 951155DX* AM VC 951155DX* AM VC 951155DX*	-0.10	-0.10	20197308	-0.50	-1.10	11177114	-0.10	-0.10	-0.38	-0.82	HAPS29 11177116
GCVC90704CX* ACVC90704CX*	-0.37	-0.37	20197313	-0.20	-0.55	11177118	-0.37	-0.37	-0.15	-0.30	HAPS31
G CVC950714 CX* A CVC950714 CX*	-0.10	-0.10	0130F00070	-0.80	-1.60	0130F00100	N/A	N/A	N/A	N/A	N/A
GCVC90905DX* ACVC90905DX*	-0.37	-0.37	20197313	-0.20	-0.55	11177118	-0.37	-0.37	-0.15	-0.30	HAPS31
GCVC950915DX* ACVC950915DX*	-0.10	-0.10	0130F00070	-0.80	-1.60	0130F00100	N/A	N/A	N/A	Y/N	N/A
GCVC91155DX*	-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	0.Ve 7.000 ft r	equire a press	sure switch char	nde Forinsts	Ilations in Ca	change. For installations in Canada the *MVC95 & *CVC9/95 furnaces are certified only to 4500 ft.	395 & *CVC9,	/95 furna ces	are certified o	nlv to 4500 ft	

Note: All installations above 7,000 ft. require a pressure switch change. For installations in Canada the *MVC95 & *CVC9/95 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.).

	PRIMARY LIMIT									
Part Number	20162903	20162904	20162905	20162907	20162908	0130F00105				
Open Setting (°F)	160	150	145	155	170	130				
GMVC950453BX* AMVC950453BX*			1							
GMVC950704CX* AMVC950704CX*				1						
GMVC950905CX* AMVC950905CX*						1				
GMVC950905DX* AMVC950905DX*			1							
GMVC951155DX* AMVC951155DX*		1								
GCVC90704CX* ACVC90704CX*	1									
GCVC950714CX* ACVC950714CX*		1								
GCVC90905DX* ACVC90905DX*					1					
GCVC950915DX* ACVC950915DX*						1				
GCVC91155DX*			1							

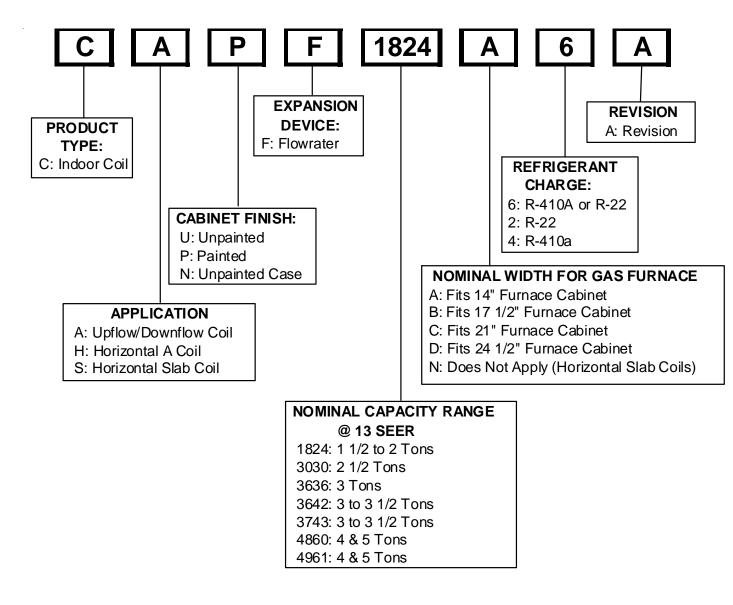
ROLLOUT LIMIT SWITCHES									
Part Number	10123512	10123517	10123518	10123533	10123534	10123537			
Open Setting (°F)	325	210	170	200	220	190			
GMVC950453BX* AMVC950453BX*			1						
GMVC950704CX* AMVC950704CX*				2					
GMVC950905CX* AMVC950905CX*				2					
GMVC950905DX* AMVC950905DX*						2			
GMVC951155DX* AMVC951155DX*				2					
GCVC90704CX* ACVC90704CX*					2				
GCVC950714CX* ACVC950714CX*		2							
GCVC90905DX* ACVC90905DX*		2							
GCVC950915DX* ACVC950915DX*		2							
GCVC91155DX*		2							

	AUXILIARY LIMIT SWITCHES								
Part Number	10123534	10123535	10123537	10123536	10123533	0130F00038			
Open Setting (°F)	220	150	190	180	200	120			
GMVC950453BX* AMVC950453BX*		2							
GMVC950704CX* AMVC950704CX*			2						
GMVC950905CX* AMVC950905CX*						2			
GMVC950905DX* AMVC950905DX*				2					
GMVC951155DX* AMVC951155DX*					2				
GCVC90704CX* ACVC90704CX*	2								
GCVC950714CX* ACVC950714CX*						2			
GCVC90905DX* ACVC90905DX*				2					
GCVC 9509 15DX* ACVC 95091 5DX*						2			
GCVC911555DX*				2					

Coil Matches:

A large array of Amana® brand coils are available for use with the GCVC9 and ACVC9 furnaces, in either counterflow or horizontal applications & with GMVC95 and AMVC95 furnaces, in either upflow or horizontal applications. These coils are available in both cased and uncased models (with the option of a field installed TXV expansion device). These 92%+ and 95%+ furnaces match up with the existing Amana® brand coils as shown in the chart below.





• 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 ARI rated with a matched outdoor unit.

Thermostats:

ComfortNet[™] CTK01A* Thermostat Kit

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

Return air filters may be installated at the furnace side and/or bottom return openings. The furnace bottom return opening and side openings will accommodate the following filter sizes depending on cabinet size:

Sid	le Return Opening	g(s)
Cabinet Width (in.)	Nominal Filter Size (in.)	Approx. Flow Area (in ²)
All	16 x 25 x 1	400

Bo	ttom Return Open	ing
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.

			UPFLOW COOLING AIRFLOW REQUIREMENT (CFM)							
		600 800 1000 1200 1400 1600 1800 200							2000	
MO	0453X*	415*	415*	480	576					
Airflow	0704X*			636*	636*	672	768			
Input	0905X*				826*	826*	826*	864	960	
lu	1155X*				875*	875*	875*	875*	960	

		COUNTER FLOW COOLING AIRFLOW REQUIREMENT (CFM)							
		600 800 1000 1200 1400 1600 1800 200							2000
	0704X* 0714X*			634*	634*	672	768		
Input Airflow	0905X* 0915X*				819*	819*	819*	864	960
	1155X*				860*	860*	860*	864	960

*Minimum filter area dictated by heating airflow requirement.

Disposable Minimum Filter Area (in²)

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

		UPFLOW COOLING AIRFLOW REQUIREMENT (CFM)							
		600 800 1000 1200 1400 1600 1800 200							
M	0453X*	207*	207*	240	288				
Airflow	0704X*			318*	318*	336	384		
Input	0905X*				413*	413*	413*	432	480
Ing	1155X*				437*	437*	437*	432	480

		COUNTER FLOW COOLING AIRFLOW REQUIREMENT (CFM)							
		600 800 1000 1200 1400 1600 1800 200							2000
	0704X* 0714X*			316*	316*	336	384		
Input Airflow	0905X* 0915X*				409*	409*	409*	432	480
	1155X*				430*	430*	430*	432	480

*Minimum filter area dictated by heating airflow requirement.

Disposable Minimum Filter Area (in²)

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

Counterflow Filters

Return air filters may be installated at the at the counterflow top return. A field supplied center filter support must be provided by the installer in order to use the top return. The furnace will accommodate the following counterflow top return filter sizes depending on cabinet size:

	•	Return Air
Optional Access Door		▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲

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

GMVC95

MODEL	GMVC950453BX*	GMVC950704CX*	GMVC950905CX*	GMVC950905DX*	GMVC951155DX*
Btuh Input (US) High Fire	46,000	69,000	92,000	92,000	115,000
Output (US) High Fire	44,300	66,900	88,800	88,800	111,100
Btuh Input (US) Low Fire	32,000	48,000	64,000	64,000	80,000
Output (US) Low Fire	30,800	46,400	61,700	61,700	77,400
A.F.U.E.	95%	95%	95%	95%	95%
Rated External Static (" w.c.)	.1050	.1050	.1050	.1050	.1050
Temperature Rise (°F)	30 - 60	30 - 60	30 - 60	30 - 60	35 - 65
High Stage Pressure Switch Trip Point (" w.c.)	-0.75	-0.75	-1.70	-1.10	-1.10
Low Stage Pressure Switch Trip Point (" w.c.)	-0.30	-0.30	-0.60	-0.50	-0.50
Front Cover Pressure Switch Trip Point (" w.c)	-0.10	-0.10	-0.10	-0.10	-0.10
Blower Wheel (D" x W")	10 x 8	10 x 10	11 x 10	11 x 10	11 x 10
Blower Horsepower	1/2	3/4	1	1	1
Blower Speeds		Defer to			
Max CFM @ 0.5 E.S.P.		Refer to	airflow charts in this	s manual.	
Power Supply	115-60-1	115-60-1	115-60-1	115-60-1	115-60-1
Minimum Circuit Ampacity (MCA)	11.3	14.1	14.4	14.4	14.4
Maximum Overcurrent Device	15	15	15	15	15
Transformer (VA)	40	40	40	40	40
Heat Anticipator (Amps)	0.7	0.7	0.7	0.7	0.7
Primary Limit Setting (°F)	145	155	130	145	150
Auxiliary Limit Setting (°F)	150	190	120	180	200
Rollout Limit Setting (°F)	170	200	200	190	200
Fan Delay On Heating	30 secs.	30 secs.	30 secs.	30 secs.	30 secs.
Off Heating *	150 secs.	150 secs.	150 secs.	150 secs.	150 secs.
Fan Delay On Cooling	5 secs.	5 secs.	5 secs.	5 secs.	5 secs.
Off Cooling	45 secs.	45 secs.	45 secs.	45 secs.	45 secs.
Fan Delay On - Fan Only	5 secs.	5 secs.	5 secs.	5 secs.	5 secs.
Gas Supply Pressure (Natural/Propane) (" w.c.)	7 / 11	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	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	1.9 / 6.0
Orifice Size (Natural/Propane)	#43 / #55	#43 / #55	#43 / #55	#43 / #55	#43 / #55
Number of Burners	2	3	4	4	5
Vent Connector Diameter (inches)	2	2	2	2	2
Combustion Air Connector Diameter (inches)	2	2	2	2	2
Shipping Weight (lbs.)	133	157	172	172	184

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

1. These furnaces are manufactured for natural gas operation. Optional Kits are available for conversion to propane gas operation.

2. For elevations above 2000 ft. the rating should be reduced by 4% for each 1000 ft. 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 manufactures method 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, steady state efficiency times output.

AMVC95

MODEL	AMVC950453BX*	AMVC950704CX*	AMVC950905CX*	AMVC950905DX*	AMVC951155DX*
Btuh Input (US) High Fire	46,000	69,000	92,000	92,000	115,000
Output (US) High Fire	44,300	66,900	88,800	88,800	111,100
Btuh Input (US) Low Fire	32,000	48,000	64,000	64,000	80,000
Output (US) Low Fire	30,800	46,400	61,700	61,700	77,400
A.F.U.E.	99%	95.5%	95.7%	95.7%	95.8%
Rated External Static (" w.c.)	.1050	.1050	.1050	.1050	.1050
Temperature Rise (°F)	30 - 60	30 - 60	30 - 60	30 - 60	35 - 65
High Stage Pressure Switch Trip Point (" w.c.)	-0.75	-0.75	-1.70	-1.10	-1.10
Low Stage Pressure Switch Trip Point (" w.c.)	-0.30	-0.30	-0.60	-0.50	-0.50
Front Cover Pressure Switch Trip Point (" w.c)	-0.10	-0.10	-0.10	-0.10	-0.10
Blower Wheel (D" x W")	10 x 8	10 x 10	11 x 10	11 x 10	11 x 10
Blower Horsepower	1/2	3/4	1	1	1
Blower Speeds Max CFM @ 0.5 E.S.P.		Refer to	airflow charts in this	s manual.	
Power Supply	115-60-1	115-60-1	115-60-1	115-60-1	115-60-1
Minimum Circuit Ampacity (MCA)	11.3	14.1	14.4	14.4	14.4
Maximum Overcurrent Device	15	15	15	15	15
Transformer (VA)	40	40	40	40	40
Heat Anticipator (Amps)	0.7	0.7	0.7	0.7	0.7
Primary Limit Setting (°F)	145	155	130	145	150
Auxiliary Limit Setting (°F)	150	190	120	180	200
Rollout Limit Setting (°F)	170	200	200	190	200
Fan Delay On Heating	30 secs.	30 secs.	30 secs.	30 secs.	30 secs.
Off Heating *	150 secs.	150 secs.	150 secs.	150 secs.	150 secs.
Fan Delay On Cooling	5 secs.	5 secs.	5 secs.	5 secs.	5 secs.
Off Cooling	45 secs.	45 secs.	45 secs.	45 secs.	45 secs.
Fan Delay On - Fan Only	5 secs.	5 secs.	5 secs.	5 secs.	5 secs.
Gas Supply Pressure (Natural/Propane) (" w.c.)	7 / 11	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	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	1.9 / 6.0
Orifice Size (Natural/Propane)	#43 / #55	#43 / #55	#43 / #55	#43 / #55	#43 / #55
Number of Burners	2	3	4	4	5
Vent Connector Diameter (inches)	2	2	2	2	2
Combustion Air Connector Diameter (inches)	2	2	2	2	2
Shipping Weight (lbs.)	133	157	172	172	184

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

1. These furnaces are manufactured for natural gas operation. Optional Kits are available for conversion to propane gas operation.

2. For elevations above 2000 ft. the rating should be reduced by 4% for each 1000 ft. 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 manufactures method 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, steady state efficiency times output.

GCVC9

MODEL	GCVC90704CX*	GCVC90905DX*	GCVC91155DX*
Btuh Input (US) High Fire	69,000	92,000	115,000
Output (US) High Fire	65,300	86,500	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.	93.0%	92.0%	93%
Rated External Static (" w.c.)	.1050	.1050	.1050
Temperature Rise (°F)	30 - 60	30 - 60	40 - 70
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 Max CFM @ 0.5 E.S.P.	Refer	to airflow charts in this m	anual.
Power Supply	115-60-1	115-60-1	115-60-1
Minimum Circuit Ampacity (MCA)	14.1	14.4	14.4
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	2	2
Combustion Air Connector Diameter (inches)	2	2	2
Shipping Weight (lbs.)	157	172	175

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

1. These furnaces are manufactured for natural gas operation. Optional Kits are available for conversion to propane gas operation.

2. For elevations above 2000 ft. the rating should be reduced by 4% for each 1000 ft. 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 manufactures method 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, steady state efficiency times output.

GCVC95

MODEL	GCVC950714CX*	G C V C 9 5 0 9 1 5 D X *
Btuh Input (US) High Fire	69,000	92,000
Output (US) High Fire	65,300	86,500
Btuh Input (US) Low Fire	48,000	64,000
Output (US) Low Fire	45,000	60,100
A.F.U.E.	95.0%	95.0%
Rated External Static (" w.c.)	.1050	.1050
Temperature Rise (°F)	25 - 55	25 - 55
High Stage Pressure Switch Trip Point (" w.c.)	-1.60	-1.60
Low Stage Pressure Switch Trip Point (" w.c.)	-0.80	-0.80
Front Cover Pressure Switch Trip Point ("w.c)	-0.10	-0.10
Blower Wheel (D" x W")	10 x 10	11 x 10
Blower Horsepower	3/4	1
Blower Speeds		
Max CFM @ 0.5 E.S.P.	Refer to airflow ch	arts in this manual.
Power Supply	115-60-1	115-60-1
Minimum Circuit Ampacity (MCA)	11.2	15.0
Maximum Overcurrent Device	15	15
Transformer (VA)	40	40
Heat Anticipator (Amps)	0.7	0.7
Primary Limit Setting (°F)	150	130
Auxiliary Limit Setting (°F)	120	120
Rollout Limit Setting (°F)	210	210
Fan Delay On Heating	30 secs.	30 secs.
Off Heating *	150 secs.	150 secs.
Fan Delay On Cooling	5 secs.	5 secs.
Off Cooling	45 secs.	45 secs.
Fan Delay On - Fan Only	5 secs.	5 secs.
Gas Supply Pressure (Natural/Propane) (" w.c.)	7 / 11	7 / 11
Manifold Pressure (Natural/Propane) High Stage (" w.c.)	3.5 / 10	3.5 /10
Manifold Pressure (Natural/Propane) Low Stage ("w.c.)	1.9 / 6.0	1.9 / 6.0
Orifice Size (Natural/Propane)	#43 / #55	#43 / #55
Number of Burners	3	4
Vent Connector Diameter (inches)	2	2
Combustion Air Connector Diameter (inches)	2	2
Shipping Weight (Ibs.)	157	172

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

1. These furnaces are manufactured for natural gas operation. Optional Kits are available for conversion to propane gas operation.

2. For elevations above 2000 ft. the rating should be reduced by 4% for each 1000 ft. 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 manufactures method 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, steady state efficiency times output.

ACVC9

MODEL	ACVC90704CX*	ACVC90905DX*
Btuh Input (US) High Fire	69,000	92,000
Output (US) High Fire	65,300	86,500
Btuh Input (US) Low Fire	48,000	64,000
Output (US) Low Fire	45,000	60,100
A.F.U.E.	93.3%	92.7%
Rated External Static (" w.c.)	.1050	.1050
Temperature Rise (°F)	30 - 60	30 - 60
High Stage Pressure Switch Trip Point (" w.c.)	-0.55	-0.55
Low Stage Pressure Switch Trip Point (" w.c.)	-0.20	-0.20
Front Cover Pressure Switch Trip Point (" w.c)	-0.37	-0.37
Blower W heel (D" x W")	10 x 10	11 x 10
Blower Horsepower	3/4	1
Blower Speeds Max CFM @ 0.5 E.S.P.	Refer to airflow cha	arts in this manual.
Power Supply	115-60-1	115-60-1
Minimum Circuit Ampacity (MCA)	14.1	14.4
Maximum Overcurrent Device	15	15
Transformer (VA)	40	40
Heat Anticipator (Amps)	0.7	0.7
Primary Limit Setting (°F)	160	170
Auxiliary Limit Setting (°F)	220	180
Rollout Limit Setting (°F)	220	210
Fan Delay On Heating	30 secs.	30 secs.
Off Heating *	150 secs.	150 secs.
Fan Delay On Cooling	5 secs.	5 secs.
Off Cooling	45 secs.	45 secs.
Fan Delay On - Fan Only	5 secs.	5 secs.
Gas Supply Pressure (Natural/Propane) (" w.c.)	7 / 11	7 / 11
Manifold Pressure (Natural/Propane) High Stage (" w.c.)	3.5 / 10	3.5 /10
Manifold Pressure (Natural/Propane) Low Stage ("w.c.)	1.9 / 6.0	1.9 / 6.0
Orifice Size (Natural/Propane)	#43 / #55	#43 / #55
Number of Burners	3	4
Vent Connector Diameter (inches)	2	2
Combustion Air Connector Diameter (inches)	2	2
Shipping Weight (lbs.)	157	172

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

1. These furnaces are manufactured for natural gas operation. Optional Kits are available for conversion to propane gas operation.

2. For elevations above 2000 ft. the rating should be reduced by 4% for each 1000 ft. 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 manufactures method 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, steady state efficiency times output.

ACVC95

MODEL	ACVC950714CX*	A C V C 9 50 9 15 D X *
Btuh Input (US) High Fire	69,000	92,000
Output (US) High Fire	65,300	86,500
Btuh Input (US) Low Fire	48,000	64,000
Output (US) Low Fire	45,000	60,100
A.F.U.E.	95.0%	95.0%
Rated External Static (" w.c.)	.1050	.1050
Temperature Rise (°F)	25 - 55	25 - 55
High Stage Pressure Switch Trip Point (" w.c.)	-1.60	-1.60
Low Stage Pressure Switch Trip Point (" w.c.)	-0.80	-0.80
Front Cover Pressure Switch Trip Point ("w.c)	-0.10	-0.10
Blower Wheel (D" x W")	10 x 10	11 x 10
Blower Horsepower	3/4	1
Blower Speeds	Defer to sinflow sh	•
Max CFM @ 0.5 E.S.P.	Relefito affilow ch	arts in this manual.
Power Supply	115-60-1	115-60-1
Minimum Circuit Ampacity (MCA)	11.2	15.0
Maximum Overcurrent Device	15	15
Transformer (VA)	40	40
Heat Anticipator (Amps)	0.7	0.7
Primary Limit Setting (°F)	150	130
Auxiliary Limit Setting (°F)	120	120
Rollout Limit Setting (°F)	210	210
Fan Delay On Heating	30 secs.	30 secs.
Off Heating *	150 secs.	150 secs.
Fan Delay On Cooling	5 secs.	5 secs.
Off Cooling	45 secs.	45 secs.
Fan Delay On - Fan Only	5 secs.	5 secs.
Gas Supply Pressure (Natural/Propane) (" w.c.)	7 / 11	7 / 11
Manifold Pressure (Natural/Propane) High Stage ("w.c.)	3.5 / 10	3.5 /10
Manifold Pressure (Natural/Propane) Low Stage ("w.c.)	1.9 / 6.0	1.9 / 6.0
Orifice Size (Natural/Propane)	#43 / #55	#43 / #55
Number of Burners	3	4
Vent Connector Diameter (inches)	2	2
Combustion Air Connector Diameter (inches)	2	2
Shipping Weight (lbs.)	157	172

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

1. These furnaces are manufactured for natural gas operation. Optional Kits are available for conversion to propane gas operation.

2. For elevations above 2000 ft. the rating should be reduced by 4% for each 1000 ft. 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 manufactures method 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, steady state efficiency times output.

GMVC95/AMVC95 Heating Speed Charts

	GMVC950453BX* AMVC950453BX* (Rise Range: 30 - 60°F)				GMVC950704CX* AMVC950704CX* (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)	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)
	Minus(-)	523	736	55		Minus(-)	756	1089	56
А	Normal	581	818	49	Α	Normal	840	1210	50
	Plus (+)	639	900	45		Plus (+)	924	1331	46
	Minus(-)	580	827	49		Minus(-)	828	1192	51
В	Normal	644	919	44	В	Normal	920	1325	46
	Plus (+)	708	1010	40		Plus (+)	1012	1457	42
	Minus(-)	640	920	44		Minus(-)	900	1296	47
С	Normal	711	1022	39	С	Normal	1000	1440	42
	Plus (+)	782	1124	36		Plus (+)	1100	1584	38
	Minus(-)	716	1020	39		Minus(-)	972	1400	43
D	Normal	795	1134	36	D	Normal	1080	1555	39
	Plus (+)	875	1247	32		Plus (+)	1188	1711	35

	GMVC950905CX* AMVC950905CX* (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)					
	Minus(-)	945	1341	60					
А	Normal	1050	1490	54					
	Plus (+)	1155	1639	49					
	Minus(-)	1008	1413	57					
В	Normal	1120	1570	51					
	Plus (+)	1232	1727	47					
	Minus(-)	1080	1521	53					
С	Normal	1200	1690	48					
	Plus (+)	1320	1859	43					
	Minus(-)	1125	1602	50					
D	Normal	1250	1780	45					
	Plus (+)	1375	1958	41					

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.

22

GMVC95/AMVC95 Heating Speed Charts

	GMVC950905DX* AMVC950905DX* (Rise Range: 30 - 60°F)					GMVC951155DX* AMVC951155DX* (Rise Range: 35 - 65°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)	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)
	Minus(-)	1013	1458	56		Minus(-)	1107	1594	63
Α	Normal	1125	1620	50	Α	Normal	1230	1771	57
	Plus (+)	1238	1782	45		Plus (+)	1353	1948	52
	Minus(-)	1076	1549	52		Minus(-)	1139	1639	62
В	Normal	1195	1721	47	В	Normal	1265	1822	56
	Plus (+)	1315	1893	43		Plus (+)	1392	2004	50
	Minus(-)	1139	1639	49		Minus(-)	1170	1685	60
С	Normal	1265	1822	44	С	Normal	1 300	1872	54
	Plus (+)	1 392	2004	40		Plus (+)	1 4 3 0	2059	49
	Minus(-)	1202	1730	47		Minus(-)	1202	1730	58
D	Normal	1 3 3 5	1922	42	D	Normal	1 335	1922	53
	Plus (+)	1 469	2115	38		Plus (+)	1 469	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.

GMVC95/AMVC95 High (Single) Stage Cooling Speed Charts

GMVC950453BX* AMVC950453BX*			GMVC950704CX* AMVC950704CX*			GMVC950905CX* AMVC950905CX*		
Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP
	Minus(-)	540		Minus(-)	540		Minus(-)	729
Α	Normal	600	А	Normal	600	A	Normal	810
	Plus (+)	660		Plus (+)	660		Plus (+)	891
	Minus(-)	720		Minus(-)	720		Minus(-)	990
В	Normal	800	В	Normal	800	В	Normal	1100
	Plus (+)	880		Plus (+)	880		Plus (+)	1210
	Minus(-)	900		Minus(-)	990		Minus(-)	1323
С	Normal	1000	С	Normal	1100	С	Normal	1470
	Plus (+)	1100		Plus (+)	1210		Plus (+)	1617
	Minus(-)	1080		Minus(-)	1286		Minus(-)	1629
D	Normal	1200	D	Normal	1429	D	Normal	1810
	Plus (+)	1320		Plus (+)	1572		Plus (+)	1991

-	IVC95090 VC95090	-	GMVC951155DX* AMVC951155DX*		
Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP
	Minus(-)	720		Minus(-)	720
Α	Normal	800	Α	Normal	800
	Plus (+)	880		Plus (+)	880
	Minus(-)	990		Minus(-)	990
В	Normal	1100	В	Normal	1100
	Plus (+)	1210		Plus (+)	1210
	Minus(-)	1260		Minus(-)	1260
С	Normal	1400	С	Normal	1400
	Plus (+)	1540		Plus (+)	1540
	Minus(-)	1620		Minus(-)	1620
D	Normal	1800	D	Normal	1800
	Plus (+)	1980		Plus (+)	1980

- 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.

24

GMVC95/AMVC95 Low Stage Cooling Speed Charts

GMVC950453BX* AMVC950453BX*			GMVC950704CX* AMVC950704CX*			GMVC950905CX* AMVC950905CX*		
Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP
	Minus(-)	351		Minus(-)	351		Minus(-)	495
А	Normal	390	A	Normal	390	Α	Normal	550
	Plus (+)	429		Plus (+)	429		Plus (+)	605
	Minus(-)	468	в	Minus(-)	468	В	Minus(-)	693
В	Normal	520		Normal	520		Normal	770
	Plus (+)	572		Plus (+)	572		Plus (+)	847
	Minus(-)	585		Minus(-)	644		Minus(-)	900
С	Normal	650	С	Normal	715	С	Normal	1000
	Plus (+)	715		Plus (+)	787		Plus (+)	1100
	Minus(-)	us(-) 702		Minus(-)	836	D	Minus(-)	1125
	Normal	780	D	Normal	929		Normal	1250
	Plus (+)	858		Plus (+)	1022		Plus (+)	1375

_	IVC95090 IVC95090	-	GMVC951155DX* AMVC951155DX*			
Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP	
	Minus(-)	468		Minus(-)	468	
А	Normal	520	Α	Normal	520	
	Plus (+)	572		Plus (+)	572	
	Minus(-)	644	В	Minus(-)	644	
В	Normal	715		Normal	715	
	Plus (+)	787		Plus (+)	787	
	Minus(-)	819		Minus(-)	819	
С	Normal	910	С	Normal	910	
	Plus (+)	1001		Plus (+)	1001	
	Minus(-)	1053		Minus(-)	1053	
D	Normal	1170	D	Normal	1170	
	Plus (+)	1287		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.

GMVC95/AMVC95 Continuous Fan Speed Chart

Model	Furnace Maximum CFM	Continuous Fan Speed ^{1,2}
GMVC950453BX* AMVC950453BX*	1400	420
GMVC950704CX* AMVC950704CX*	1760	530
GMVC950905CX* AMVC950905CX*	2200	660
GMVC950905DX* AMVC950905DX*	2200	660
GMVC951155DX* AMVC951155DX*	2200	660

¹ Continuous fan speed is 30% of furnace maximum CFM ² Three continuous fan speeds are possible with the CTK01AA thermostat: 30%, 50%, and 70% of furnace maximum CFM

GCVC9/ACVC9 Continuous Fan Speed Chart

Model	Fumace Maximum CFM	Continuous Fan Speed ^{1,2}
GCVC90704CX* ACVC90704CX*	1760	530
GCVC90905DX* ACVC90905DX*	2200	660
GCVC91155DX*	2350	705

¹ Continuous fan speed is 30% of furnace maximum CFM

² Three continuous fan speeds are possible with the CTK01AA thermostat: 30%, 50%, and 70% of furnace maximum CFM.

GCVC95/ACVC95 Continuous Fan Speed Chart

Model	Fumace Maximum CFM	Continuous Fan Speed ^{1,2}
GCVC950714CX* ACVC950714CX*	1760	530
GCVC950915DX* ACVC950915DX*	2200	660

¹ Continuous fan speed is 30% of furnace maximum CFM

² Three continuous fan speeds are possible with the CTK01AA thermostat: 30%, 50%, and 70% of furnace maximum CFM.

- 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.

26

GCVC9/ACVC9 Heating Speed Charts

	GCVC90704CX* ACVC90704CX* (Rise Range: 30 - 60°F)					GCVC90905DX* ACVC90905DX* (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)	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)
	Minus(-)	747	1,076	56		Minus(-)	999	1,439	56
А	Normal	830	1,195	50	А	Normal	1,110	1,598	50
	Plus (+)	913	1,315	46		Plus (+)	1,221	1,758	46
	Minus(-)	824	1,186	51		Minus(-)	1,067	1,536	52
В	Normal	915	1,318	46	В	Normal	1,185	1,706	47
	Plus (+)	1,007	1,449	42		Plus (+)	1,303	1,876	43
	Minus(-)	900	1,296	47		Minus(-)	1,134	1,633	49
С	Normal	1,000	1,440	42	С	Normal	1,260	1,814	44
	Plus (+)	1,100	1,584	38		Plus (+)	1,386	1,996	40
	Minus(-)	978	1,408	43		Minus(-)	1,202	1,730	46
D	Normal	1,085	1,562	39	D	Normal	1,335	1,922	42
	Plus (+)	1,194	1,719	35		Plus (+)	1,469	2,115	38

	GCVC91155DX* (Rise Range: 40 - 70°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)				
	Minus(-)	1,093	1,583	63				
А	Normal	1,214	1,759	56				
	Plus (+)	1,335	1,935	51				
	Minus(-)	1,106	1,612	61				
В	Normal	1,229	1,791	55				
	Plus (+)	1,352	1,970	50				
	Minus(-)	1,166	1,654	60				
С	Normal	1,296	1,838	54				
	Plus (+)	1,426	2,022	49				
	Minus(-)	1,172	1,690	59				
D	Normal	1,302	1,878	53				
	Plus (+)	1,432	2,066	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.

GCVC95/ACVC95 Heating Speed Charts

	GCVC950714CX* ACVC950714CX* (Rise Range: 25 - 55°F)				GCVC950915DX* ACVC950915DX* (Rise Range: 25 - 55°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)	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)
	Minus(-)	783	1107	55		Minus(-)	1008	1458	55
Α	Normal	870	1230	49	A	Normal	1120	1620	50
	Plus (+)	957	1353	45		Plus (+)	1232	1782	45
	Minus(-)	855	1215	50		Minus(-)	1098	1575	51
В	Normal	950	1350	45	В	Normal	1220	1750	46
	Plus (+)	1045	1485	41		Plus (+)	1342	1925	42
	Minus(-)	936	1323	46		Minus(-)	1152	1674	48
С	Normal	1040	1470	41	С	Normal	1280	1860	43
	Plus (+)	1144	1617	37		Plus (+)	1408	2046	39
	Minus(-)	1017	1440	42		Minus(-)	1206	1773	45
D	Normal	1130	1600	38	D	Normal	1340	1970	41
	Plus (+)	1243	1760	34		Plus (+)	1474	2167	37

- 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.

28

GCVC9/ACVC9 High (Single) Stage Cooling Speed Charts

_	CVC907040 CVC907040		GCVC90905DX* ACVC90905DX*		
Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP
	Minus(-)	540		Minus(-)	720
А	Normal	600	А	Normal	800
	Plus (+)	660		Plus (+)	880
	Minus(-)	720	в	Minus(-)	990
В	Normal	800		Normal	1100
	Plus (+)	880		Plus (+)	1210
	Minus(-)	990		Minus(-)	1260
С	Normal	1100	С	Normal	1400
	Plus (+)	1210		Plus (+)	1540
	Minus(-)	1286		Minus(-)	1620
D	Normal	1429	D	Normal	1800
	Plus (+)	1572		Plus (+)	1980

GCVC91155DX*						
Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP				
	Minus(-)	705				
А	Normal	783				
	Plus (+)	861				
	Minus(-)	982				
В	Normal	1091				
	Plus (+)	1200				
	Minus(-)	1265				
С	Normal	1406				
	Plus (+)	1547				
	Minus(-)	1628				
D	Normal	1809				
	Plus (+)	1990				

GCVC9/ACVC9 Low Stage Cooling Speed Charts

	CVC90704 CVC90704		GCVC90905DX* ACVC90905DX*		
Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP
	Minus(-)	351		Minus(-)	468
А	Normal	390	А	Normal	520
	Plus (+)	429		Plus (+)	572
	Minus(-)	468	В	Minus(-)	644
В	Normal	520		Normal	715
	Plus (+)	572		Plus (+)	787
	Minus(-)	644		Minus(-)	819
С	Normal	715	С	Normal	910
	Plus (+)	787		Plus (+)	1001
	Minus(-)	836		Minus(-)	1053
D	Normal	929	D	Normal	1170
	Plus (+)	1022		Plus (+)	1287

r						
GCVC91155DX*						
Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP				
	Minus(-)	457				
А	Normal	508				
	Plus (+)	559				
	Minus(-)	621				
В	Normal	690				
	Plus (+)	759				
	Minus(-)	815				
С	Normal	906				
	Plus (+)	997				
	Minus(-)	1049				
D	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.

GCVC95/ACVC95 High (Single) Stage Cooling Speed Charts

	VC95071 VC95071		GCVC950915DX* ACVC950915DX*		
Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP
	Minus(-)	594		Minus(-)	729
А	Normal	660	А	Normal	810
	Plus (+)	726		Plus (+)	891
	Minus(-)	747	В	Minus(-)	999
В	Normal	830		Normal	1110
	Plus (+)	913		Plus (+)	1221
	Minus(-)	1017		Minus(-)	1287
С	Normal	1130	С	Normal	1430
	Plus (+)	1243		Plus (+)	1573
	Minus(-)	1314	D	Minus(-)	1674
D	Normal	1460		Normal	1860
	Plus (+)	1606		Plus (+)	2046

GCVC95/ACVC95 Low Stage Cooling Speed Charts

	VC95071 VC95071		GCVC950915DX* ACVC950915DX*		
Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP	Cooling Speed Tap	Adjust Tap	CFM at .1"8" w.c. ESP
	Minus(-)	378		Minus(-)	504
Α	Normal	420	А	Normal	560
	Plus (+)	462		Plus (+)	616
	Minus(-)	531	В	Minus(-)	666
В	Normal	590		Normal	740
	Plus (+)	649		Plus (+)	814
	Minus(-)	702		Minus(-)	828
С	Normal	780	С	Normal	920
	Plus (+)	858		Plus (+)	1012
	Minus(-)	864	D	Minus(-)	1071
D	Normal	960		Normal	1190
	Plus (+)	1056		Plus (+)	1309

- 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.

30

Circulator Blower Speed Adjustment Switches

Switch Bank: S3					
Cooling Speed	DIP Sw	itch No.			
Taps	1	2			
А	OFF	OFF			
В	ON	OFF			
С	OFF	ON			
D* ON ON					
(*Indicates factory setting)					

Switch Bank: S4						
Heating Speed Taps	DIP Sw	itch No.				
	7	8				
A	OFF	OFF				
B*	ON	OFF				
С	OFF	ON				
D ON ON						
(*Indicates factory setting)						

Switch Bank: S3					
	DIP Sw	itch No.			
Adjust Taps	3	4			
Normal*	OFF	OFF			
10%	ON	OFF			
-10%	OFF	ON			
Normal ON ON					
(*Indicates factory setting)					

Note: There are dual 7-segment LED's adjacent to the selection dipswitches. The airflow rounded to the nearest 100 CFM, is displayed on the dual 7-segment LED's. The CFM display alternates with the operating mode.

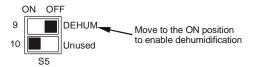
Example:

If the airlfow demand is 1230 CFM, the LED's will display 12. If the airlfow demand is 1275 CFM, the LED's will display 13.

Note: Continuous fan speed will be *30%* of the furnace's maximum airflow capability. If the furnace maximum CFM capaibility is 1760 CFM, the continuous fan speed will be 0.30 X 1760 CFM = 530 CFM.

Example: If the furnace maximum CFM capaibility is 1760 CFM, the continuous fan speed will be $0.30 \times 1760 \text{ CFM} = 530 \text{ CFM}.$

Dehumidification Enable Switch



Note: The optional usage of a dehumidistat allows the furnace's circulator blower to operate at a slightly lower speed (85% of desired speed) during a combined thermostat call for cooling and dehumidistat call for dehumidification. This can be done through an independent dehumidistat or through a thermostat's DEHUM terminal (if available). This lower blower speed enhances dehumidification of the conditioned air as it passes through the AC coil. For proper function, a dehumidistat applied to this furnace must operate on 24 VAC and utilize a switch which *opens on humidity rise*.

- 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.

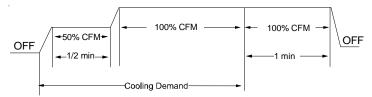
Ramping Profile

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. Refer to the following figure for switch positions and their corresponding taps. Refer to the bullet points below for a description of each ramping profile. Verify CFM by noting the number displayed on the dual 7-segment LED display.

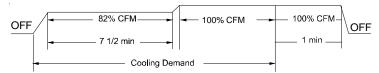
Switch Bank: S4						
Ramping	DIP Switch N					
Profiles	5	6				
A*	OFF	OFF				
В	ON	OFF				
С	OFF	ON				
D ON ON						
(*Indicates factory setting)						



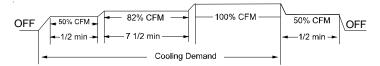
Profile A: provides only an OFF delay of one (1) minute at 100% of the cooling demand airflow.



Profile B: ramps up to full cooling demand airflow by first stepping up to 50% of the full demand for 30 seconds. The motor then ramps to 100% of the required airflow. A one (1) minute OFF delay at 100% of the cooling airflow is provided.



Profile C: ramps up to 82% of the full cooling demand airflow and operates there for approximately 7 1/2 minutes. The motor then steps up to the full demand airflow. Profile C also has a one (1) minute 100% OFF delay.

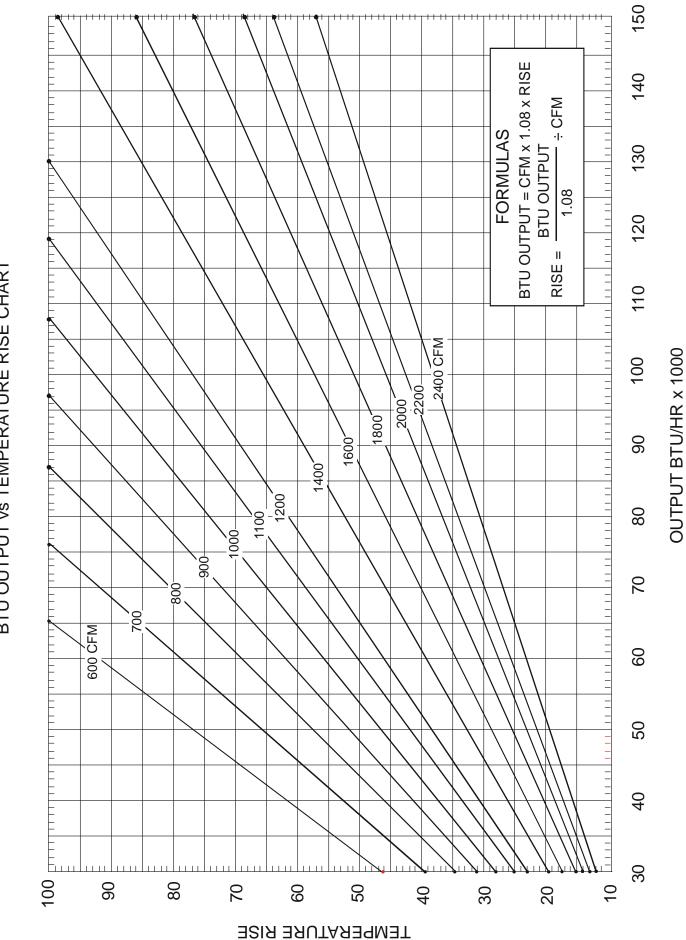


Profile D: ramps up to 50% of the demand for 1/2 minute, then ramps to 82% of the full cooling demand airflow and operates there for approximately 7 1/2 minutes. The motor then steps up to the full demand airflow. Profile D has a 1/2 minute at 50% airflow OFF delay.

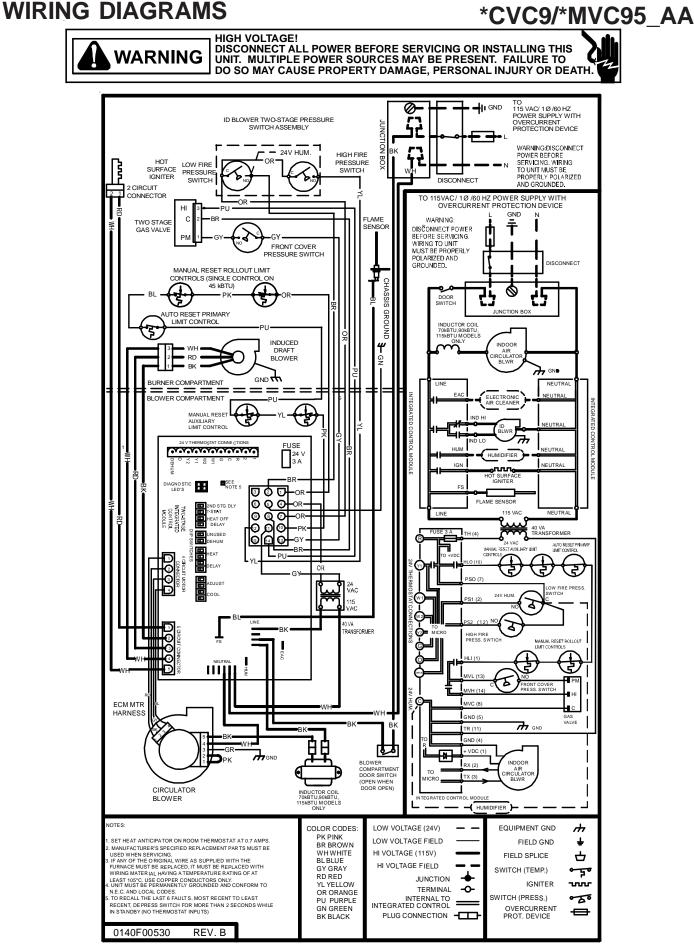
- 1. Units are shipped without filter(s). CFM in chart is without filter(s).
- 2. All furnaces shipped with heating speed set at "B" and cooling speed set at "D". Installer should adjust blower speed as needed. The first task is to determine the proper aiflow for the cooling system.
- 3. For most cooling 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.

32

PERFORMANCE



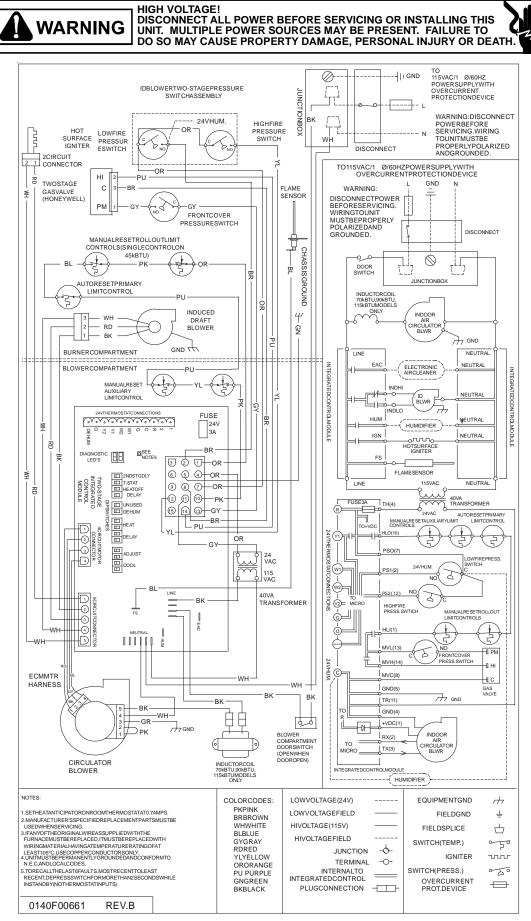
BTU OUTPUT vs TEMPERATURE RISE CHART



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

WIRING DIAGRAMS

*CVC9/*MVC95_AB

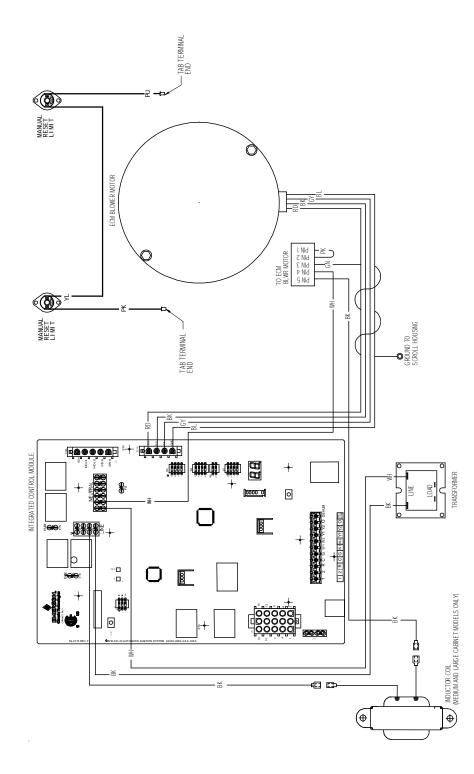


Wiring is subject to change. Always refer to the wiring diagram on the unit for the most up-to-date wiring.

SCHEMATICS



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.



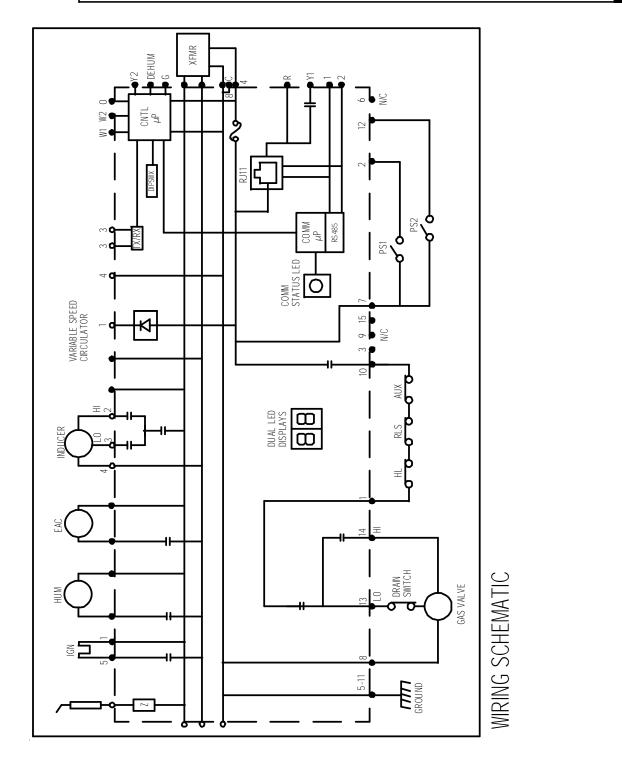
BLOWER ASSEMBLY SCHEMATIC ACVC9/AMVC95/GCVC9/GMVC95____X* MODEL FURNACES This schematic is for reference only. Not all wiring is as shown above, refer to the appropriate wiring diagram for the unit being serviced.

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

SCHEMATICS



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.



This schematic is for reference only. Not all wiring is as shown above. Refer to the appropriate wiring diagram for the unit being serviced. _X* MODEL FURNACES WR 50C51-289 INTEGRATED IGNITION CONTROL TYPICAL SCHEMATIC ACVC9/AMV95/GCVC9/GMVC95_