

GKS9

SINGLE-STAGE, MULTI-SPEED, UPFLOW/MULTI-POSITION GAS FURNACE

UP TO 92.1% AFUE
HEATING INPUT:
46,000–115,000 BTU/H

Standard Features

- Dual-diameter tubular heat exchanger
- Single-stage combination redundant gas valve
- Hot surface igniter and adaptive learning control for long igniter life
- Quiet four-speed direct-drive circulator blower motor
- Furnace control board with self-diagnostics and low-voltage terminal block
- Dual-certified for sealed combustion direct vent (2-pipe) or non-direct vent (1-pipe) applications
- Quiet, single-speed induced draft blower
- All models comply with California NOx emissions standards

Cabinet Features

- Foil-faced insulation lines the heat exchanger
- Designed for upflow installation; can be converted to horizontal left or right with a pressure switch kit (sold separately)
- Easy-to-install top venting is standard
- Airtight solid bottom for side return applications and easy-cut tabs for effortless removal in bottom air inlet applications
- Coil and furnace fit flush for most installations



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* Complete warranty details available from your local dealer or at www.amana-hac.com. To receive the Lifetime Heat Exchanger Limited Warranty (good for as long as you own your home) 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	K	S	9	045	4	B	X	A	
	1	2	3	4,5	6,7,8	9	10	11	12	
Brand	G Goodman® Brand or Distinctions™								Revisions	A Initial Release B 1st Revision C 2nd Revision
Airflow Direction	C Downflow/Horizontal D Dedicated Downflow H High Airflow K Dedicated Upflow M Upflow/Horizontal								NOx	N Natural Gas X Low NOx
Description/Motor	V Two-Stage/Variable-speed H Two-Stage/Multi-speed S Single-Stage/Multi-speed E Two-Stage/High-Efficiency								Cabinet Width	A 14" B 17½" C 21" D 24½"
AFUE	95 95% 9 93%+ 8 80%								Maximum CFM @ 0.5" ESP	3 1200 4 1600 5 2000
									MBTU/h	045: 45,000 070: 70,000 090: 90,000 115: 115,000 140: 140,000

Important EnergyStar Notice: EnergyStar ratings are dependent upon conditions beyond equipment installation. Proper sizing and installation of equipment is critical to achieve optimal performance. Split system air conditioners and heat pumps must be matched with appropriate coil components to meet EnergyStar criteria. Ask your contractor for details or visit www.energystar.gov.

SPECIFICATIONS

	GKS9 0453BX*	GKS9 0703BX*	GKS9 0704CX*	GKS9 0904CX*	GKS9 0905DX*	GKS9 1155DX*
HEATING CAPACITY						
Input ¹	46,000	69,000	69,000	92,000	92,000	115,000
Natural Gas Output ¹	42,800	64,400	64,400	86,000	86,000	106,500
LP Gas Output ¹	38,502	57,753	57,753	77,004	77,004	96,255
AFUE ²	92.1	92.1	92.1	92.1	92.1	92.1
Available AC @ 0.5" ESP	3	3	4	4	5	5
Temperature Rise Range (°F)	35 - 65	35 - 65	35 - 65	35 - 65	35 - 65	35 - 65
CIRCULATOR BLOWER						
Size (D x W)	10" x 8"	10" x 8"	10" x 10"	10" x 10"	11" x 10"	11" x 10"
Horsepower @ 1075 RPM	⅓	⅓	½	½	¾	¾
Speed	4	4	4	4	4	4
Vent Diameter ³	2"	2"	2"	2"	2"	3"
No. of Burners	2	3	3	4	4	5
FILTER SIZE (IN²)						
Permanent	288	282	376	376	470	470
Disposable	576	564	752	752	940	940
ELECTRICAL DATA						
Min. Circuit Ampacity ⁴	9.4	9.4	13.8	13.8	13.2	13.2
Max. Overcurrent Device (amps) ⁵	15	15	15	15	15	15
SHIP WEIGHT (LBS)						
	132	135	153	158	170	175

¹ Natural Gas BTU/h. For altitudes above 2,000', reduce input rating 4% for each 1,000' above sea level.

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. Vent connector diameter is 2". Refer to the installation & operation manual shipped with the furnace for applicable vent and combustion air pipe lengths.

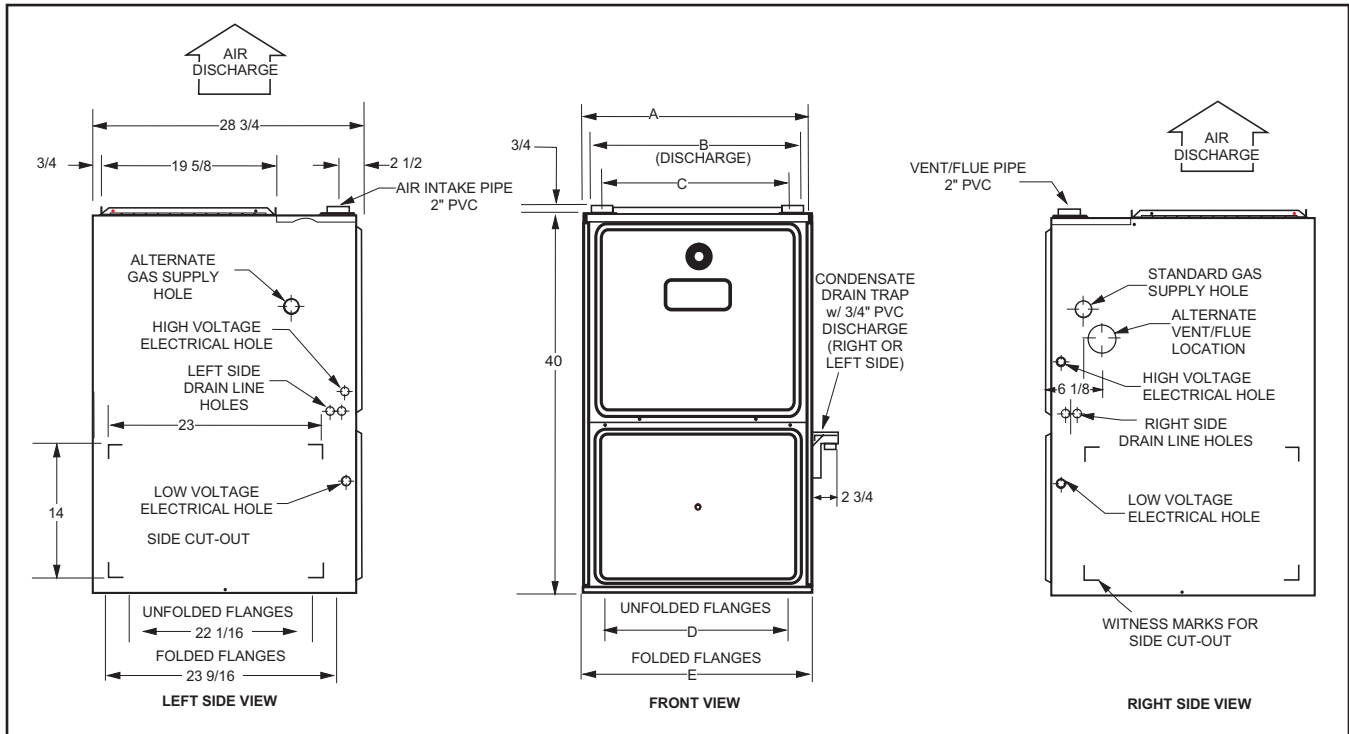
⁴ Minimum Circuit Ampacity = (1.25 x Circulator Blower Amps) + ID Blower amps. Wire size should be determined in accordance with National Electrical Codes. Extensive wire runs will require larger wire sizes.

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.

DIMENSIONS



MODEL	A	B	C	D	E
GKS90453BX*	17½"	16"	13⅞"	12⅞"	13⅞"
GKS90703BX*	17½"	16"	13⅞"	12⅞"	13⅞"
GKS90704CX*	21"	19½"	16⅞"	16"	17½"
GKS90904CX*	21"	19½"	16⅞"	16"	17½"
GKS90905DX*A	24½"	23"	20⅞"	19⅞"	20⅞"
GKS91155DX*	24½"	23"	20⅞"	19⅞"	20⅞"

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.
- 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.
- Conversion kits for high altitude natural gas operation are available. Contact your Goodman distributor or dealer for details.
- Installer must supply following gas line fittings, according to which entrance is used:
Left—Two 90° elbows, one close nipple, straight pipe
Right—Straight pipe to reach gas valve
- For bottom return: Failure to unfold flanges may reduce airflow by up to 18%. This could result in performance and noise issues.

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS

POSITION	SIDES	REAR	FRONT	BOTTOM	FLUE	TOP
Upflow	0"	0"	1"	C	0"	1"
Horizontal	6"	0"	1"	C	0"	4"

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

NOTES:

- For servicing or cleaning, a 24" front clearance is recommended.
- Unit connections (electrical, flue and drain) may necessitate greater clearances than the minimum clearances listed below.
- **In all cases, accessibility clearance must take precedence over clearances from the enclosure where accessibility clearances are greater.**

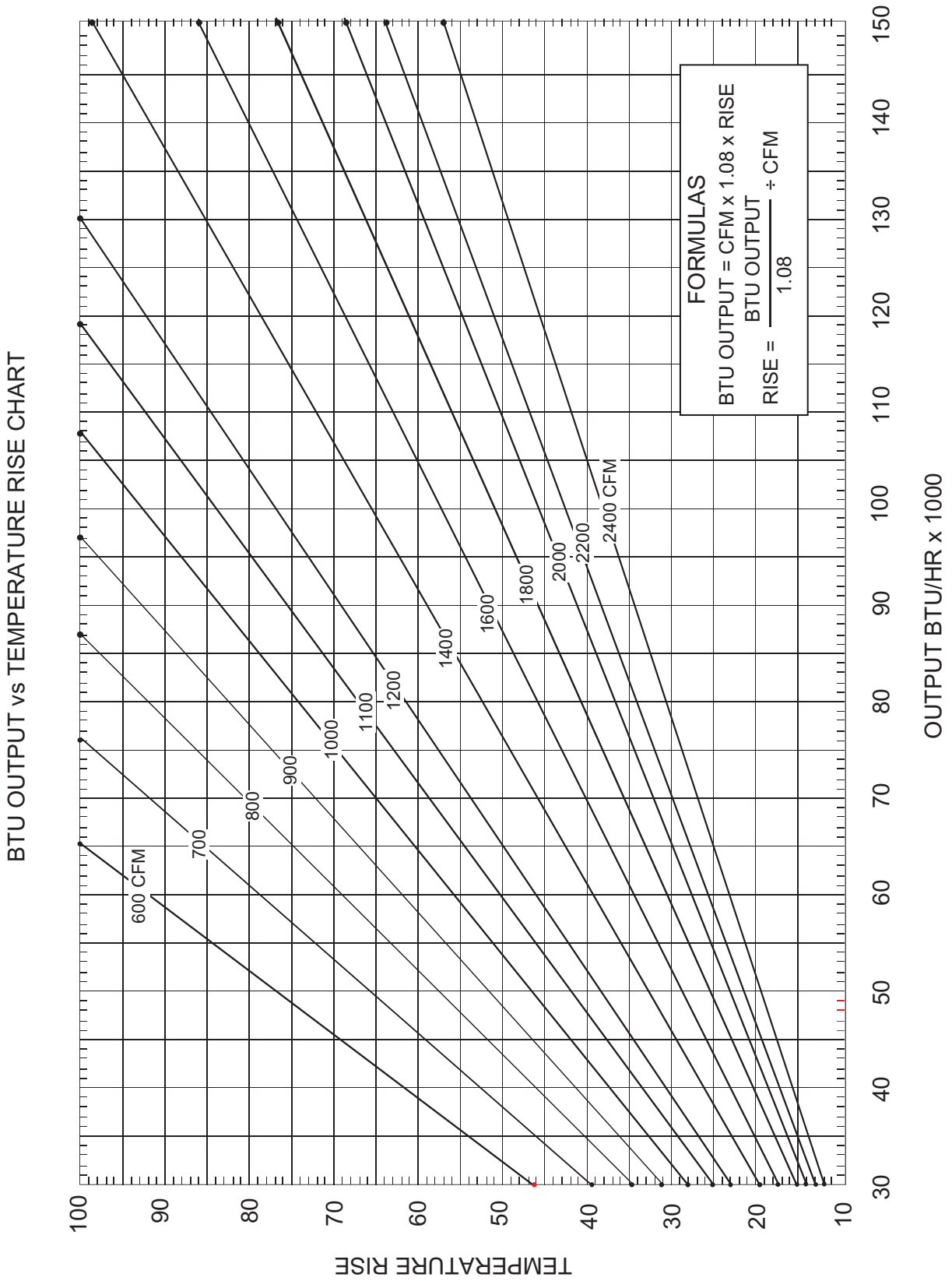
AIRFLOW SPECIFICATIONS

(CFM & TEMPERATURE RISE VS. EXTERNAL STATIC PRESSURE)															
MODEL	MOTOR SPEED	TONS AC AT 0.5" ESP	EXTERNAL STATIC PRESSURE, (INCHES WATER COLUMN)												
			0.1		0.2		0.3		0.4		0.5		0.6	0.7	0.8
			CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	CFM	CFM
GKS9 0453BX*	High	3	1,352	29	1,318	30	1,260	31	1,202	33	1,128	35	1,044	955	853
	Med	2.5	1,214	32	1,172	34	1,123	35	1,064	37	1,012	39	938	859	741
	Med-Lo	2	997	40	994	40	960	41	923	43	884	45	817	741	611
	Low	1.5	757	52	753	52	734	54	704	56	674	59	620	524	438
GKS9 0703BX*	High	3	1,449	41	1,409	42	1,326	45	1,273	47	1,201	49	1,194	1,136	1,018
	Med	2.5	1,192	50	1,172	51	1,141	52	1,094	54	1,046	57	973	904	793
	Med-Lo	2	981	61	962	62	943	63	917	65	888	67	830	764	665
	Low	1.5	750	79	730	81	714	83	692	86	657	90	620	570	502
GKS9 0704CX*	High	4	2,069	29	1,965	30	1,871	32	1,756	34	1,661	36	1,549	1,415	1,275
	Med	3.5	1,752	34	1,724	34	1,667	36	1,603	37	1,488	40	1,402	1,290	1,082
	Med-Lo	3	1,437	41	1,437	41	1,417	42	1,369	43	1,320	45	1,256	1,140	984
	Low	2.5	1,184	50	1,177	50	1,161	51	1,132	52	1,095	54	1,047	928	837
GKS9 0904CX*	High	4	1,970	40	1,874	42	1,757	45	1,667	48	1,566	51	1,431	1,334	1,182
	Med	3.5	1,713	46	1,650	48	1,572	50	1,510	52	1,418	56	1,313	1,211	1,079
	Med-Lo	3	1,439	55	1,412	56	1,370	58	1,327	60	1,260	63	1,166	1,078	956
	Low	2.5	1,183	67	1,155	69	1,122	71	1,108	72	1,062	75	1,011	931	816
GKS9 0905DX*	High	5	2,147	37	2,114	37	2,057	39	2,030	39	1,978	40	1,889	1,784	1,713
	Med	4	1,675	47	1,686	47	1,640	48	1,623	49	1,557	51	1,501	1,455	1,360
	Med-Lo	3.5	1,489	53	1,470	54	1,436	55	1,409	56	1,361	58	1,318	1,243	1,130
	Low	3	1,307	61	1,265	63	1,234	64	1,203	66	1,168	68	1,096	1,053	991
GKS9 1155DX*	High	5	2,134	46	2,103	47	2,029	48	1,941	51	1,906	51	1,818	1,733	1,625
	Med	4	1,678	58	1,643	60	1,643	60	1,577	62	1,527	64	1,489	1,423	1,339
	Med-Lo	3.5	1,453	68	1,440	68	1,426	69	1,363	72	1,349	73	1,314	1,253	1,205
	Low	3	1,259	78	1,239	79	1,220	80	1,181	83	1,159	85	1,118	1,082	1,015

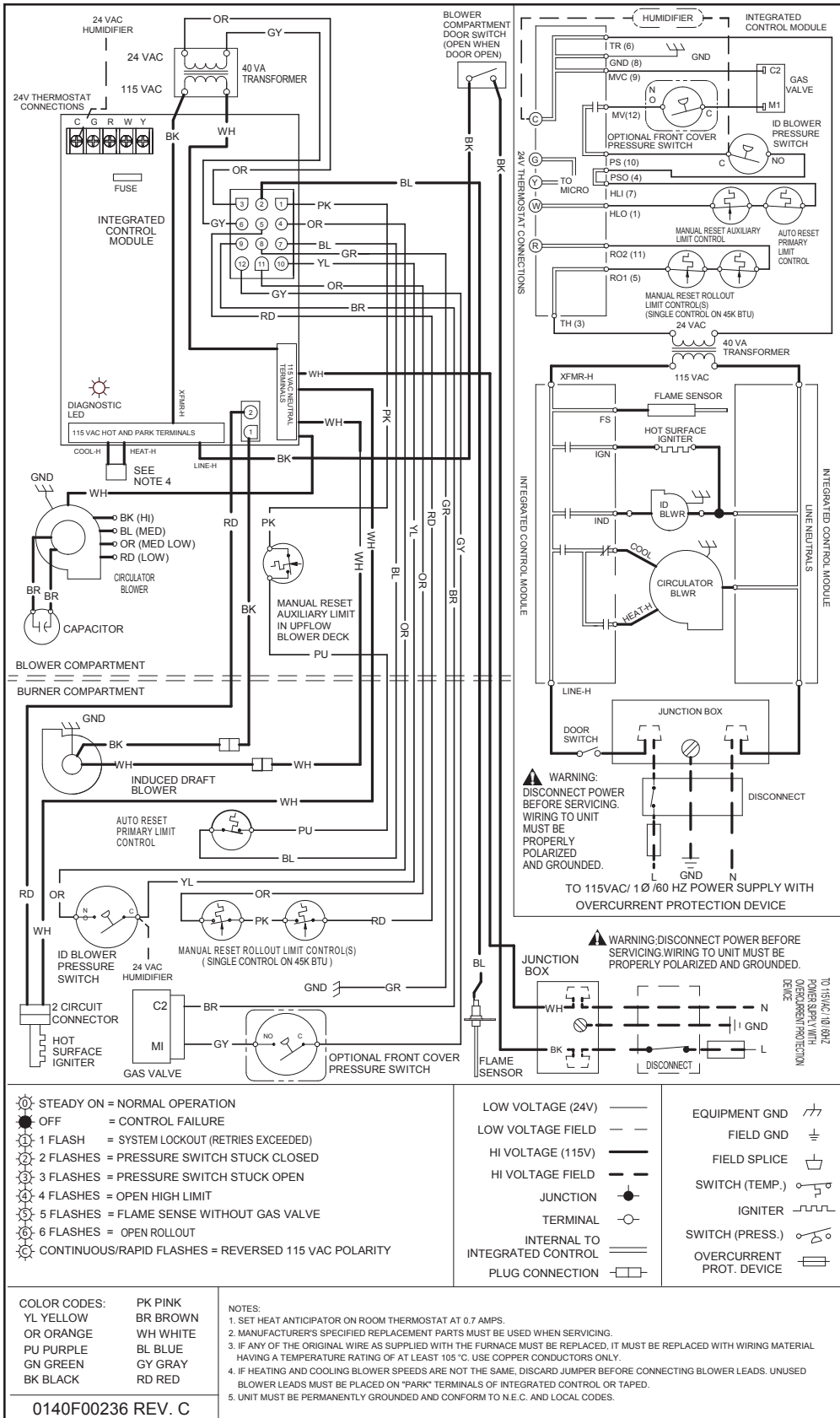
NOTES:

- CFM in chart is without filter(s). Filters do not ship with this furnace, but must be provided by the installer. If the furnace requires two return filters, this chart assumes both filters are installed.
- All furnaces ship as high-speed cooling and medium-speed heating. Installer must adjust blower cooling and heating speed as needed.
- For most jobs, about 400 CFM per ton when cooling is desirable.
- INSTALLATION IS TO BE ADJUSTED TO OBTAIN TEMPERATURE RISE WITHIN THE RANGE SPECIFIED ON THE RATING PLATE.
- The chart is for information only. For satisfactory operation, external static pressure should not exceed value shown on the rating plate.
- The above chart is for U.S. furnaces installed at 0-2000 feet. At higher altitudes, a properly de-rated unit will have approximately the same temperature rise at a particular CFM, while ESP at the CFM will be lower.

AIRFLOW SPECIFICATIONS (CONT.)



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

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

- ⊙ STEADY ON = NORMAL OPERATION
- OFF = CONTROL FAILURE
- ⊙ 1 FLASH = SYSTEM LOCKOUT (RETRIES EXCEEDED)
- ⊙ 2 FLASHES = PRESSURE SWITCH STUCK CLOSED
- ⊙ 3 FLASHES = PRESSURE SWITCH STUCK OPEN
- ⊙ 4 FLASHES = OPEN HIGH LIMIT
- ⊙ 5 FLASHES = FLAME SENSE WITHOUT GAS VALVE
- ⊙ 6 FLASHES = OPEN ROLLOUT
- ⊙ CONTINUOUS/RAPID FLASHES = REVERSED 115 VAC POLARITY

- 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:**
- PK PINK
 - YL YELLOW
 - OR ORANGE
 - PU PURPLE
 - GN GREEN
 - BK BLACK
 - BR BROWN
 - WH WHITE
 - BL BLUE
 - 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. IF HEATING AND COOLING BLOWER SPEEDS ARE NOT THE SAME, DISCARD JUMPER BEFORE CONNECTING BLOWER LEADS. UNUSED BLOWER LEADS MUST BE PLACED ON "PARK" TERMINALS OF INTEGRATED CONTROL OR TAPED.
 5. UNIT MUST BE PERMANENTLY GROUND AND CONFORM TO N.E.C. AND LOCAL CODES.

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ACCESSORIES

ITEM #	DESCRIPTION	GKS9 0453BX*	GKS9 0703BX*	GKS9 0704CX*	GKS9 0904CX*	GKS9 0905DX*	GKS9 1155DX*
LPT-00A	LP Conversion Kit ¹	√	√	√	√	√	√
LPT-03	LP Conversion Kit ²	√	√	√	√	√	√
LPLP01	LP Gas Low Pressure Kit	√	√	√	√	√	√
HALP10	High-Altitude LP Gas Kit	3	3	3	3	3	3
HANG11	High-Altitude Natural Gas Kit	1	1	1	1	1	1
HANG12	High-Altitude Natural Gas Kit	2	2	2	2	2	2
017K000005	Flush-Mount Vent Kit	√	√	√	√	√	√
0270K00012	Horizontal Conversion Pressure Switch Kit	√	√	√	√	√	√
AFE18-60A	Fossil Fuel Kit	√	√	√	√	√	√
FTK04	Twinning Kit	√	√	√	√	√	√
GSAS	Electronic Air Cleaner	√	√	√	√	√	√
GMU	Media Air Cleaner	√	√	√	√	√	√
EFR01	External Filter Rack	√	√	√	√	√	√
DCVK-20	2" Horizontal/Vertical Concentric Vent Kit	√	√	√	-----	-----	-----
DCVK-30	3" Horizontal/Vertical Concentric Vent Kit	-----	-----	-----	√	√	√

√ Available for this model

1 7,001' to 9,000'

2 9,001' to 11,000'

3 7,001' to 11,000'

NOTES:

¹ White-Rodgers valve only

² White-Rodgers and Honeywell valves

- All installations above 7,000' require a pressure switch change. For installation in Canada, furnaces are certified only to 4,500'.

