



Air Conditioning & Heating



PRODUCT SPECIFICATIONS

GMS9/GCS9 SERIES 93% AFUE

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

HEATING CAPACITY:
46,000-115,000 BTU/H



Standard Features

- Corrosion-resistant, aluminized-steel tubular heat exchanger and stainless-steel recuperative coil
- Multi-position installation – GMS9: upflow, horizontal right or left; GCS9: downflow, horizontal right or left
- Energy-saving, reliable Hot Surface Ignition system, featuring a Norton® Mini-Igniter with patented adaptive learning algorithm to maximize igniter life
- Aluminized-steel inshot burners
- Energy-saving PSC, multi-speed, direct-drive blower motor
- Quiet, corrosion-resistant induced draft blower assembly
- Integrated furnace control with improved diagnostics
- Low-voltage terminal blocks
- Multiple flame roll-out switches, blower door safety switch, outlet air-limit & pressure switch for proof of combustion air
- 40VA transformer for heating and air conditioning control service
- Combination redundant gas valve and regulator
- Factory run-tested for heating or combination heating/cooling application
- All models comply with California NOx Standards

Cabinet Features

- Heavy-gauge, reinforced, fully insulated steel cabinet with durable baked-enamel finish
- Attractive architectural gray paint finish
- Foil-face insulation-lined heat exchanger compartment
- Coil and furnace fit flush for easy installation
- Convenient left or right connection for gas and electric service
- Suitable for 2-pipe or 1-pipe venting applications
- Bottom or side air inlet (GMS9)
- Removable, solid-bottom block-off (GMS9)

Accessories

- L.P. Conversion Kit
- L.P. Gas Low Pressure Kit
- High-Altitude Natural Gas/L.P. Kits)
- High-Altitude Pressure Switch Kit
- External Filter Rack
- Horizontal Concentric Vent Kit
- Vertical Concentric Vent Kit
- Internal Filter Retention Kit—upflow, horizontal
- Internal Filter Retention Kit—downflow
- Thermostats

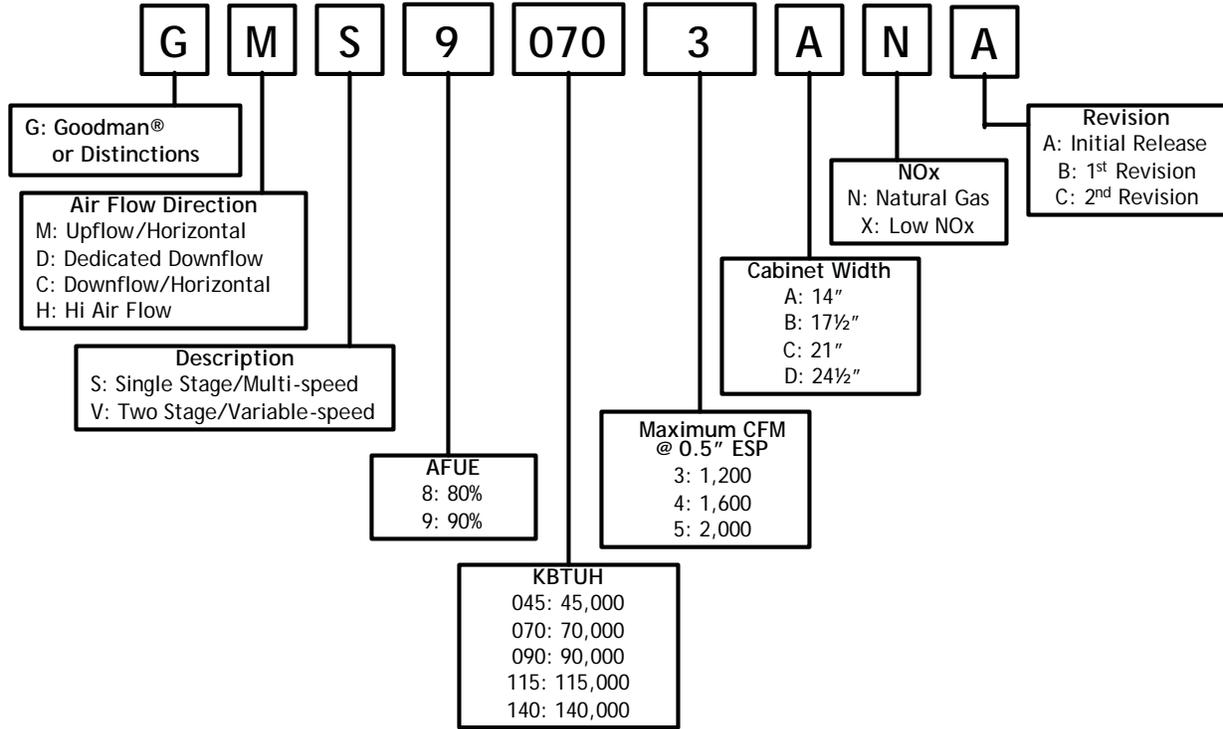


Blower Motors



PRODUCT SPECIFICATIONS

NOMENCLATURE



SPECIFICATIONS

	GMS9 0453BXA	GMS9 0703BXA	GMS9 0904CXA	GMS9 1155DXA	GCS9 0453BXA	GCS9 0703BXA	GCS9 0904CXA	GCS9 1155DXA
Heating Capacity								
Natural Gas Input ¹	46,000	69,000	92,000	115,000	46,000	69,000	92,000	115,000
Natural Gas Output ¹	42,800	64,400	86,000	106,500	42,800	64,400	86,000	106,500
LP Gas Output ¹	37,200	55,800	74,400	93,000	37,200	55,800	74,400	93,000
AFUE ²	93	93	93	93	93	93	93	93
Available AC @ 0.5" ESP	3	3	4	5	3	3	4	5
Temperature Rise Range (° F)	35 - 65	35 - 65	35 - 65	35 - 65	35 - 65	35 - 65	40 - 70	40 - 70
Circular Motor								
Size (D x W)	10" x 7"	10" x 8"	10" x 10"	11" x 10"	10" x 7"	10" x 8"	10" x 10"	11" x 10"
Horsepower - RPM	1/3	1/3	1/2	3/4	1/3	1/3	1/2	3/4
Speed	4	4	4	4	4	4	4	4
Vent Diameter ³	2"	2"	2"	2"	2"	2"	2"	2"
No. of Burners	2	3	4	5	2	3	4	5
Filter Size (in²)								
Permanent	288	282	376	470	288	282	376	470
Disposable	576	564	752	940	576	564	752	940
Electrical Data								
Min. Circuit Ampacity ⁴	9	9	8.9	12.2	9	9	8.9	12.2
Max. Overcurrent Device (amps) ⁵	15	15	15	15	15	15	15	15
Ship Weight (lbs)	132	135	158	175	132	135	156	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.

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.

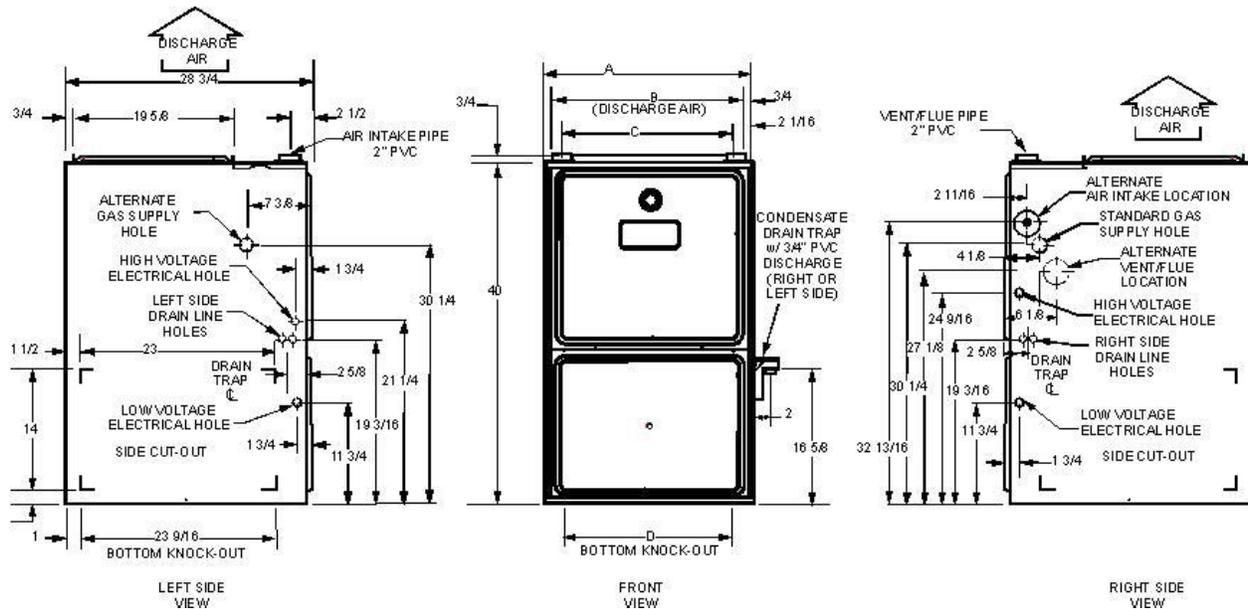
5- Maximum Overcurrent Protection Device refers to maximum recommended fuse or circuit breaker size. May use fuses or HACR-type circuit breakers of the same size as noted.

Notes:

- All furnaces are manufactured for use on 115 VAC, 60 Hz, single-phase electrical supply.
- Gas Service Connection 1/2" FPT
- Requirement: Size fuses and wires properly and make electrical connections in accordance with the National Electrical Code and/or all existing local codes.

PRODUCT SPECIFICATIONS

GMS9 DIMENSIONS



Model	A	B	C	D
GMS90453BXA	17½"	16"	12¾"	13¾"
GMS90703BXA	17½"	16"	12¾"	13¾"
GMS90904CXA	21"	19½"	16¾"	17½"
GMS91155DXA	24½"	23"	20¾"	20¾"

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

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS

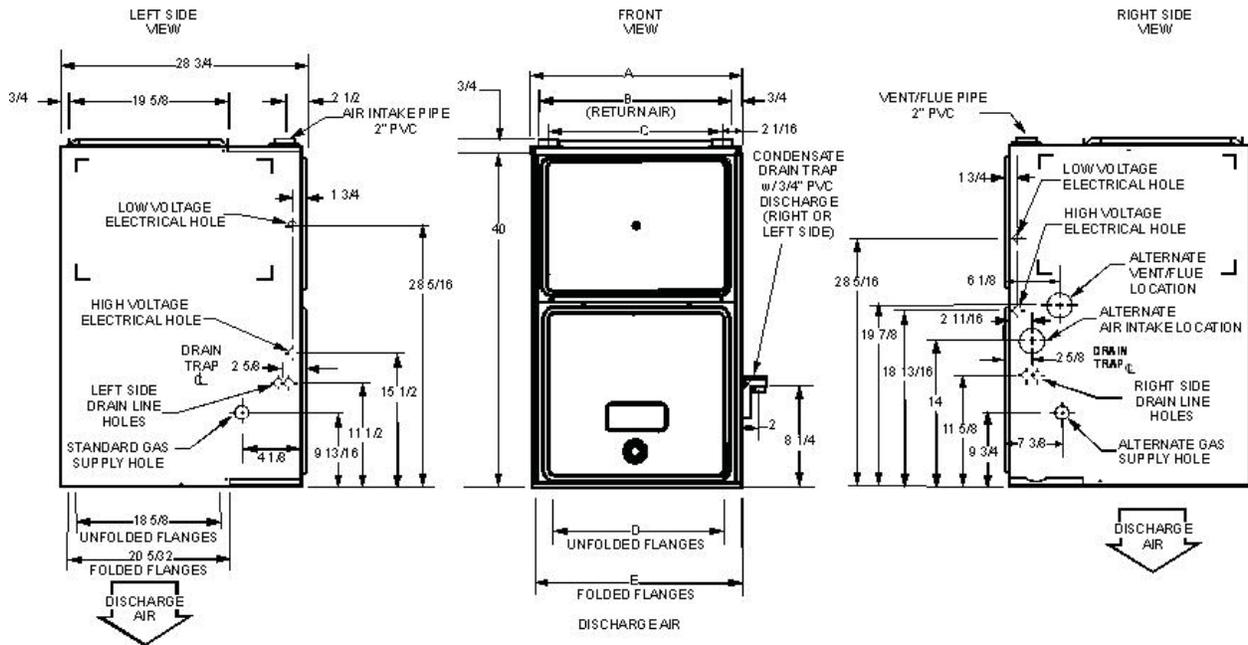
Position	Sides	Rear	Front	Bottom	Flue	Top
Upflow	0"	0"	3"	C	0"	1"
Horizontal	6"	0"	3"	C	0"	4"

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

Notes:

- For servicing or cleaning, a 36" 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.

GCS9 DIMENSIONS



Model	A	B	C	D	E
GCS90453BXA	17 1/2"	16"	12 3/8"	14 1/2"	16"
GCS90703BXA	17 1/2"	16"	12 3/8"	14 1/2"	16"
GCS90904CXA	21"	19 1/2"	16 3/8"	18"	19 1/2"
GCS91155DXA	24 1/2"	23"	20 3/8"	21 1/2"	23"

Notes:

- 1- Installer must supply one or two PVC pipes: one for combustion air (optional) and one for the flue outlet (required). Vent pipe must be either 2" or 3" in diameter, depending upon furnace input, number of elbows, length of run and installation (1 or 2 pipes). The optional Combustion Air Pipe is dependent on installation/code requirements and must be 2" or 3" diameter PVC.
- 2- Line voltage wiring can enter through the right or left side of the furnace. Low-voltage wiring can enter through the right or left side of furnace.
- 3- Conversion kits for high-altitude natural gas operation are available. Contact your Goodman distributor or dealer for details.
- 4- 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

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS

Position	Sides	Rear	Front	Bottom	Flue	Top
Downflow	0"	0"	1"	NC	0"	1"
Horizontal	6"	0"	1"	C	0"	4"

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

NC = Non-Combustible: A combustible floor sub-base must be used for installation on combustible flooring

Notes:

- For servicing or cleaning, a 36" 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.

PRODUCT SPECIFICATIONS

GMS9 BLOWER PERFORMANCE 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
GMS9 0453BXA	High	3.0	1352	29	1318	30	1260	31	1202	33	1128	35	1044	955	853
	Med	2.5	1214	32	1172	34	1123	35	1064	37	1012	39	938	859	741
	Med-Lo	2.0	997	40	994	40	960	41	923	43	884	45	817	741	611
	Low	1.5	757	52	753	52	734	54	704	56	674	59	620	524	438
GMS9 0703BXA	High	3.0	1449	41	1409	42	1326	45	1273	47	1201	49	1194	1136	1018
	Med	2.5	1192	50	1172	51	1141	52	1094	54	1046	57	973	904	793
	Med-Lo	2.0	981	61	962	62	943	63	917	65	888	67	830	764	665
	Low	1.5	750	79	730	81	714	83	692	86	657	90	620	570	502
GMS9 0904CXA	High	4.0	1970	40	1874	42	1757	45	1667	48	1566	51	1431	1334	1182
	Med	3.5	1713	46	1650	48	1572	50	1510	52	1418	56	1313	1211	1079
	Med-Lo	3.0	1439	55	1412	56	1370	58	1327	60	1260	63	1166	1078	956
	Low	2.5	1183	67	1155	69	1122	71	1108	72	1062	75	1011	931	816
GMS9 1155DXA	High	5.0	2134	46	2103	47	2029	48	1941	51	1906	51	1818	1733	1625
	Med	4.0	1678	58	1643	60	1643	60	1577	62	1527	64	1489	1423	1339
	Med-Lo	3.5	1453	68	1440	68	1426	69	1363	72	1349	73	1314	1253	1205
	Low	3.0	1259	78	1239	79	1220	80	1181	83	1159	85	1118	1082	1015

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 must 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.

GCS9 BLOWER PERFORMANCE 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
GCS9 0453BXA	High	3.0	1352	29	1318	30	1260	31	1202	33	1128	35	1044	955	853
	Med	2.5	1214	32	1172	34	1123	35	1064	37	1012	39	938	859	741
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	Med	4.0	1678	58	1643	60	1643	60	1577	62	1527	64	1489	1423	1339
	Med-Lo	3.5	1453	68	1440	68	1426	69	1363	72	1349	73	1314	1253	1205
	Low	3.0	1259	78	1239	79	1220	80	1181	83	1159	85	1118	1082	1015

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PRODUCT SPECIFICATIONS

ACCESSORIES

Model	Description	G_S9 0453BXA	G_S9 0703BXA	G_S9 0904CXA	G_S9 1155DXA
LPT-00A	L.P. Conversion Kit	/	/	/	/
LPLP01	L.P. Gas Low Pressure Kit	/	/	/	/
HANG11	High Altitude Natural Gas Kit	1	1	1	1
HANG12	High Altitude Natural Gas Kit	2	2	2	2
HALP10	High Altitude L.P. Gas Kit	3	3	3	3
HAPS27	High Altitude Pressure Switch Kit	3	3	3	3
EFR01	External Filter Rack	/	/	/	/
DCVK-20	Horizontal/Vertical Concentric Vent Kit (2")	/	/		
DCVK-30	Horizontal/Vertical Concentric Vent Kit (3")			/	/

/ Available for this model

1- 7,001' to 9,000'

2- 9,001' to 11,000'

3- 7,001' to 11,000'

Notes:

- All installations above 7,000' require a pressure switch change. For installation in Canada, furnaces are certified only to 4,500'.
- **Downflow Floor Base:** When the GCS9 model is installed directly on a wood floor, a downflow floor base must be used. Those model numbers are: CFB17, CFB21 and CFB24.

THERMOSTATS

Model	Description
CHT18-60	Cooling/Heating, Mechanical
CH70TG	Cooling/Heating, Digital, Non-programmable
CHSATG	Cooling/Heating, Mechanical
H20TWR	Heating Only, Mechanical



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