



Air Conditioning & Heating

GMVC96

**TWO-STAGE,
VARIABLE-SPEED ECM GAS FURNACE
UP TO 96% AFUE**



Standard Features

- ComfortNet™ Communicating System compatible
- Heavy-duty aluminized-steel tubular heat exchanger
- Stainless-steel secondary heat exchanger
- Two-stage gas valve provides quiet, economical heating
- Durable Silicon Nitride igniter
- Quiet two-speed induced draft blower
- Utilizes ComfortNet™ communicating, two-stage or single-stage thermostats
- Self-diagnostic control board with constant memory fault code history output to a dual 7-segment display
- Color-coded low-voltage terminals with provisions for electronic air cleaner and humidifier
- Efficient and quiet variable-speed airflow system gently ramps up or down according to heating or cooling demand
- Multiple continuous fan speed options offer quiet air circulation
- Auto-Comfort and enhanced dehumidification modes available
- All models comply with California Low NOx emissions standard

Cabinet Features

- Designed for multi-position installation — upflow, horizontal left or right
- Certified for direct vent (2-pipe) or non-direct vent (1-pipe)
- Easy to install top venting with optional side venting
- Convenient left or right connection for gas and electrical service
- Cabinet air leakage ($Q_{Leak} \leq 2\%$)
- Heavy-gauge steel cabinet with durable baked-enamel finish
- Fully insulated heat exchanger and blower section
- Airtight solid bottom or side-return with easy-cut tabs for effortless removal in bottom air-inlet applications

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* Complete warranty details available from your local dealer or at www.goodmanmfg.com. To receive the Lifetime Heat Exchanger Limited Warranty (good for as long as you own your home), 10-Year Unit Replacement Limited Warranty and 10-Year Parts Limited Warranty, online registration must be completed within 60 days of installation. Online registration is not required in California or Québec.



NOMENCLATURE

	G	M	V	C	96	040	3	B	N	A	A
	1	2	3	4	5,6	7,8,9	10	11	12	13	14
Brand G - Goodman® Brand											Minor Revision A - Initial Release B - 1st Revision
Configuration M - Upflow/Horizontal C - Downflow/Horizontal											Major Revision A - Initial Release B - 1st Revision
Motor V - Variable Speed ECM / ComfortNet E - Multi-Speed ECM S - Single Speed											NOx N - Low NOx
Gas Valve M - Modulating C - 2 Stage S - Single Stage											Cabinet Width B - 17.5" C - 21" D - 24.5"
AFUE 92 - 92% AFUE 96 - 96% AFUE 97 - 97% AFUE											Maximum CFM 2 - 800 CFM 3 - 1200 CFM 4 - 1600 CFM 5 - 2000 CFM
MBTU/h 040 - 40,000 BTU/h 060 - 60,000 BTU/h 120 - 120,000 BTU/h											



SPECIFICATIONS

	GMVC96 0403BNA	GMVC96 0603BNA	GMVC96 0803BNA	GMVC96 0804CNA	GMVC96 1005CNA	GMVC96 1205DNA
Heating Data						
High Fire Input ¹	40,000	60,000	80,000	80,000	100,000	120,000
High Fire Output ¹	38,400	57,600	76,800	76,800	96,000	115,200
Low-Fire Steady-State Input ¹	28,000	42,000	56,000	56,000	70,000	84,000
Low-Fire Steady-State Output ¹	26,880	40,320	53,760	53,760	67,200	80,640
AFUE ²	96	96	96	96	96	96
Temperature Rise Range (°F)	35 - 65	20 - 50	35 - 65	25 - 55	35 - 65	35 - 65
Vent Diameter ³	2" - 3"	2" - 3"	2" - 3"	2" - 3"	2" - 3"	2" - 3"
No. of Burners	2	3	4	4	5	6
Circulator Blower						
Available AC @ 0.5" ESP	1.5 - 3	1.5 - 3	1.5 - 3	1.5 - 4	2 - 5	2 - 5
Size (D x W)	10" x 8"	11" x 8"	11" x 8"	11" x 10"	11" x 10"	11" x 11"
Horsepower @ 1075 RPM	½	½	½	¾	1	1
Speed	VS ECM	VS ECM	VS ECM	VS ECM	VS ECM	VS ECM
Filter Size (in²)						
Permanent	341	731	683	853	853	1,024
Disposable	171	366	341	427	427	512
Electrical Data						
Min. Circuit Ampacity ⁴	7.8	7.8	7.8	10.6	14.4	14.4
Max. Overcurrent Device (amps) ⁵	15	15	15	15	20	20
Shipping Weight (lbs)						
	114	117	120	141	143	156

¹ Natural Gas BTU/h

² DOE AFUE based upon Isolated Combustion System (ICS)

³ 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.

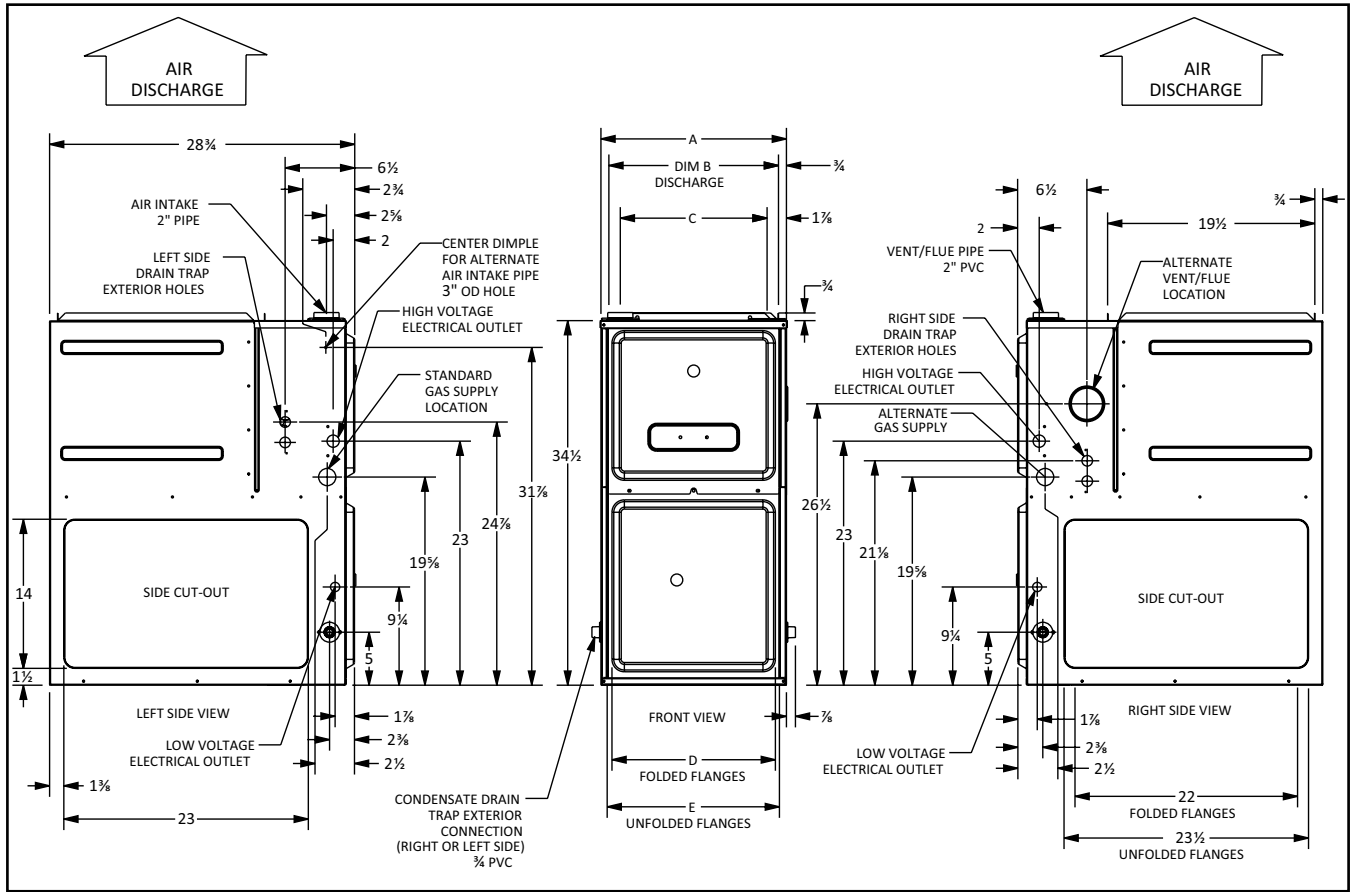
⁴ Minimum Circuit Ampacity = (1.25 x Circulator Blower Amps) + ID Blower amps. Wire size should be determined in accordance with National Electrical Codes. Extensive wire runs will require larger wire sizes.

⁵ Maximum Overcurrent Protection Device refers to maximum recommended fuse or circuit breaker size. May use fuses or HACR-type circuit breakers of the same size as noted.

NOTES

- All furnaces are manufactured for use on 115 VAC, 60 Hz, single-phase electrical supply.
- Gas Service Connection ½" FPT
- Important: Size fuses and wires properly and make electrical connections in accordance with the National Electrical Code and/or all existing local codes.
- For bottom return: Failure to unfold flanges may reduce airflow by up to 18%. This could result in performance and noise issues.
- For servicing or cleaning, a 24" front clearance is required. Unit connections (electrical, flue and drain) may necessitate greater clearances than the minimum clearances listed above. In all cases, accessibility clearance must take precedence over clearances from the enclosure where accessibility clearances are greater.

GMVC96 DIMENSIONS



MODEL	A	B	C	D	E
GMVC960403BNA	17 1/2"	16"	13 3/8"	12 1/8"	13 3/8"
GMVC960603BNA	17 1/2"	16"	13 3/8"	12 1/8"	13 3/8"
GMVC960803BNA	17 1/2"	16"	13 3/8"	12 1/8"	13 3/8"
GMVC960804CNA	21"	19 1/2"	17 3/8"	16"	17 1/2"
GMVC961005CNA	21"	19 1/2"	17 3/8"	16"	17 1/2"
GMVC961205DNA	24 1/2"	23"	20 3/8"	19 3/8"	20 3/8"

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS

POSITION	SIDES	REAR	FRONT	BOTTOM	FLUE	TOP
Upflow	0"	0"	3"	C	0"	1"
Horizontal	6"	0"	3"	C	0"	6"

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

GMVC96 AIRFLOW DATA

GMVC960403BNA
COOLING SPEED
 (@ .1" - .8" w.c. ESP)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM
A	Minus 10%	536	363
	Minus 5%	566	383
	Normal	596	403
	Plus 5%	626	423
	Plus 10%	656	443
B	Minus 10%	716	474
	Minus 5%	756	501
	Normal	796	527
	Plus 5%	836	553
	Plus 10%	876	580
C	Minus 10%	877	608
	Minus 5%	925	641
	Normal	974	675
	Plus 5%	1,023	709
	Plus 10%	1,071	743
D	Minus 10%	1,073	723
	Minus 5%	1,132	763
	Normal	1,192	803
	Plus 5%	1,252	843
	Plus 10%	1,311	883

GMVC960403BNA
HEATING SPEED
 (@ .1" - .5" w.c. ESP; RISE RANGE: 35 - 65°F)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM	RISE (°F)
A	Minus 10%	445	380	n/a
	Minus 5%	469	401	n/a
	Normal	494	422	n/a
	Plus 5%	519	443	n/a
	Plus 10%	543	464	65
B	Minus 10%	498	424	n/a
	Minus 5%	525	447	n/a
	Normal	553	471	64
	Plus 5%	581	495	61
	Plus 10%	608	518	58
C	Minus 10%	541	469	n/a
	Minus 5%	571	495	62
	Normal	601	521	59
	Plus 5%	631	547	56
	Plus 10%	661	573	54
D	Minus 10%	608	517	58
	Minus 5%	642	545	55
	Normal	676	574	53
	Plus 5%	710	603	50
	Plus 10%	744	631	48

GMVC960603BNA
COOLING SPEED
 (@ .1" - .8" w.c. ESP)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM
A	Minus 10%	539	358
	Minus 5%	569	378
	Normal	599	398
	Plus 5%	629	418
	Plus 10%	659	438
B	Minus 10%	735	501
	Minus 5%	776	529
	Normal	817	557
	Plus 5%	858	585
	Plus 10%	899	613
C	Minus 10%	906	626
	Minus 5%	957	661
	Normal	1,007	696
	Plus 5%	1,057	731
	Plus 10%	1,108	766
D	Minus 10%	1,091	729
	Minus 5%	1,151	770
	Normal	1,212	810
	Plus 5%	1,273	851
	Plus 10%	1,333	891

GMVC960603BNA
HEATING SPEED
 (@ .1" - .5" w.c. ESP; RISE RANGE: 20 - 50°F)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM	RISE (°F)
A	Minus 10%	858	600	n/a
	Minus 5%	905	634	n/a
	Normal	953	667	n/a
	Plus 5%	1,001	700	n/a
	Plus 10%	1,048	734	n/a
B	Minus 10%	953	666	n/a
	Minus 5%	1,006	703	n/a
	Normal	1,059	740	50
	Plus 5%	1,112	777	48
	Plus 10%	1,165	814	46
C	Minus 10%	1,042	727	n/a
	Minus 5%	1,100	768	48
	Normal	1,158	808	46
	Plus 5%	1,216	848	44
	Plus 10%	1,274	889	42
D	Minus 10%	1,134	793	47
	Minus 5%	1,197	837	45
	Normal	1,260	881	42
	Plus 5%	1,323	925	40
	Plus 10%	1,386	969	38

GMVC96 AIRFLOW DATA (CONT.)

GMVC960803BNA
COOLING SPEED
 (@ .1" - .8" w.c. ESP)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM
A	Minus 10%	566	363
	Minus 5%	598	383
	Normal	629	403
	Plus 5%	660	423
	Plus 10%	692	443
B	Minus 10%	725	486
	Minus 5%	766	513
	Normal	806	540
	Plus 5%	846	567
	Plus 10%	887	594
C	Minus 10%	921	635
	Minus 5%	972	670
	Normal	1,023	705
	Plus 5%	1,074	740
	Plus 10%	1,125	776
D	Minus 10%	1,107	737
	Minus 5%	1,169	778
	Normal	1,230	819
	Plus 5%	1,292	860
	Plus 10%	1,353	901

GMVC960803BNA
HEATING SPEED
 (@ .1" - .5" w.c. ESP; RISE RANGE: 35 - 65°F)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM	RISE (°F)
A	Minus 10%	1,082	770	n/a
	Minus 5%	1,142	812	62
	Normal	1,202	855	59
	Plus 5%	1,262	898	56
	Plus 10%	1,322	941	54
B	Minus 10%	1,184	831	60
	Minus 5%	1,250	877	57
	Normal	1,316	923	54
	Plus 5%	1,382	969	51
	Plus 10%	1,448	1,015	49
C	Minus 10%	1,250	930	57
	Minus 5%	1,320	981	54
	Normal	1,389	1,033	51
	Plus 5%	1,458	1,085	49
	Plus 10%	1,528	1,136	47
D	Minus 10%	1,256	957	57
	Minus 5%	1,326	1,010	54
	Normal	1,396	1,063	51
	Plus 5%	1,466	1,116	49
	Plus 10%	1,536	1,169	46

GMVC960804CNA
COOLING SPEED
 (@ .1" - .8" w.c. ESP)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM
A	Minus 10%	710	462
	Minus 5%	750	487
	Normal	789	513
	Plus 5%	828	539
	Plus 10%	868	564
B	Minus 10%	870	594
	Minus 5%	919	627
	Normal	967	660
	Plus 5%	1,015	693
	Plus 10%	1,064	726
C	Minus 10%	1,064	712
	Minus 5%	1,123	751
	Normal	1,182	791
	Plus 5%	1,241	831
	Plus 10%	1,300	870
D	Minus 10%	1,238	822
	Minus 5%	1,306	867
	Normal	1,375	913
	Plus 5%	1,444	959
	Plus 10%	1,513	1,004

GMVC960804CNA
HEATING SPEED
 (@ .1" - .5" w.c. ESP; RISE RANGE: 25 - 55°F)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM	RISE (°F)
A	Minus 10%	1,082	780	n/a
	Minus 5%	1,142	824	n/a
	Normal	1,202	867	n/a
	Plus 5%	1,262	910	n/a
	Plus 10%	1,322	954	54
B	Minus 10%	1,184	845	n/a
	Minus 5%	1,250	892	n/a
	Normal	1,316	939	54
	Plus 5%	1,382	986	51
	Plus 10%	1,448	1,033	49
C	Minus 10%	1,250	914	n/a
	Minus 5%	1,320	965	54
	Normal	1,389	1,016	51
	Plus 5%	1,458	1,067	49
	Plus 10%	1,528	1,118	47
D	Minus 10%	1,256	969	n/a
	Minus 5%	1,326	1,023	54
	Normal	1,396	1,077	51
	Plus 5%	1,466	1,131	49
	Plus 10%	1,536	1,185	46

NOTES

- All furnaces ship as high speed for cooling. Installer must adjust blower speed as needed.
- For most jobs, about 400 CFM per ton when cooling is desirable.
- Do not operate above .5" w.c. ESP in heating mode. Operating CFM between .5" and .8" w.c. is tabulated for cooling purposes only.

GMVC96 AIRFLOW DATA (CONT.)

GMVC961005CNA
COOLING SPEED
(@ .1" - .8" w.c. ESP)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM
A	Minus 10%	738	508
	Minus 5%	779	536
	Normal	820	564
	Plus 5%	861	592
	Plus 10%	902	620
B	Minus 10%	1,020	706
	Minus 5%	1,076	745
	Normal	1,133	784
	Plus 5%	1,190	823
	Plus 10%	1,246	862
C	Minus 10%	1,318	884
	Minus 5%	1,391	933
	Normal	1,464	982
	Plus 5%	1,537	1,031
	Plus 10%	1,610	1,080
D	Minus 10%	1,562	1,133
	Minus 5%	1,649	1,196
	Normal	1,736	1,259
	Plus 5%	1,823	1,322
	Plus 10%	1,910	1,385

GMVC961005CNA
HEATING SPEED
(@ .1" - .5" w.c. ESP; RISE RANGE: 35 - 65°F)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM	RISE (°F)
A	Minus 10%	1,636	1,130	54
	Minus 5%	1,727	1,193	51
	Normal	1,818	1,256	49
	Plus 5%	1,909	1,319	47
	Plus 10%	2,000	1,382	44
B	Minus 10%	1,683	1,163	53
	Minus 5%	1,777	1,227	50
	Normal	1,870	1,292	48
	Plus 5%	1,964	1,357	45
	Plus 10%	2,057	1,421	43
C	Minus 10%	1,719	1,184	52
	Minus 5%	1,815	1,250	49
	Normal	1,910	1,316	47
	Plus 5%	2,006	1,382	44
	Plus 10%	2,101	1,448	42
D	Minus 10%	1,761	1,222	50
	Minus 5%	1,859	1,290	48
	Normal	1,957	1,358	45
	Plus 5%	2,055	1,426	43
	Plus 10%	2,153	1,494	41

GMVC961205DNA
COOLING SPEED
(@ .1" - .8" w.c. ESP)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM
A	Minus 10%	780	492
	Minus 5%	824	520
	Normal	867	547
	Plus 5%	910	574
	Plus 10%	954	602
B	Minus 10%	1,044	748
	Minus 5%	1,102	789
	Normal	1,160	831
	Plus 5%	1,218	873
	Plus 10%	1,276	914
C	Minus 10%	1,320	918
	Minus 5%	1,394	969
	Normal	1,467	1,020
	Plus 5%	1,540	1,071
	Plus 10%	1,614	1,122
D	Minus 10%	1,719	1,150
	Minus 5%	1,815	1,214
	Normal	1,910	1,278
	Plus 5%	2,006	1,342
	Plus 10%	2,101	1,406

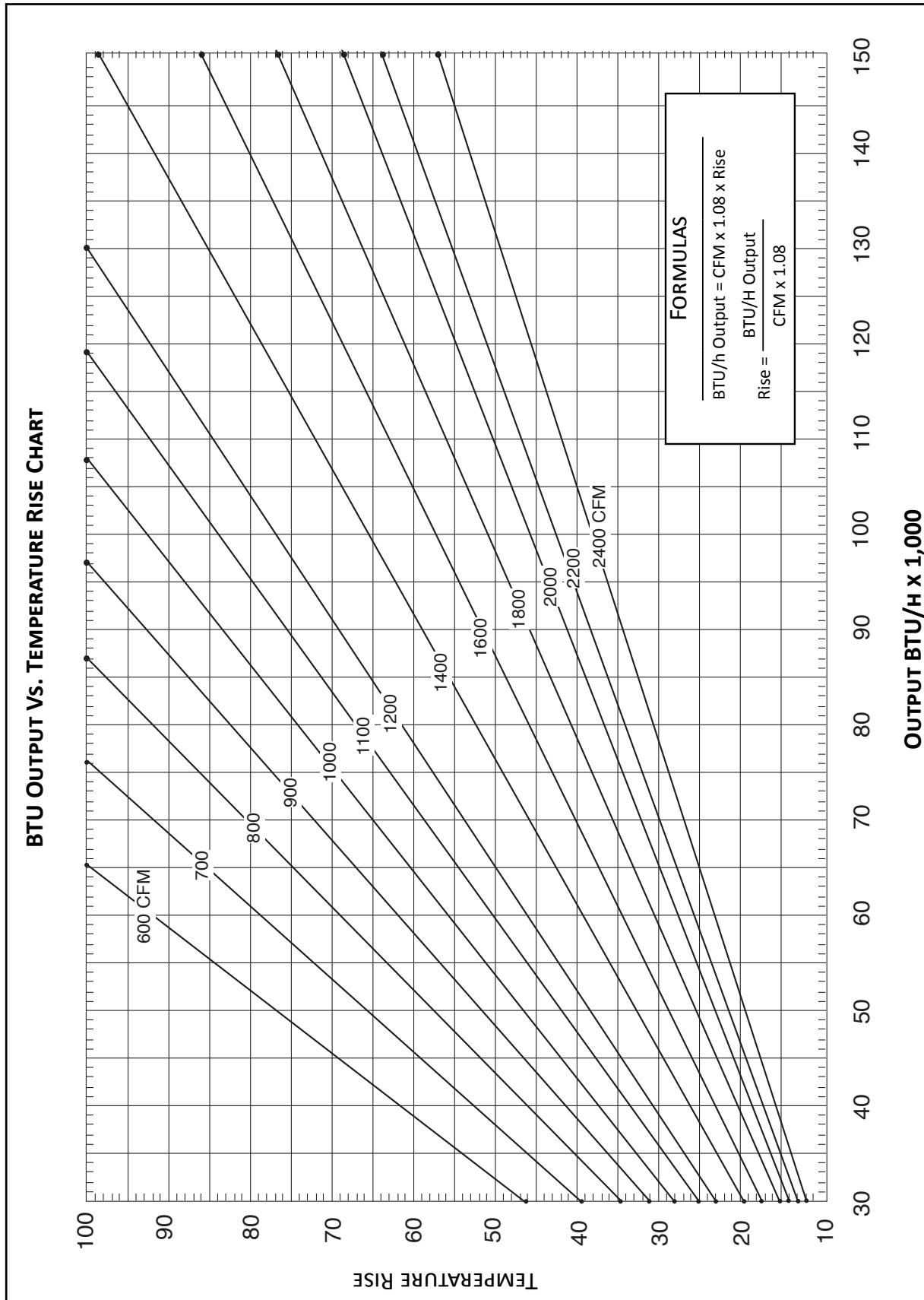
GMVC961205DNA
HEATING SPEED
(@ .1" - .5" w.c. ESP; RISE RANGE: 35 - 65°F)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM	RISE (°F)
A	Minus 10%	1,702	1,196	63
	Minus 5%	1,796	1,263	59
	Normal	1,891	1,329	56
	Plus 5%	1,986	1,395	54
	Plus 10%	2,080	1,462	51
B	Minus 10%	1,746	1,226	61
	Minus 5%	1,843	1,294	58
	Normal	1,940	1,362	55
	Plus 5%	2,037	1,430	52
	Plus 10%	2,134	1,498	50
C	Minus 10%	1,771	1,251	60
	Minus 5%	1,870	1,321	57
	Normal	1,968	1,390	54
	Plus 5%	2,066	1,460	52
	Plus 10%	2,165	1,529	49
D	Minus 10%	1,825	1,296	58
	Minus 5%	1,927	1,368	55
	Normal	2,028	1,440	53
	Plus 5%	2,129	1,512	50
	Plus 10%	2,231	1,584	48

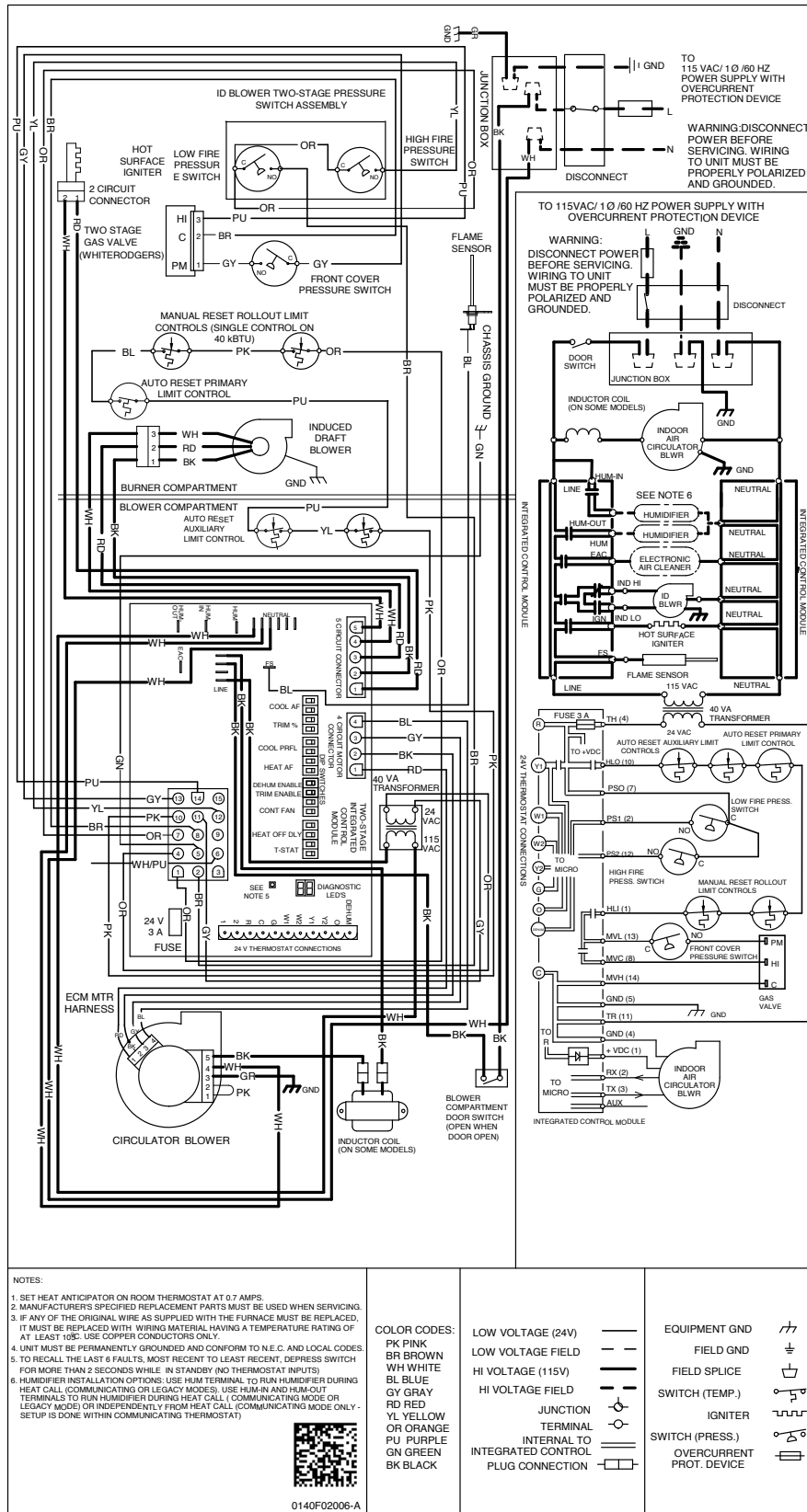
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- For most jobs, about 400 CFM per ton when cooling is desirable.
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TEMPERATURE RISE RANGE CHART



WIRING DIAGRAM



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

- 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 GROUND AND CONFORM TO N.E.C. AND LOCAL CODES.
 5. TO RECALL THE LAST 6 FAULTS, MOST RECENT TO LEAST RECENT, DEPRESS SWITCH FOR MORE THAN 2 SECONDS WHILE IN STANDBY (NO THERMOSTAT INPUTS).
 6. HUMIDIFIER INSTALLATION OPTIONS: USE HUM TERMINAL TO RUN HUMIDIFIER DURING HEAT CALL (COMMUNICATING OR LEGACY MODES). USE HUM-IN AND HUM-OUT TERMINALS TO RUN HUMIDIFIER DURING HEAT CALL (COMMUNICATING MODE OR LEGACY MODE) OR INDEPENDENTLY FROM HEAT CALL (COMMUNICATING MODE ONLY - SETUP IS DONE WITHIN COMMUNICATING THERMOSTAT)

COLOR CODES: PK PINK BR BROWN WH WHITE BL BLUE GY GRAY RD RED YL YELLOW OR ORANGE PU PURPLE GN GREEN BK BLACK	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
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0140F02006-A

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

ACCESSORIES

MODEL	DESCRIPTION	GMVC96 0403BNA	GMVC96 0603BNA	GMVC96 0803BNA	GMVC96 0804CNA	GMVC96 1005CNA	GMVC96 1205DNA
CVENT-2	Concentric Vent Kit (2")	√	√	√	√	√	√
CVENT-3	Concentric Vent Kit (3")	√	√	√	√	√	√
CFSB17	Downflow Sub-Base 17.5"	---	---	---	---	---	---
CFSB21	Downflow Sub-Base 21"	---	---	---	---	---	---
CFSB24	Downflow Sub-Base 24"	---	---	---	---	---	---
RF000142	Drain Kit -Horizontal Left Vertical Flue	√	√	√	√	√	√
EFR02	External Filter Rack with 16"x25" Permanent Filter	√	√	√	√	---	---
0170K00000S	Flush Mount Vent Kit - 3" or 2"	√	√	√	√	√	√
0170K00001S	Flush Mount Vent Kit - 2"	√	√	√	√	√	√
AFE18-60A	Fossil Fuel (Duel Fuel) Kit	√	√	√	√	√	√
	High-Altitude Natural Gas Kit	TBD	TBD	TBD	TBD	TBD	TBD
	High-Altitude Pressure Switch	TBD	TBD	TBD	TBD	TBD	TBD
	High-Altitude LP Gas Kit	TBD	TBD	TBD	TBD	TBD	TBD
LPLP03	Low LP Gas Pressure Switch	√	√	√	√	√	√
LPM-08	LP Conversion Kits	√	√	√	√	√	√

THERMOSTATS



CTK04 ComfortNet-compatible Control



CTK02 ComfortNet-compatible Control

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NOTES