



Heating & Air Conditioning

O 80% Furnace Tech Guide

Gas-Fired Residential Single Stage Multi-Position 80% AFUE Gas Furnaces



DESCRIPTION

CAC CoilsVol152011

These compact furnaces come standard with reliable hot surface ignition and tubular heat exchangers which promote high heat transfer. They come factory-ready for vertical, horizontal and downflow applications.

All of Midea's furnaces are factory-tested to assure safe, dependable installation and operation. This line of furnaces is manufactured for residential installation in an attic, closet, basement, garage, alcove or similar confined space. It is also perfect for commercial applications.

This 4-way, multipoise variable-speed, Category I fan-assisted furnace is CSA design-certified. The furnace is factory-shipped for use with natural gas, and is not approved for installation in mobile homes, recreational vehicles, or outdoors. This furnace is designed for a minimum continuous return-air temperature of 60°F (16°C) db or intermittent operation down to 55°F (13°C) db such as when used with a night setback thermostat. Return-air temperature must not exceed 85°F (29°C) db. Failure to follow these return-air temperature limits may affect reliability of heat exchangers, motors, and controls. (See Fig. 3).

For details regarding accessory installation, please refer to the applicable instruction literature.

FEATURES

- Compact height of 33 3/4
- Blower door safety switch
- Quiet inducer motor
- Aluminized steel tubular heat exchanger with lifetime limited warranty
- Single-stage gas valve
- Quiet, multi-speed PSC blower motor
- All models are convertible to use propane (LP) gas
- Furnace control board with self-diagnostics and low-voltage terminal block.
- Designed for multi-position installation: upflow, downflow, horizontal left or right
- Convenient left or right connection for gas and electric service
- All models comply with high altitude and California NOx requirement
- Removable bottom for side-or bottom-return applications

Due to continuous product improvement, specifications are subject to change without notice. Visit us at www.midea.com or www.mideaaircon.com

WARRANTY

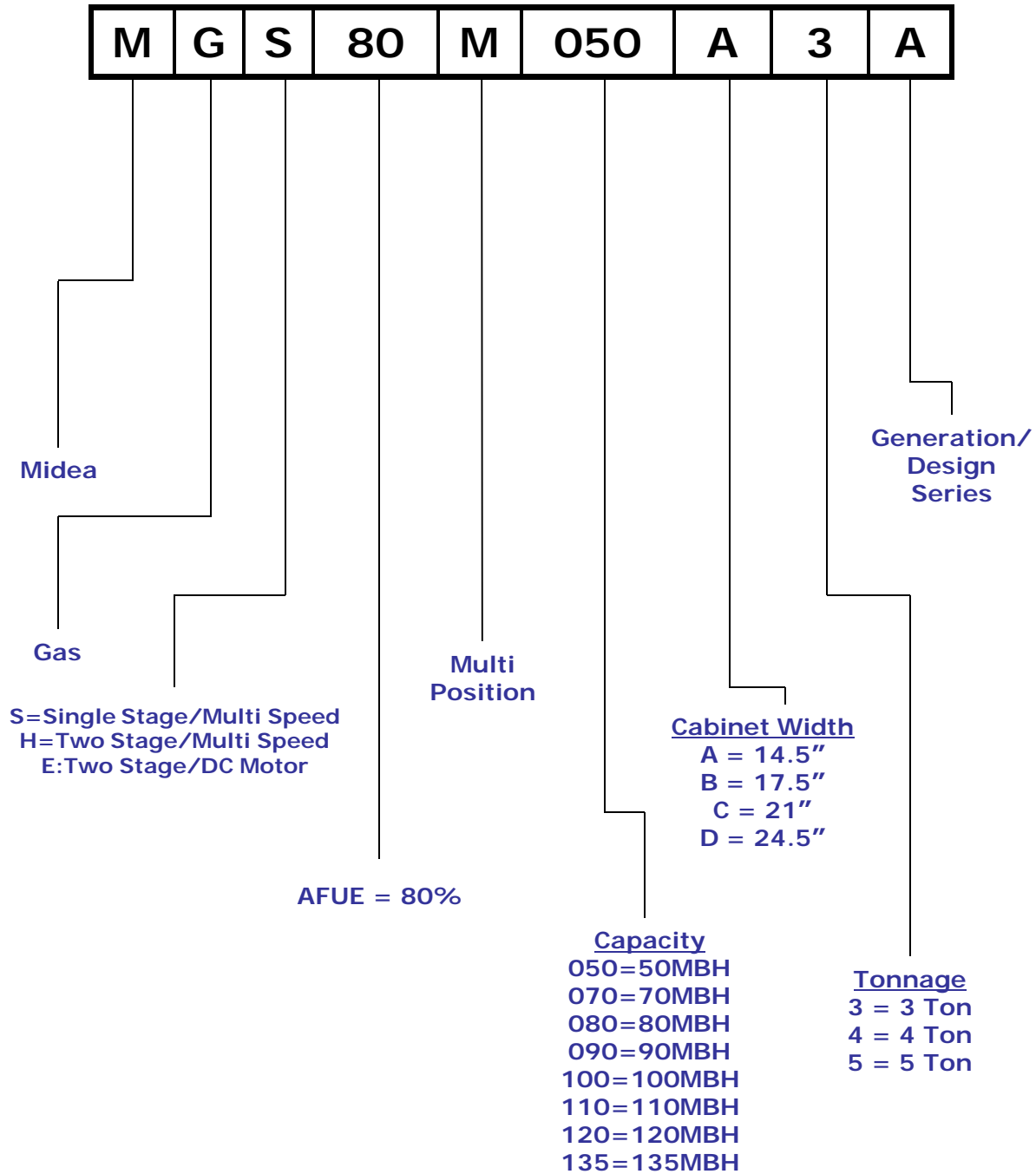
2-Year "no hassle" exchange for customer
10-Year heat exchanger warranty on commercial applications
Standard 5-Year limited parts

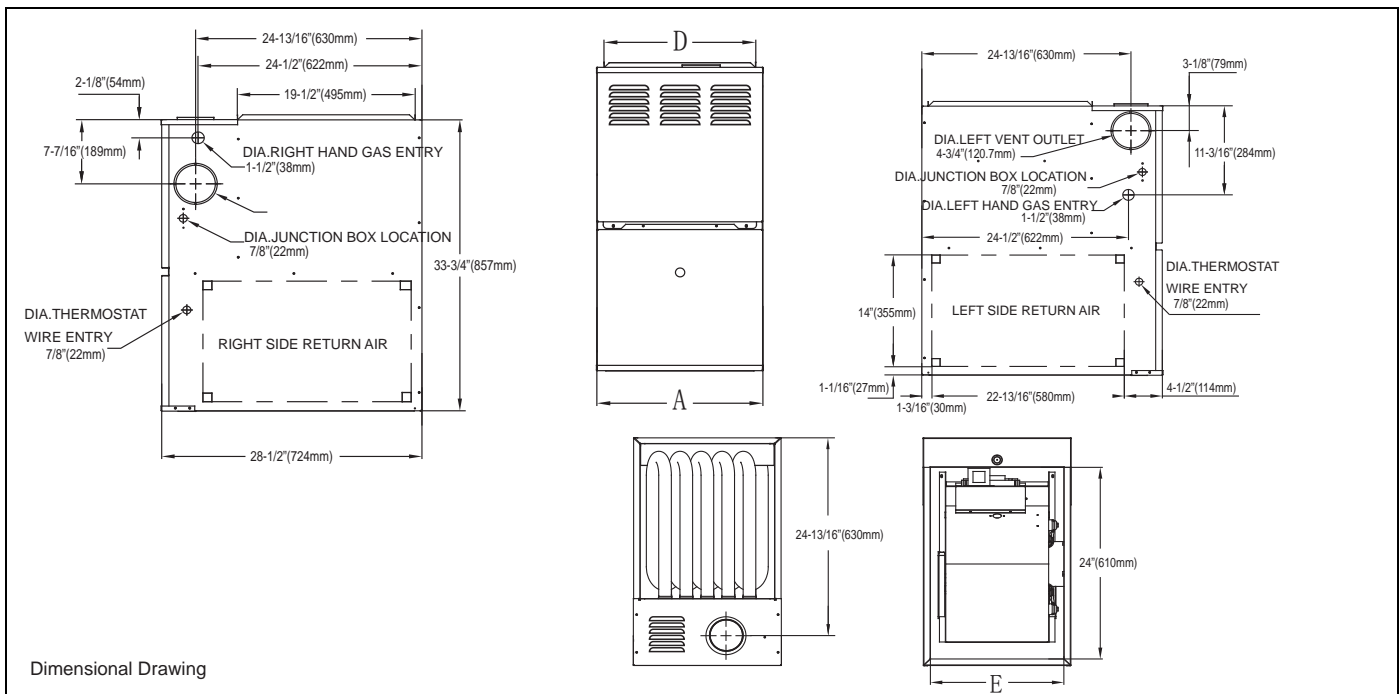
Tested in accordance with:





MIDEA 80% FURNACE NOMENCLATURE





Dimensional Drawing

Cabinet and Duct Dimensions

Models	Nominal CFM (m ³ /min)	Cabinet Size	Cabinet Dimensions (Inches)			Unit weight
			A	D	E	
MGS80M050A3A	1200	A	14.5	13	12-27/32	110 lbs
MGS80M070A3A	1200	A	14.5	13	12-27/32	115 lbs
MGS80M080B4A	1600	B	17.5	16	15-27/32	130 lbs
MGS80M080C4A	1600	C	21	19.5	19-13/32	139 lbs
MGS80M090B4A	1600	B	17.5	16	15-27/32	130 lbs
MGS80M100C5A	2000	C	21	19.5	19-13/32	146 lbs
MGS80M100D5A	2000	D	24.5	23	22-27/32	152 lbs
MGS80M110C5A	2000	C	21	19.5	19-13/32	146 lbs
MGS80M120D5A	2000	D	24.5	23	22-27/32	157 lbs
MGS80M135D5A	2000	D	24.5	23	22-27/32	161 lbs

Ratings & Physical / Electrical Data

Input MBH	Output MBH	Nominal Airflow CFM	Blower H.P.	MAX. Unit Amps	AFUE	Air Temp. Rise		Max. Over-Current Protection Amps	Min. Wire Size (awg) @ 75 ft	Max. Outlet Air Temp	
						°F	°C			°F	°C
50A	40	1200	1/3	7.1	80	25-55	14-31	15	14	155	68
70A	56	1200	1/3	7.1	80	30-60	17-33	15	14	160	71
80B	64	1600	1/2	8.5	80	30-60	17-33	15	14	160	71
90B	72	1600	1/2	8.5	80	30-60	17-33	15	14	170	77
80C	64	1600	1/2	8.7	80	30-60	17-33	15	14	160	71
100C	80	2000	3/4	9.7	80	30-60	17-33	20	14	160	71
110C	88	2000	3/4	9.7	80	35-65	19-36	20	14	165	74
100D	80	2000	3/4	10.4	80	30-60	17-33	20	14	160	71
120D	96	2000	3/4	10.1	80	35-65	19-36	20	14	165	74
135D	108	2000	3/4	10.0	80	40-70	22-39	20	14	170	77

Annual Fuel Utilization Efficiency (AFUE) numbers are determined in accordance with DOE Test procedures.

National Electrical Code (NFPA-70-latest edition) and all local code

The furnace shall be installed so that the electrical components are protected from water.

FILTER PERFORMANCE

See recommended filter size and type in the next table.

One of the most common causes of a problem in furnace is a blocked or dirty filter. The filter must be inspected monthly for dirt accumulation and replace it if necessarily.

Filter Size Information - In. (mm)

FURNACE CASING WIDTH	FILTER SIZE		FILTER TYPE
	SIDE RETURN	BOTTOM RETURN	
14-1/2(368)	16X25 (406X635)	14X25 (356X635)	High Velocity (600 FPM)
17-1/2(445)	16X25 (406X635)	16X25 (406X635)	High Velocity (600 FPM)
21(533)	16X25 (406X635)	20X25 (508X635)	High Velocity (600 FPM)
24.5(622)	16X25 (406X635)	24X25 (610X635)	High Velocity (600 FPM)

Air velocity through throwaway filters may not exceed 300 feet per minute (91.4m/min). All velocities over this require the use of high velocity filters. If a normal speed disposable filter is used and air speed exceeds 300 feet per minute(FPM), two side returns or one side return and the bottom return may be needed.

Unit Clearances to Combustibles (All dimensions in inches, and all surfaces identified with the unit in an upflow configuration)

Application	Top	Front	Rear	Left Side	Right Side	Floor/Bottom	Closet	Alcove	Attic	Line Contact
Upflow	1	3	1	1	1	Combustible	Yes	Yes	Yes	No
Downflow	1	3	1	1	1	1 ¹	Yes	Yes	Yes	No
Horizontal	1	3	1	1	1	Combustible	No	Yes	Yes	Yes ²

1. Special floor base or air conditioning coil required for use on combustible floor.
2. Line contact only permitted between lines formed by the intersection of the rear panel and side panel (top in horizontal position) of the furnace jacket and building joists, studs or framing.
3. Vent Clearance to combustibles for type B-1 vent type is 1 inch.
4. The LP conversion kit comes with furnace please see: natural gas to LP gas conversion kit instruction

ACCESSORIES (FIELD SUPPLIED)

1. Electronic Air Cleaner (EAC)

Connect an accessory Electronic Air Cleaner (if used) using 1/4-in female quick connect terminals to the two male 1/4-in quick-connect terminals on the control board marked EAC-H and EAC-M. The terminals are rated for 115V AC, 1.0 amps maximum and are energized during blower motor operation.

2. Humidifier (HUM)

Connect an accessory 115V AC, 0.5 amp. maximum humidifier (if used) to the 1/4-in male quick-connect HUM-H terminal and HUM-N terminal on the control board. The HUM terminal is energized when gas valve relay (GVR) is energized.

Air Delivery - CFM (Without Filter)

FURNACE SIZE	RETURN-AIR INLET	SPEED	EXTERNAL STATIC PRESSURE (IN.WC)									
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
50A	Bottom or Sides	H	1460	1420	1370	1320	1260	1200	1120	1040	950	860
		H-M	1210	1170	1140	1090	1030	970	910	840	760	780
		** M-L	1080	1050	1010	960	960	870	810	750	670	550
		L	780	760	730	700	670	630	580	510	390	---
70A	Bottom or Sides	H	1415	1355	1300	1240	1165	1100	1010	935	850	750
		** H-M	1145	1100	1050	1000	940	880	820	750	670	565
		M-L	1015	975	930	885	840	785	730	660	575	475
		L	740	710	680	645	605	555	500	430	345	240
80B	Bottom or Sides	H	1880	1810	1730	1650	1580	1500	1430	1330	1210	990
		** H-M	1680	1620	1560	1500	1430	1350	1270	1160	1020	800
		M-L	1440	1390	1340	1290	1240	1170	1080	970	810	640
		L	1190	1150	1110	1070	1020	950	870	750	640	530
80C	Bottom or Sides	H	1863	1816	1763	1709	1645	1569	1483	1381	1234	1059
		** H-M	1625	1583	1534	1479	1428	1356	1288	1190	1059	849
		M-L	1351	1315	1281	1246	1200	1142	1071	970	831	695
		L	1096	1062	1041	1012	968	919	841	738	638	566
90B	Bottom or Sides	H	1880	1810	1730	1650	1580	1500	1430	1330	1210	990
		** H-M	1680	1620	1560	1500	1430	1350	1270	1160	1020	800
		M-L	1440	1390	1340	1290	1240	1170	1080	970	810	640
		L	1190	1150	1110	1070	1020	950	870	750	640	530
100C	Bottom or Sides	H	2180	2070	1960	1890	1810	1720	1620	1500	1370	1230
		** H-M	1760	1710	1660	1600	1520	1460	1360	1260	1140	1130
		M-L	1570	1540	1490	1440	1380	1310	1240	1150	1040	910
		L	1410	1370	1340	1310	1250	1200	1130	1040	940	810
110C	Bottom or Sides	H	2180	2070	1960	1890	1810	1720	1620	1500	1370	1230
		** H-M	1760	1710	1660	1600	1520	1460	1360	1260	1140	1130
		M-L	1570	1540	1490	1440	1380	1310	1240	1150	1040	910
		L	1410	1370	1340	1310	1250	1200	1130	1040	940	810
100D	Bottom or Sides	H	2360	2280	2200	2120	2020	1920	1810	1700	1600	1460
		** H-M	1800	1760	1720	1670	1600	1530	1460	1360	1240	1030
		M-L	1560	1540	1500	1460	1420	1360	1300	1210	1090	890
		L	1360	1340	1330	1290	1250	1210	1150	1070	920	760
120D	Bottom or Sides	H	2320	2240	2160	2060	1980	1890	1780	1670	1540	1360
		** H-M	1790	1750	1700	1660	1610	1540	1460	1360	1220	1060
		M-L	1550	1520	1490	1450	1430	1360	1300	1210	1110	960
		L	1360	1350	1330	1310	1280	1220	1160	1070	960	830
135D	Bottom or Sides	H	2271	2188	2112	2016	1939	1837	1737	1628	---	---
		** H-M	2265	2188	2101	2006	1917	1832	1732	1622	---	---
		M-L	1727	1677	1620	1568	1513	1442	1368	1263	---	---
		L	1516	1477	1436	1386	1335	1268	1195	1095	---	---

A filter is required for each return -air Inlet. Airflow performance Included 3/4-In. (19 mm) washable filter media such as contained In factory-authorized accessory filter rack. To determine airflow performance with this filter, assume an additional 0.1 in. wc available external static pressure.

CSA tested at Max. external static pressure 0.5 in W.C.

**Manufacturer default speed tap for heating.