Midea MGV80 Series Gas Furnace

80% AFUE

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Features:

- Durable aluminized steel tubular heat exchanger.
- Hot-surface ignition for dependable operation.
- Quiet multi-speed direct-drive Blower.
- Natural gas and propane (LP) convertible.
- Designed for multi-position installation: Up flow, down flow, horizontal.
- Industry-standard cabinet sizes for easy replacement, installation and add-on cooling.
- Convenient left or right connection for gas and electric service.
- Removable bottom for side or bottom return application.

1 Nomenclature

M	G	H	80	M	060	A	3	A
1	2	3	4	5	6	7	8	9

Legend		
No.	**Code**	**Remarks**
1	M	Brand: Midea brand
2	G	Gas furnaces
3	V	Motor type: H: Two-stage/Consistent torque DC Motor S: Single-stage/Multi-speed E: Single-stage /DC Motor V: Two-stage/ Consistent flow DC Motor
4	80	AFUE: 96: 96% AFUE 80: 80% AFUE
5	M	Installation type: M: Multiple Position Installation
6	040	Heating capacity: 040: 20-40KBtu/h; 060: 30-60KBtu/h; 080: 40-80KBtu/h; 100: 50-100KBtu/h; 120: 60-120KBtu/h
7	A	Duct size
8	3	Max. of Condenser Unit: 3: Max. of Condenser Unit 3Tons
9	A	Version number

2 Specifications

	MGV80M040A3A	MGV80M060A3A	MGV80M060B4A	MGV80M080B4A
FUEL TYPE	Natural/Propane Gas	Natural/Propane Gas	Natural/Propane Gas	Natural/Propane Gas
GAS HEATING PERFORMANCE				
High Fire Input (BTU/h)	40,000	60,000	60,000	80,000
High Fire Output (BTU/h)				
Natural Gas	32,000	48,000	48,000	64,000
LP Gas	32,000	48,000	48,000	64,000
AFUE	80	80	80	80
Available AC @ 0.5” ESP	1/1.5/2/2.5	1.5/2/2.5/3	1.5/2/2.5/3	2.5/3/3.5/4
Temperature Rise Range (° F)	20-50	25-55	25-55	30-60
ELECTRICAL DATA				
Voltage/Phase(60Hz)	115	115	115	115
Min. / Max. Voltage	104/127	104/127	104/127	104/127
Min. Circuit Ampacity	6	6	6	6
Max. Overcurrent Protection	15	15	15	15
FAN MOTOR				
Motor Type	ECM	ECM	ECM	ECM
Horsepower	1/2	1/2	1/2	1/2
Rated RPM	1050	1050	1050	1050
Full Load Amps (FLA)	8	8	8	8
Capacitor (uF)	\	\	\	\
CIRCULATOR BLOWER				
Material	Metal	Metal	Metal	Metal
Type	Centrifugal	Centrifugal	Centrifugal	Centrifugal
Size (D x H) (in.)	11-3/16x 6-9/64	11-3/16x 6-9/64	11-3/16x 9-41/64	11-3/16x 9-41/64
Vent Diameter[1]	3“/4”	3“/4”	3“/4”	3“/4”
No. of Burners	3	3	3	5
Speed Mode Number	5	5	5	5

Specifications

	MGV80M080C4A	MGV80M100C5A	MGV80M120D5A
FUEL TYPE	Natural/Propane Gas	Natural/Propane Gas	Natural/Propane Gas
GAS HEATING PERFORMANCE			
Low Fire Input (BTU/h)	80,000	100000	120000
Low Fire Output (BTU/h)			
Natural Gas	64,000	80,000	96,000
LP Gas	64,000	80,000	96,000
AFUE	80	80	80
Available AC @ 0.5” ESP	2.5/3/3.5/4	3.5/4/4.5/5	3.5/4/4.5/5
Temperature Rise Range (° F)	30-60	30-60	35-65
ELECTRICAL DATA			
Voltage/Phase(60Hz)	115	115	115
Min. / Max. Voltage	104/127	104/127	104/127
Min. Circuit Ampacity	6	12.3	13
Max. Overcurrent Protection	15	20	20
FAN MOTOR			
Motor Type	ECM	ECM	ECM
Horsepower	1/2	1	1
Rated RPM	1050	1050	1050
Full Load Amps (FLA)	8	14	14
Capacitor (uF)	\	\	\
CIRCULATOR BLOWER			
Material	Metal	Metal	Metal
Type	Centrifugal	Centrifugal	Centrifugal
Size (D x H) (in.)	11-3/16 x 11-3/16	11-3/16 x 11-3/16	12-6/8 x 11-1/4
Vent Diameter[1]	3“/4”	3“/4”	3”/4”
No. of Burners	5	6	7
Speed Mode Number	5	5	5

3 Combustion System Specifications

Model			040A3A	060A3A	060B4A	080B4A	080C4A	100C5A	120D5A
Max. Inlet Gas Press	Natural Gas	in.w.c	10.5	10.5	10.5	10.5	10.5	10.5	10.5
	Propane Gas (LP)	in.w.c	13	13	13	13	13	13	13
Min. Inlet Gas Press	Natural Gas	in.w.c	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	Propane Gas (LP)	in.w.c	11	11	11	11	11	11	11
Natural Gas Manifold Pressure(High/Low fire)		in.w.c	3.0	3.5	3.5	3.8	3.8	3.8	3.9
Propane Gas Manifold Pressure(High/Low fire)		in.w.c	10	10	10	10	10	10	10.5
Natural Gas Factory Orifice (0-2000 feet)		#	50	45	45	49	49	49	49
Propane Gas (LP) Factory Orifice (0-2000 feet)		#	59	55	55	56	56	56	56
Gas Connection Size		in. NPT	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Igniton Device			Hot surface						
Number of Burners		#	3	3	3	5	5	6	7
Primary Heat exchanger Diameter		Inch	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2
Primary Heat exchanger		# tubes	3	3	3	5	5	6	7
Flue Vent Diameter		Inch	1-3/16	1-29/64	1-29/64	1-49/64	1-37/64	1-57/64	1-57/64
Safety Switch Settings									
Pressure Switch Factory Setting		Low	in.w.c	0.55	0.55	0.55	0.55	0.55	0.55
Rollout switch - resettable		Off/On	°F	300	300	300	300	300	300
Inlet High Temperature Limit switch - fixed		Off/On	°F	180/150	180/150	180/150	150/120	180/150	180/150

4 Dimensions

FURNACE SIZE	A CABINET WIDTH IN.	D SUPPLY AIR WIDTH IN.	E RETURN AIR WIDTH IN.	SHIP WT (lbs)
40A3A	14.5	13	15-57/32	119
60A3A	14.5	13	15-57/32	119
60B4A	17.5	16	15-27/32	126
80B4A	17.5	16	15-27/32	139
80C4A	21	19.5	19-13/32	146
100C5A	21	19.5	19-13/32	159
120D5A	24.5	23	22-27/32	170

5 Airflow Data

Air Delivery - CFM without filter

FURNACE SIZE	SPEED	Static Pressure	0	0.2	0.4	0.6	0.8	1
40A	H	[SCFM]	1149	1121	1160	1153	1143	1169
		Temp.Rise °F	26	27	26	26	26	26
	MH	[SCFM]	999	1008	994	1030	990	972
		Temp.Rise °F	30	30	30	29	30	31
	M	[SCFM]	799	777	797	782	828	809
		Temp.Rise °F	37	38	37	38	36	37
	ML	[SCFM]	600	611	622	611	577	632
		Temp.Rise °F	/	/	/	/	/	/
	L	[SCFM]	450	483	460	469	437	454
		Temp.Rise °F	/	/	/	/	/	/
60A	H	[SCFM]	1149	1121	1160	1153	1143	1169
		Temp.Rise °F	39	40	39	39	39	38
	MH	[SCFM]	999	1008	994	1030	990	972
		Temp.Rise °F	45	44	45	43	45	46
	M	[SCFM]	799	777	797	782	828	809
		Temp.Rise °F	/	/	/	/	/	/
	ML	[SCFM]	600	611	622	611	577	632
		Temp.Rise °F	/	/	/	/	/	/
	L	[SCFM]	450	483	460	469	437	454
		Temp.Rise °F	/	/	/	/	/	/
60B	H	[SCFM]	1301	1294	1313	1325	1301	1288
		Temp.Rise °F	34	35	34	34	34	35
	MH	[SCFM]	1101	1106	1103	1106	1077	1142
		Temp.Rise °F	41	40	41	40	42	39
	M	[SCFM]	901	899	889	886	879	918
		Temp.Rise °F	50	50	50	50	51	49
	ML	[SCFM]	800	816	841	783	824	813
		Temp.Rise °F	/	/	/	/	/	/
	L	[SCFM]	600	631	635	612	601	610
		Temp.Rise °F	/	/	/	/	/	/

MGV80 Series

FURNACE SIZE	SPEED	Static Pressure	0	0.2	0.4	0.6	0.8	1
80B	H	[SCFM]	1301	1294	1313	1325	1301	1288
		Temp.Rise °F	46	46	45	45	46	46
	MH	[SCFM]	1101	1106	1103	1106	1077	1142
		Temp.Rise °F	54	54	54	54	55	52
	M	[SCFM]	901	899	889	886	879	918
		Temp.Rise °F	/	/	/	/	/	/
	ML	[SCFM]	800	816	841	783	824	813
		Temp.Rise °F	/	/	/	/	/	/
	L	[SCFM]	600	631	635	612	601	610
		Temp.Rise °F	/	/	/	/	/	/
80C	H	[SCFM]	1301	1297	1271	1251	1343	1240
		Temp.Rise °F	46	46	47	48	44	48
	MH	[SCFM]	1101	1113	1142	1141	1060	1168
		Temp.Rise °F	54	54	52	52	56	51
	M	[SCFM]	901	855	905	938	874	924
		Temp.Rise °F	/	/	/	/	/	/
	ML	[SCFM]	800	785	815	823	798	863
		Temp.Rise °F	/	/	/	/	/	/
	L	[SCFM]	600	606	593	549	571	549
		Temp.Rise °F	/	/	/	/	/	/
100C	H	[SCFM]	1751	1739	1742	1739	1736	1733
		Temp.Rise °F	43	43	43	43	43	43
	MH	[SCFM]	1501	1516	1492	1500	1499	1505
		Temp.Rise °F	50	49	50	50	50	50
	M	[SCFM]	1351	1351	1364	1356	1347	1336
		Temp.Rise °F	55	55	55	55	55	56
	ML	[SCFM]	1151	1154	1152	1132	1154	1142
		Temp.Rise °F	/	/	/	/	/	/
	L	[SCFM]	1001	995	996	982	981	1013
		Temp.Rise °F	/	/	/	/	/	/
120D	H	[SCFM]	1951	1910	1896	1929	1981	1917
		Temp.Rise °F	38	39	39	39	38	39
	MH	[SCFM]	1751	1775	1749	1772	1786	1771
		Temp.Rise °F	43	42	43	42	42	42
	M	[SCFM]	1501	1570	1575	1569	1543	1544
		Temp.Rise °F	50	48	47	48	48	48
	ML	[SCFM]	1348	1420	1410	1416	1412	1400
		Temp.Rise °F	55	53	53	53	53	53
	L	[SCFM]	1148	1210	1196	1174	1179	1175
		Temp.Rise °F	/	/	/	/	/	/

Filter Size Information - In.

FURNACE CASING WIDTH (IN.)	FILTER SIZE		FILTER TYPE
	SIDE RETURN (IN.)	BOTTOM RETURN (IN.)	
14-1/2	16X25	14X25	High Velocity (600 FPM)
17-1/2	16X25	16X25	
21	16X25	20X25	
24.5	16X25	24X25	

Minimum Area in Square Inch Required for Each Opening

BTUH Input Rating	Minimum Free Area in Square Inch Required for Each Opening
40,000	40 in^2
60,000	60 in^2
80,000	80 in^2
100,000	100 in^2
120,000	120 in^2

Minimum Free Area Required for Each Opening

BTUH Input Rating	Minimum Free Area Required for Each Opening		
	Horizontal Duct (2,000 BTUH)	Vertical Duct or Opening to Outside (4,000 BTUH)	Round Duct (4,000 BTUH)
40,000	20 in^2	10 in^2	4″
60,000	30 in^2	15 in^2	5″
80,000	40 in^2	20 in^2	5″
100,000	50 in^2	25 in^2	6″
120,000	60 in^2	30 in^2	7″

EXAMPLE: Determining Free Area.

Appliance 1 Appliance 2 Total Input

100,000 + 30,000 = (130,000 ÷ 4,000) = 32.5 Sq. In. Vertical

Appliance 1 Appliance 2 Total Input

100,000 + 30,000 = (130,000 ÷ 2,000) = 65 Sq. In. Horizontal

6 Piston

High Altitude Derate Orifice Size Chart (Natural and LP Gas*)

Input Rate KBTU/H	Number of Burner	Elevation(Ft)									
		0-2000		2000-4000		4000-6000		6000-8000		8000-10000	
		Nat	LP	Nat	LP	Nat	LP	Nat	LP	Nat	LP
40A	3	50	59	51	61	52	62	53	64	54	65
60A	3	45	55	47	56	48	56	49	57	51	57
60B	3	45	55	47	56	48	56	49	57	51	57
80B	5	49	56	50	57	51	58	52	59	53	61
80C	5	49	56	50	57	51	58	52	59	53	61
100C	6	49	56	50	57	51	58	52	59	53	61
120D	7	49	56	50	57	51	58	52	59	53	61

*LP orifice based on 10 in.w.c manifold pressure

The input to the furnace must be checked AFTER reorificing.

High Altitude Derate Orifice Size Chart (Natural and LP Gas*)

Input Rate KBTU/H	Number of Burner	Elevation(Ft)									
		0-2000		2000-4000		4000-6000		6000-8000		8000-10000	
		Nat	LP	Nat	LP	Nat	LP	Nat	LP	Nat	LP
40A	3	50	59	51	61	52	62	53	64	54	65
60A	3	45	55	47	56	48	56	49	57	51	57
60B	3	45	55	47	56	48	56	49	57	51	57
80B	5	49	56	50	57	51	58	52	59	53	61
80C	5	49	56	50	57	51	58	52	59	53	61
100C	6	49	56	50	57	51	58	52	59	53	61
120D	7	49	56	50	57	51	58	52	59	53	61

*LP orifice based on 10 in.w.c manifold pressure

The input to the furnace must be checked AFTER reorificing.

7 Wiring Diagrams

MGV80M040A3A; MGV80M060A3A; MGV80M060B4A; MGV80M080B4A; MGV80M080C4A; MGV80M100C5A; MGV80M120D5A

IPM MODULE: * The Factory Default

FAN SPEED		
SW1-1	OFF	NORMAL SPEED *
	ON	SLOW SPEED
SW1-2	OFF	RESERVE *
	ON	RESERVE
SERIES OF PRODUCTS		
SW2-4	OFF	80% GAS FURNACE
	ON	96% GAS FURNACE

80% MACHINE TYPE

DIP SW			TYPE
SW2-1	SW2-2	SW2-3	
OFF	OFF	OFF	*
OFF	OFF	ON	40A、60A
OFF	ON	OFF	60B、80B
OFF	ON	ON	80C
ON	OFF	OFF	100C
ON	OFF	ON	120D

LED1 ERROR CODE		CONTENT
STEADY ON		NORMAL OPERATION
OFF		POWER SUPPLY FAILURE
KEEP FLASHING	2s ON 2s OFF	IDLE
	0.2s ON 0.2s OFF	INTER INTEGRATED CIRCUIT COMMUNICATION ERROR
1FLASH/CYCLE		MOTOR CURRENT ERROR
2FLASH/CYCLE		INVERTER MODULE TEMPERATURE ERROR
3FLASH/CYCLE		DC BUS VOLTAGE ERROR
4FLASH/CYCLE		MOTOR PARAMETER ERROR
5FLASH/CYCLE		MOTOR STARTUP FAILURE
6FLASH/CYCLE		PHASE SEQUENCE ERROR

LED2 ERROR CODE	CONTENT
STEADY ON	NORMAL OPERATION
OFF	POWER SUPPLY FAILURE
6FLASH/CYCLE	NO MACHINE TYPE

INTEGRATED CONTROL MODULE: * The Factory Default

80% machine windshield setting	FAN SPEED							
	DIP SW				NOMINAL SPEED			
	S3-1	S3-2	S3-3	S3-4	H-heat	L-heat	H-cool	H-cool
100C/120D	* OFF	ON	OFF	OFF	4	3	3	2
	OFF	ON	ON	OFF	4	3	5	3
	OFF	ON	ON	ON	5	4	4	4
	OFF	ON	OFF	ON	4	3	4	3
60A/80B/80C	* ON	OFF	OFF	ON	5	5	5	4
	OFF	ON	OFF	ON	4	3	4	3
	OFF	ON	OFF	OFF	4	3	3	2
60B	OFF	ON	OFF	OFF	4	3	3	2
	* OFF	ON	ON	OFF	4	3	5	3
	OFF	ON	ON	ON	5	4	4	4
	OFF	ON	OFF	ON	4	3	4	3
40A	* ON	OFF	ON	ON	5	3	5	4
	OFF	OFF	ON	OFF	4	2	3	2
	ON	ON	OFF	ON	4	2	4	3

Switch ON Position
See image to the right,switch position is UP for ON.

Switch OFF Position
See image to the right,switch position is DOWN for OFF.

W2 DELAY		
DIP SW		NOMINAL (MINUTES)
S1-1	S1-2	
OFF	OFF	*OFF
ON	OFF	RESERVE
OFF	ON	RESERVE
ON	ON	RESERVE

HEAT OFF DELAY		
DIP SW		NOMINAL (SECONDS)
S2-1	S2-2	
OFF	OFF	*90
ON	OFF	120
OFF	ON	150
ON	ON	180

COOL OFF DELAY		
DIP SW		NOMINAL (SECONDS)
S2-3	S2-4	
OFF	OFF	*60
ON	OFF	90
OFF	ON	120
ON	ON	150

Error code

Error code	Meaning
E1	Shorted pressure switch
E2	Open pressure switch
E3	reserve
E4	Open Pressure Switch locked
E5	Open thermal limit,Rollout switch
E6	Open thermal limit,Rollout switch(Afer 5 times)
E7	Ignition failure locked
E8	Flame loss locked
FE	Gas valve relay stuck closed
FL	Flame low
Pr	Power reversed
Fo	Fuse open
bE	board error
nL	Signal error

Operation code

Code	Meaning
--	idle
H1	1st heat
H2	2nd heat (reserve)
CF	continuous fan
C1	1st cooling
C2	2nd cooling

SW1 Error Query

After pressing the SW1 key, the digital LED display the last 10 times error code. When the key is pressed once, the digital LED display one error code. The digital LED display the last error code first.

The wiring diagram shown is for reference onl y.
It maybe di fferent from the actual product.

Factory code	Date	Revision
16027600001422	Jun. 7th, 2022	C

YL	YELLOW	GY	GRAY
OR	ORANGE	RD	RED
PU	PURPLE		
GR	GREEN		
BK	BLACK		
BR	BROWN		
WH	WHITE		
BL	BLUE		

JUNCTION
TERMINAL
PLUG CONNECTION
EQUIPMENT GND
FIELD GND
FIELD SPLICE
SWITCH (TEMP.)
IGNITER
SWITCH (PRESS.)
OVERCURRENT PROT. DEVICE
KEY

NOTE:
[- -]: means reserved
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. BLOWER SPEEDS SHOULD BE ADJUSTED BY INSTALLER TO MATCH THE INSTALLATION REQUIREMENTS SO AS TO PROVIDE THE CORRECT COOLING CFM. (SEE SPEC SHEET FOR AIR FLOW CHART)
5. UNIT MUST BE PERMANENTLY GROUNDED AND CONFORM TO N.E.C. AND LOCAL CODES.

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Note: Product specifications change from time to time as product improvements and developments are released and may vary from those in this document.