



Air Conditioning & Heating

## PRODUCT SPECIFICATIONS



**93% AFUE**

**HEATING CAPACITY:  
40,000–100,000 BTU/H [11.7–29.5 kW/H]**



# GMS9 / GDS9

## 220V/ 50 Hz, MULTI-POSITION, SINGLE-STAGE/MULTI-SPEED GAS FURNACES

The Goodman® GMS9/GDS9 93% AFUE Single-Stage, Multi-Speed Condensing Gas Furnaces feature a patented aluminized-steel tubular heat exchanger and durable automatic ignition system. With a corrosion-resistant, painted steel cabinet, these units can be installed in a variety of locations.

### Standard Features

- Corrosion-resistant, aluminized-steel tubular heat exchanger and stainless-steel recuperative coil
- Multi-position installation —  
GMS9: upflow, horizontal right or left; GDS9: downflow
- 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 cooling control service
- Redundant single-stage combination gas valve
- Factory run-tested for heating or combination heating/cooling application

### 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
- Bottom or side air inlet (GMS9)

**NOMENCLATURE**

	<b>G</b>	<b>M</b>	<b>S</b>	<b>9</b>	<b>040</b>	<b>3</b>	<b>B</b>	<b>2</b>	<b>A</b>
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5,6,7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
<b>Brand</b>	G Goodman® Brand								<b>Revisions</b>
									A Initial Release
<b>Airflow Direction</b>	D Dedicated Downflow M Upflow/Horizontal								<b>Electrical</b>
									2 220V / 50Hz / 1 Ph
<b>Description</b>	V Two-Stage/Variable-speed H Two-Stage/Multi-speed S Single-Stage/Multi-speed								<b>Cabinet Width</b>
									B 17½" 445 mm C 21" 533 mm D 24½" 622 mm
<b>AFUE</b>	95 95% 9 90%+ 8 80%								<b>Maximum CFM @ 0.5" ESP</b>
									3 1,200 2040 Cu. M/Hr. <sup>2</sup> 4 1,600 2700 Cu. M/Hr. <sup>2</sup> 5 2,000 3420 Cu. M/Hr. <sup>2</sup>
									<b>MBTU/h</b>
									040: 40,000 12 kW-h 060: 60,000 18 kW-h 080: 80,000 24 kW-h 100: 100,000 29 kW-h

SPECIFICATIONS

	GMS9 0403B2AA	GMS9 0603B2AA	GMS9 0804C2AA	GMS9 1005D2AA	GDS9 0805D2AA	GDS9 1005D2AA
<b>Heating Capacity</b>						
Input BTU/h <sup>1</sup> [kW-h]	40,000 [11.7]	60,000 [17.6]	80,000 [23.5]	100,000 [29.3]	80,000 [23.5]	100,000 [29.3]
Nat. Gas Output (BTU/h <sup>1</sup> [kW-h])	37,200 [10.9]	55,800 [16.4]	74,400 [21.8]	93,000 [27.3]	74,400 [21.8]	93,000 [27.3]
Steady State Efficiency %	93	93	93	93	93	93
Cooling SCFM @ 0.5" ESP	1,200	1,200	1,600	2,000	2,000	2,000
Cooling Cubic Meters / Hr.	2040	2040	2700	3396	3396	3396
Temperature Rise Range °F [°C]	30-60 [17-33]	35-65 [19-36]	30-60 [17-33]	35-65 [19-36]	35-65 [19-36]	40-70 [22-39]
<b>Circulator Blower</b>						
Size: Dia. x Width (In. [mm])	10 x 8	10 x 8	10 x 10	11 x 10	11 x 10	11 x 10
	[254 x 203]	[254 x 203]	[254 x 254]	[279 x 254]	[279 x 254]	[279 x 254]
Horsepower	¾	¾	1	1	1	1
Speeds	3	3	3	3	3	3
Vent Diameter (In. [mm]) <sup>2</sup>	2 [51]	2 [51]	3 [76]	3 [76]	3 [76]	3 [76]
No. of Burners	2	3	4	5	4	5
<b>Filter Size (in<sup>2</sup> [cm<sup>2</sup>])</b>						
Permanent <sup>3</sup>	290 [1871]	288 [1858]	385 [2484]	486 [3135]	376 [2426]	470 [3032]
Disposable <sup>4</sup>	580 [3742]	580 [3742]	770 [4968]	960 [6184]	752 [4852]	940 [6065]
<b>Electrical Data</b>						
Power Supply (Volts/Hz-Ph)	220 / 50-1	220 / 50-1	220 / 50-1	220 / 50-1	220 / 50-1	220 / 50-1
FLA	6.6	6.6	8.2	8.2	8.2	8.2
Min. Circuit Ampacity <sup>5</sup>	7.8	7.8	9.8	9.8	9.8	9.8
Max. Overcurrent Protection <sup>6</sup>	15 amps	15 amps	15 amps	15 amps	15 amps	15 amps
<b>Ship Weight (lbs [kg])</b>	132 [60]	135 [61]	158 [72]	175 [79]	173 [78]	175 [79]

[ ] Designates metric measurements

<sup>1</sup> For altitudes above 2,000', reduce input rating 4% for each 1,000' above sea level.

<sup>2</sup> 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.

<sup>3</sup> Permanent air filter size is based on 600 FPM (183 meters per minute) face velocity. Check with filter manufacturer for specific details.

<sup>4</sup> Disposable air filter size is based on 300 FPM (91.5 meters per minute) face velocity. Check with filter manufacturer for specific details.

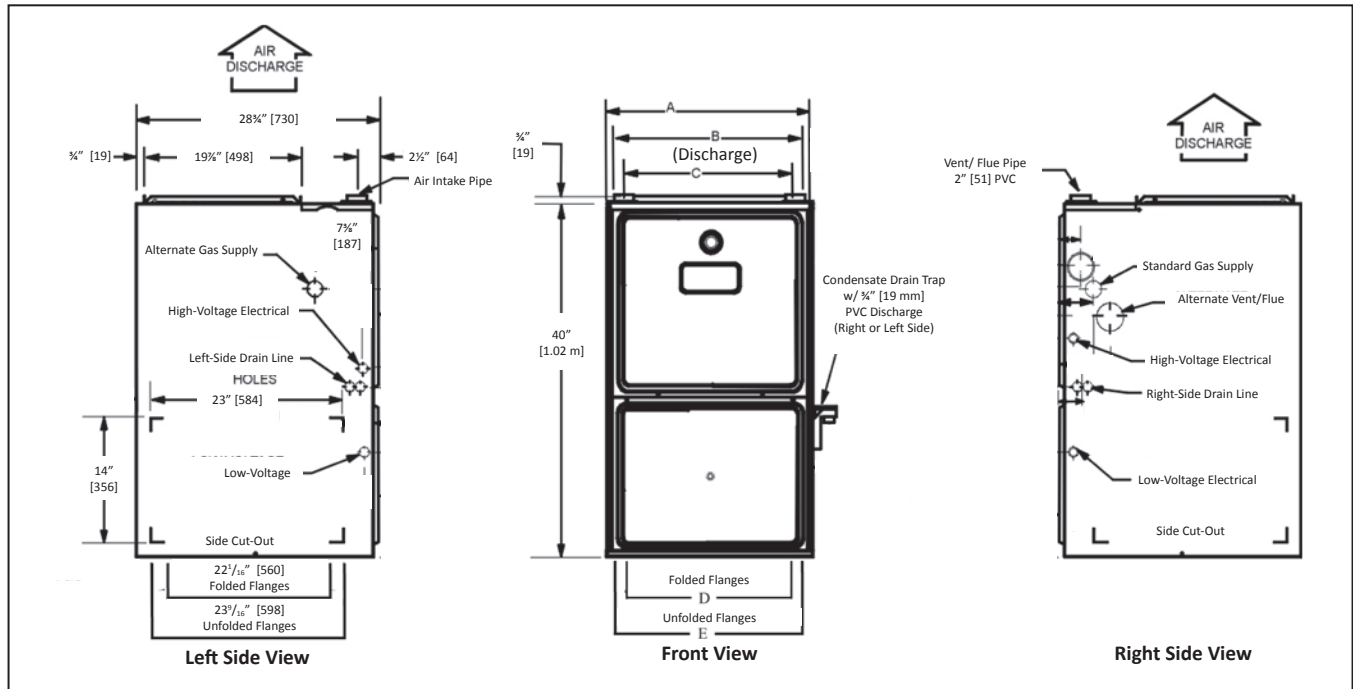
<sup>5</sup> Minimum Circuit Ampacity = (1.25 x Circulator Blower Amps) + ID Blower amps. Wire size should be determined in accordance with local electrical codes. Extensive wire runs will require larger wire sizes.

<sup>6</sup> 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 220 VAC, 50 Hz, single-phase electrical supply.
- Gas Service Connection ½" BPT
- Important: Size fuses and wires properly and make electrical connections in accordance with all existing local codes.

# GMS9 DIMENSIONS



[mm] = millimeter measurements

Model	A	B	C	D	E
GMS90403B2AA	17 1/2" [445]	16" [406]	13 3/8" [333]	12 1/8" [308]	13 1/8" [333]
GMS90603B2AA	17 1/2" [445]	16" [406]	13 3/8" [333]	12 1/8" [308]	13 1/8" [333]
GMS90804C2AA	21" [533]	19 1/2" [495]	16 1/8" [410]	16" [406]	17 1/2" [445]
GMS91005D2AA	24 1/2" [622]	23" [584]	20 5/8" [524]	19 3/8" [492]	20 3/8" [524]

**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.
- Conversion kits for high-altitude natural gas operation are available. Contact your Goodman distributor or dealer for details.
- Installer must supply the following gas line fittings, according to which entrance is used:  
 Left: One 90° street elbow; one 2 1/2" pipe nipple; one 90° elbow; straight pipe; one ground joint union  
 Right: Straight pipe to reach gas valve

## MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS

Position	Sides	Rear	Front	Bottom	Flue	Top
Upflow	0" [0]	0" [0]	3" [76]	C	0" [0]	1" [25]
Horizontal	6" [152]	0" [0]	3" [76]	C	0" [0]	4" [102]

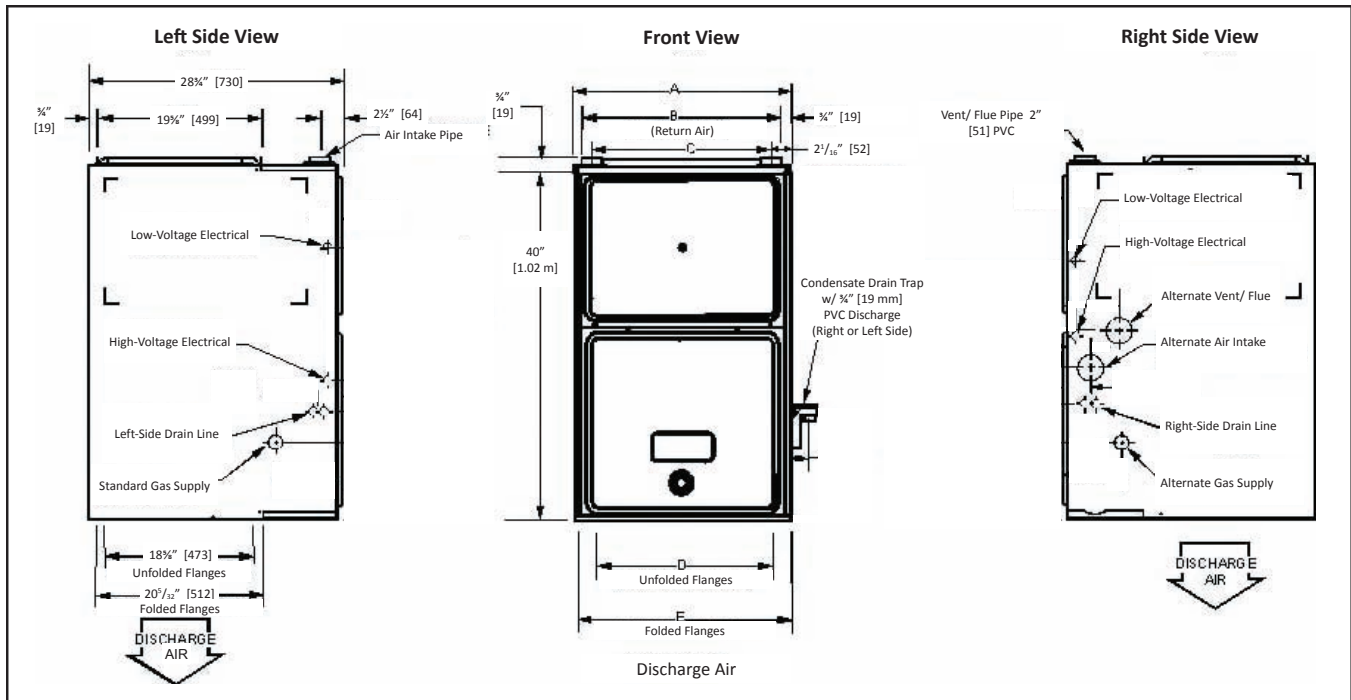
[ ] Designates metric measurements

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

**Notes**

- For servicing or cleaning, a 36" [914 mm] 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.

# GDS9 DIMENSIONS



[mm] = millimeter measurements

Model	A	B	C	D	E
GDS90805D2AA	24 1/2" [622]	23" [584]	20 3/8" [524]	21 1/2" [546]	23" [584]
GDS91005D2AA	24 1/2" [622]	23" [584]	20 3/8" [524]	21 1/2" [546]	23" [584]

[ ] Designates metric measurements

### 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.
- Conversion kits for high-altitude natural gas operation are available. Contact your Goodman distributor or dealer for details.
- Installer must supply the following gas line fittings, according to which entrance is used:  
 Left: One 90° street elbow; one 2 1/2" pipe nipple; one 90° elbow; straight pipe; one ground joint union  
 Right: Straight pipe to reach gas valve
- Installations using a bottom return: Failure to unfold duct flanges will reduce airflow area by approximately 18%. This could result in performance and noise issues.

## MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS (GDS9)

Position	Sides	Rear	Front	Bottom	Flue	Top
Upflow	0" [0]	0" [0]	1" [25]	NC	0" [0]	1" [25]
Horizontal	6" [152]	0" [0]	1" [25]	C	0" [0]	4" [102]

[ ] Designates metric measurements

C = 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" [914 mm] 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.

# BLOWER PERFORMANCE SPECIFICATIONS (ENGLISH MEASUREMENTS)

Standard CFM & Temperature Rise vs. External Static Pressure															
Furnace Model (Rise Range, F)	Motor Speed	Tons AC <sup>1</sup>	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 0403B2AA (30-60)	High	3.0	1474	23	1431	24	1367	25	1327	26	1280	27	1231	1180	1122
	Med	2.5	1320	26	1283	27	1249	28	1209	28	1157	30	1102	1073	1026
	Low	2.0	1202	29	1165	30	1121	31	1080	32	1044	33	1002	952	899
GMS9 0603B2AA (35-65)	High	3.0	1327	39	1288	40	1230	42	1194	43	1152	45	1108	1062	1010
	Med	2.5	1188	43	1155	45	1124	46	1088	47	1041	50	992	966	923
	Low	2.0	1082	48	1049	49	1009	51	972	53	940	55	902	857	809
GMS9 0804C2AA (30-60)	High	4.0	1940	36	1880	37	1833	38	1778	39	1702	40	1619	1555	1468
	Med	3.5	1722	40	1674	41	1632	42	1583	44	1499	46	1433	1372	1300
	Low	3.0	1572	44	1531	45	1481	47	1430	48	1368	50	1322	1254	1177
GMS9 1005D2AA (35-65)	High	5.0	2090	41	2030	42	2011	43	1932	45	1887	46	1814	1705	1667
	Med	4.0	1718	50	1676	51	1631	53	1588	54	1525	56	1457	1421	1335
	Low	3.5	1480	58	1450	59	1384	62	1338	64	1307	66	1245	1176	1129
GDS9 0805D2AA (35-65)	High	5.0	2114	28	2065	29	2044	29	1968	30	1905	31	1857	1783	1705
	Med	4.0	1795	33	1736	34	1691	35	1646	36	1590	37	1532	1461	1378
	Low	3.5	1603	37	1552	38	1502	39	1446	41	1398	42	1344	1263	1186
GDS9 1005D2AA (40-70)	High	5.0	2090	41	2030	42	2011	43	1932	45	1887	46	1814	1705	1667
	Med	4.0	1718	50	1676	51	1631	53	1588	54	1525	56	1457	1421	1335
	Low	3.5	1480	58	1450	59	1384	62	1338	64	1307	66	1245	1176	1129

<sup>1</sup> at 0.5" ESP

**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 (680 m3/hr) per ton when cooling is desirable.
- INSTALLATION IS TO BE ADJUSTED TO OBTAIN TEMPERATURE RISE WITHIN THE RANGE SPECIFIED ON THE RATING PLATE.
- This chart is for information only. For satisfactory operation, external static pressure must not exceed value shown on the rating plate. The shaded area indicates ranges in excess of maximum static pressure allowed when heating.
- The above chart is for U.S. furnaces installed at 0'-2000' [0-610 m]. 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.

# BLOWER PERFORMANCE SPECIFICATIONS (METRIC MEASUREMENTS)

(Standard Cubic Meters per Hour & Temperature Rise vs. External Static Pressure)															
Furnace Model (Rise Range, C)	Motor Speed	Tons AC <sup>1</sup>	External Static Pressure (mm H <sub>2</sub> O 4C)												
			3		5		8		10		13		15	18	20
			CuM/Hr	Rise	CuM/Hr	Rise	CuM/Hr	Rise	CuM/Hr	Rise	CuM/Hr	Rise	CuM/Hr	CuM/Hr	CuM/Hr
GMS9 0403B2AA (17-33)	High	2.7	2460	13	2400	13	2280	14	2220	14	2160	15	2040	1980	1860
	Med	2.3	2220	14	2160	15	2100	16	2040	16	1920	17	1860	1800	1740
	Low	1.8	2040	16	1980	17	1860	17	1800	18	1740	18	1680	1620	1500
GMS9 0603B2AA (19-36)	High	2.7	2214	22	2160	22	2052	23	1998	24	1944	25	1836	1782	1674
	Med	2.3	1998	24	1944	25	1890	26	1836	26	1728	28	1674	1620	1566
	Low	1.8	1836	27	1782	27	1674	28	1620	29	1566	31	1512	1458	1350
GMS9 0804C2AA (17-33)	High	3.6	3240	20	3180	21	3060	21	3000	22	2880	22	2700	2640	2460
	Med	3.2	2880	22	2820	23	2760	23	2640	24	2520	26	2400	2280	2160
	Low	2.7	2640	24	2580	25	2460	26	2400	27	2280	28	2220	2100	1980
GMS9 1005D2AA (19-36)	High	4.5	3540	23	3420	23	3360	24	3240	25	3180	26	3060	2880	2820
	Med	3.6	2880	28	2820	28	2760	29	2640	30	2580	31	2460	2400	2220
	Low	3.2	2460	32	2460	33	2340	34	2220	36	2220	37	2100	1980	1920
GDS9 0805D2AA (19-36)	High	4.5	3540	16	3480	16	3420	16	3300	17	3180	17	3120	3000	2880
	Med	3.6	3000	18	2940	19	2820	19	2760	20	2700	21	2580	2460	2340
	Low	3.2	2700	21	2580	21	2520	22	2400	23	2340	23	2280	2100	1980
GDS9 1005D2AA (22-39)	High	4.5	3540	23	3420	23	3360	24	3240	25	3180	26	3060	2880	2820
	Med	3.6	2880	28	2820	28	2760	29	2640	30	2580	31	2460	2400	2220
	Low	3.2	2460	32	2460	33	2340	34	2220	36	2220	37	2100	1980	1920

<sup>1</sup> at 13 ESP

**Notes**

- Airflow 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 680 m<sup>3</sup>/hr per ton when cooling is desirable.
- INSTALLATION IS TO BE ADJUSTED TO OBTAIN TEMPERATURE RISE WITHIN THE RANGE SPECIFIED ON THE RATING PLATE.
- This chart is for information only. For satisfactory operation, external static pressure must not exceed value shown on the rating plate. The shaded area indicates ranges in excess of maximum static pressure allowed when heating.

