Midea MGV96 Series Gas Furnace

96% AFUE



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Features:

- Durable aluminized steel tubular heat exchanger. Stainless-steel secondary heat exchanger.
- Two-stage gas valve.
- Hot-surface igniter.
- Quiet multi-speed ECM circulator blower motor.
- Control board with self-diagnostics and Low-voltage terminal block.
- Constant air volume control, 0-250pa static pressure automatically adapts to different installation requirements
- Quiet variable-speed induced draft blower
- AHRI Certified; ETL Listed
- Perfect match with Midea evaporator coil, no need extra kit for R454b system.
- Natural gas and propane (LP) convertible.
- Designed for multi-position installation: Up 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 applications.
- Cabinet air leakage (QLeak) ≤ 1.4%
- All models comply with California 40 ng/J Low NOx emissions standard

1 Nomenclature

M	G	V	96	U	040	B	3	ND
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	96	AFUE: 96: 96% AFUE
5	U	Installation type: M: Multiple Position Installation U: Up/horizontal air outlet
6	040	Heating capacity: 040: 20-40KBtu/h
7	B	B/C/D: Duct size
8	3	Max. of Condenser Unit: 3: Max. of Condenser Unit 3Tons 4: Max. of Condenser Unit 4Tons 5: Max. of Condenser Unit 5Tons
9	ND	Version number

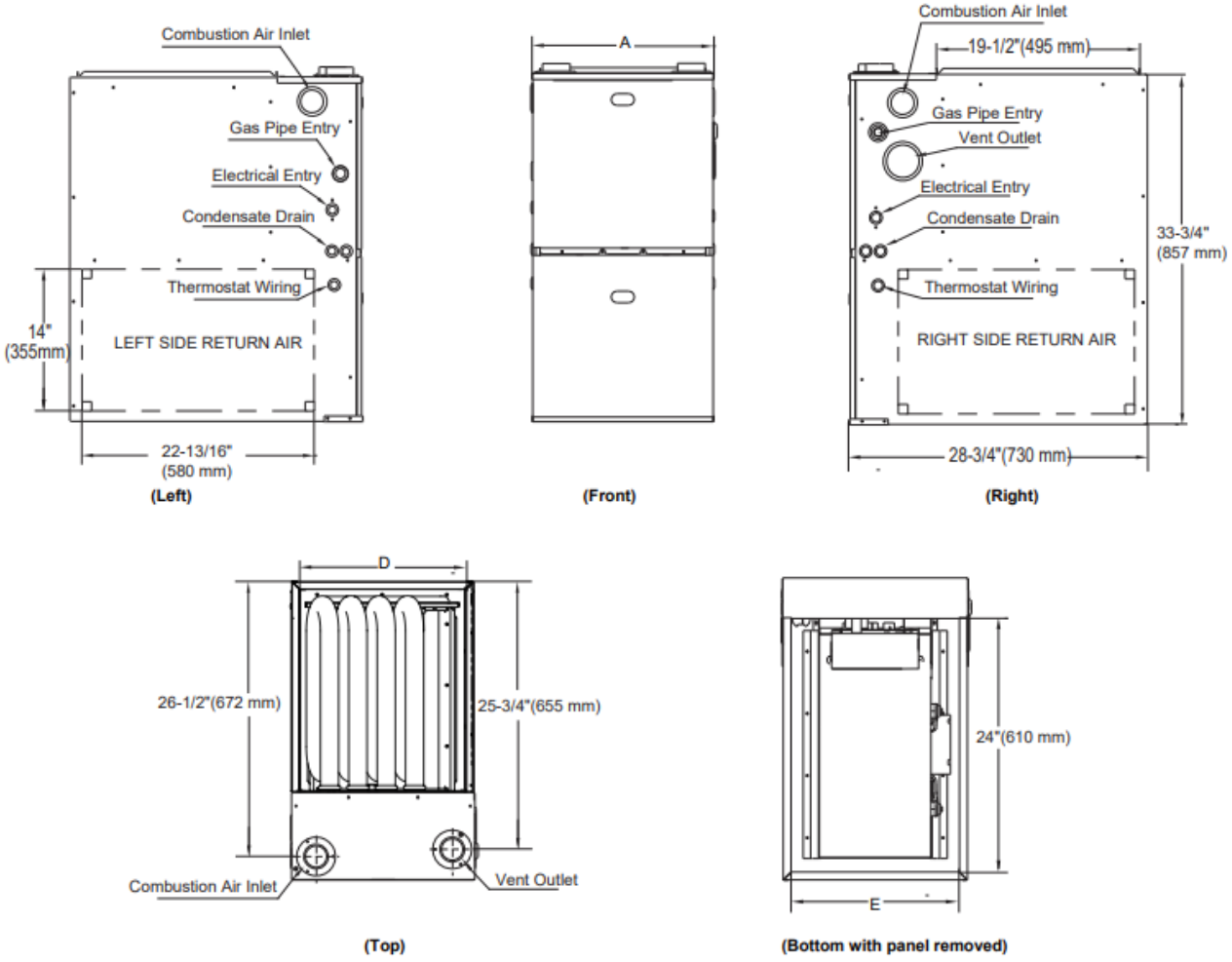
2 Specifications

	MGV96U040B3ND
FUEL TYPE	Natural/Propane Gas
GAS HEATING PERFORMANCE	
High Fire Input (BTU/h)	40000
High Fire Output (BTU/h)	
Natural Gas	38400
LP Gas	38400
Low Fire Input (BTU/h)	32000
Low Fire Output (BTU/h)	
Natural Gas	30720
LP Gas	30720
AFUE	96
Available AC @ 0.5” ESP	1.5/2/2.5/3
Temperature Rise Range (° F)	30-60
Static pressure(in.w.c)	1．0
Heating	0.12
Cooling	0.5
ELECTRICAL DATA	
Voltage/Phase(60Hz)	115
Min. / Max. Voltage	104/127
Min. Circuit Ampacity	8
Max. Overcurrent Protection	15
FAN MOTOR	
Motor Type	ECM
Horsepower	1
Rated RPM	1050
Full Load Amps (FLA)	8
Capacitor (uF)	/
CIRCULATOR BLOWER	
Material	Metal
Size (D x H) (in.)	12-3/8 x 8
Vent Diameter[1]	2“/3”
No. of Burners	3
Speed Mode Number	5

3 Combustion System Specifications

Model			040B3ND
Max. Inlet Gas Press	Natural Gas	in.w.c	10.5
	Propane Gas (LP)	in.w.c	13
Min. Inlet Gas Press	Natural Gas	in.w.c	4.5
	Propane Gas (LP)	in.w.c	11
Natural Gas Manifold Pressure (High fire)		in.w.c	3.5
Natural Gas Manifold Pressure (Low fire)		in.w.c	1.6
Propane Gas Manifold Pressure (High fire)		in.w.c	9.4
Propane Gas Manifold Pressure (Low fire)		in.w.c	4.1
Natural Gas Factory Orifice (0-2000 feet)		#	45
Propane Gas (LP) Factory Orifice (0-2000 feet)		#	55
Gas Connection Size		in. NPT	1/2
Ignition Device			Hot surface
Number of Burners		#	3
Primary Heat exchanger Diameter		Inch	1-6/8
Primary Heat exchanger		# tubes	3
Secondary Heat Exchanger Diameter		Inch	3/8
Secondary Heat Exchanger		# tubes	33
Flue Vent Diameter		Inch	2“/3”
Safety Switch Settings			
Pressure Switch Factory Setting	High	in.w.c	1.1
Pressure Switch Factory Setting	Low	in.w.c	0.55
Rollout switch - resettable	Off/On	˚F	300
Inlet High Temperature Limit switch - fixed	Off/On	˚F	160/130

4 Dimensions



FURNACE SIZE	A CABINET WIDTH IN. (mm)	D SUPPLY AIR WIDTH IN. (mm)	E RETURN AIR WIDTH IN. (mm)	NET/SHIP WT (lbs)
40B	17.5[445]	16[406]	15-27/32[402]	134.5/146.5

5 Airflow Data

Air Delivery - CFM without filter

FURANCE SIZE	RETURN-AIR INLET	SPEED		EXTERNAL STATIC PRESSURE(IN.W.C)									
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
40B	Bottom or Sides	5	CFM	1339	1327	1338	1309	1321	1320	1342	1334	1316	1335
			Temp Rise-1st stage℉	33.3	33.0	33.4	33.3	33.0	32.6	32.7	33.1	33.4	34.1
			Temp Rise-2nd stage℉	39.1	39.2	39.2	40.0	40.1	40.3	41.6	40.8	40.5	40.2
		4	CFM	1124	1118	1102	1106	1096	1099	1102	1109	1089	1105
			Temp Rise-1st stage℉	34.3	34.5	35.0	35.3	35.3	34.8	35.2	34.9	35.2	35.8
			Temp Rise-2nd stage℉	47.2	47.8	48.5	48.1	48.5	47.6	47.4	48.0	47.5	48.2
		3	CFM	880	870	853	858	865	858	854	866	871	839
			Temp Rise-1st stage℉	44.0	44.5	45.4	45.1	44.8	45.2	45.4	44.7	44.5	46.2
			Temp Rise-2nd stage℉	56.3	58.0	58.1	57.9	57.5	58.0	58.4	57.7	57.4	59.7
		2	CFM	779	768	762	756	740	753	757	747	785	766
			Temp Rise-1st stage℉	53.1	52.7	53.4	52.7	52.4	52.4	54.0	54.2	53.8	53.7
			Temp Rise-2nd stage℉	--	--	--	--	--	--	--	--	--	--
		1	CFM	553	586	543	569	552	562	584	572	575	567
			Temp Rise-1st stage℉	--	--	--	--	--	--	--	--	--	--
			Temp Rise-2nd stage℉	--	--	--	--	--	--	--	--	--	--

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.w.c available external static pressure.

Filter Size Information - In.

FURNACE CASING WIDTH	FILTER SIZE		FILTER TYPE
	SIDE RETURN	BOTTOM RETURN	
17-1/2(445)	16 X 25(406 X 635)	16 X 25(406 X 635)	High Velocity (600FPM)
21(533)	16 X 25(406 X 635)	20 X 25(508 X 635)	High Velocity (600FPM)
24.5(622)	16 X 25(406 X 635)	24 X 25(610 X 635)	High Velocity (600 FPM)

NOTES:

1. Air velocity through throwaway type filters may not exceed 300 feet per minute (91.4 m/min). All velocities over this require the use of high velocity filters.
2. Do not exceed 1800 CFM using a single side return and a 16x25 filter. For CFM greater than 1800, you may use two side returns or one side and the bottom or one side return with a transition to allow use of a 20x25 filter.

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(258 cm^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 in2(129 cm2)	10 in2(64 cm2)	4" (10 cm)
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*)

US installation

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
40	3	45	55	47	56	48	57	49	58	50	59

*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*)

Canada installation

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
40	3	45	55	47	56	48	57	49	58	50	59

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

The input to the furnace must be checked AFTER reorificing.

For Canada application, based on regulation that requires 10% derating between 2000-4500ft. orifice change is NOT required up to 4500ft.

7 Wiring Diagrams

MGV96U040B3ND

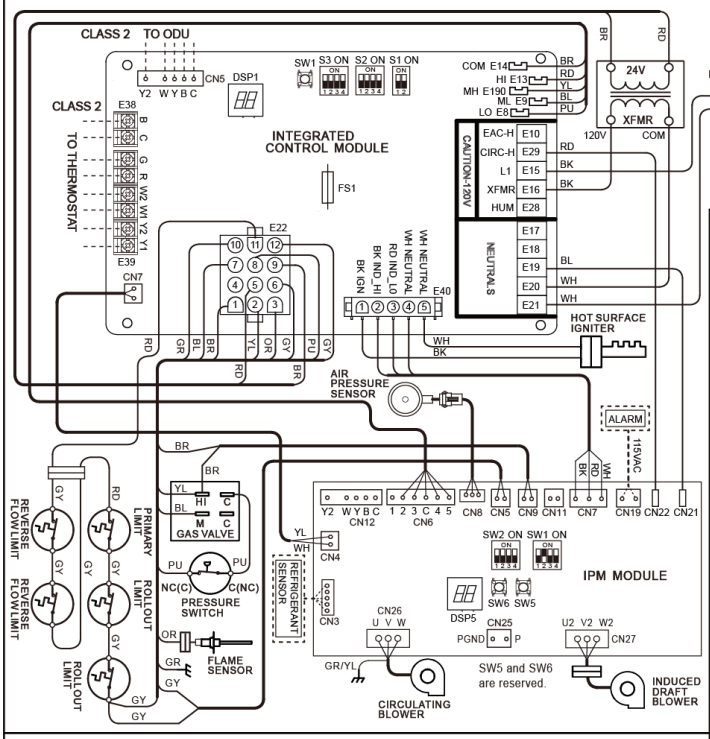
Wiring is subject to change. Always refer to the wiring diagram on the unit for the most up-to-date schematic.

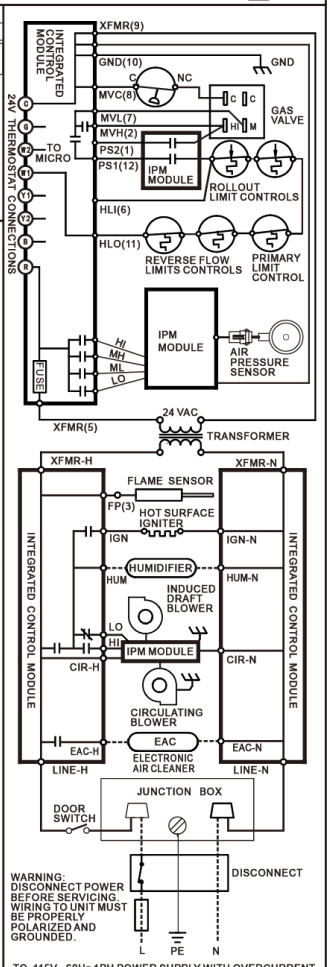
WARNING

High Voltage:
Disconnecet 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.

Factory code	Date	Revision
16027600A05218	Nov. 14th, 2025	A

WARNING: DISCONNECT POWER BEFORE SERVICING. WIRING TO UNIT MUST BE PROPERLY POLARIZED AND GROUNDED.





IPM MODULE: ✱ The Factory Default

DIP SWITCH SETTING		
SW1-1	OFF	✱ NORMAL SPEED
	ON	SLOW SPEED
SW1-2	OFF	WITHOUT REFRIGERANT SENSOR
	ON	✱ WITH REFRIGERANT SENSOR
SW1-3	OFF	✱ NON-COMMUNICATING MODE
	ON	COMMUNICATION MODE
SW1-4	OFF	✱ RESERVED
	ON	RESERVED

96% MACHINE TYPE				
DIP SW				TYPE
SW2-1	SW2-2	SW2-3	SW2-4	
OFF	OFF	OFF	OFF	✱
ON	ON	ON	ON	40B

Operation code	Operation status
--	Idle
FF	Induced draft blower and circulating blower are running
F-	Induced draft blower is running and circulating blower is idle
-F	Induced draft blower is idle and circulating blower is running

Error code	Fault description
1X(.)	Motor over-current protection
2X(.)	IPM over-temperature protection
3X(.)	DC bus voltage fault
4X(.)	IPM fault
5X(.)	Motor startup fault
6X(.)	Motor phase loss fault
80	Communication fault between drive chip and main control chip
90	Communication fault between air pressure sensor and main control chip
EC	Machine type not set
b3	Refrigerant sensor fault
b4	Communication fault between refrigerant sensor and main control chip
b5	Communication fault between furnace and ODU
b7	Refrigerant leakage protection
b8	Refrigerant sensor out of service life
b9	Dip switch SW1-2 does not match refrigerant sensor

Error code 1X-6X is for circulating blower motor.
Error code 1X.-6X. is for induced draft blower motor.

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

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

INTEGRATED CONTROL MODULE: ✱ The Factory Default

W2 DELAY		
DIP SW		NOMINAL (MINUTES)
S1-1	S1-2	
OFF	OFF	✱ OFF
ON	OFF	10
OFF	ON	AUTO
ON	ON	20

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

Machine fan speed setting	FAN SPEED							
	DIP SW				NOMINAL SPEED			
	S3-1	S3-2	S3-3	S3-4	H-heat	L-heat	H-cool	L-cool
40B	✱OFF	ON	ON	OFF	4	3	5	3
	OFF	ON	OFF	OFF	4	3	3	2

Operation code	Mode description
--	Idle
H1	1st stage heating
H2	2nd stage heating
CF	Continuous fan
C1	1st stage cooling
C2	2nd stage cooling
dF	Defrost

Error code	Fault description
E1	Pressure switch shorted
E2	Pressure switch open, 1st-stage
E3	Pressure switch open, 2nd-stage
E4	Pressure switch lockout
E5	Rollout switch open
E6	Rollout switch lockout (After 5 times)
E7	Ignition failure lockout
E8	Flame loss lockout
FE	Gas valve relay stuck closed
FL	Flame low
Pr	Power reversed
Fo	Fuse open
bE	Board error
nL	Room thermostat signal error

SW1 Error Code Query

The LED on the integrated control module displays the last 10 error codes one by one when pressing SW1 **on the integrated control module**. The LED displays the last error code first.

YL YELLOW	GY GRAY	JUNCTION TERMINAL	SWITCH (TEMP.)
OR ORANGE	RD RED	PLUG CONNECTION	IGNITER
PU PURPLE		EQUIPMENT GND	SWITCH (PRESS.)
GR GREEN		FIELD GND	OVERCURRENT PROT. DEVICE
BK BLACK		FIELD SPLICE	KEY
BR BROWN		FIELD INSTALLED	FACTORY OPTIONAL
WH WHITE			
BL BLUE			

NOTE:
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 FACTORY PROVIDED WIRES HAS TO 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.

Ver. 2026-06

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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.