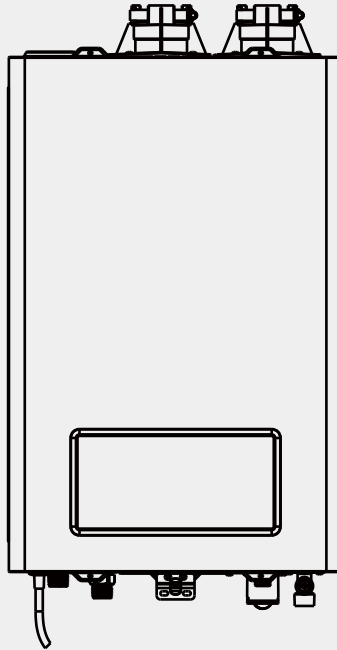




Instantaneous Gas Water Heater Premixed Series

Installation & Operation Manual

**MGWH199IXNN / MGWH199IXPN
MGWH180IXNN / MGWH180IXPN
MGWH150IXNN / MGWH150IXPN**

Warning notices: Before using this product, please read this manual carefully and keep it for future reference. The design and specifications are subject to change without prior notice for product improvement. Consult with your dealer or manufacturer for details.

The diagram above is just for reference. Please take the appearance of the actual product as the standard.

WARNING: If the information in these instructions is not followed exactly a fire or explosion may result causing property damage, personal injury, or death.

- **Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.**
- **WHAT TO DO IF YOU SMELL GAS:**
 - **Do not try to light any appliance.**
 - **Do not touch any electrical switch; do not use any phone in your building.**
 - **Immediately call your gas supplier from a neighbor's phone.**
 - **Follow the gas supplier's instructions.**
 - **If you cannot reach your gas supplier, call the fire department.**
- **Installation and service must be performed by a qualified installer, service agency, or the gas supplier.**

THANK YOU LETTER

Thank you for choosing Midea! Before using your new Midea product, please read this manual thoroughly to ensure that you know how to operate the features and functions that your new appliance offers in a safe way



CONTENTS

THANK YOU LETTER	0 1
SAFETY INSTRUCTIONS	0 3
SPECIFICATIONS	0 8
PRODUCT OVERVIEW	1 0
PRODUCT INSTALLATION	1 4
Water Quality	1 4
Access to Utilities	1 5
Adequate Drainage	1 5
Adequate Venting and Ventilation.....	1 5
Proximity to Fixtures and Appliances	1 6
Coastal Installations	1 7
Operating Temperature	1 7
Mounting the Water Heater to the Wall.....	1 7
Connecting the Gas Line	2 0
Connecting the Gas Supply	2 1
Gas Pipe Sizing Tables	2 2
Measuring the Inlet Gas Pressure.....	2 3
Connecting the Water Supply	2 5
Connecting a Pressure Relief Valve	2 7
Connecting the Condensate Drain	2 8
Venting the Water Heater - Overview.....	3 1
Selecting a Vent Type.....	3 3
Selecting Vent Pipe Materials.....	3 9
Measuring Vent Length	4 0
Terminating the Vent.....	4 0
Indoor Water Heater Installation Venting Examples	4 2
Connecting the Power Supply	4 5
Installation Checklist.....	4 6
OPERATION INSTRUCTIONS.....	4 8
CLEANING AND MAINTENANCE.....	5 3
COMPONENT ASSEMBLY DIAGRAMS AND PARTS LISTS.....	5 6
CERTIFICATIONS AND SAFETY APPROVALS.....	5 8
CERTIFICATIONS.....	5 9
TRADEMARKS, COPYRIGHTS AND LEGAL STATEMENT	6 0
DATA PROTECTION NOTICE.....	6 1

SAFETY INSTRUCTIONS

Read Before Installation!

Incorrect installation may cause serious damage or injury!
The seriousness of potential damage or injuries is classified as either a **WARNING!**
Or **CAUTION!**

Explanation of Symbols

	Warning This symbol indicates ignoring instructions may cause death or serious injury.
	Caution This symbol indicates that ignoring instructions may cause moderate personal injury, damage to the unit, or other property.
	DO NOT This symbol indicates that you should NEVER perform the indicated action.

INSTALLATION & SERVICE MUST BE PERFORMED BY A QUALIFIED INSTALLER, SERVICE AGENCY, OR GAS SUPPLIER!
Please read the manual in its entirety before installing, operating, or repairing.
NOTE: The installation must conform to local codes or, in the absence of local codes, the National Fuel Gas Code, ANSI Z223.1/NFPA 54.

WARNING:

This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Warning:

IF YOU SMELL GAS:

- Do not try to light any appliance.
 - Do not touch any electrical switches or use landline phones.
 - From a neighbor's phone, call your gas provider and follow their instructions.
 - If you cannot reach your gas provider, call the fire department.
-  **DO NOT** try to light the burner by hand. this appliance does NOT have a pilot light. it is equipped with an ignition device which automatically lights the burner.
-  **DO NOT** store or use gasoline or other flammable substances (vapors or liquids) in the vicinity of this water heater or any other appliance. this could create a hazard that may result in personal injury, fire, and/or an explosion.

⚠ **DO NOT** place newspapers or laundry near the water heater or venting system (including the vent termination outlet), as these could create a fire hazard, which could result in personal injury and property damage.

⚠ **DO NOT** use or store aerosol products (such as hair sprays, spray paints etc.) or any other compressed gases near the water heater or venting system (including the vent termination outlet), as this could result in personal injury, fire, and/or an explosion.

⚠ **DO NOT** use this appliance if any part has been submerged in water. immediately call a qualified service technician to inspect the appliance and to replace any parts which have been under water.

⚠ **DO NOT** use tools to push in or turn the manual gas appliance shut-off valve. use only your hand to perform this action. in the event the valve will not turn, DO NOT attempt to repair it. using too much force or attempting to repair the manual gas shut-off valve could result in personal injury, fire, and/or an explosion. call a qualified service technician to perform any repairs.

- Have your installer or plumber show the location of the manual gas shut-off valve and demonstrate how to properly use it.
- Keep the containers closed tightly and out of the reach of children and pets.

OPERATIONAL WARNINGS:

⚠ **DO NOT** operate the water heater with the front cover open. Doing so could cause a fire or carbon monoxide (CO) poisoning, which could result in property damage, personal injury, death, and/or an explosion.

⚠ **DO NOT** operate the water heater without a proper venting system. Operating the unit without a vent could cause fire and/or carbon monoxide poisoning, which could result in property damage, personal injury, or death. inspect the vent termination and air intake supply annually to ensure proper operation of the water heater. If any of the vent pipes, vent elbows, or intake pipes are damaged in any way (separated at a joint or show signs corrosion, rusting, or melting), turn OFF the water heater and discontinue use until piping is repaired.

⚠ **DO NOT** touch the power cord or internal components of the water heater with wet hands. Doing so could result in electric shock and personal injury. Always disconnect the power supply before servicing.

- If the water heater is damaged for any reason, immediately shut off the gas supply to the appliance.
- If the water heater is damaged as a result of overheating, fire, flood, or any other reason, close the manual shut-off valve and DO NOT operate the unit again until it has been repaired and inspected by a qualified technician.

WHAT TO DO IF YOU SMELL GAS:

⚠ **DO NOT** try to start, ignite/light, or operate any nearby appliance.

⚠ **DO NOT** touch any electrical switch.

⚠ **DO NOT** use any phone within the building where you smell gas.

- EXIT the building IMMEDIATELY and CALL your GAS SUPPLIER. follow the gas supplier's instructions. if you CANNOT reach the gas supplier, CALL the FIRE DEPARTMENT.

TO PREVENT BURNS:

 ***DO NOT*** change or adjust the temperature setting of the water heater before reading all of the instructions in this manual carefully.

- Use the lowest operating temperature setting to provide comfortably hot water.
- If your household has children, elderly, or disabled residents, consider using a lower temperature setting.
- Feel the temperature of the hot water before allowing children, the elderly, or disabled to be exposed to it.

IMPORTANT: This water heater is set to a default temperature setting of 120°F at the factory for your safety and comfort. Increasing the temperature above this increases the risk of accidental scalding. Water temperatures at or above 125°F can cause instant scalding, severe burns, or death. If it is necessary to set the temperature of the water heater 125°F, have a temperature-limiting valve or mixing valve installed on the water heater. Before changing the temperature setting, read & review the chart to the right carefully.

Time/Temperature Relationship in Scalds	
Water Temperature	Time to Produce Serious Burn
120° F	More than 5 minutes
125° F	1 to 2 minutes
130° F	About 30 seconds
135° F	About 10 seconds
140° F	Less than 5 seconds
145° F	Less than 3 seconds
150° F	About 1 seconds
155° F	About 1 second

Table courtesy of Shriners Burn Institute

FREEZE PROTECTION:

The water heater is equipped with an anti-freeze protection system that activates based on internal water temperature in the appliance. If the system detects the water temperature is 41°F or below, it will activate internal electric heaters to ensure the water meets the target temperature and maintains the set temperature level.

NOTE: If a power failure occurs during cold weather, the anti-freeze protection system of the water heater will not operate and may allow freezing within the heat exchanger and waterway to occur.

Please note the following information and guidelines regarding the anti-freeze protection function:

- If the water heater is not going to be used and the indoor environment is expected to be near or below freezing temperatures, please drain the water within the appliance.
- The freeze protection function will only operate when the temperature of the inlet water of the water heater is 41°F or lower. However, it cannot be guaranteed that it will provide protection to water pipes connected to the appliance and they could be damaged by freezing.
- The anti-freeze protection of the water heater only applies to the internal water tubing of the appliance. Damage of electrical components caused by a low ambient temperature is not covered by the warranty.
- In the event the water heater is not operating for extended periods of time, be sure to drain any condensate water completely. If this is not done, when the ambient temperature is near or drops below 32°F, the condensate will freeze and could cause damage to the internal condensation system of the water heater.

ALTITUDE ADJUSTMENT:

The parameter setting of the water heater may need to be adjusted depending on the altitude of the location it is being installed. Being from the West ourselves, we already adjusted the initial altitude setting to operate between 2,000 – 6,500 feet above sea level, since being out West is best. Please refer to the table below for the proper setting based on your altitude. This adjustment can be made through the water heater control panel.

For Canada: For operation at elevation at 2000-4500ft, input rating should be reduced at the rate of 90% with normal manifold pressure. For operation at elevation at 4500-9800ft, input rating shall be reduced at the rate of 4% for each 1000ft above sea level accordance with local codes or, in the absence of local codes, CSA B149.1.

For US: For operation at elevations above 2000ft, input rating should be reduced at the rate of 4% for each 1000ft above sea level accordance with local codes or, in the absence of local codes, NFPA54/ANSI Z223.1.

Instructions on how to perform this adjustment can be found in the Appliance Servicing section of installation manual. However, this adjustment should only be performed by a qualified technician at the time of installation. If this adjustment is not made, or performed incorrectly, it could cause improper operation of the unit. Improper operation could cause gas leakage, fire, and/or an explosion that can put you at risk of personal injury or death.

Program data	Altitude setting	
Altitude above Sea Level	2,000 – 6,500 feet	6,500 – 9,800 feet
L2	05 (Factory Default Setting)	06

Vapors from flammable liquids will explode and catch fire, causing death or severe burns.

⚠ DO NOT use or store flammable products such as gasoline, solvents, or adhesives in the same room or any area near the water heater.

The water heater has a main burner.

Keep flammable products:

- 1. Far away from the unit.
- 2. In approved containers.
- 3. Tightly closed.
- 4. Away from children

The main burner flame can:

- 1. Come on at any time.
- 2. Will ignite flammable vapors.

Vapors:

- 1. Cannot be seen.
- 2. Are heavier than air.
- 3. Can travel a long distance.

⚠ DO NOT install the water heater where flammable products will be stored or used unless the main burner is at least 18 inches above the floor. This will reduce, but not eliminate, the risk of vapors being ignited by the main burner.

Read and follow all water heater warnings and instructions. If the owner’s manual is missing, contact the retailer or manufacturer.



Figure 1

IMPORTANT: This water heater has been approved for use in the USA. Installing and operating this water heater in any other country will void the product’s warranty.

Caution

Contact an authorized service technician for repair or maintenance of this unit. The installation of this appliance must comply with national building or installation laws and regulations. Installation must be carried out by authorized personnel or specialists. Failure to follow these guidelines could result in hazardous conditions.

⚠ **DO NOT** attempt to repair or replace any part of the water heater unless it is specifically recommended in this manual.

⚠ **DO NOT** operate the water heater if it shows any signs of damage or any part of it has been submerged in water. doing so could result in personal injury, product failure, and/or property damage. if any part of the unit has been damaged or has been submerged in water, immediately contact a qualified service technician to inspect the unit and replace any parts that are damaged or have been under water.

⚠ **DO NOT** allow children to operate or access the water heater. doing so could result in personal injury, product failure, and/or property damage.

⚠ **DO NOT** attempt to adjust or change the temperature setting while the water heater is in use, as this could result in personal injury.

⚠ **DO NOT** turn on the water heater unless the water and gas supplies are properly connected and fully opened. operating the unit without the water and gas connected and flowing could cause damage to the water heater.

⚠ **DO NOT** turn on the water heater if the cold water supply shut-off valve is closed, as this could cause damage to the unit.

⚠ **DO NOT** use this water heater for anything other than its intended purpose, as described within this manual.

⚠ **DO NOT** remove the front cover unless the power to the water heater is turned off and the appliance is disconnected from the outlet. failure to follow this warning could result in electric shock.

⚠ **DO NOT** use unapproved replacement parts or accessories, as this could cause the unit to operate improperly or fail and void the product's warranty.

⚠ **DO NOT** place anything in or around the vent terminals that could obstruct airflow in or out of the water heater (e.g. clothesline).

Should overheating occur, or the gas supply fails to shut off, turn off the manual gas valve to the appliance.

SPECIFICATIONS

Note: Pls check the model on the brand,the explanation of the model have been list below.

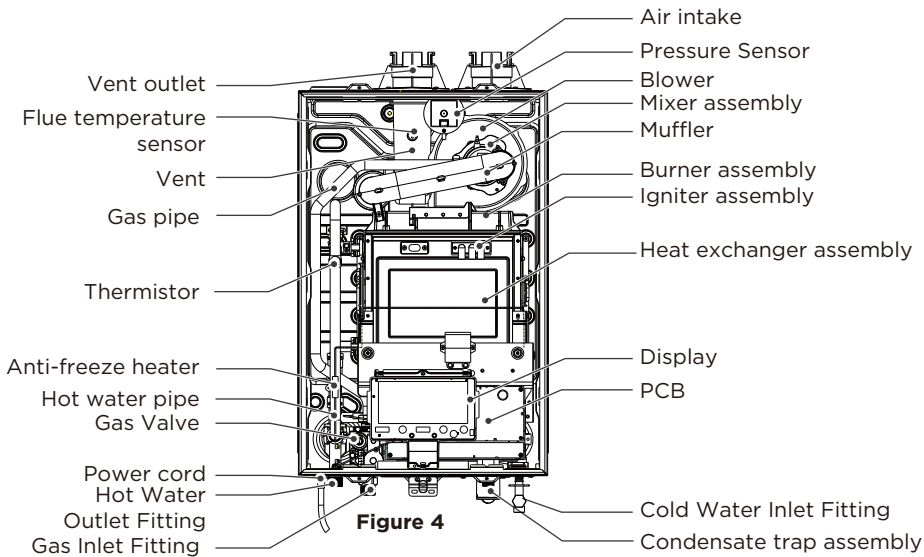
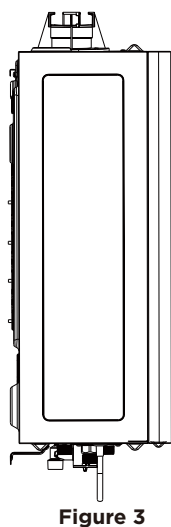
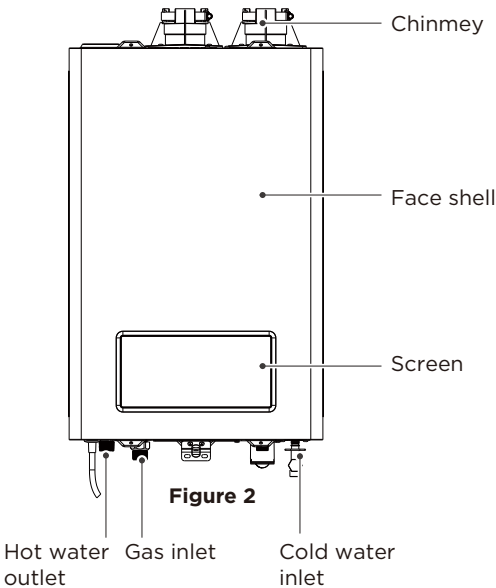
MGWH	199	IX	N	P
	:		:	:
	Rated Input		N: Natural Gas P: Propane	P : Pump N:No pump

Natural Gas Model Name		MGWH150IXNN	MGWH180IXNN	MGWH150IXNN
Propane Model Name		MGWH150IXPN	MGWH180IXPN	MGWH199IXPN
Heat Capacity (Input)	Natural Gas, Propane Gas	20000-150000 BTU/h	20000-180000 BTU/h	20000-199000 BTU/h
Uniform Energy Factor	UEF (for NG & LP)	0.95	0.95	0.95
Flow Rate (DHW)	37°F (20 °C) Temp Rise	8.1	9.7	10.7
	47°F (26 °C) Temp Rise	6.4	7.6	8.4
	67°F (37 °C) Temp Rise	4.5	5.4	5.9
Dimensions		26.8X17.3X10.6in. (680*440*270mm)		
Weight		70.5lbs (32kg)		
Installation Type		Indoor		
Venting Type		Forced draft direct-vent		
Ignition		Electronic Ignition		
Water Pressure		15-150 PSI		
Natural Gas Supply Pressure (from source)		3.5in.WC-10.5in.WC (870Pa-2610Pa)		
Propane Gas Supply Pressure (from source)		8in.WC-13in.WC (1990Pa-3230Pa)		

Minimum Flow Rate		0.5GPM (1.9L/min)	0.5GPM (1.9L/min)	0.5GPM (1.9L/min)
Con- nection Sizes	Cold Water Inlet	3/4NPT		
	Hot Water Outlet	3/4NPT		
	Gas Inlet	3/4NPT		
Power Supply	Main Supply	120V, 60Hz		
	Maximum Power Consumption	150 W (+114 W when antifreeze module is on)		
Materi- als	Casing	SPCC		
	Heat Exchangers	300 series stainless steel		
Venting	Exhaust	2 in. or 3 in. PVC, CPVC, approved Polypropylene		
	Intake			
Safety Devices		Flue High Limit Switch (158°F / 70°C) • Water Temperature High Limit Switch (185°F / 85°C) • Freeze Protection Ceramic Heater (Turns on at 41°F / 5°C & Turns off at 59°F / 15°C)		

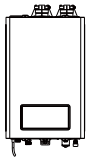
PRODUCT OVERVIEW

Product



Included Accessories

Tankless Gas
Water Heater x 1



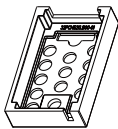
Three (3") in. Exhaust
Pipe Flow Restrictor
x 1 (3" inch pipe only)



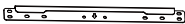
Hose/Pipe
Clamps x 2



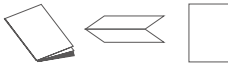
Styrofoam Packing
Materials x 2



Wall-Mounting
Bracket
(upper) x 1



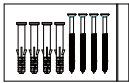
Installation & Operation Manual x1
1:1 Installation Drawing x 1
Limited Warranty X 1



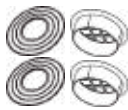
Toggle Bolts x 4



Fastener
Packet x 1



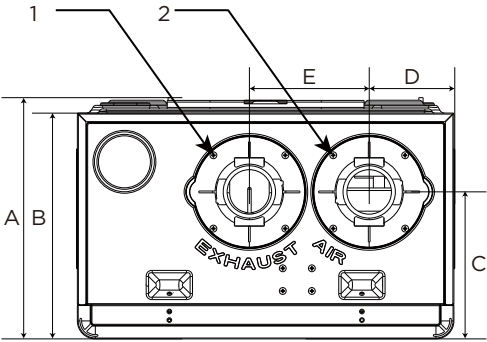
Bird Screens 2
x 2 pieces each



Wall-Mounting
Bracket
(lower/bottom) x 1

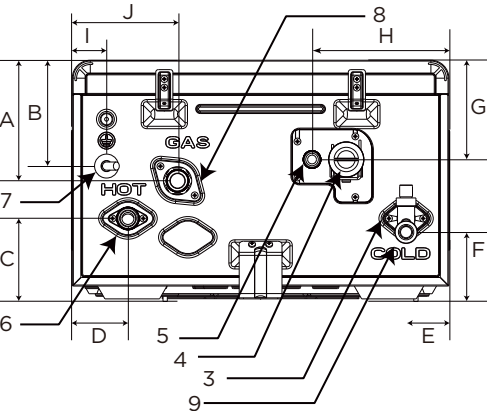


Dimension



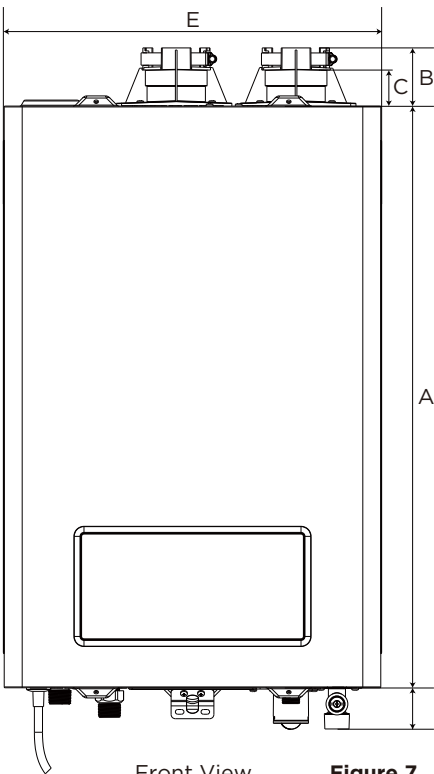
Top View

Figure 5



Bottom View

Figure 6



Front View

Figure 7

Appliance Components

No.	Description	Size
1	Exhaust Vent	2" inches(in.)
2	Air Intake	2" in.
3	Cold Water Inlet	¾" in.
4	Condensate Clean	N/A
5	Condensate Drain	½" in.
6	Hot Water Outlet	¾" in.
7	Power Cable	120V/60Hz
8	Gas Inlet	¾" in.
9	Water inlet	¾" in.

Appliance Dimensions

Item	Top View	Front View	Bottom View
A	10 7/8 in.	26 3/4 in.	5 5/8 in.
B	10 3/8 in.	2 3/4 in.	4 7/8 in.
C	6 3/4 in.	1 3/4 in.	3 1/8 in.
D.1	3 7/8 in.	1 3/4 in.	2 1/2 in.
D.2	3 7/8 in.	1 3/4 in.	2 5/8 in.
E	5 1/2 in.	17 1/4 in.	2 in.
F			2 1/2 in.
G			4 3/8 in.
H			4 1/8 in.
I			4 7/8 in.
J			1 5/8 in.

PRODUCT INSTALLATION

When choosing an installation location, the site must provide adequate clearance for the water heater, adequate options for venting and drainage, and sufficient access to gas, water, and electrical supplies.

Caution

- Review all of the installation information in this manual before starting installation. Consider all the requirements for venting, piping, condensate removal, and wiring.
- The installation location of the water heater should have a minimum clearance of eight (8') feet from any high heat sources (producing temperatures greater than 158°F), as these will cause deformation of plastic parts or plastic pipe fittings of the unit.
- Example: boiler ventilation pipe, space heater, etc.
- The unit must be installed in a fire retardant area away from all combustible materials. The minimum clearances from combustible construction are six (6") in. on the sides, zero (0") in. from the back, and twelve (12") in. from the top.
- The location chosen and installation MUST comply with the Uniform Plumbing Code (latest version).

Water Quality

Proper maintenance of the water heater is required to ensure compliance to EPA water quality standards. Damage caused by poor water quality IS NOT covered under the product warranty. The following table shows the maximum contaminant levels allowed, based in part on the EPA National Secondary Drinking Water Regulations (40 CFR Part 143.3). If you suspect that your water is contaminated in any way, discontinue use of the water heater and contact an authorized technician or licensed professional to investigate further.

Contaminant	Max. Allowable Level	Contaminant	Max. Allowable Level
Total Hardness	Up to 300 mg/l*	Iron	Up to 0.3 mg/l
Aluminum	0.05 to 0.2 mg/l	Manganese	Up to 0.05 mg/l
Chloride	Up to 250 mg/l	pH	6.5 to 8.5 mg/l
Copper	Up to 1.0 mg/l	Sulfate	Up to 250 mg/l
Total Dissolved Solids	Up to 500 mg/l	Zinc	Up to 5 mg/l
Chlorine	Up to 4 mg/l		

*18 grains/gallon

If your local water is hard, please review the following treatment and flushing guidelines. However, first check your local codes for any restrictions on the use of softeners before choosing and purchasing a softener.

Hardness Level : EPA 2018 Water Quality Parameters		Treatment Method	Flush Frequency
Soft	0-4 grains/gallon (0-75mg/l)	None	None
Moderately Hard	4-9 grains/gallon (75-150 mg/l)	None	Annually
Hard	9-18 grains/gallon (150-300 mg/l)	Water Softener is Strongly Recommended for Optimal Performance	Every 6 months
Very Hard	>18 grains/gallon (300 mg/l)	Water Softener REQUIRED for Product Warranty	Threshold exceeds operational capability of the Product

Access to Utilities

The installation location should be near where there is easy access to the cold water supply, natural gas supply, and a GFCI 120V 60Hz 20-Amp electrical outlet, preferably near where these utilities enter the building.

Adequate Drainage

The water heater produces a significant amount of condensate during operation due to its increased natural gas efficiency. The water heater should be located near a suitable drain and where potential water damage from this condensate will be minimal. Installation of the water heater in a location without a suitable drain will void the warranty and Midea will not be liable or responsible for any damages that occur as a result. For further information about condensate drainage, please refer to Chapter CONNECTING THE CONDENSATE DRAIN.

The water heater must be located in an area where condensate drainage from the unit or its connections will not result in damage to the area adjacent to the unit, or to lower floors of the building or structure. When such a location cannot be found, it is highly recommended that a condensate drain pan that can drain adequately be installed beneath the unit. When installing the drain pan, ensure that it will not restrict combustion airflow in any way.

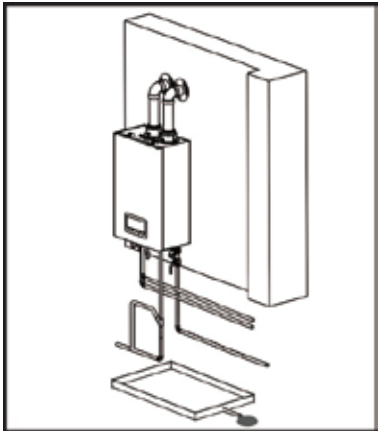


Figure 9

Adequate Venting and Ventilation

Select an installation location that will also require minimal venting. Consider venting restrictions caused by windows, doors, air intakes, gas meters, foliage, and other buildings. For more information regarding venting, please refer to Chapters VENTING THE WATER HEATER- OVERVIEW/SELECTING A VENT TYPE/SELECTING VENT PIPE MATERIALS/MEASURING VENT LENGTH/TERMINATING THE VENT.

To ensure adequate venting and ventilation, follow these guidelines and restrictions:

- ⊘ **DO NOT** install the water heater in bathrooms, bedrooms, or any other occupied rooms that are normally kept closed or are not adequately ventilated.
- ⊘ **DO NOT** install the water heater where moisture from the vented exhaust could discolor or damage exterior walls.
- ⊘ **DO NOT** enclose the vent termination.
- Maintain proper clearances from any openings in the building.
- Install the water heater with a minimum clearance of twelve (12") in. above an exterior grade or as required by local codes.
- Maintain a minimum clearance of four (4') feet from heating and cooling vents.
- Install the exhaust vent in an area that is free from obstructions and does not allow the exiting exhaust to accumulate.

Proximity to Fixtures and Appliances

Install the water heater near fixtures that deliver or use hot water, such as near the bathroom, kitchen, and laundry room fixtures. Select a location that will minimize the amount of water piping required between major fixtures. Insulate as much of the hot water pipes as possible. For more information regarding the water supply, refer to Chapter **CONNECTING THE WATER SUPPLY**.

Install the water heater in an area that will allow for front panel removal for service & maintenance as well as access to the utility connections, piping, filters, and traps. Based on the installation location, ensure the clearances listed in the table below are maintained.

Minimum installation Clearance	Top	Bottom	Front	Back	Sides
Inches	9" in.	12" in.	4" in.	0" in.	6" in.

Install in an Area Free from Debris + Chemical-Free Air for Optimal Combustion

Follow the installation guidelines listed below regarding the air surrounding the unit and storage of potentially dangerous items in the vicinity of the unit.

- ⊘ **DO NOT** install the water heater in areas where dust and debris may accumulate.
- ⊘ **DO NOT** install the unit where hair sprays, spray detergents, chlorine, or similar chemicals are used or stored.
- ⊘ **DO NOT** install the water heater in areas where gasoline or other flammables are used or stored.
- ⊘ **DO NOT** allow hanging laundry or any similar items to obstruct access to the water heater or its venting system.
- Ensure that any combustible materials are properly and securely stored away from the water heater.

NOTE

The combustion air must be free of flammable vapors or corrosive chemical fumes. Common corrosive chemical fumes to avoid include: fluorocarbons, other halogenated compounds such as freon, trichloroethylene, perchloroethylene, and chlorine, all of which can be found in refrigerants or solvents. When these chemicals burn, they produce acids that can corrode the stainless-steel heat exchanger, gaskets, the flue, and venting system.

Coastal Installations

For installations around salt water marine environments, the salt in the air can cause corrosion to the water heater. The water heater should be protected and enclosed to minimize exposure to this corrosive atmosphere. Damage caused by a corrosive environment is not covered under the warranty.

Operating Temperature

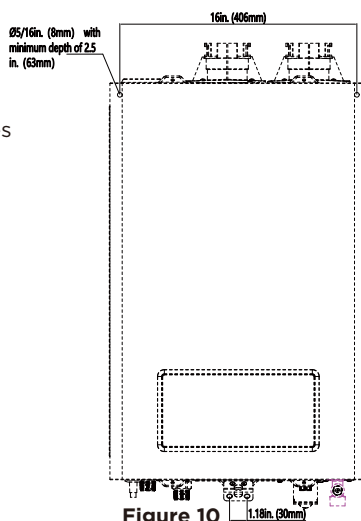
The ambient temperature at the installation location must be above freezing. Steps should be taken to ensure the water inlet and outlet pipes will not freeze. Frozen pipes should be allowed to fully thaw, and the appliance should be drained, fully thawed, and inspected by a professional before use after a freezing event. Operation of the appliance after it has been frozen without the procedure above or the water pipes have frozen without proper thawing will void the product warranty.

The 1:1 drawing was supplied to help locate the holes on the wall quickly. Put the drawing on the wall and make the holes at the shown position.

NOTE

The ambient air temperature for operation of the appliance is between 33°F to 120°F.

The anti-freeze system activates when the inlet water temperature of the appliance is below 41°F.



Mounting the Water Heater to the Wall

Mounting the Water Heater to the Wall

The water heater referenced in this manual comes with an upper mounting bracket that is pre-drilled for easy installation. If the strength of the wall is insufficient or if the framing is uneven, reinforce the area before installing the water heater. Avoid installation on common walls as the unit will make some operational noises while operating.

To mount the water heater to the wall:

Upper Bracket secured with Expansion Bolts

1. Make two (2) 5/16" (8mm) holes in the wall with the drill that align with the outer holes on the upper bracket. If additional support is required, utilize the supplied W" wood screws and plastic anchors or toggle bolts in the middle holes of the upper bracket. Place the expansion bolts with washers inside of drilled hole, ensuring bolt extends from wall. Affix the upper bracket to the protruding bolts, ensuring that the bracket is level, the centertab on the bracket is facing upwards, and that the area where the bolts insert into the bracket is flush with the wall. Add the lock washers and nuts to secure bracket to the wall. Tighten the nuts until the lock washers engage. Do not over tighten the nuts on the expansion bolts to prevent stripping bolt threads.

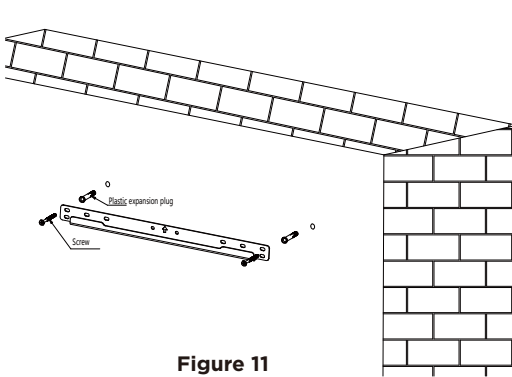


Figure 11

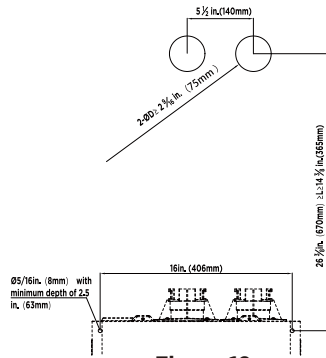


Figure 12

If the wall is not able to support the expansion bolt, the toggle bolts can be used to mounting the water heater. Step 1, remove the nuts; Step 1 fix the mounting bracket on the wall with the screw components; Step 3, fastening the screw with the nuts in the back.

Step 1

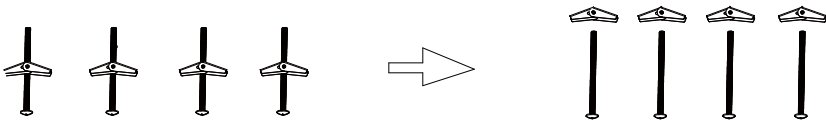


Figure 13

Step 2&3

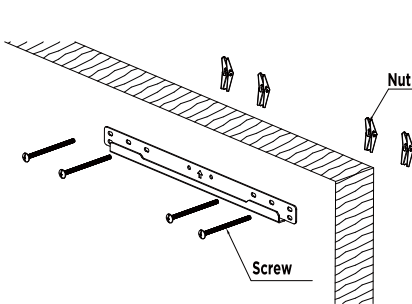


Figure 14

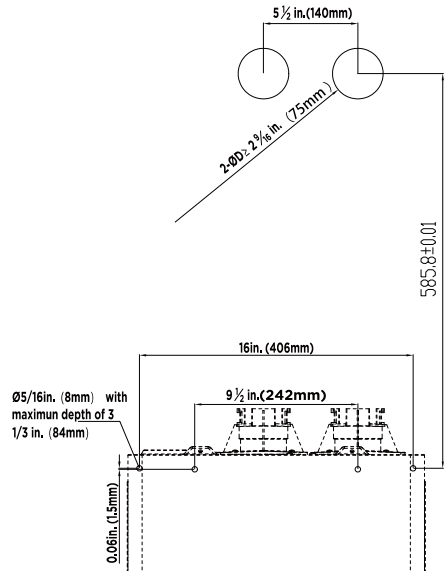


Figure 15

Bottom Bracket Installation

2. Use the two (2) pre-installed screws (illustration on the right) on the bottom of the unit to fasten the lower bracket to the bottom of the water heater.



Figure 16

3. Lift the unit with two people. Align the lip of the pre-installed hanging bracket on the back of the water heater with the lip of the upper bracket. The tab on the upper bracket should insert into the slot of the pre-installed bracket on the water heater.

4. Gently hang the unit on the upper bracket attached to the wall.

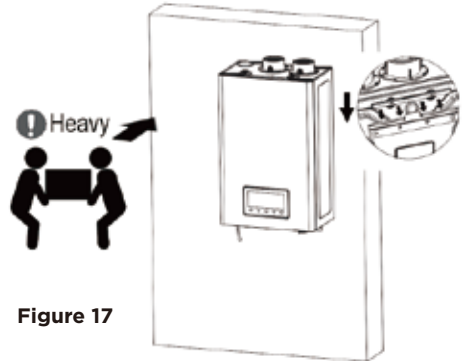


Figure 17

5. Secure the lower bracket to the wall with the expansion screws and plastic parts

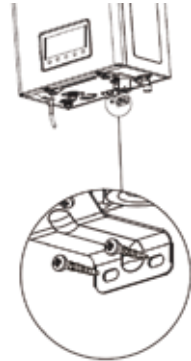


Figure 18

Notice:

When installing, please be careful to avoid the electrical circuits, water pipes and gas pipes within the wall. Also, avoid damaging these pipes or causing any other unintended effects by the screws or other components of the product.

Connecting the Gas Line

If possible, we recommend connecting the water heater as the first gas appliance to the meter to ensure a sufficient gas supply.

Warning

Before connecting the gas supply, determine the gas type and pressure for the water heater by referring to the appliance rating plate. Only use the same gas type indicated on the rating plate. Using a different gas type will result in abnormal combustion and water heater malfunction which will void the product warranty. Gas supplies should be connected only by a licensed professional.

⚠ **DO NOT** use a flame to check for a gas leakage. Perform a bubble test and/or utilize a commercial combustible gas detector around the joints to check for gas leaks. If a leak exists, bubbles from the bubble test will form at the leaking joint. A gas leak could result in substantial property damage, severe personal injury, or death.

⚠ **DO NOT** attempt a field conversion of this water heater from natural gas to propane. This water heater CANNOT be converted from one type to another. Doing so will result in dangerous operating conditions and will void the warranty.

⚠ **DO NOT** allow the piping to be supported by the water heater or its accessories. Properly support the piping with hanging bands.

- To avoid damaging the connectors on the water heater, use two wrenches when tightening piping to the water heater. Use one wrench to prevent the connector at the water heater from turning, and the other wrench to tighten the connection. Damaged connectors may result in system leaks.
- Ensure that the gas piping is protected from physical damage. Failure to follow these instructions could result in gas leakage, which can result in fire, explosion, property damage, severe personal injury, or death.
- The appliance and its gas connection must be leak tested before initial operation of the appliance.
- The inlet gas pressure must be within the range specified in Chapter : Product Specifications of this manual (Refer to Max. Inlet Gas Pressure & Min. Inlet Gas Pressure).

To connect the gas supply:

1. Determine the gas type and pressure for the water heater by referring to the appliance's rating plate.
2. Perform a pressure test on the main gas supply line.
3. Purge the gas line of any debris.
4. Determine the proper size and type of piping for the gas line. Refer to the diagrams and tables on the following pages.
5. Install the full port manual gas shut-off valve on the gas supply line and water heater.
6. Connect the gas supply line.
7. Test the supply line, all connection points, and the water heater for gas leaks.

Connecting the Gas Supply

Illustration of typical rigid pipe installation

- The connection fitting on the water heater is $\frac{3}{4}$ " in.
- $\frac{1}{2}$ " in. rigid pipe may be used. (Refer to the Gas Pipe Sizing Tables on the adjacent page for limitations.)
- Check with the local jurisdiction to verify the use of $\frac{1}{2}$ " in. gas pipe is allowed/approved in the area where the water heater is being installed.

⚠ **DO NOT** use $\frac{1}{2}$ " in. corrugated tubing or connectors as these could cause excessive noise during appliance operation.

- When using flexible gas lines, ensure that the inner diameter of the pipe and connector are sufficient to supply the required amount of BTUs. Also, ensure the flexible line has no crimps or tight bends in it, as these will restrict gas flow.
- When using rigid pipe, installation of a union on the gas supply line close to the water heater is recommended. This will facilitate any future maintenance or service required.
- Tighten the water heater connection valves with care to avoid damaging them.

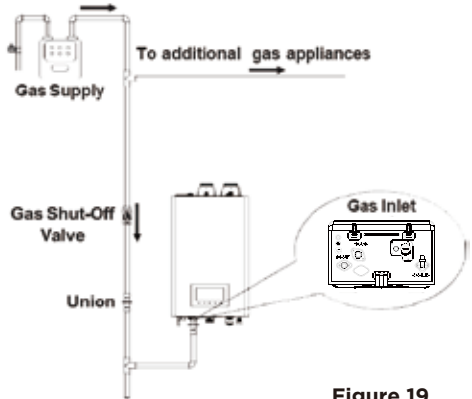


Figure 19

⚠ Caution

Prior to using an Excess Flow Valve (EFV) in the gas line, check the manufacturer's minimum and maximum flow capacity rating. An improperly sized EFV will not allow for full gas flow to the water heater. If this occurs, it could cause improper operation of the water heater.



Figure 20

⚠ Caution

DO NOT use excessive force (over 30 N·m) in tightening the pipe. Excessive force can damage the water heater. Suggest tighten G1/2 pipe threaded joint with a torque of 12 ± 2 N·m, tighten G3/4 pipe threaded joint with a torque of 15 ± 2 N·m.



Danger of leaks!

The manufacturer is not liable for any connection leaking, after being handled.

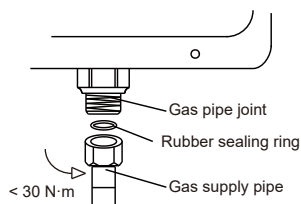


Figure 21

Gas Pipe Sizing Tables

NOTE: The tables below are for reference only. Please consult the gas pipe manufacturer for actual pipe capacities. The tables below are referenced from the 2012 National Fuel Gas Code.

Maximum Natural Gas Delivery Capacity

In Cubic Feet (ft³) per hour (0.60 Specific Gravity; 0.5 in. WC Pressure Drop). Contact your gas supplier for BTU/ft³ ratings. Use 1,000 BTU/ft³ for simplified calculations. This table is recommended for supply pressures less than 6 in. WC.

Pipe Size	Length (including fittings)										
	10 ft	20 ft	30 ft	40 ft	50 ft	60 ft	70 ft	80 ft	90 ft	100 ft	125 ft
3/4 in.	360	247	199	170	151	137	126	117	110	104	92
1 in.	678	466	374	320	284	257	237	220	207	195	173
1 ¼ in.	1,390	957	768	657	583	528	486	452	424	400	355
1 ½ in.	2,090	1,430	1,150	985	873	791	728	677	635	600	532
2 in.	4,020	2,760	2,220	1,900	1,680	1,520	1,400	1,300	1,220	1,160	1,020
2 ½ in.	6,400	4,400	3,530	3,020	2,680	2,430	2,230	2,080	1,950	1,840	1,630
3 in.	11,300	7,780	6,250	5,350	4,740	4,290	3,950	3,670	3,450	3,260	2,890
4 in.	23,100	15,900	12,700	10,900	9,660	8,760	8,050	7,490	7,030	6,640	5,890

In Cubic Feet (ft³) per hour (0.60 Specific Gravity; 3.0 in. WC Pressure Drop). Contact your gas supplier for BTU/ft³ ratings. Use 1,000 BTU/ft³ for simplified calculations. This table is recommended for supply pressures less than 6 in. WC.

Pipe Size	Length (including fittings)										
	10 ft	20 ft	30 ft	40 ft	50 ft	60 ft	70 ft	80 ft	90 ft	100 ft	125 ft
1/2 in.	454	312	250	214	190	172	158	147	138	131	116
3/4 in.	949	652	524	448	397	360	331	308	289	273	242
1 in.	1,790	1,230	986	844	748	678	624	580	544	514	456
1 ¼ in.	3,670	2,520	2,030	1,730	1,540	1,390	1,280	1,190	1,120	1,060	936
1 ½ in.	5,500	3,780	3,030	2,600	2,300	2,090	1,920	1,790	1,670	1,580	1,400
2 in.	10,600	7,280	5,840	5,000	4,430	4,020	3,690	3,440	3,230	3,050	2,700
2 ½ in.	16,900	11,600	9,310	7,970	7,060	6,400	5,890	5,480	5,140	4,860	4,300
3 in.	29,800	20,500	16,500	14,100	12,500	11,300	10,400	9,690	9,090	8,580	7,610
4 in.	60,800	41,800	33,600	28,700	25,500	23,100	21,200	19,800	18,500	17,500	15,500

Maximum Natural Gas Delivery Capacity

Pipe Size	Length (including fittings)													
	10 ft (3m)	20 ft (6m)	30 ft (9m)	40 ft (12m)	50 ft (15m)	60 ft (18m)	80 ft (24m)	100 ft (30m)	125 ft (38m)	150 ft (45m)	175 ft (53m)	200 ft (60m)	250 ft (76m)	
1/2 in.	291	200	160	137	122	110	101	94	89	84	74	67	62	
3/4 in.	608	418	336	287	255	231	212	197	185	175	155	140	129	
1 in.	1,150	787	632	541	480	434	400	372	349	330	292	265	243	
1 ¼ in.	2,350	1,620	1,300	1,110	985	892	821	763	716	677	600	543	500	
1 ½ in.	3,520	2,420	1,940	1,660	1,480	1,340	1,230	1,140	1,070	1,010	899	814	749	
2 in.	6,790	4,660	3,750	3,210	2,840	2,570	2,370	2,200	2,070	1,950	1,730	1,570	1,440	

Measuring the Inlet Gas Pressure

Warning

The water heater cannot function properly without sufficient inlet gas pressure (refer to the name plate of the unit for gas pressure rating). Measuring the inlet gas pressure should **ONLY** be performed by a licensed professional.

- The inlet gas pressure must be maintained between 3.5" in. and 10.5" in. WC for natural gas.
- The appliance and its individual shut-off valve must be disconnected from the gas supply piping system during any pressure testing of that system when test pressures are in excess of 1/2 psi (3.5 kPa). The appliance must be isolated from the gas supply piping system by closing its individual manual shut-off valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psi (3.5 kPa)

NOTE:

If gas pressure is out of the acceptable range or an excessive pressure drop is observed, contact the gas supplier or a qualified installer to supply proper gas pressure to the unit.

To measure the inlet gas pressure:

1. Close the manual gas shut-off valve on the gas supply line. (See [Figure 22](#) on the following page)
2. Open a hot water faucet. The water heater should turn on and the gas in the gas supply line will be purged.
3. Leave the faucet on until the water heater shuts down due to a lack of gas supply, and then turn off the hot water faucet.
4. Loosen the four (4) Phillips head screws that attached the front panel to the casing of the unit (two on the top and two on the bottom). ([Figure 23](#))
5. Carefully raise the front cover approximately 2 inches. 6. Find the control panel cable and unplug it from the main control board.

NOTE:

Before removing the front cover, you must unplug the control display cable first. Failing to do so will damage the water heater.

7. Fully remove the front cover. ([Figure 24](#))
8. Loosen the screw indicated in [Figure 25](#) and connect a manometer to the pressure port. Reset the manometer to zero before use.
9. Re-open the manual gas valve and check for leaks.
10. Open multiple fixtures that have high flow rates, such as bathtub and shower faucets, to ramp the water heater up to its maximum firing rate.
11. When the water heater reaches its maximum firing rate, check the inlet gas pressure reading on the manometer. The gas pressure must fall within the ranges specified in Chapter SPECIFICATIONS.
12. After checking the intake pressure, tighten the screw again.

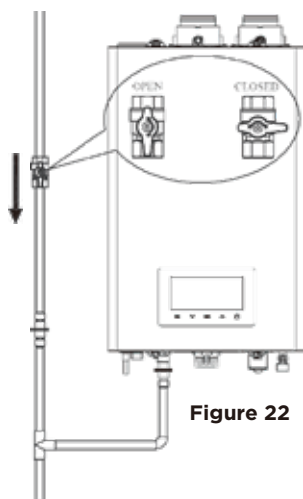


Figure 22

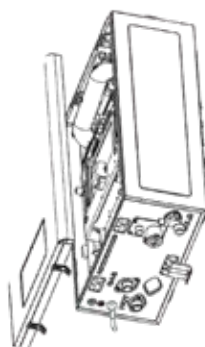


Figure 24

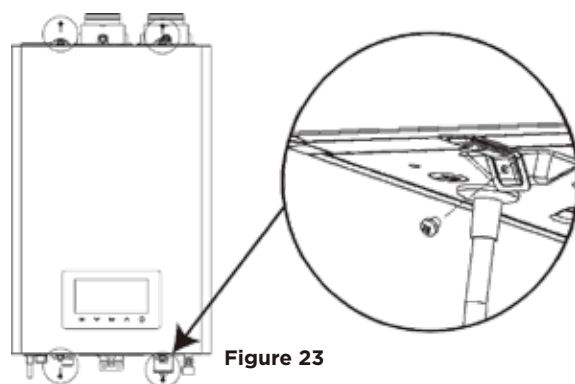


Figure 23

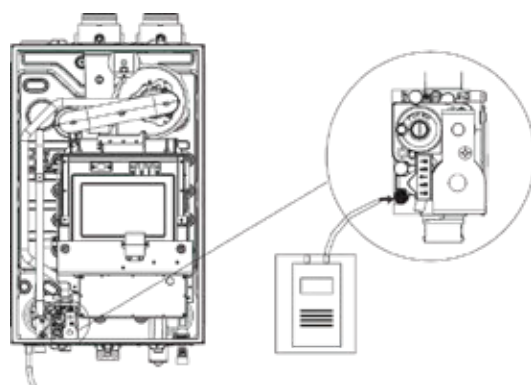


Figure 25

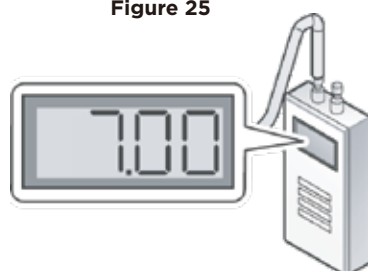
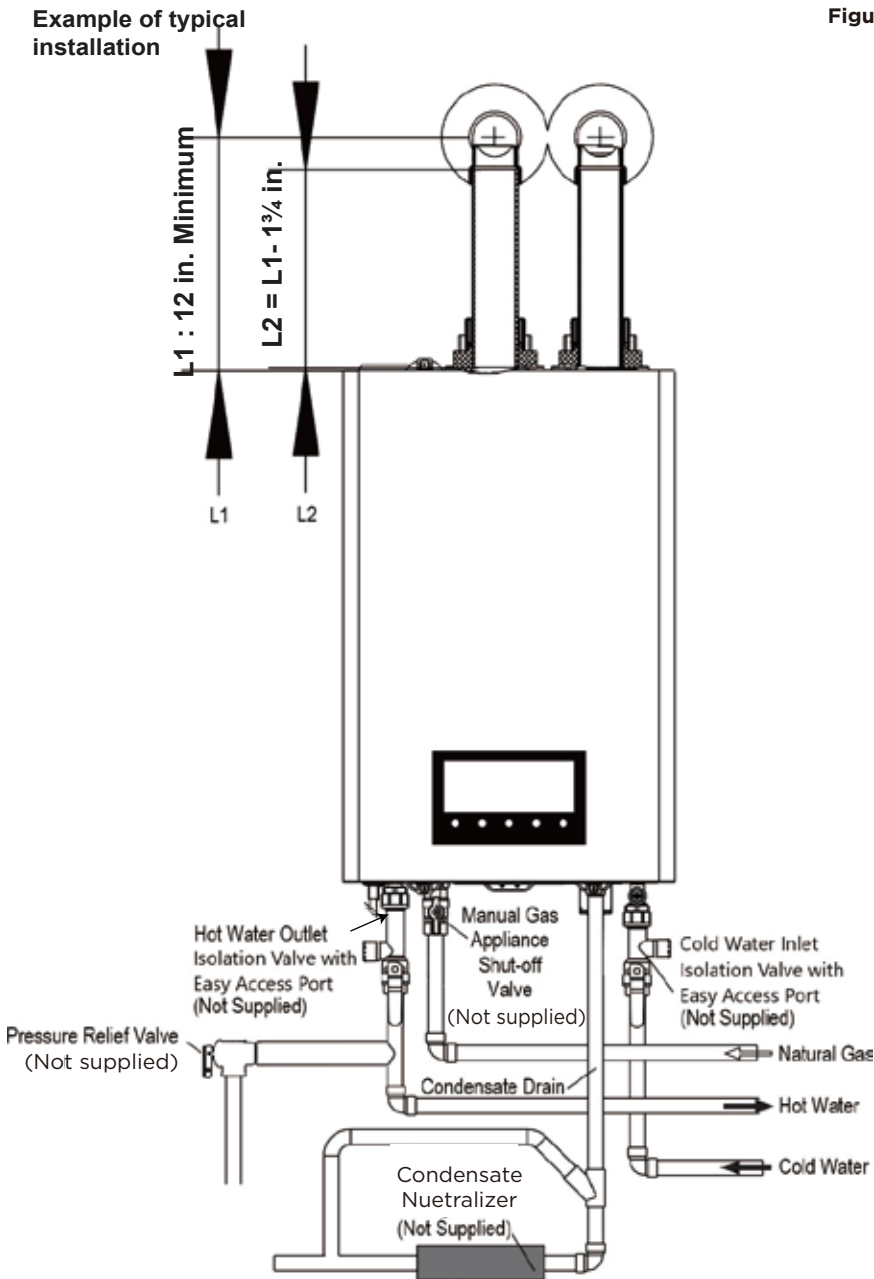


Figure 26

Connecting the Water Supply

Figure 27



Water Supply Guidelines

The water fittings on the water heater are $\frac{3}{4}$ " in. If the installation site only has $\frac{1}{2}$ " in. plumbing throughout, it is not necessary to up-size the water lines to $\frac{3}{4}$ " in. if you are installing a single water heater.

Caution

*The air in the return pipe may cause noise and heat loss, drain up all the air in the water pipe before use.

When connecting the water supply, follow these guidelines:

Warning

If a water heater is installed in a closed water supply system, such as one having a backflow preventer in the cold water supply line, means shall be provided to control thermal expansion. Contact the water supplier or local plumbing inspector on how to control this situation.

- Water quality is tested and is within the acceptable EPA guidelines listed on [Page 14](#) of this manual.
- Water hardness is tested, the hardness level is identified, and a water softening system is added, if required or recommended, before this appliance to ensure this appliance's proper operation. Failure to achieve the appropriate water hardness level will void this product's warranty.
- Use only pipes, fittings, valves, and components (e.g. solder) that are approved for use in potable watersystems.
- Tighten the water heater connection valves with care to avoid damage.
- It is recommended to use unions on the cold water inlet and hot water outlet.
- Use the appropriate sealing method (such as adhesive tape) to connect the inlet and outlet water pipes to the connectors on the machine, ensuring no leakage during use.
- It is mandatory to use isolation valves with easy access ports on the cold water inlet and hot water outlet assemblies from the appliance for required routine maintenance purposes.
- Make the hot water piping system as short as possible to deliver hot water to the fixtures quickly.
- To conserve water and energy, insulate all water piping, especially the hot water lines. DO NOT cover the drain or pressure relief valve.
- After installing the water heater, clean the inlet water filter that is located inside the cold water inlet, and then test the water heater for proper flow and inspect for leaks. Instruct the water heater owner that the filter must be cleaned initially every six (6) months to maintain proper water flow. If debris is often present more frequent cleanings should occur.

Warning

Failure to follow the instructions in this section and the warnings listed below will not only void the warranty but could also result in property damage, severe personal injury, or death.

⚠ **DO NOT** pipe the water heater with black iron, steel, galvanized steel, lead, or aluminum water pipe, as it could result in premature product failure.

⚠ **DO NOT** apply a torch within twelve (12") in. of the water heater. If sweat connections are used, sweat tubing to the adapter before fitting the adapter to the water connections of the heater.

⚠ **DO NOT** use dielectric unions or galvanized steel fittings in a system with this unit. Use only copper, brass, or stainless steel fittings. Teflon thread sealant must be used on all connections.

Connecting a Pressure Relief Valve

To complete the installation of the water heater, you must install an approved $\frac{3}{4}$ " in. maximum 150 PSI pressure relief valve on the hot water outlet. The water heater has a built-in, high temperature shut-off switch, so install a "pressure only" relief valve. This valve is not supplied; however, it is required. The pressure relief valve should be placed as close to the water heater as possible. No other valve outside of the isolation valve with easy access port should be placed between the pressure relief valve and the water heater. See illustration on [Page 25](#) for reference.

Warning

Improper installation of the pressure relief valve may result in property damage, personal injury, or death.

Follow all instructions and guidelines when installing the pressure relief valve.

- The valve should **ONLY** be installed by a licensed professional.
- To avoid water damage or scalding direct the discharge line to a safe place for disposal.

When installing the pressure relief valve, follow these guidelines:

⚠ **DO NOT** plug the relief valve. If the relief valve discharges periodically, this may be due to thermal expansion in a closed water supply system. Contact the water supplier or local plumbing inspector on how to correct this situation.

⚠ **DO NOT** direct the discharge line to a location where freezing could occur.

⚠ **DO NOT** install a reducing coupling or other restriction on the discharge line.

- Ensure that the discharge capacity of the pressure relief valve is equal to or greater than the maximum pressure rating of the water heater.
- Ensure that the maximum BTU/hr rating on the pressure relief valve is equal to or greater than the maximum input BTU/hr rating of the water heater.
- Direct the discharge piping of the pressure relief valve so that hot water will not splash on anyone or any nearby equipment.
- Attach the discharge line to the pressure relief valve and run the end of the line to within 6-12" in. of the floor drain, making discharge clearly visible.
- Ensure that the discharge line will allow free and complete drainage without restriction.
- Ensure that the discharge line is not plugged or obstructed.
- After filling and pressurizing the system, test the relief valve operation by lifting the lever. If the valve fails to operate correctly, immediately replace the relief valve.

Caution

- To avoid potential property damage or personal injury, check the pressure relief valve at least once every three years by manually operating the valve to ensure proper operation.
- Before manually operating the valve, check the discharge line and make sure that the hot discharge water will not cause personal injury or property damages. Contact with the discharge water may result in severe injury.

Connecting the Condensate Drain

Overview

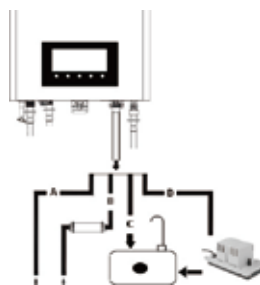
This water heater creates condensation as part of its normal operation. The condensation produced is acidic and generally ranges from 3-5 on the pH scale. Be sure to follow all local codes and regulations when disposing of condensate from the water heater. Check local codes for suitable waste drain locations, if applicable.

Caution

- ⊘ **DO NOT** cap or plug the integrated condensate line, if the condensate line is obstructed impeding its ability to drain, it could damage the water heater.
- ⊘ **DO NOT** allow people or animals to drink the condensate water.
- The condensate line must have a negative slope to drain properly.
- Once the condensate drainpipe has been installed, fill the condensate trap with water to ensure it flow through the drainpipe freely.

Condensate Drainage Options:

- A: From the water heater directly into an external drain.
- B: From the water heater, through a neutralizing agent, and then into an external drain.
- C: From the water heater into a laundry tub.
- D: From the water heater into a water heater condensate pump, and then into a laundry tub.



To External Drain To Laundry Tub

Figure 28

NOTE

If you choose option B, the neutralizing agent must be replaced periodically. Depletion of the neutralizing agent will vary, based on the usage rate of the water heater. During the first year of operation, the neutralizer should be checked every few months for depletion and replaced as needed.

If you choose option C, the bottom of the water heater must be higher than the top of the laundry tub. The condensate line must have a negative slope to drain properly.

If you choose option D, a pump can be used when there is a long distance between the water heater and the laundry tub, or when the bottom of the water heater is lower than the top of the laundry tub

Connecting the Condensate Drain

1. Locate the condensate drain on the bottom of the water heater and remove the drain cap. (See **Figure 29-30**)
2. Connect a drain line to the $\frac{1}{2}$ " in. fitting at the bottom of the unit. NOTE: Use only corrosion-resistant material for the drain line, such as PVC or CPVC.
3. Place the free end of the drain line into an appropriate drain.
4. Fill the condensate trap inside the water heater by pouring water through the exhaust vent on top of the unit until water flows through the condensate drain. Ensure the water flows through the condensate drain line smoothly. (**Figure 31**)

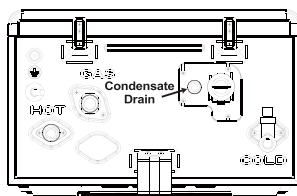


Figure 29

⚠ **DO NOT** reduce the size of this fitting or the drain to less than $\frac{1}{2}$ " in

NOTE

If you are using a condensate pump, ensure that the pump allows for up to 2 GPH of drainage for each water heater in the system.

If you are not using a condensate pump, ensure that the drain line is pitched downward at a minimum slope of $\frac{1}{2}$ " in. per foot.

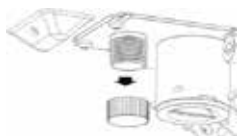


Figure 30

⚠ Caution

The condensate line must remain unobstructed, allowing for the free flow of condensate. If condensate freezes in the line, or if the line is obstructed in any other manner, condensate can exit the appliance in other areas due to an overflow of the condensate trap, resulting in potential water damage.

Condensate Neutralizer Kit

⚠ Warning

⚠ **DO NOT** allow exhaust flue gases to vent through the neutralizer. Leakage can cause injury or death from carbon monoxide.

⚠ **DO NOT** connect more than one appliance to the neutralizer.

- To avoid damaging the appliance, the neutralizer inlet and discharge must be lower than the condensate drain.
- The connection between the appliance and the neutralizer must be installed to prevent the back flow of condensate into the appliance.

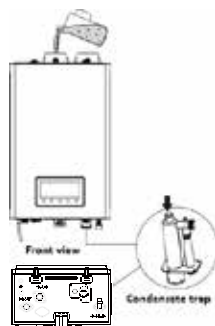


Figure 31

If option B from **Page 28** is selected for condensate disposal (condensate flows through the neutralizer and directly into an external drain), the condensate will flow through the neutralizing media and its pH level will increase. An increased pH level will help prevent corrosion of the installation's drainage system and the public sewer system.

Neutralizer Installation Guidelines:

- The inlet of the neutralizer has a center connection point and the outlet will have an offset connection point.
- Install the neutralizer on the wall or the floor and secure it using the brackets.
- If the neutralizer is installed horizontally, rotate the neutralizer to position the outlet at the highest point. (Refer to **Figure 32**)
- If the neutralizer is mounted vertically, ensure that the outlet is higher than the inlet. (Refer to **Figure 33**)
- Ensure that the condensate runs freely to the drain.
- Ensure all connections are made to prevent the back-flow of condensate.
- Use corrosion resistant piping and secure it to prevent movement.
- For increased safety, in the event there is a blockage in the condensate drain, install a Y fitting. Connect the Y fitting (as shown in the diagrams to the right) and ensure condensate can run freely to the drain.
- Ensure that the discharge connection is accessible, as access is required for maintenance and pH testing.
- If there is an insufficient gradient for drainage, install a drainage pump designed for water heater & boiler condensate removal.

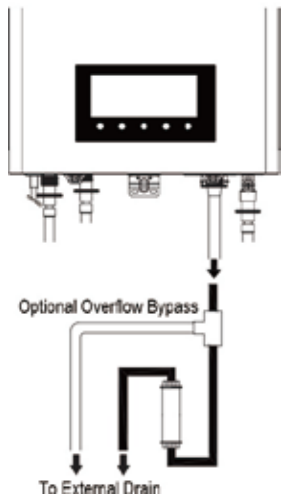
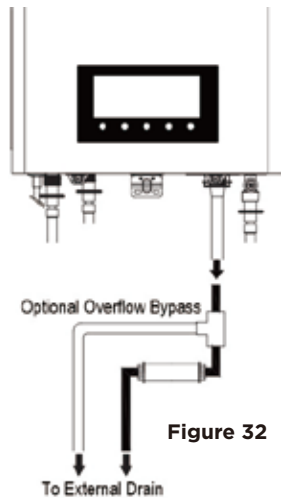
Maintenance of Neutralizer

Periodically monitor the level of media in the neutralizer and test the pH level at the condensate drain outlet. We recommend an annual pH test using recognized test strips or an electronic pH meter to obtain precise measurements.

Replace the neutralizing media when the pH drops below the minimum level required by the local water authority. If the pH level is not specified, replace the neutralizing media when the pH is below 6.0.

NOTE

⚠ **DO NOT** install condensate piping in areas where the temperature drops below the freezing point.
Protect piping in high pedestrian areas from damage and vibration.



Venting the Water Heater - Overview

Venting the Water Heater

Warning

This appliance is certified as a “Category IV” appliance and requires a special venting system. The vent system will operate with a positive pressure in the pipe. Exhaust gases must be piped directly outdoors using the vent materials and rules outlined in these instructions. Follow the venting instructions carefully. Failure to follow these instructions will result in substantial property damage, severe personal injury, or death.

A water heater shall not be connected to a chimney flue serving a separate appliance designed to burn solid fuel. Provisions for adequate combustion and ventilation air in accordance with one of the following:

- A) the National Fuel Gas Code, ANSI Z223.1/NFPA 54;
- B) CSA B149.1, Natural Gas and Propane Installation Code;
- C) applicable provisions of the local building code.

 **DO NOT** connect vent connectors serving appliances vented by natural draft into any portion of mechanical draft systems operating under positive pressure.

- Improper venting of the water heater can result in excessive levels of carbon monoxide, which can lead to severe personal injury or death. This water heater must be vented in accordance with the “Venting of Equipment” section of the latest edition of the ANSI Z223.1/NFPA 54 Natural Fuel Gas Code in the USA, as well as all applicable local building codes and regulations. Follow all instructions and guidelines when venting the water heater. Installation of a venting system should only be performed by a licensed professional.
- The venting system must be sealed airtight to prevent flue gas spillage and carbon monoxide emissions; both spillage and emissions will result in severe personal injury or death.
- The end user is responsible for keeping the air intake and exhaust termination free of snow, ice, or other potential obstructions, as well as scheduling routine maintenance. Blocked or obstructed vent piping terminations could result in property damage, severe

The water heater must be properly vented to ensure a constant supply of clean intake air and to ensure that exhaust air is properly removed from living areas. When venting the water heater, follow these guidelines:

 **DO NOT** install the water heater in areas with contaminated air (high levels of sawdust, dust, sand, flour, aerosols, halogenated compounds, or any other airborne contaminants), as this could cause the unit to have operational issues. Please refer to [Page 16 and 17](#) for more information. Damage that is caused as a result of the unit being operated and installed in an area with contaminated air will not be covered by the warranty. If you must install the water heater in an area with contaminated air, use direct venting to supply air from outside of the building. It is recommended that more frequent intervals of maintenance and filter cleaning be performed when installed in these areas.

 **DO NOT** connect the water heater vent to a vent for any other gas water heater or vent stack.

 **DO NOT** obstruct heater air intake or exhaust. Support all vent piping per the vent pipe manufacturer's installation instructions.

 **DO NOT** place chemical vapor emitting products near the unit.

 **DO NOT** operate the heater unless it is vented to the outdoors.

- Install the water heater as close as possible to the vent termination.
- For horizontal runs, slope the horizontal section upward toward the vent termination at a rate of 1/4 in. per foot (2% slope).
- Create an airtight seal at each joint in the exhaust and intake air pipes from the water heater collar to the vent termination connecting the pipe to the vent collar by using the supplied Hose/Pipe Clamps. Please refer to [Page 34 and 36](#) for more information.
- Analyze the entire vent system to make sure that condensate in the vent pipe will not become trapped in a section of vent pipe and reduce the open cross-sectional area of the vent. Condensate in the vent pipe should be disposed via a condensate trap.
- According to NFPA 720, carbon monoxide detectors should be installed outside each sleeping area. Venting the Water Heater - Overview © 2024 Salt Lake Iron & Steel Ltd. Co.

Venting the Water Heater

NOTE

⚠ **DO NOT** use primer or cement on the appliance connection.

- The products covered in this manual are designed for two (2") in. vent pipes. Both vent pipes can be installed without an external adapter. When installing the vent pipe, please refer to the following pages for selection & installation of the correct vent piping for your application.
- Three (3" in.) vent pipe may be used, however the supplied Flue Gas Flow Limiting ring must be used in the exhaust pipe to help increasing the resistance for the outlet.
- Covering non-metallic vent pipe and fittings with thermal insulation is prohibited.

⚠ Warning

Ensure the ends of the vent pipe are properly beveled to 90° prior to installation. Also ensure the pipe is fully connected to the exhaust gas vent fitting. Failure to properly bevel and install the pipe correctly could lead to gasket failure and flue gas leakage, which could result in serious injury or death.



Figure 34

Vent Pipe Installation

1. Measure 1 1/2" in. from the end of the vent pipe and then draw a mark at that distance
2. Insert the pipe into the vent collar to start the vent run. Make sure to completely slide the vent into the collar until the end makes contact with the bottom of the socket
3. Verify that over 1 1/2" in. of the pipe has been completely inserted into the collar and that the mark is no longer visible. The pipe will be tightened and sealed by the rubber gasket
4. Fasten the install retaining plate to fix the flue pipe

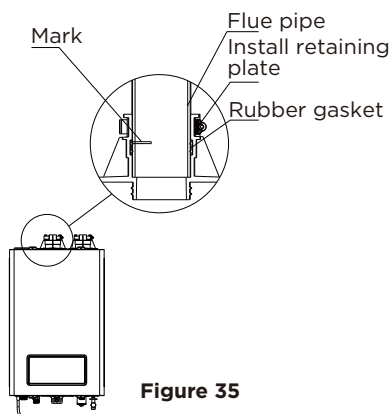


Figure 35

⚠ Caution

⚠ **DO NOT** start the vent run with a street elbow at the vent collar.

- Using an elbow directly at the collar will not allow for a tight seal between the appliance and the vent pipe. A section of straight pipe must be used when starting the vent run.

Warning

- If the connections leak, harmful gas could cause severe personal injury or death.
- After completing the installation, and the unit is filled with water, turn on the water heater and test it for leaks using a bubble test kit. After applying the soap solution, bubbles will form on the connections if leaks exist.

Selecting a Vent Type

The water heater referenced in this manual is prepared at the factory to be direct vent (sealed combustion) appliances that draw all of the required combustion air directly from the outdoors. Direct air vent installations are recommended whenever possible to avoid the back-drafting of cold air through the water heater.

If using room air (non-direct vent) for combustion, ensure the required volume of indoor air is available in accordance with orders in the page (36).

Installation of a new vent system with this appliance is also recommended. In the event an existing vent system is reused, ensure it is thoroughly inspected for punctures, cracks, or blockages before it is connected to the water heater.

1. Direct vent

The piping installed for the equipment allows it to draw in air from outside and discharge the combustion gases to the outside.

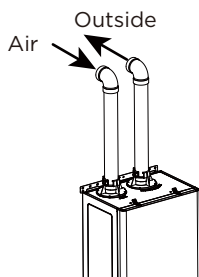


Figure 36

2. Non-direct Vent

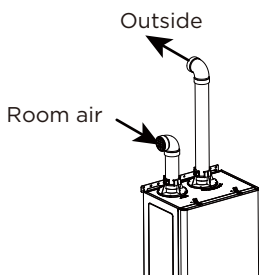
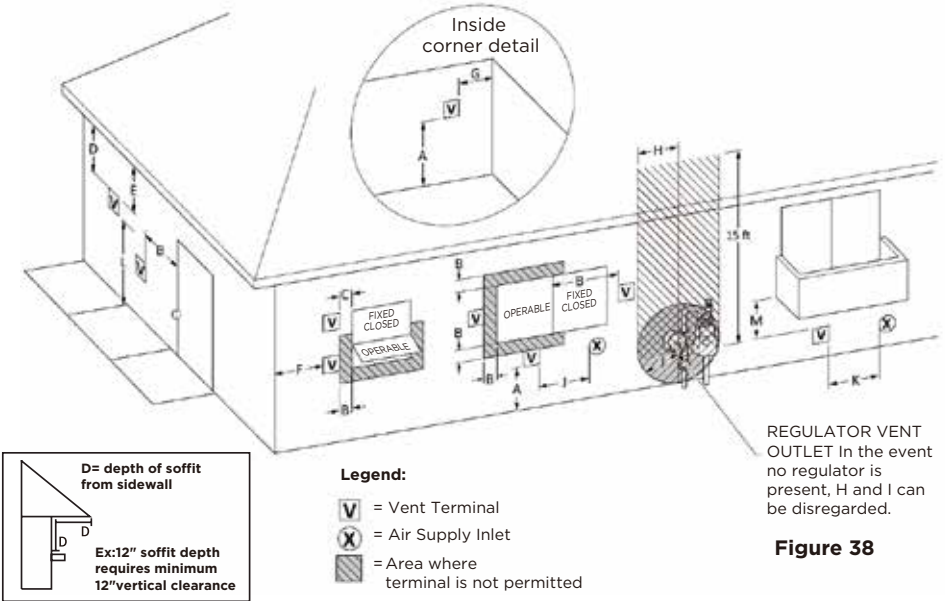


Figure 37

Terminal Clearances for Direct Vent Installations



	Description	Canadian installations ¹	US installations ²
A	Clearance above grade, veranda, porch, deck, or balcony	12 in. (30 cm)	12 in. (30 cm)
B	Clearance to window or door that may be opened	36 in. (91 cm) for appliances >100,000 Btuh (30 kW)	12 in. (30 cm) for appliances >50,000 Btuh (15 kW)
C	Clearance to permanently closed window	0 in (0 cm) ⁵	0 in (0 cm) ⁵
D	Vertical clearance to ventilated soffit located above the terminal within a horizontal distance of 2 ft (61 cm) from the center line of the terminal	Equal or greater than soffit depth ^{4, 5}	Equal or greater than soffit depth ^{4, 5}
E	Clearance to unventilated soffit	Equal or greater than soffit depth ^{4, 5}	Equal or greater than soffit depth ^{4, 5}
F	Clearance to outside corner	2 ft (61 cm)*	2 ft (61 cm)*
G	Clearance to inside corner	12 in. (30 cm)*	12 in. (30 cm)*
H	Clearance to each side of center line extended above meter/regulator assembly within a height of 15 ft (4.6 m)	3 ft (91 cm) within a height of 15 ft (4.6 m)	3 ft (91 cm) within a height of 15 ft (4.6 m)*
I	Clearance to service regulator vent outlet	3 ft (91 cm)	3 ft (91 cm)

	Description	Canadian installations ¹	US installations ²
J	Clearance to nonmechanical air supply inlet to building or the combustion air inlet to any other appliance	36 in. (91 cm) for appliances >100,000 Btuh (30 kW)	12 in. (30 cm) for appliances >50,000 Btuh (15 kW)
K	Clearance to a mechanical air supply inlet	6 ft (1.83 m)	3 ft (91 cm) above if within 10 ft (3 m) horizontally
L	Clearance above paved sidewalk or paved driveway located on public property	7 ft (2.13 m) [†]	7 ft (2.13 m) for mechanical draft systems (Category I appliances). Vents for Category II and IV appliances cannot be located above public walkways or other areas where condensate or vapor can cause a nuisance or hazard*
M	Clearance under veranda, porch deck, or balcony	12 in. (30 cm) [‡]	12 in. (30 cm) – open on 3 sides*

* Suggested clearances by the manufacturer. If the clearances required by local codes are different from those from the table above, the greater clearance should apply. Direct exhaust vapors and condensate away from building materials to avoid degradation. The minimum distance from adjacent public walkways, adjacent buildings, openable windows, and building openings shall not be less than those values specified in the National Fuel Gas Code, ANSI Z223.1/NFPA 54, and/or the Natural Gas and Propane Installation Code, CSA B149.1.

[†] A vent shall not terminate directly above a sidewalk or paved driveway that is located between two single family dwellings and serves both dwellings.

[‡] Permitted only if veranda, porch, deck, or balcony is fully open on a minimum of two sides beneath the floor.

NOTE

¹ In accordance with the current CSA B149.1 Natural Gas and Propane Installation Code

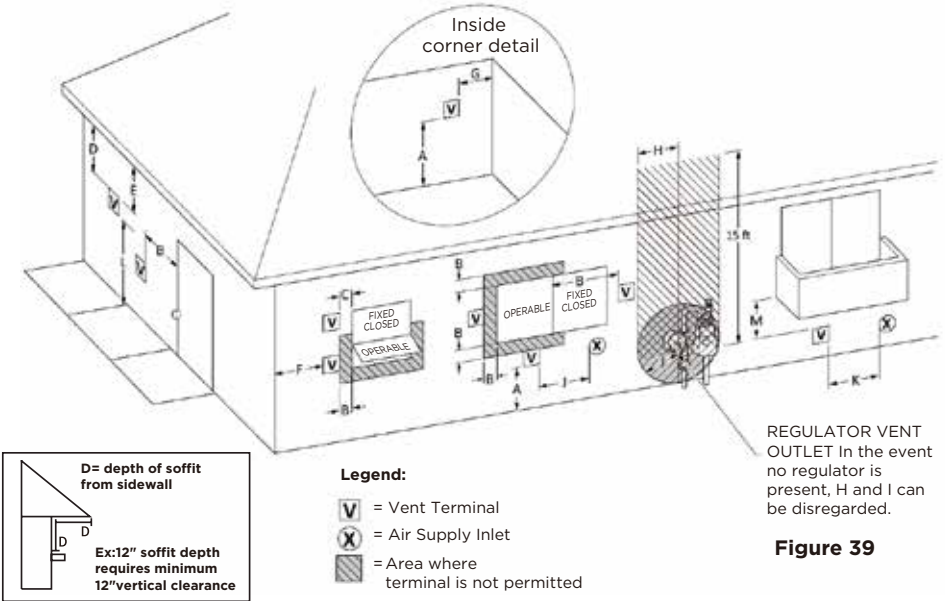
² In accordance with the current ANSI Z223.1/NFPA 54 National Fuel Gas Code

³ If locally adopted installation codes specify clearances different than those illustrated, then the most stringent clearance shall prevail.

⁴ Soffit with 12" depth requires a minimum of 12" vertical clearance from the termination (36" soffit requires a minimum of 36" vertical clearance).

⁵ In the areas where corrosion and discoloration of building materials can occur, a minimum clearance of 12" shall apply.

Terminal Clearances for Non-Direct Vent Installations



	Description	Canadian installations ¹	US installations ²
A	Clearance above grade, veranda, porch, deck, or balcony	12 in. (30 cm)	12 in. (30 cm)
B	Clearance to window or door that may be opened	36 in. (91 cm) for appliances > 100,000 Btuh (30 kW)	4 ft (1.21 m) below or to side of opening; 1 ft (300 mm) above opening
C	Clearance to permanently closed window	0 in (0 cm) ⁵	0 in (0 cm) ⁵
D	Vertical clearance to ventilated soffit located above the terminal within a horizontal distance of 2 ft (61 cm) from the center line of the terminal	Equal or greater than soffit depth ^{4, 5}	Equal or greater than soffit depth ^{4, 5}
E	Clearance to unventilated soffit	Equal or greater than soffit depth ^{4, 5}	Equal or greater than soffit depth ^{4, 5}
F	Clearance to outside corner	2 ft (61 cm)*	2 ft (61 cm)*
G	Clearance to inside corner	12 in. (30 cm)*	12 in. (30 cm)*
H	Clearance to each side of center line extended above meter/regulator assembly within a height of 15 ft (4.6 m)	3 ft (91 cm) within a height of 15 ft (4.6 m)	3 ft (91 cm) within a height of 15 ft (4.6 m)*
I	Clearance to service regulator vent outlet	3 ft (91 cm)	3 ft (91 cm)

	Description	Canadian installations ¹	US installations ²
J	Clearance to nonmechanical air supply inlet to building or the combustion air inlet to any other appliance	36 in. (91 cm) for appliances >100,000 Btuh (30 kW)	4 ft (1.2 m) below or to side of opening; 1 ft (300 mm) above opening
K	Clearance to a mechanical air supply inlet	6 ft (1.83 m)	3 ft (91 cm) above if within 10 ft (3 m) horizontally
L	Clearance above paved sidewalk or paved driveway located on public property	7 ft (2.13 m) [†]	7 ft (2.13 m) for mechanical draft systems (Category I appliances). Vents for Category II and IV appliances cannot be located above public walkways or other areas where condensate or vapor can cause a nuisance or hazard
M	Clearance under veranda, porch deck, or balcony	12 in. (30 cm) [‡]	12 in. (30 cm) – open on 3 sides*

* Suggested clearances by the manufacturer. If the clearances required by local codes are different from those from the table above, the greater clearance should apply. Direct exhaust vapors and condensate away from building materials to avoid degradation. The minimum distance from adjacent public walkways, adjacent buildings, openable windows, and building openings shall not be less than those values specified in the National Fuel Gas Code, ANSI Z223.1/NFPA 54, and/or the Natural Gas and Propane Installation Code, CSA B149.1.

[†] A vent shall not terminate directly above a sidewalk or paved driveway that is located between two single family dwellings and serves both dwellings.

[‡] Permitted only if veranda, porch, deck, or balcony is fully open on a minimum of two sides beneath the floor.

NOTE

¹ In accordance with the current CSA B149.1 Natural Gas and Propane Installation Code.

² In accordance with the current ANSI Z223.1/NFPA 54 National Fuel Gas Code.

³ If locally adopted installation codes specify clearances different than those illustrated, then the most stringent clearance shall prevail.

⁴ Soffit with 12" depth requires a minimum of 12" vertical clearance from the termination (36" soffit requires a minimum of 36" vertical clearance).

⁵ In the areas where corrosion and discoloration of building materials can occur, a minimum clearance of 12" shall apply.

Non-Direct Venting (Single Pipe)

If, at any time, the installation location could experience negative pressure, there is a possibility of back drafting cold air through the water heater's heat exchanger. This situation could lead to the freezing of the heat exchanger and malfunction of the water heater.

However, building codes in most jurisdictions disallow negative pressures in residences. In a home with a well-balanced air supply, the heat exchanger should not be in danger of freezing. Because the cause of back drafting is not considered a manufacturing problem, any freezing damage which occurs from back drafting will not be covered by the Navien warranty. If there is any question about the possibility of back drafting in the installation location, use a direct venting system for the water heater.

When installed in a manufactured home, all combustion air must be supplied from the outdoors as described on [page 36](#).

Warning

Carbon Monoxide Hazard

NEVER install this water heater in a recreational vehicle, trailer, boat or other moving vehicle to prevent serious injury or death.

When using non-direct venting, maintain non-direct vent clearances shown on [page 36](#) as required by **CSA/ANSI Z21.10.3 and the National Fuel Gas Code, ANSI Z223.1/NFPA 54, and CAN/CSA B149.1 Natural Gas And Propane Installation Code.**

To use non-direct venting for the water heater:

1. Insert the termination end cap into the intake air duct.

NOTE

Do NOT glue the end cap to allow for easy removal and cleaning of the cap.

2. The equipment room MUST be provided with properly sized openings to assure adequate combustion air.

3. Combustion air requirements are based on the latest edition of the National Fuel Gas Code, NFPA 54 / ANSI Z223.1; in Canada refer to the latest edition of CGA Standard CAN/CSA B149.1.

All local codes supersede these clearance requirements when applicable.

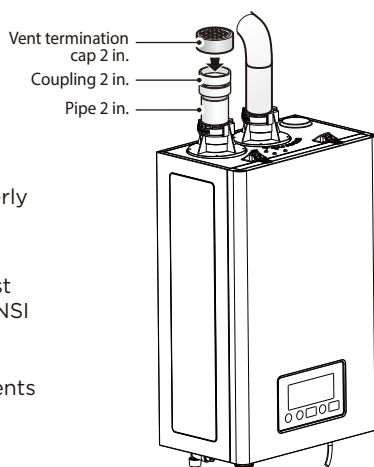


Figure 40

Selecting Vent Pipe Materials

Consult the following chart, or the most recent edition of ANSI Z223.1/NFPA 54, as well as all applicable local codes and regulations when selecting vent pipe materials.

DO NOT use cellular core PVC (ASTM F891), cellular core CPVC, or Radel (polyphenol sulfone) for the exhaust vent.

Warning

DO NOT mix components from different systems. The vent system could fail and harmful elements from the flue could leak into the living space. In the event this occurs, it could cause serious personal injury or death.

• Mixing of vent materials WILL VOID THE WARRANTY and certification of the appliance.

Intake materials can be made of ABS, PVC, CPVC, PP, galvanized steel, corrugated aluminum or any other such materials. If you use a corrugated material, ensure that there is not crimping or damage to the intake airpipe.

When using direct venting, maintain the following venting clearances, as required by ANSI Z21.10.3 and the National Fuel Gas Code, ANSI Z223.1/NFPA 54:

Failure to provide a properly installed vent and air system will cause personal injury or death!

Locale	Recommended Vent Materials
USA	• PVC/CPVC Schedule 40 or 80 (Solid Core) • UL1738 approved PVC or CPVC
Canada*	• Type BH Special Gas Vent Class IIA (PVC) • Type BH Special Gas Vent Class IIB (CPVC)

* For installation in Canada, field-supplied plastic vent piping must comply with CAN/CGA B149.1 (latest edition) and be certified to the Standard For Type BH Gas Venting Systems, ULC-S636. Components of this listed system must not be interchanged with other vent systems or unlisted pipes or fittings. The supplied vent connector and vent termination are certified as part of the water heater.

NOTE

These installation instructions reference snow levels in establishing a minimum height for the installation of the exhaust vent or air intake terminations. Snow levels are determined as follows:

- A. The installation location, by ordinance, designate the calculation of the snow levels in that location.
- B. In the absence of specific ordinances, snow levels should be calculated from the average of monthly maximum depth of snow accumulation as indicated by the 10-year statistics for the installation/geographical area by the National Weather Service.

The supplied vent connectors and vent termination methods outlined on [Pages 40 - 41](#) are certified as part of the water heater.

Measuring Vent Length

The maximum vent length when using two (2") in. exhaust ducts is 60 feet and 150ft for the three (3")in.The intake duct length may be identical to the exhaust duct length. One (1") foot straight pipe and a 90° elbow are not included in the vent length. The maximum vent length is reduced by the number of elbows used, as shown in the table below:

Vent Size	Max. Length	Equivalent Lengths
2 in	60 ft	Reduce the maximum vent length accordingly for each elbow used: • Each 90° elbow equates to five (5") linear feet of vent length. • Each 45° elbow equates to two and a half (2.5") linear feet of vent length.
3 in	150 ft	• The number of 90° elbows cannot exceed seven (7). • The number of 45° elbows cannot exceed fourteen (14).

NOTE: The use of a PVC or polypropylene concentric termination counts as 5 linear feet of vent.

NOTE

When the exhaust pipe is too long, the gas load will be reduced due to the influence of air resistance

⚠ **DO NOT** exceed the maximum length of the vent. Excessive length may result in heater shutdown and property loss.

⚠ **DO NOT** make the exhaust pipe shorter than the minimum length allowed. If the length of the pipe is too short, the exhaust gas generated by gas combustion could enter into the air inlet of the machine, which could lead to incomplete combustion, and result in heater failure, property loss, personal injury, or death.

Terminating the Vent

Before installing the water heater, determine what type of vent termination is appropriate for the installation location and materials. The following sections describe some typical venting configurations, but do not include all possible options. The examples shown on the following pages are possible venting options. The following terminal listed in the table below has been approved to be adequate for the unit mentioned in this manual.

Type	Vent pipe size	Brand	Part #
Low Profile Two-Pipe Sidewall Venting	2in	Diversitech (Certified to ULCS636)	HVENT2
	3in		HVENT3
	2in	IPEX Low Profile Termination Kit (Certified to UL1738)	397984
	3in		397985
Concentric Sidewall/Vertical Venting	2in	IPEX (Certified to ULCS636) IPEX (Certified to UL1738)	397105
	3in		397106

Type	Vent pipe size	Brand	Part #
90° Elbow	2in	*	*
	3in		*
45° Elbow	2in	*	*
	3in		*
Tee	2in	*	*
	3in		*

NOTE

- Only the “low profile” termination model listed in this manual is certified for use with this appliance, IPEX and Centrotherm branded “Low Profile” terminations may be used, however they must be the same dimensions as the SKU listed above. This product is not recommended for use with Centrotherm concentric terminations.
- Only terminations produced by the same manufacturer as the vent system shall be used.
- Refer to the vent manufacturer’s instructions for detailed installation procedures and guidelines.

Warning

The vent system must be installed by an authorized technician or licensed professional. Improper installation may cause appliance failure, property damage, severe personal injury, or death.

Improper installation will also void the warranty of the water heater.

If the distance between the air inlet and exhaust vent terminations is less than seven (7”) in., the water heater will draw in exhaust gases through the intake. This creates a risk of inadequate combustion air for the water heater, which can increase the amount of Carbon Monoxide (CO) emissions and noise due to vibration.

Termination elbows must be oriented vertically, ensuring they point directly downward. Attempt to prevent exhaust air from entering the air inlet by angling termination elbows in directions other than directly downward will increase the risk of freezing.

Reversing the air intake and exhaust pipes is not allowed. Carbon Monoxide (CO) emissions and noise due to vibration will increase.

In case of earthquake, tornado, or other natural disasters, have a trained professional check the vent pipe for any damage, that the exhaust flows normally, and the unit functions properly after such extreme event.

NOTE

- Install the bird screen at the end of the terminal elbow when a two-pipe sidewall venting method is applied.
- If glue and other solvent cement are used during the installation, please follow the manufacturer’s instructions when using.
- Please refer to the illustrations on the following page for the dimension requirements when using this method of venting.

Indoor Water Heater Installation Venting Examples

Warning

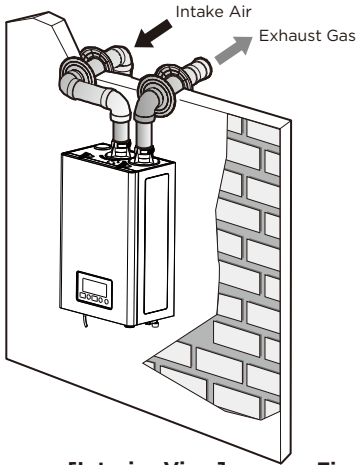
Fire and Explosion Hazard

To prevent death, serious injury or property damage:

- ALWAYS make sure to follow the provided clearance requirements.
- Failure to do so may result in circulating exhaust gas and cause dangerous operation of the water heater.

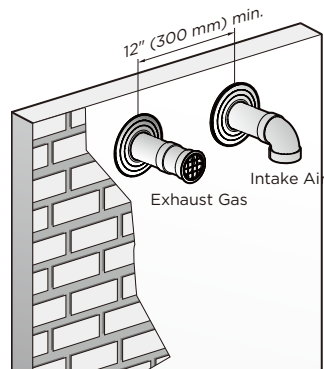
The following are some possible indoor venting options:

- Two-Pipe Sidewall Venting



[Interior View]

Figure 41



[Exterior View]

Figure 42

- Two-pipe Vertical Venting - Intake and exhaust pipes do not have to terminate in the same area.

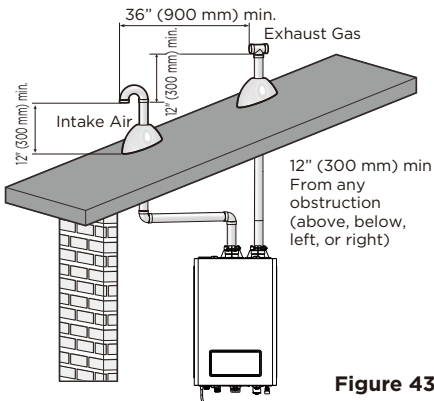


Figure 43

- **Non-Concentric Sidewall Venting:** Air is drawn from a different location that is at least 12 in. (300 mm) away from the exhaust termination. The exhaust termination can be located either on the sidewall or roof. Try to minimize the length of the intake air pipe when installing the vent.

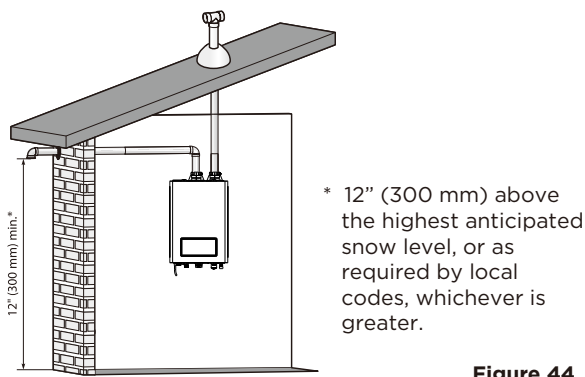


Figure 44

- **Concentric Sidewall Venting**

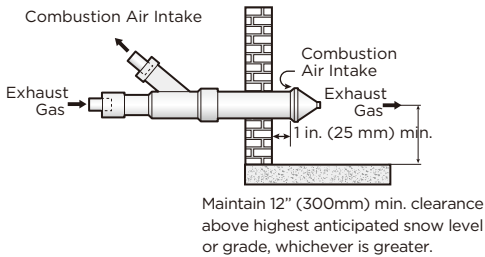


Figure 45

- **Concentric Vertical Venting**

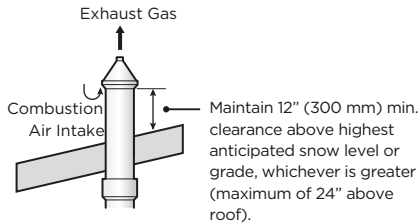


Figure 46

NOTE

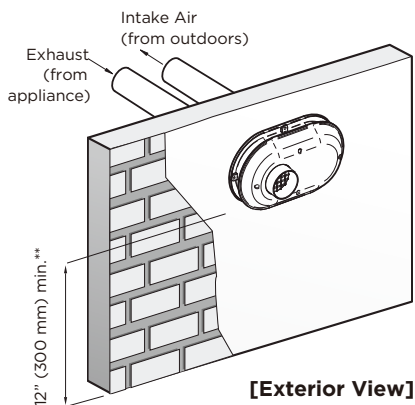
For cascade applications, the required horizontal clearance between terminations is 12" for both sidewall and vertical venting installations.

⚠ CAUTION



Do not vertically stack concentric terminations on sidewalls. The circulation of exhaust gases will cause improper operation of the water heater.

- Low Profile Two-Pipe Sidewall Venting*



- * IPEX and Centrotherm Low Profile terminations only
- ** Clearance above highest anticipated snow level or grade, or as required by local codes, whichever is greater.

Figure 47

NOTE

Only the following orientations are allowed for twin pipe terminations.



Figure 48

NEVER install in this orientation with the exhaust located nearest to the ground.

Connecting the Power Supply

Warning

The products referred to in this manual utilize an external electrical source. When installed, the unit must be electrically grounded in accordance with local codes or, in the absence of local codes, with the National Electrical Code ANSI/NFPA 70. and/or the CSA C22.1, Canadian Electrical Code, Part 1.

Improperly connecting the power supply could result in personal injury, electrical shock, and/or death! Extension sockets are forbidden.

When connecting the power supply, follow these guidelines:

-  **DO NOT** connect the electrical supply until all plumbing and gas piping is complete and the water heater has been filled with water.
 -  **DO NOT** connect the water heater to a 220 - 240V AC power supply. Doing this will damage the water heater and void the warranty.
 -  **DO NOT** run a dedicated electrical line to the water heater. All water heaters come with a 3 -pronged (grounded) plug. The water heater can be plugged into any grounded electrical outlet nearby to the installation location, as the unit only requires 2-4 Amps to operate.
 -  **DO NOT** use a broken or modified power cord.
 -  **DO NOT** bind, bend, or stretch power cords.
- Keep power cord free of dust.
 - If local codes require the water heater to be wired directly, remove and discard the factory-installed plug. Install a power switch between the breaker and the water heater to facilitate any end-user maintenance and servicing. Connect the water heater to a 110-120V AC, 60 Hz rated electrical supply that has a maximum of 2 Amps.
 - The water heater must be electrically grounded. If using the power plug, ensure the electrical outlet that the water heater will be connected to is properly grounded. If wiring the water heater directly to a power supply, DO NOT attach the ground wire to the gas or water piping, as plastic piping or dielectric unions could prevent proper grounding.
 - It is recommended to use a surge protector to protect the water heater from power surges.
 - If there is a power failure in cold weather areas, the anti-freeze system in the water heater will not operate and could result in freezing of the heat exchanger. In cold weather areas, where power failures are common, the water heater must be completely drained to prevent damage if the power will be off for an extended period of time. A battery back-up can be used to supply hot water during power outages. Damage caused by freezing temperatures due to a power loss is NOT covered by the warranty.

If the water heater will not be used for an extended period of time, follow these steps:

1. Disconnect the power supply to the water heater.
2. Completely drain the water out of the water heater. (Refer to Chapter CLEANING AND MAINTENANCE)

Caution

Label all wires before disconnecting them when you work on the controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

Installation Checklist

No.	Items	Check box
Water Heater Installation		
1.	Have you maintained the required clearances from building openings and intake air vents?	
2.	Have you minimized the distance between the water heater and the vent termination?	
3.	Have you minimized the distance between the water heater and major fixtures?	
4.	Have you maintained the proper service and maintenance clearances?	
5.	Is the water heater and vent piping clear of combustible materials, including clothing, cleaning materials, and rags?	
Gas Supply Connection		
6.	Does the gas supply match what is specified on the water heater rating plate?	
7.	Is the gas line at least $\frac{1}{2}$ " or $\frac{3}{4}$ " in. inner diameter?	
8.	Is the gas supply line sufficient in length and diameter to deliver the required BTUs?	
9.	Have you measured the pressure of the gas supply line?	
10.	Is the gas supply pressure within the recommended ranges specified in this manual?	
11.	Is the gas supply line equipped with a manual full port valve?	
12.	Have you tested the gas line pressure and all fittings for leaks?	
13.	Has the gas company inspected the installation, if required?	
Water Supply Connection		
14.	Is the water supply pressure sufficient (greater than 20 PSI)?	
15.	Have you installed shut off valves on the inlet and outlet to facilitate cleaning of the inlet water filter?	
16.	Have you bled the air out at each fixture?	
17.	Have you checked each fixture to ensure hot water is being supplied?	
18.	Have you cleaned the inlet water filter?	
Pressure Relief Valve Connection		
19.	Have you installed an approved pressure relief valve on the water heater?	
20.	Does the rating of the pressure relief valve match or exceed the maximum BTU rating of the water heater?	
21.	Is the pressure relief valve at least $\frac{3}{4}$ " in. inner diameter?	
22.	Have you installed the pressure relief valve on the hot water outlet pipe near the water heater?	
23.	Have you installed a discharge drain tube from the pressure relief valve to within 6-12" in. of the floor?	
Condensate Drain Connection		
24.	Have you installed a condensate drain line from the water heater to a drain or laundry tub?	

Venting the Water Heater (Checklist continued)

25.	Have you vented the water heater with 2" in. or 3" in. PVC, CPVC, Polypropylene, Type BH Special Gas Vent (ULC -S636) for this water heater, or in accordance with all local codes and the guidelines in this manual?	
26.	Have you ensured that PVC solid core pipe has not been used as venting for the water heater?	
27.	Is the vent sloped upward toward the vent termination at a rate of ¼" inch per foot (2% grade)?	
28.	Are all vent runs properly supported?	
29.	Have you properly supported the vent termination?	
30.	Have you properly sealed all air intake and exhaust joints, from the flue collar to the to the vent termination?	
31.	Have you installed bird screens on the exhaust and intake Terminations?	
32.	Have you checked the venting for leaks?	
33.	Is the vent termination at least 12 " in. above the exterior grade?	
34.	Is the total vent length within the maximum vent length restriction?	

Power Supply

35.	Is the supplied voltage 110 -120 VAC?	
36.	Is the water heater plugged into a properly grounded outlet?	
37.	Have you checked the polarity of the electrical connection?	

Water Heater in Operation

38.	Have you shown the owner how to clean the inlet water filter?	
39.	Have you given the Manuals to the owner for future reference?	
40.	Have you shown the owner how to shut off the gas in case of an emergency?	

OPERATION INSTRUCTIONS

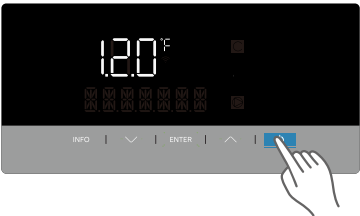
⚠ Warning

- Follow the instructions below to avoid unsafe operating conditions that could cause property damage, severe personal injury, or even death.
- Ensure the water heater is filled with water before using the water heater. if the water heater's internal gas valve cannot shut off the gas supply, use the manual gas shut-off valve and call a qualified technician.
 - If any part of the water heater has been submerged in water, do not use this appliance, immediately cut off the power supply, and call a qualified technician.

Turning the Water Heater On or Off

Power On/off

Press the POWER button to turn on/off. when the unit is turned "ON", the temperature setting will show on the display and the buzzer will sound once.



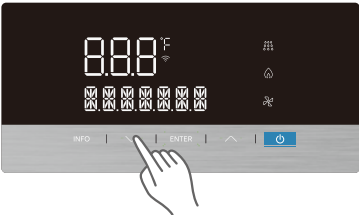
Temperature setting

⚠ Warning

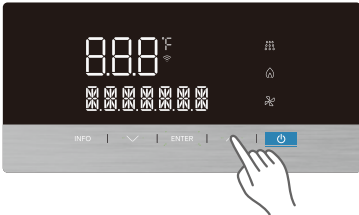
Before adjusting the temperature, pay attention to whether the water heater is properly functioning.
Water temperatures above 120°F can cause skin to scald instantly leading to severe burns or death.

The default temperature setting is 120°F (48.9°C). To adjust the temperature while the power is on, press the ^ or v buttons. Pressing the button will change the temperature by 1 degree and the buzzer will sound with each press. Holding the button will down will rapidly adjust the temperature setting.

Decrease Temperature Setting



Increase Temperature Setting



Range of temperature setting	Accuracy
95°F - 140°F	1°F

NOTE

- The set temperature may be changed from 95 to 140°F while the burner is off but the appliance is "ON".

If the current set temperature is below 120°F and the burner is on, then the temperature setting is locked from 95 to 120°F to help prevent scalding from temperature adjustment.

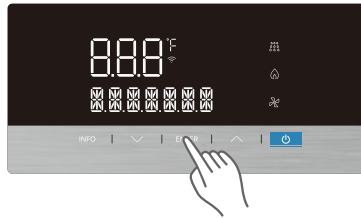
- If the set temperature is above 120°F, the set temperature can be changed from 95 to 140°F.

However, if set temperature is adjusted to a value that is lower than 120°F, the range becomes locked between 95-120°F to help prevent accidental scalding.

Set the default temperature

Set the default temperature while the power is "ON", press the ENTER button for 3 seconds until the default temperature on the display flashes, then, press the **▲** or **▼** keys to set the default temperature.

Restore to the default temperature while the burner is off, press the ENTER button.



NOTE

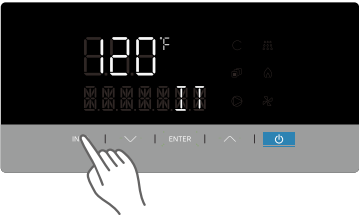
If you try to change the set temperature above 120°F while burner is on and the previous set temperature was below 120°F, the system will not allow this and the buzzer will sound twice.

Information

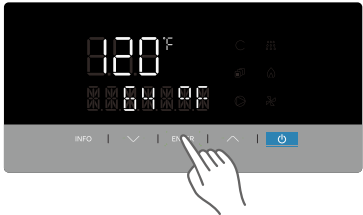
- 1. Press the info button to enter the information query interface while the power is on, IT displays as default.
- 2. Press the v or ^ buttons to select the information item.
- 3. Press ENTER to show details.
- 4. Press ENTER again to return to the display Info screen

Menu Item	Description	Units
IT	Inlet Water Temperature	°Fahrenheit
WF	Water Flow Rate	Gallons Per Minute

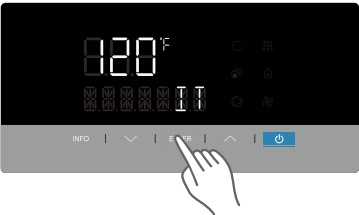
Step 1:
Display shows after pressing INFO key



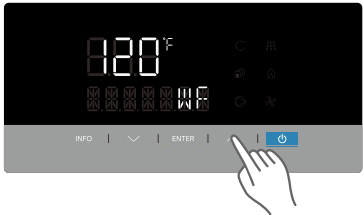
Step 2:
Then, press ENTER to see the actual IT:



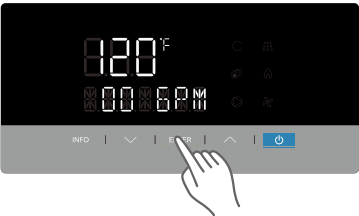
Step 3:
Press ENTER again to return to the display Info screen.



Step 4:
Press the ^ key to select WF .



Step 5:
Press ENTER again to view the actual WF.



CAUTION

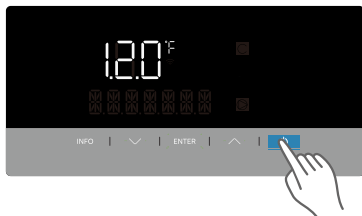
*This operation MUST ONLY be performed by licensed professionals or with the specific guidance of an authorized Midea representative.

Adjusting Parameters for High-Altitude Performance

To change program data:

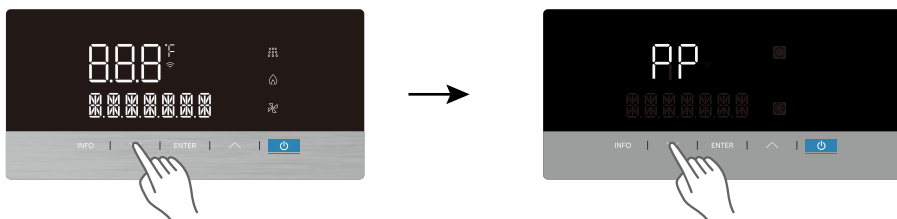
Step 1: Connect the unit to a power supply.

Step 2: Turn “OFF” the water heater by pressing the POWER button.

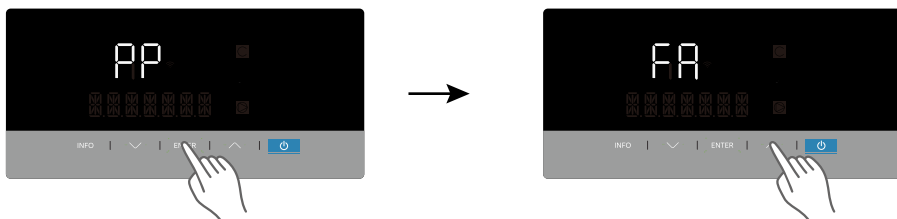


Step 3: Disconnect the unit from the power supply.

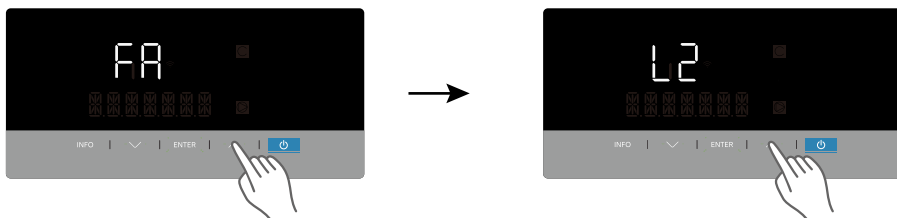
Step 4: Reconnect the power supply, however, do not turn “ON” the unit, instead press and hold the ▼ button for at least 5 seconds until PP is displayed on the screen.



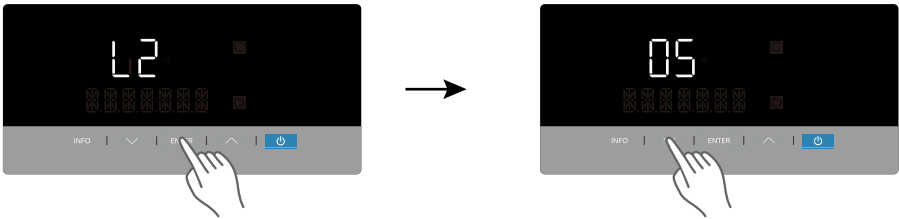
Step 5: Press the ENTER button and FA will display on the screen.



Step 6: Use the ▲ button to scroll through the parameter codes until L2 is displayed on the screen.

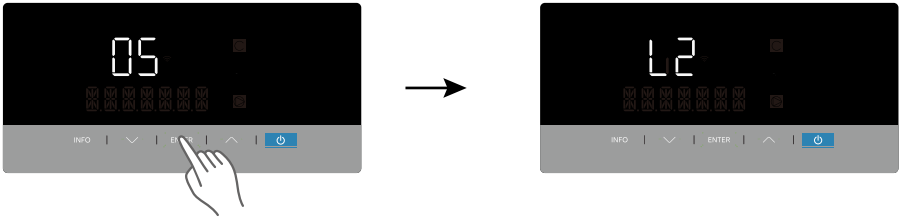


Step 7: Press the ENTER button, and then press the ▼ & ▲ buttons to adjust the L2 value according to the table below and the appliance's operating elevation.

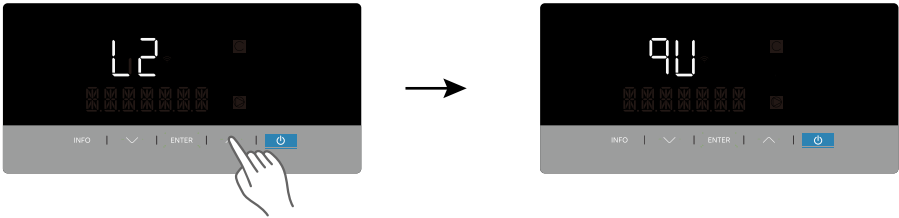


Program data	Altitude setting	
Altitude	2000 ft - 6500 ft	6500 ft - 9800 ft
L2	05	06

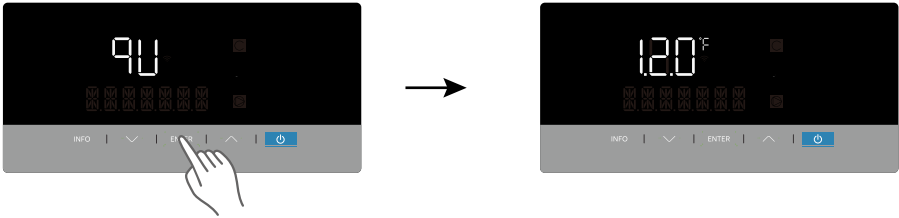
Step 8: Press the ENTER button again to exit the parameter code adjustment mode.



Step 9: Use the button until “ qU” is displayed on the screen.



Step 10: Press the ENTER button to save the L2 code and exit the adjustment mode. Several beeps will sound.



CLEANING AND MAINTENANCE

Cleaning

- Check frequently to see if the gas supply pipelines are in good condition without cracks.
- Pay attention to any rubber hoses or gaskets. In order to prevent gas leakage, check the joints of pipelines frequently by using suds to see if there are bubbles that form. If bubbles form, there is a leak.
- A water heater must be examined and cleaned after it has been used for a period of time (generally about six months to a year) to guarantee normal operation of the heater.
- Clean the external casing of the unit with water and light soap. Use of harsh chemical cleaners or volatile solvents will cause the paint to fade or lose its luster.
- Clean the inlet water filter regularly.

Burner

- Remove the screw of the front cover, and check burner flame for proper color from the flame observe window. Once ignited, the flame must cover the surface of the burner. The flame must burn with a clear, blue or orange stable flame. If the flame does not have this appearance, call the licensed professionals or authorized Midea representative for help.

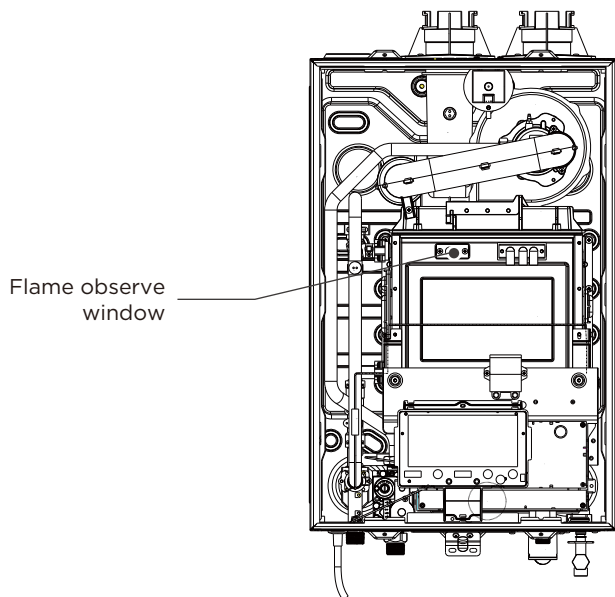


Figure 48

Flush the Heat Exchanger

Due to the hardness of the water in your area, scale may build up inside the heat exchanger and block efficient water flow. Periodic flushing is mandatory in order to ensure smooth water flow. It is recommended the heat exchanger be flushed on the schedule on the bottom of [Page 11](#) based on your water hardness. Damage to the water heater which results from water scale deposit WILL NOT be covered under the product warranty.

Please follow these steps when the appliance is flushed to descale the heat exchanger. It is recommended that you contact a licensed professional to carry out this procedure.

1. Ensure the isolation valves are fully closed before beginning this procedure.
2. Connect the empty connection of the isolation valve on the cold water side to the outlet of the circulation pump.
3. Connect the empty connection of the isolation valve on the hot water valve to a tube leading to the solution tank.
4. Connect the inlet of the circulation pump to a tube that leads to the solution tank.
5. Make sure there is no leakage in any of the connectors.
6. Fill the solution tank with descaling solution above the tube connected to the circulation pump. If using commercial descaling kit, please properly follow the instructions of the descaling kit.
7. Run the circulation pump until solution begins exiting the tubing connected to the hot water isolation valve. Ensure this tubing returns fluid to the flushing solution container.
8. Continue running the circulation pump until the solution that comes out from the hot water side is clean.
9. Fully drain solution from unit. Disconnect all tubes for flushing and fully close the empty connectors of the isolation valves.
10. Open the isolation valves to switch back to normal water flow.
11. Restore the power supply, gas supply, and water supply.
12. Run the water heater for at least five (5) minutes to make sure there is no solution remaining in the unit.

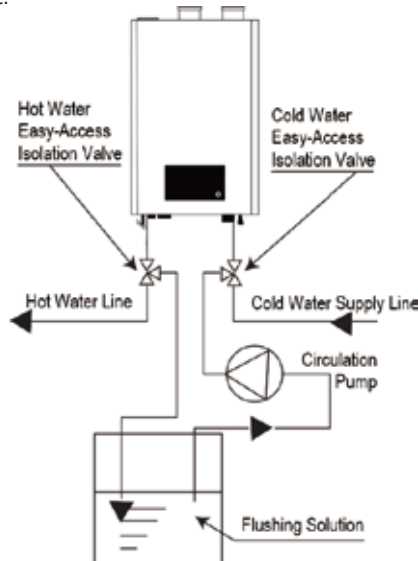


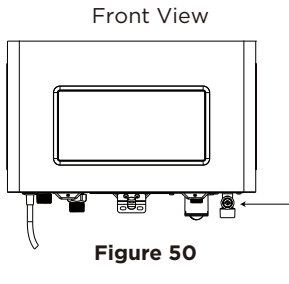
Figure 49

Clean the Inlet Water Filter

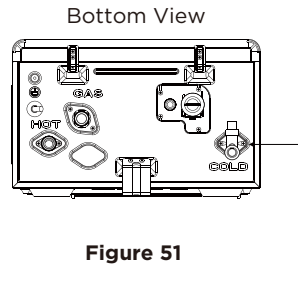
CAUTION

Before performing any maintenance, please follow these steps:

- Disconnect the power supply, disconnect power to the outlet that services this unit, and close the manual gas shut-off valve.
 - After the power is turned OFF, drain the hot water from a nearby faucet until it runs cold. Then close the water supply isolation valves (cold and hot) of the water heater.
1. Drain the water heater.
 2. Locate the cold water inlet to the water heater.
 3. Unscrew the brass end facing towards you on the cold water inlet assembly by turning it counterclockwise until it becomes loose. Remove the brass end and filter from the water inlet assembly.
 4. Rinse the filter screen with clean water, brush with an unused toothbrush, or wipe it when necessary. Do not tap the screen on a hard surface or with your hand. Tapping the screen might deform the filter, affecting filtering ability.
 5. Insert the cleaned filter and tighten it by turning clockwise until it is securely back in the cold water inlet assembly.



Water Filter location



Water Filter location

Picture of brass end and clean water filter removed from water heater (Enlarged).



Figure 52

COMPONENT ASSEMBLY DIAGRAMS AND PARTS LISTS

Appliance explosion Overview

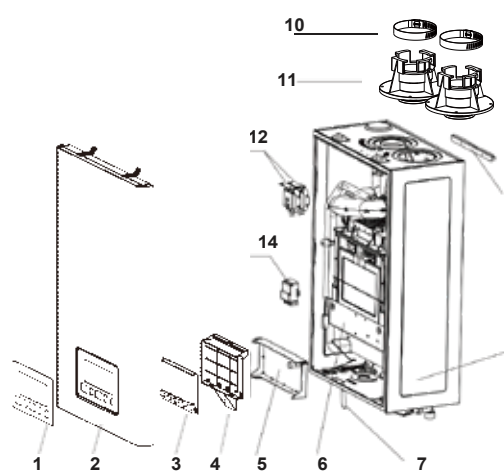


Figure 53

No.	Description	Service Part #
1.	Operation panel	
2.	Front Cover	
3.	Screen Assembly	
4.	Control box	
5.	Control Board Assembly	
6.	Controller Support	
7.	Power Cable	
8.	Case	
9.	Mounting Bracket	
10.	Collar	
11.	Vent Collar	
12.	Pressure Sensor (APS)	
13.	Ignition Transformer	

Burning system Overview

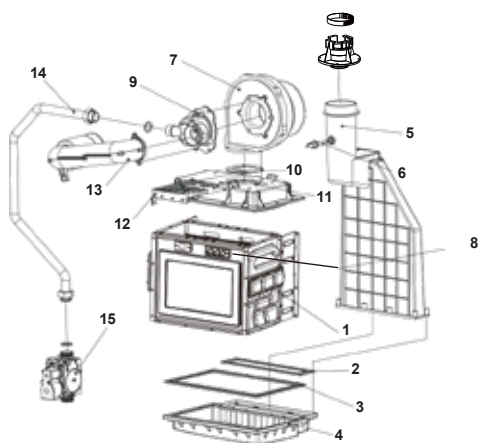


Figure 54

No.	Description	Service Part #
1.	Heat exchanger assembly	
2.	Vent gasket	
3.	Condensate collector gasket	
4.	Condensate collector	
5.	Flue Vent	
6.	Flue temperature sensor	
7.	Blower	
8.	Igniter assembly	
9.	Mixer assembly	
10.	Blower gasket	
11.	Burner assembly	
12.	Blower bracket	
13.	Muffler	
14.	Gas pipe	
15.	Gas valve	

Water system Overview

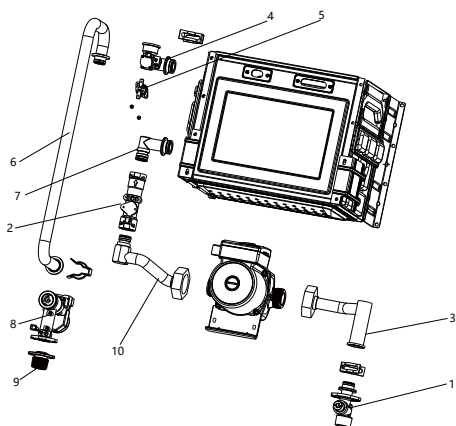


Figure 55

No.	Description	Service Part #
1.	Cold water inlet connector	
2.	Water flow sensor	
3.	Cold water pipe	
4.	Thermistor	
5.	Connector of water inlet	
6.	Connecting pipe component	
7.	Connector of water inlet	
8.	Water Ratio Valve	
9.	Water outlet connection	
10.	Cold water pipe	

Condensate system



Figure 56

No.	Description	Service Part #
1.	Condensate trap assembly	

CERTIFICATIONS AND SAFETY APPROVALS

Declaration of conformity

Certifications and Safety Approvals

Declaration of Conformity

We hereby confirm that the following customer model names and Midea model names match each other respectively

Brand	Midea model	Marketing Model
Midea	JSG52-32PCHS-NG	MGWH199IXNN
	JSG52-32PCHS-LP	MGWH199IXPN
	JSG52-32PCHPS-NG	MGWH199IXNP
	JSG52-32PCHPS-LP	MGWH199IXPP
	JSG48-29PCHS-NG	MGWH180IXNN
	JSG48-29PCHS-LP	MGWH180IXPN
	JSG48-29PCHPS-NG	MGWH180IXNP
	JSG48-29PCHPS-LP	MGWH180IXPP
	JSG40-24PCHS-NG	MGWH150IXNN
	JSG40-24PCHS-LP	MGWH150IXPN
	JSG40-24PCHPS-NG	MGWH150IXNP
	JSG40-24PCHPS-LP	MGWH150IXPP

Application of Council Directives Standards, to which Conformity Is Declared:
South Coast Air Quality Management District Rule 1146.2 Tested to South Coast Air Quality Management District Protocol: Nitrogen Oxides Emissions Compliance Testing for Natural Gas-Fired Water Heaters and Small Boilers
CSA/ANSI Z21.10.3:19/CSA 4.3:19
NSF Compliance: Fabricate and label equipment components that will be in contact with potable water to comply with NSF 61 and NSF 372
Energy Star Compliance: Fabricate and label equipment in compliance with Energy Star requirements. Special Requirements: NSF/ANSI/CAN 372 -2022- Drinking Water System Components - Lead Content.

CERTIFICATIONS

Please note that changes or modifications of this product is not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment complies with FCC's RF radiation exposure limits set forth for an uncontrolled environment.

The antenna(s) used for this transmitter must be installed and operated to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter. Installers must ensure that 20cm separation distance will be maintained between the device (excluding its handset) and users.

Federal Communications Commission (FCC) Compliance Statement for USA

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference WILL NOT occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

FCC Supplier's Declaration of Conformity

Product Name: Gas water heater

Model number: MGWH199IXNN

MGWH199IXPN

MGWH180IXNN

MGWH180IXPN

MGWH150IXNN

MGWH150IXPN

Suppliers Name: Midea America Corp.

Suppliers Address (USA): 300 Kimball Dr. Parsippany, NJ 07054

Suppliers Website: <http://midea.com/us>

Contact Email/Telephone: 833-799-4737

TRADEMARKS, COPYRIGHTS AND LEGAL STATEMENT

 Midea logo, word marks, trade name, trade dress and all versions thereof are valuable assets of Midea Group and/or its affiliates (“Midea”), to which Midea owns trademarks, copyrights and other intellectual property rights, and all goodwill derived from using any part of an Midea trademark. Use of Midea trademark for commercial purposes without the prior written consent of Midea may constitute trademark infringement or unfair competition in violation of relevant laws.

This manual is created by Midea and Midea reserves all copyrights thereof. No entity or individual may use, duplicate, modify, distribute in whole or in part this manual, or bundle or sell with other products without the prior written consent of Midea.

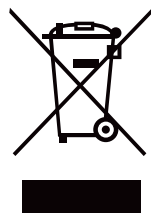
All the described functions and instructions were up to date at the time of printing this manual. However, the actual product may vary due to improved functions and designs.

DISPOSAL AND RECYCLING

Important instructions for environment

Compliance with the WEEE Directive and Disposing of the Waster Product:
This product complies with EU WEEE Directive (2012/19/EU). This product bears a classification symbol for waster electrical and electronic equipment (WEEE).

This symbol indicates that this product shall not be disposed with other household wastes at the end of its service life. Used device must be returned to official collection point for recycling of electrical electronic devices. To find these collection systems please contact to your local authorities or retailer where the product was purchased. Each household performs important role in recovering and recycling of old appliance. Appropriate disposal of used appliance helps prevent potential negative consequences for the environment and human health.



Compliance with RoHS Directive

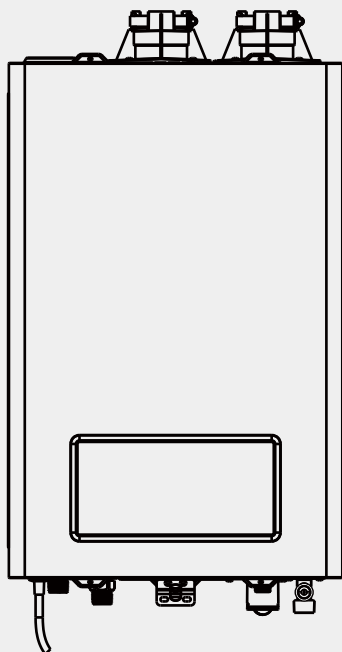
The product you have purchased complies with EU RoHS Directive (2011/65/EU). It does not contain harmful and prohibited materials specified in the Directive.

DATA PROTECTION NOTICE

For the provision of the services agreed with the customer, we agree to comply without restriction with all stipulations of applicable data protection law, in line with agreed countries within which services to the customer will be delivered, as well as, where applicable, the EU General Data Protection Regulation (GDPR).

Generally, our data processing is to fulfil our obligation under contract with you and for product safety reasons, to safeguard your rights in connection with warranty and product registration questions. In some cases, but only if appropriate data protection is ensured, personal data might be transferred to recipients located outside of the European Economic Area.

Further information are provided on request. You can contact our Data Protection Officer via **MideaDPO@midea.com**. To exercise your rights such as right to object your personal data being processed for direct marketing purposes, please contact us via **MideaDPO@midea.com**. To find further information, please follow the QR Code.



Instantaneous Gas Water Heater Premixed Series

Installation & Operation Manual

**MGWH199IXNN / MGWH199IXPN
MGWH180IXNN / MGWH180IXPN
MGWH150IXNN / MGWH150IXPN**

Warning notices: Before using this product, please read this manual carefully and keep it for future reference. The design and specifications are subject to change without prior notice for product improvement. Consult with your dealer or manufacturer for details.
The diagram above is just for reference. Please take the appearance of the actual product as the standard.

WARNING: If the information in these instructions is not followed exactly a fire or explosion may result causing property damage, personal injury, or death.

- **Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.**
- **WHAT TO DO IF YOU SMELL GAS:**
 - **Do not try to light any appliance.**
 - **Do not touch any electrical switch; do not use any phone in your building.**
 - **Immediately call your gas supplier from a neighbor's phone.**
 - **Follow the gas supplier's instructions.**
 - **If you cannot reach your gas supplier, call the fire department.**
- **Installation and service must be performed by a qualified installer, service agency, or the gas supplier.**

THANK YOU LETTER

Thank you for choosing Midea! Before using your new Midea product, please read this manual thoroughly to ensure that you know how to operate the features and functions that your new appliance offers in a safe way



CONTENTS

THANK YOU LETTER.....	0 1
SAFETY INSTRUCTIONS.....	0 3
SPECIFICATIONS.....	0 7
PRODUCT OVERVIEW	0 9
QUICK START GUIDE.....	1 1
OPERATION INSTRUCTIONS.....	1 2
CLEANING AND MAINTENANCE.....	1 7
TROUBLESHOOTING.....	2 1
CERTIFICATIONS AND SAFETY APPROVALS.....	2 6
TRADEMARKS, COPYRIGHTS AND LEGAL STATEMENT	2 7
DISPOSAL AND RECYCLING	2 7
DATA PROTECTION NOTICE.....	2 8

SAFETY INSTRUCTIONS

Read Before Installation!

Incorrect installation may cause serious damage or injury!
The seriousness of potential damage or injuries is classified as either a **WARNING!**
Or **CAUTION!**

Explanation of Symbols

	Warning This symbol indicates ignoring instructions may cause death or serious injury.
	Caution This symbol indicates that ignoring instructions may cause moderate personal injury, damage to the unit, or other property.
	DO NOT This symbol indicates that you should NEVER perform the indicated action.

Warning

Please read the manual in its entirety before operating or repairing.

NOTE: The installation must conform to local codes or, in the absence of local codes, the National Fuel Gas Code, ANSI Z223.1/NFPA 54.

WARNING:

This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

This appliance has been designed for home use only, and may cause danger if used in special occasions.

Before operating, smell all around the area near the appliance for the scent of gas. be sure to smell next to the floor as some gas is heavier than air and will settle there.

 **DO NOT** try to light the burner by hand. this appliance does not have a pilot light. it is equipped with an ignition device which automatically lights the burner.

 **DO NOT** store or use gasoline or other flammable substances (vapors or liquids) in the vicinity of this water heater or any other appliance. this could create a hazard that may result in personal injury, fire, and/or an explosion.

 **DO NOT** place newspapers or laundry near the water heater or venting system (including the vent termination outlet), as these could create a fire hazard, which could result in personal injury and property damage.

⚠ **DO NOT** use or store aerosol products (such as hair sprays, spray paints etc.) or any other compressed gases near the water heater or venting system (including the vent termination outlet), as this could result in personal injury, fire, and/or an explosion.

⚠ **DO NOT** use this appliance if any part has been submerged in water. Immediately call a qualified service technician to inspect the appliance and to replace any parts which have been under water.

⚠ **DO NOT** use tools to push in or turn the manual gas appliance shut-off valve. Use only your hand to perform this action. In the event the valve will not turn, do not attempt to repair it. Using too much force or attempting to repair the manual gas shut-off valve could result in personal injury, fire, and/or an explosion. Call a qualified service technician to perform any repairs.

- Have your installer or plumber show the location of the manual gas shut-off valve and demonstrate how to properly use it.

OPERATIONAL WARNINGS:

⚠ **DO NOT** operate the water heater with the front cover open, Doing so could cause a fire or carbon monoxide (CO) poisoning, which could result in property damage, personal injury, death, and/or an explosion.

⚠ **DO NOT** operate the water heater without a proper venting system, Operating the unit without a vent could cause fire and/or carbon monoxide poisoning, which could result in property damage, personal injury, or death. Inspect the vent termination and air intake supply annually to ensure proper operation of the water heater, If any of the vent pipes, vent elbows, or intake pipes are damaged in any way (separated at a joint or show signs corrosion, rusting, or melting), turn OFF the water heater and discontinue use until piping is repaired.

⚠ **DO NOT** touch the power cord or internal components of the water heater with wet hands. Doing so could result in electric shock and personal injury. Always disconnect the power supply before servicing.

- If the water heater is damaged for any reason, immediately shut off the gas supply to the appliance.
- If the water heater is damaged as a result of overheating, fire, flood, or any other reason, close the manual shut-off valve and do not operate the unit again until it has been repaired and inspected by a qualified technician.

WHAT TO DO IF YOU SMELL GAS:

⚠ **DO NOT** try to start, ignite/light, or operate any nearby appliance.

⚠ **DO NOT** touch any electrical switch.

⚠ **DO NOT** use any phone within the building where you smell gas.

- EXIT the building IMMEDIATELY and CALL your GAS SUPPLIER. Follow the gas supplier's instructions. If you CANNOT reach the gas supplier, CALL the FIRE DEPARTMENT.

TO PREVENT BURNS:

⚠ **DO NOT**

DO NOT change or adjust the temperature setting of the water heater before reading all of the instructions in this manual carefully.

ALTITUDE ADJUSTMENT:

The parameter setting of the water heater may need to be adjusted depending on the altitude of the location it is being installed. Being from the West ourselves, we already adjusted the initial altitude setting to operate between 2,000 – 6,500 feet above sea level, since being out West is best. Please refer to the table below for the proper setting based on your altitude. This adjustment can be made through the water heater control panel.

For Canada: For operation at elevation at 2000-4500ft, input rating should be reduced at the rate of 90% with normal manifold pressure. For operation at elevation at 4500-9800ft, input rating shall be reduced at the rate of 4% for each 1000ft above sea level accordance with local codes or, in the absence of local codes, CSA B149.1.

For US: For operation at elevations above 2000ft, input rating should be reduced at the rate of 4% for each 1000ft above sea level accordance with local codes or, in the absence of local codes, NFPA54/ANSI Z223.1.

Instructions on how to perform this adjustment can be found in the Appliance Servicing section of installation manual. However, this adjustment should only be performed by a qualified technician at the time of installation. If this adjustment is not made, or performed incorrectly, it could cause improper operation of the unit. Improper operation could cause gas leakage, fire, and/or an explosion that can put you at risk of personal injury or death.

Program data	Altitude setting	
Altitude above Sea Level	2,000 – 6,500 feet	6,500 – 9,800 feet
L2	05 (Factory Default Setting)	06

Vapors from flammable liquids will explode and catch fire, causing death or severe burns.

⚠ DO NOT use or store flammable products such as gasoline, solvents, or adhesives in the same room or any area near the water heater.

The water heater has a main burner.

Keep flammable products:

- 1. Far away from the unit.
- 2. In approved containers.
- 3. Tightly closed.
- 4. Away from children

The main burner flame can:

- 1. Come on at any time.
- 2. Will ignite flammable vapors.

Vapors:

- 1. Cannot be seen.
- 2. Are heavier than air.
- 3. Can travel a long distance.

⚠ DO NOT install the water heater where flammable products will be stored or used unless the main burner is at least 18 inches above the floor. This will reduce, but not eliminate, the risk of vapors being ignited by the main burner.

Read and follow all water heater warnings and instructions. If the owner’s manual is missing, contact the retailer or manufacturer.



Figure 1

IMPORTANT: This water heater has been approved for use in the USA. Installing and operating this water heater in any other country will void the product’s warranty.

Caution

Contact an authorized service technician for repair or maintenance of this unit.

The installation of this appliance must comply with national building or installation laws and regulations. Installation must be carried out by authorized personnel or specialists. Failure to follow these guidelines could result in hazardous conditions.

⚠ **DO NOT** attempt to repair or replace any part of the water heater unless it is specifically recommended in this manual.

⚠ **DO NOT** operate the water heater if it shows any signs of damage or any part of it has been submerged in water. doing so could result in personal injury, product failure, and/or property damage. if any part of the unit has been damaged or has been submerged in water, immediately contact a qualified service technician to inspect the unit and replace any parts that are damaged or have been under water.

⚠ **DO NOT** allow children to operate or access the water heater. doing so could result in personal injury, product failure, and/or property damage.

⚠ **DO NOT** attempt to adjust or change the temperature setting while the water heater is in use, as this could result in personal injury.

⚠ **DO NOT** turn on the water heater unless the water and gas supplies are properly connected and fully opened. operating the unit without the water and gas connected and flowing could cause damage to the water heater.

⚠ **DO NOT** turn on the water heater if the cold water supply shut-off valve is closed, as this could cause damage to the unit.

⚠ **DO NOT** use this water heater for anything other than its intended purpose, as described within this manual.

⚠ **DO NOT** remove the front cover unless the power to the water heater is turned off and the appliance is disconnected from the outlet. failure to follow this warning could result in electric shock.

⚠ **DO NOT** use unapproved replacement parts or accessories, as this could cause the unit to operate improperly or fail and void the product's warranty.

⚠ **DO NOT** place anything in or around the vent terminals that could obstruct airflow in or out of the water heater (e.g. clothesline).

Should overheating occur, or the gas supply fails to shut off, turn off the manual gas valve to the appliance.

SPECIFICATIONS

Note: Pls check the model on the brand,the explanation of the model have been list below.

MGWH	199	IX	N	P
	:		:	:
	Rated Input		N: Natural Gas P: Propane	P : Pump N:No pump

Natural Gas Model Name		MGWH150IXNN	MGWH180IXNN	MGWH150IXNN
Propane Model Name		MGWH150IXPN	MGWH180IXPN	MGWH199IXPN
Heat Capacity (Input)	Natural Gas, Propane Gas	20000-150000 BTU/h	20000-180000 BTU/h	20000-199000 BTU/h
Uniform Energy Factor	UEF (for NG & LP)	0.95	0.95	0.95
Flow Rate (DHW)	37°F (20 °C) Temp Rise	8.1	9.7	10.7
	47°F (26 °C) Temp Rise	6.4	7.6	8.4
	67°F (37 °C) Temp Rise	4.5	5.4	5.9
Dimensions		26.8X17.3X10.6in. (680*440*270mm)		
Weight		70.5lbs (32kg)		
Installation Type		Indoor		
Venting Type		Forced draft direct-vent		
Ignition		Electronic Ignition		
Water Pressure		15-150 PSI		
Natural Gas Supply Pressure (from source)		3.5in.WC-10.5in.WC (870Pa-2610Pa)		
Propane Gas Supply Pressure (from source)		8in.WC-13in.WC (1990Pa-3230Pa)		

Minimum Flow Rate		0.5GPM (1.9L/min)	0.5GPM (1.9L/min)	0.5GPM (1.9L/min)
Con- nection Sizes	Cold Water Inlet	3/4NPT		
	Hot Water Outlet	3/4NPT		
	Gas Inlet	3/4NPT		
Power Supply	Main Supply	120V, 60Hz		
	Maximum Power Consumption	150 W (+114 W when antifreeze module is on)		
Materi- als	Casing	SPCC		
	Heat Exchangers	300 series stainless steel		
Venting	Exhaust	2 in. or 3 in. PVC, CPVC, approved Polypropylene		
	Intake			
Safety Devices		Flue High Limit Switch (158°F / 70°C) • Water Temperature High Limit Switch (185°F / 85°C) • Freeze Protection Ceramic Heater (Turns on at 41°F / 5°C & Turns off at 59°F / 15°C)		

PRODUCT OVERVIEW

Product

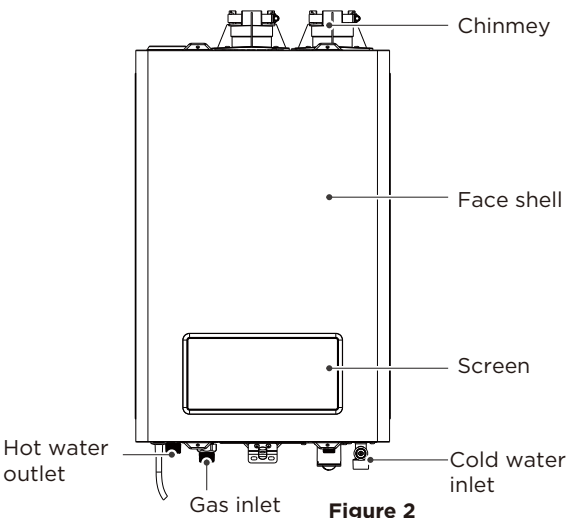
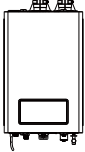
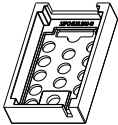
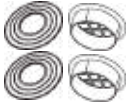
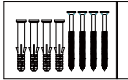
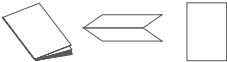


Figure 2

Included Accessories

Tankless Gas Water Heater x 1	Styrofoam Packing Materials x 2	Toggle Bolts x 4	Bird Screens 2 x 2 pieces each
			
Three (3") in. Exhaust Pipe Flow Restrictor x 1 (3" inch pipe only)	Wall-Mounting Bracket (upper) x 1	Fastener Packet x 1	Wall-Mounting Bracket (lower/bottom) x 1
			
Hose/Pipe Clamps x 2	Installation & Operation Manual x1 1:1 Installation Drawing x 1 Limited Warranty X 1		
			

Dimension

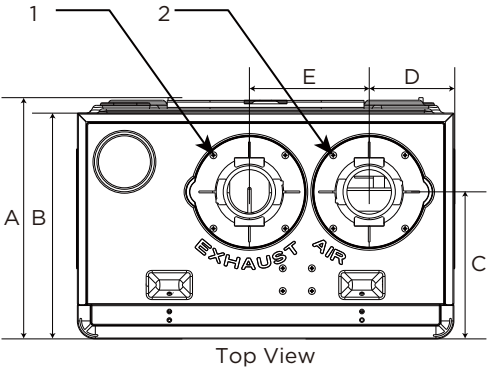


Figure 3

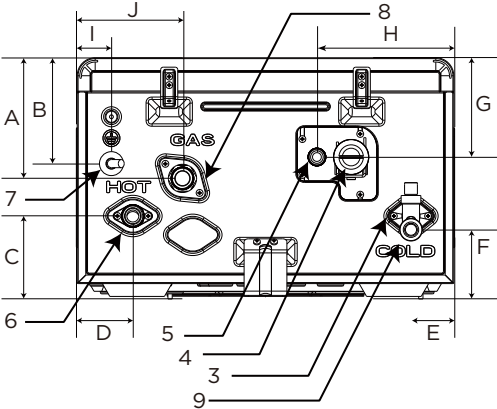


Figure 4

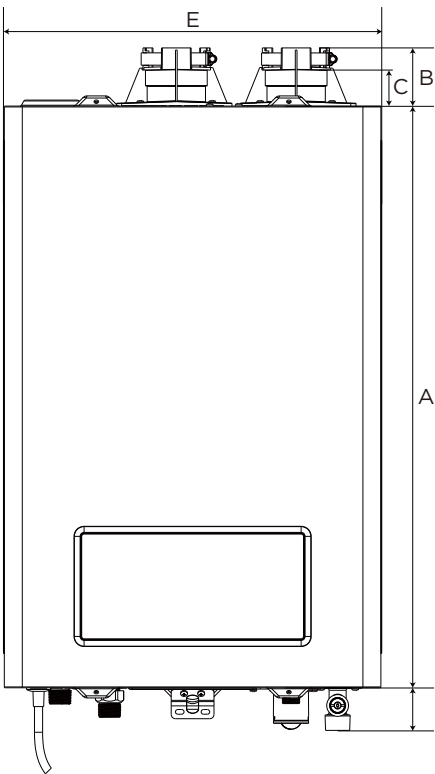


Figure 5

Appliance Components

No.	Description	Size
1	Exhaust Vent	2" inches(in.)
2	Air Intake	2" in.
3	Cold Water Inlet	¾" in.
4	Condensate Clean	N/A
5	Condensate Drain	¾" in.
6	Hot Water Outlet	¾" in.
7	Power Cable	120V/60Hz
8	Gas Inlet	¾" in.
9	Water inlet	¾" in.

Appliance Dimensions

Item	Top View	Front View	Bottom View
A	10 7/8 in.	26 3/4 in.	5 5/8 in.
B	10 3/8 in.	2 3/4 in.	4 7/8 in.
C	6 3/4 in.	1 3/4 in.	3 1/8 in.
D.1	3 7/8 in.	1 3/4 in.	2 1/2 in.
D.2	3 7/8 in.	1 3/4 in.	2 5/8 in.
E	5 1/2 in.	17 1/4 in.	2 in.
F			2 1/2 in.
G			4 3/8 in.
H			4 1/8 in.
I			4 7/8 in.
J			1 5/8 in.

QUICK START GUIDE

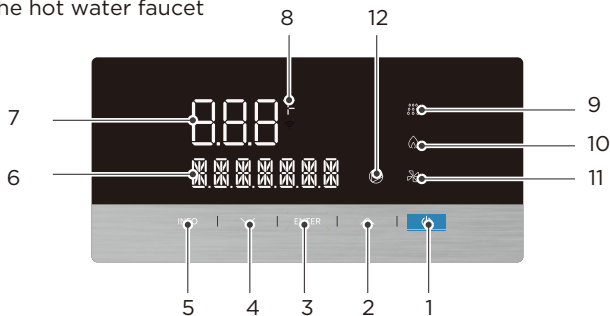
Before first use

CAUTION

Before first using, a trial running should be carried out by authorized professionals. Before using, please make sure the gas water heater is installed properly.

Trial running and quick start

1. Insert the power supply plug and switch on the power.
2. Turn on the gas switch.
3. Open the water inlet valve before ignition
4. Turn on the hot water faucet. Observe the flame from the screen.
5. Turn off the hot water faucet



No.	Symbol	Description	Function
1		Power	Power ON/OFF
2		Up	• Increase temperature setting. • Switch the information displayed when Info button is pressed.
3	ENTER	Enter	• Set the default temperature • Restore to the default temperature
4		Down	• Decrease temperature setting. • Switch the information displayed when Info button is pressed.
5	INFO	Information	Display more operation information.
6		Error Display	Show error description.
7		Temperature	Displays temperature of the water.
8		Temperature	Displays the temperature in Fahrenheit.
9		Water Flow	Indicates water flow signal is detected.
10		Flame	Indicates flame signal is detected.
11		Blower	Indicates blower is operating.
12		Pump	Indicates pump is operating.

OPERATION INSTRUCTIONS

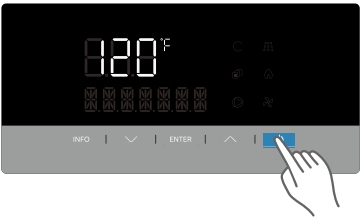
Warning

- Follow the instructions below to avoid unsafe operating conditions that could cause property damage, severe personal injury, or even death.
- Ensure the water heater is filled with water before using the water heater. If the water heater's internal gas valve cannot shut off the gas supply, use the manual gas shut-off valve and call a qualified technician.
 - If any part of the water heater has been submerged in water, do not use this appliance, immediately cut off the power supply, and call a qualified technician.

Turning the Water Heater On or Off

Power On/off

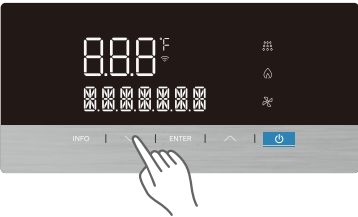
Press the POWER button to turn on/off. When the unit is turned "ON", the temperature setting will show on the display and the buzzer will sound once.



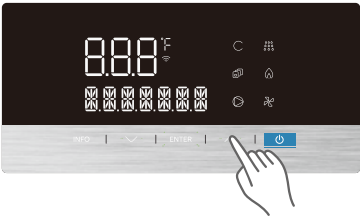
Adjusting the Water Temperature

The default temperature setting is 120°F (48.9°C). To adjust the temperature while the power is on, press the  or  buttons. Pressing the button will change the temperature by 1 degree and the buzzer will sound with each press. Holding the button down will rapidly adjust the temperature setting.

Decrease Temperature Setting



Increase Temperature Setting



Range of temperature setting	Accuracy
95°F - 140°F	1°F

NOTE

- The set temperature may be changed from 95 to 140°F while the burner is off but the appliance is "ON". If the current set temperature is below 120°F and the burner is on, then the temperature setting is locked from 95 to 120°F to help prevent scalding from temperature adjustment.
- If the set temperature is above 120°F, the set temperature can be changed from 95 to 140°F.

Error code

If an error message appears, you can try resetting the water heater to resolve the problem. To reset the water heater, press the power button.

If resetting the water heater does not solve the problem, refer to “5. Troubleshooting” on page trouble shooting or contact technical support on the warranty card.



	ERROR	CODE	DISPLAY	DISPLAY CONTENT
1	Hot water outlet Temperature Sensor Failure	E0	E0 Flash	OT SENSOR ERROR
2	Accidental Flame Lost	E1	E1 Flash	FLAME LOST ERROR
3	Fake Flame	E2	E2 Flash	FAKE FLAME ERROR
4	Thermistor Failure	E3	E3 Flash	THERMOSTAT ERROR
5	Outlet Temperature Too High	E4	E4 Flash	OT OVERHEAT ERROR
6	Fan Failure	E5	E5 Flash	FAN ERROR
7	Gas Valve Failure	E6	E6 Flash	GAS VALVE ERROR
8	Pump Failure	E8	E8 Flash	PUMP ERROR
9	Main Water Valve Failure*	E9	N/A	MAIN WATER VALVE ERROR
10	Overtime Failure	EE	EE Flash	HEATING OVERTIME ERROR
11	Inlet Temperature Failure	F2	F2 Flash	IT SENSOR ERROR
12	Ignition Fail	C0	C0 Flash	IGNITION FAILURE ERROR
13	Residual Flame	C1	C1 Flash	FLAME LEFT ERROR
14	Vent Blockage	C4	C4 Flash	VENT BLOCK ERROR
17	Waterway Blockage Failure	C5	C5 Flash	WATER CIRCUIT BLOCK ERROR
16	Exhaust gas Temperature	C9	C9 Flash	EGT SENSOR ERROR
17	Exhaust Gas Temperature Too High	CA	CA Flash	EXHAUST GAS OVER-HEAT ERROR
18	Bypass Water Valve Failure*	CB	N/A	BYPASS WATER VALVE ERROR
19	Heat Exchanger Outlet Temperature Sensor Failure	CF	CF Flash	HET SENSOR ERROR
20	Watch Dog Circuit Failure	A0	A0 Flash	WATCH DOG ERROR
21	MCU PC Command	A1	A1 Flash	MCU CMD ERROR
22	FailureInstruction Compilation & Execution Failure	A2	A2 Flash	CMD RUN ERROR
23	MCU RAM DC Failure	A3	A3 Flash	MCU RAM DC ERROR
24	MCU ROM Failure	A4	A4 Flash	MCU ROM ERROR
25	MCU Register Dc	A5	A5 Flash	MCU REGISTER ERROR

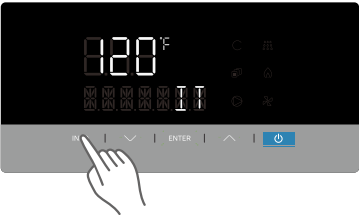
* These error codes will not display on the screen, however, they can be accessed in the after-sales mode. Please refer to the previous page for more information.

Information

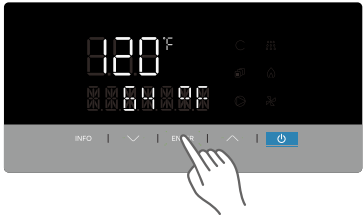
- 1. Press the info button to enter the information query interface while the power is on, IT displays as default.
- 2. Press the ∇ or $\wedge$ buttons to select the information item.
- 3. Press ENTER to show details.
- 4. Press ENTER again to return to the display Info screen.

Menu Item	Description	Units
IT	Inlet Water Temperature	°Fahrenheit
WF	Water Flow Rate	Gallons Per Minute

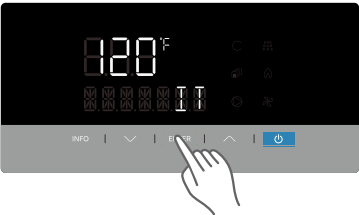
Step 1:
Display shows after pressing INFO key



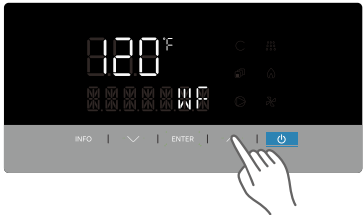
Step 2:
Then, press ENTER to see the actual IT:



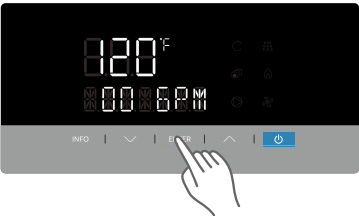
Step 3:
Press ENTER again to return to the display Info screen.



Step 4:
Press the $\wedge$ key to select WF .



Step 5:
Press ENTER again to view the actual WF.



Appliance Servicing*

CAUTION

*This operation MUST ONLY be performed by licensed professionals or with the specific guidance of an authorized Midea representative.

Diagnostics and Suggested Corrective Actions

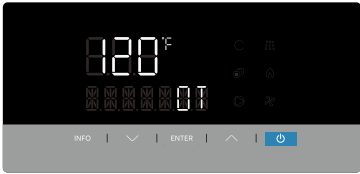
The water heater control panel is able to record information about the water heater's operating condition at the time of the ten most recent faults or errors. This information is available to view in the error code history when accessed in the Appliance Servicing Mode. The following screens will be displayed when reviewing the water heater history. The table below also includes diagnostic information and possible corrective actions.

Display	Condition	Diagnostic	Possible Corrective Actions
Nothing appears on the display panel but the unit beeps.	Main control board is not receiving commands.	Check the wiring to ensure it is correct and there are no short-circuits.	Correct wiring per wiring diagram, including the connection of the transformer to the control.
Nothing appears on the display panel and no other components are operating.	No 120V power supply is being received.	Ensure the power button on the display panel is turned ON.	Turn on the power button on the display panel.
		Is there 120V at the distribution box?	Troubleshoot and correct the power supply to the distribution box.
		Is the power connector on the MAIN CONTROL BOARD disconnected?	Properly connect the power cable to the MAIN CONTROL BOARD.
		Inspect the fuse.	Replace the MAIN CONTROL BOARD.
Display repeatedly goes through initialization sequence.	Occurs when power supply is abnormal.	Power supply voltage too low.	Turn on the power button on the display panel.
		Switching power is malfunctioning.	Replace the MAIN CONTROL BOARD.
Nothing appears on the display control panel, but the water heater is operating.	This occurs when communications are lost from the control to the display.	Check for loose connections and proper pin alignment / engagement on the control's connector.	Correct wiring per wiring diagram, including the connection of the transformer to the control.
		Power the water heater off and on using the power button on the display board and check for operation.	Replace the display module.

⚠ CAUTION

This operation **MUST** be performed by licensed professionals or with the guidance of an authorized Midea representative.

Press and hold the ENTER and INFO buttons together for 3 seconds to enter the servicing information interface (OT shows as default). Press the **▲** or **▼** to scroll through the information fields listed below. Once the desired field is selected, press ENTER to show more details.



- *HE: The most recent 10 error codes can be selected from the list.
- **TUW: Total water consumption, displayed in Gallons (e.g., 0 HG means less than 100 L/G, 1 HG means 100G-200G).
- ***IS: Number of times of Ignition success (e.g., 0H means less than 100 times, 1H means 100-200 times).

Contents	Description	Units
OT	Outlet Temperature	°F
EGT	Exhaust Gas Temperature	°F
HET	Heat Exchanger Temperature	°F
FS	Fan Speed	RPM
AP	Air Pressure	PA
HE*	Historical Error	N/A
TUW**	Total Water Consumption	HG
IS***	Ignition Success Times	H
UA	Version Number of Main Board	N/A
UB	Version Number of Display Board	N/A

CLEANING AND MAINTENANCE

Cleaning

- Check frequently to see if the gas supply pipelines are in good condition without cracks.
- Pay attention to any rubber hoses or gaskets. In order to prevent gas leakage, check the joints of pipelines frequently by using suds to see if there are bubbles that form. If bubbles form, there is a leak.
- A water heater must be examined and cleaned after it has been used for a period of time (generally about six months to a year) to guarantee normal operation of the heater.
- Clean the external casing of the unit with water and light soap. Use of harsh chemical cleaners or volatile solvents will cause the paint to fade or lose its luster.
- Clean the inlet water filter regularly.

Burner

- Remove the screw of the front cover, and check burner flame for proper color from the flame observe window. Once ignited, the flame must cover the surface of the burner. The flame must burn with a clear, blue or orange stable flame. If the flame does not have this appearance, call the licensed professionals or authorized Midea representative for help.

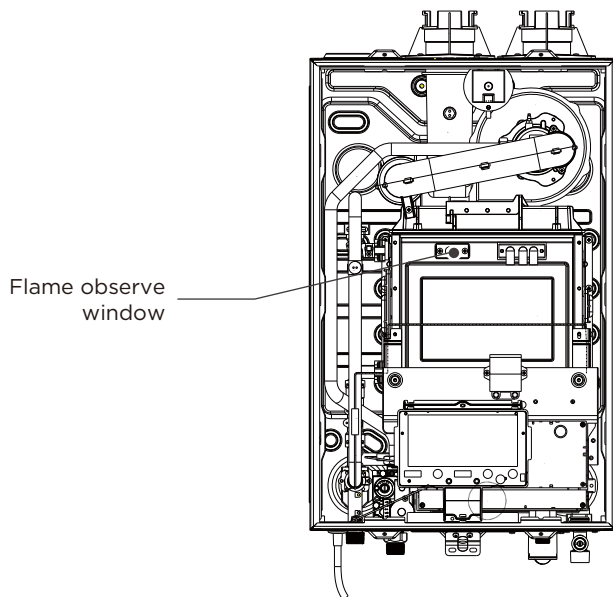


Figure 6

Flush the Heat Exchanger

Due to the hardness of the water in your area, scale may build up inside the heat exchanger and block efficient water flow. Periodic flushing is mandatory in order to ensure smooth water flow. It is recommended the heat exchanger be flushed on the schedule on the bottom of [installation manual page 14](#) based on your water hardness. Damage to the water heater which results from water scale deposit WILL NOT be covered under the product warranty.

Please follow these steps when the appliance is flushed to descale the heat exchanger. It is recommended that you contact a licensed professional to carry out this procedure.

1. Ensure the isolation valves are fully closed before beginning this procedure.
2. Connect the empty connection of the isolation valve on the cold water side to the outlet of the circulation pump.
3. Connect the empty connection of the isolation valve on the hot water valve to a tube leading to the solution tank.
4. Connect the inlet of the circulation pump to a tube that leads to the solution tank.
5. Make sure there is no leakage in any of the connectors.
6. Fill the solution tank with descaling solution above the tube connected to the circulation pump. If using commercial descaling kit, please properly follow the instructions of the descaling kit.
7. Run the circulation pump until solution begins exiting the tubing connected to the hot water isolation valve. Ensure this tubing returns fluid to the flushing solution container.
8. Continue running the circulation pump until the solution that comes out from the hot water side is clean.

9. Fully drain solution from unit. Disconnect all tubes for flushing and fully close the empty connectors of the isolation valves.
10. Open the isolation valves to switch back to normal water flow.
11. Restore the power supply, gas supply, and water supply.
12. Run the water heater for at least five (5) minutes to make sure there is no solution remaining in the unit.

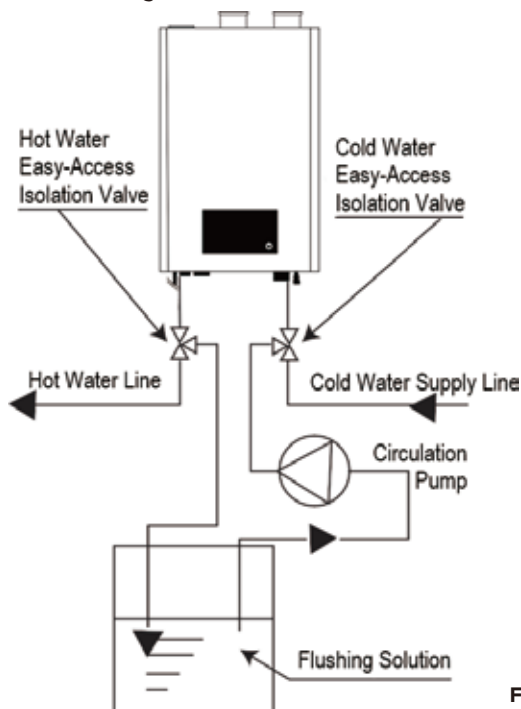


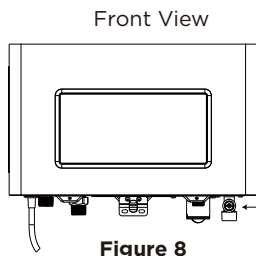
Figure 7

Clean the Inlet Water Filter

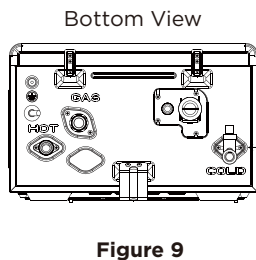
CAUTION

Before performing any maintenance, please follow these steps:

- Disconnect the power supply, disconnect power to the outlet that services this unit, and close the manual gas shut-off valve.
 - After the power is turned OFF, drain the hot water from a nearby faucet until it runs cold. Then close the water supply isolation valves (cold and hot) of the water heater.
1. Drain the water heater.
 2. Locate the cold water inlet to the water heater.
 3. Unscrew the brass end facing towards you on the cold water inlet assembly by turning it counterclockwise until it becomes loose. Remove the brass end and filter from the water inlet assembly.
 4. Rinse the filter screen with clean water, brush with an unused toothbrush, or wipe it when necessary. Do not tap the screen on a hard surface or with your hand. Tapping the screen might deform the filter, affecting filtering ability.
 5. Insert the cleaned filter and tighten it by turning clockwise until it is securely back in the cold water inlet assembly.



Water Filter location



Water Filter location

Picture of brass end and clean water filter removed from water heater (Enlarged).



Figure 10

Time calibration

1. Power on the water heater
2. Enter the STETIME in servicing information interface
3. Calibrate the current time
4. Exit



CAUTION

- The current time shall be set every half year
- If the device is powered off for more than two months, the time should be reset.
- After the change of seasons, the time should be reset.

TROUBLESHOOTING

Error Codes and Solutions

Should you experience a problem with the water heater, please refer to the following chart for possible remedies. Error codes that appear on the front panel display are explained in the below section. For minor problems or issues, resetting the water heater may resolve the issue. To reset the water heater, press the POWER button on the front panel, or turn off the faucet and then back on.

Error codes	Description	Cause	Possible Solution
E0	E0 Displayed	Outlet water temperature sensor open or has short-circuited.	Ensure temperature sensor is properly connected. If connection is good, change the sensor.
			If error still occurs change the MAIN CONTROL BOARD.
E1	Accidental Flame Lost	Gas has run out during combustion or no pressure in the pipeline. Gas valve operation is unstable.	Increase the gas supply pressure to the required value.
			Replace the gas valve.
E2	Flame Signal Detected Before Ignition	Open circuit formed between flame sensor and the burner or the heat exchanger before ignition.	Unplug the flame sensor from the MAIN CONTROL BOARD, with the power on, but burner .
			• If E2 persists, change the MAIN CONTROL-BOARD. • If E2 does not persist, change the flame sensor.
E3	Thermistor Open Circuit*	Heat exchanger outlet water overheated.	1.Check if there's debris or dirt on the filter of the water inlet. If so, clean the filter (refer to the Clean the Inlet WaterFilter section on Page 41). 2.Check the BWF value (refer to theAppliance Servicing section), if it exceeds 0.4 GPM, check the HE, if the CError can be searched from HE, changethe bypass water valve.
		Thermistor failure.	Turn off the unit, use a multi-meter to check if the thermistor is conducting. If E3 exists while the thermistor is conducting, change the MAIN CONTROL BOARD.
E4	Outlet Water Temperature Exceeds 185°F (85°C) For Over 3 Seconds	Outlet hot water overheated.	1.Check if there's debris or dirt on the filter of the water inlet. If so, clean the filter (refer to the Clean the Inlet WaterFilter section). 2. Check the BWF value (refer to the Appliance Servicing section), if it exceeds 0.4 GPM, check the HE, if the CB error can be searched from HE, change thebypass water valve.
		Temperature sensor failure.	Replace the sensor.

* The unit will not automatically restore while this error code is displayed. Press power off and then on to manually restore the unit.

Error codes	Description	Cause	Possible Solution
E5	Fan Failure	Cables not connected.	• Connect the cables.
		Fan controller failure.	• If E5 persists, replace the fan.
E6	Gas Valve Failure	Cables not connected.	• Connect the cables.
		Solenoid Failure.	• If E6 persists, replace the gas valve.
E8	Low water flow	The water flow low,and pump fail detected	• Cut off the power.and start again. • Close all faucet and open again. • The appliance will start again to recover the pump. • Try several times ,if the recovery failed,re-place the pump.
EE	Overtime	Burner time exceeds 40 minutes of continuous operation .	Close & open the faucet to restart combustion operation.
F2	Inlet Water Temperature Sensor Failure	Inlet water temperature sensor open or has short-circuited.	• Ensure the sensor is connected. • If the sensor is connected & F2 persists, change the sensor. • If F2 persists with a new sensor, change the MAIN CONTROL BOARD.
CO	Ignition Failure	Gas valve not open.	Replace the gas valve.
		Air in the gas supply line.	Attempt to ignite several times to discharge the air.
		Gas supply pressure too low.	Ensure gas supply pressure is within range.
		Nozzle blockage.	Clean the nozzle.
		No signal from flame sensor.	Change the flame sensor, if CO persists, change the MAIN CONTROL BOARD.
C1	Residual Flame	Gas valve leakage.	Replace the gas valve.
C3	Air pressure sensor error	Wrong air pressure detected	Reset the plug.
C4	Vent Blockage	Vent pipe blockage.	Clean & remove debris from the vent pipe.
		Ambient wind pressure too high.	Change the terminal to resist higher wind pressure.
		Air pressure sensor failure.	Replace air pressure sensor module.
		Fan failure.	Replace the fan.
C5	Low water flow	The water pipe blocked and the pump fail to start	• Disassemble and check the water circulation system,clean the inlet and the pipe if any blockage found. • Connect all the pipe and set the circulation mode (HQ=03). • Wait the system recover.

Error codes	Description	Cause	Possible Solution
C9	Exhaust Gas Temperature Sensor Failure	Exhaust gas temperature sensor is open or has short-circuited.	• Ensure the sensor is connected. • If the sensor is connected & C9 persists, change the sensor. • If C9 persists with a new sensor, change the MAIN CONTROL BOARD.
CA	Exhaust Gas Temperature Too High	Heat exchanger failure.	Change the heat exchanger.
		Exhaust gas temperature failure.	Refer to C9 above.
CB	Bypass Water Valve Failure	Bypass water valve jam.	Clean the bypass water valve.
		Bypass water valve failure.	Replace the bypass water valve.
CF	Heat Exchanger Outlet Temperature Sensor Failure	Heat exchanger outlet temperature sensor is open or has short-circuited.	• Ensure the sensor is connected. • If the sensor is connected & CF persists, change the sensor. • If CF persists with a new sensor, change the MAIN CONTROL BOARD.
AO	Watch Dog Circuit Failure	MCU internal failure.	Change the controller.
A1	MCU PC Command Failure	MCU internal failure.	Change the controller.
A2	Instruction Compilation & Execution Failure	MCU internal failure.	Change the controller.
A3	MCU RAM Failure	MCU internal failure.	Change the controller.
A4		MCU internal failure.	Change the controller.
A5	MCU Register DC	MCU internal failure.	Change the controller.

Corrective Action Recommendations

Issue	Possible Causes	Possible Remedies
No electrical power to the water heater.	Is the plug on the power supply cord unplugged from the electrical outlet?	Reset the plug.
	Has the electrical panel's 10 Amp circuit breaker been tripped?	Reset the circuit breaker.
	Is the fuse on the circuit board good?	If the display panel is blank, unplug the unit & contact a qualified installer or service technician.
	Is there a power outage?	Contact the power company.
No water is available when the faucet is turned on or opened.	Is the water supply valve shut off at the meter (are the cold water faucets still working)?	Open the closed supply valve.
	Is the water supply valve near the unit opened?	Open the water valve.
	Is the water pipe frozen?	Turn OFF the unit, close all water valves and the gas valve. Then, contact a qualified installer or service technician.
	Is the main water valve jammed?	Check to see if an E9 code has been triggered in the error code history of the Appliance Servicing mode. If the water supply is OK, and there is no water flow at the hot water outlet, change the main water valve.
Hot water is not available when the faucet is turned on or opened.	Does the water heater have power (is it plugged in)?	Restore electrical power to the unit.
	Is the water heater turned on?	Press & hold the power button to turn the unit on.
	Is an error code flashing on the display panel?	Refer to the error codes & solutions section on the previous pages.
	Is the gas supply valve shut off at the meter (are other gas devices operating)?	Open the gas supply valve.
The water temperature is not hot enough or turns cold during operation.	Is the faucet open enough to draw at least a 1/2 gallon per minute through the water heater?	Open the faucet to allow more water flow.
	Is an error code flashing on the display panel?	Refer to the error codes & solutions section on the previous pages.
	Is the outlet water temperature set too low?	Adjust the outlet water temperature.

Issue	Possible Causes	Possible Remedies
The water is not hot enough.	Is the water temperature set too low?	Adjust the temperature setting.
The water at the faucet is too hot.	Is the water temperature set too high?	Adjust the temperature setting.
A fan can be heard even when the unit is not operating.	The fan continues to operate after the burner shuts off to clear the exhaust vent of combustion gases.	This is a normal pre-purge or post- purge operation; no action is required.
White smoke can be seen coming out of the exterior exhaust gas vent.	Depending on the outside temperature, water vapor can be produced as the exhaust is vented.	This is a normal operation; no action is required.
The recirculation doesn't work or work in wrong time,but no error codes display	The time is not correctly configured	Calibrate time

CERTIFICATIONS AND SAFETY APPROVALS

Declaration of conformity

Certifications and Safety Approvals

Declaration of Conformity

We hereby confirm that the following customer model names and Midea model names match each other respectively

Brand	Midea model	Marketing Model
Midea	JSG52-32PCHS-NG	MGWH199IXNN
	JSG52-32PCHS-LP	MGWH199IXPN
	JSG52-32PCHPS-NG	MGWH199IXNP
	JSG52-32PCHPS-LP	MGWH199IXPP
	JSG48-29PCHS-NG	MGWH180IXNN
	JSG48-29PCHS-LP	MGWH180IXPN
	JSG48-29PCHPS-NG	MGWH180IXNP
	JSG48-29PCHPS-LP	MGWH180IXPP
	JSG40-24PCHS-NG	MGWH150IXNN
	JSG40-24PCHS-LP	MGWH150IXPN
	JSG40-24PCHPS-NG	MGWH150IXNP
	JSG40-24PCHPS-LP	MGWH150IXPP

Application of Council Directives Standards, to which Conformity Is Declared:
South Coast Air Quality Management District Rule 1146.2 Tested to South Coast Air Quality Management District Protocol: Nitrogen Oxides Emissions Compliance Testing for Natural Gas-Fired Water Heaters and Small Boilers
CSA/ANSI Z21.10.3:19/CSA 4.3:19
NSF Compliance: Fabricate and label equipment components that will be in contact with potable water to comply with NSF 61 and NSF 372
Energy Star Compliance: Fabricate and label equipment in compliance with Energy Star requirements. Special Requirements: NSF/ANSI/CAN 372 -2022- Drinking Water System Components - Lead Content.

TRADEMARKS, COPYRIGHTS AND LEGAL STATEMENT

 Midea logo, word marks, trade name, trade dress and all versions thereof are valuable assets of Midea Group and/or its affiliates (“Midea”), to which Midea owns trademarks, copyrights and other intellectual property rights, and all goodwill derived from using any part of an Midea trademark. Use of Midea trademark for commercial purposes without the prior written consent of Midea may constitute trademark infringement or unfair competition in violation of relevant laws.

This manual is created by Midea and Midea reserves all copyrights thereof. No entity or individual may use, duplicate, modify, distribute in whole or in part this manual, or bundle or sell with other products without the prior written consent of Midea.

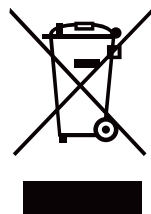
All the described functions and instructions were up to date at the time of printing this manual. However, the actual product may vary due to improved functions and designs.

DISPOSAL AND RECYCLING

Important instructions for environment

Compliance with the WEEE Directive and Disposing of the Waster Product:
This product complies with EU WEEE Directive (2012/19/EU). This product bears a classification symbol for waster electrical and electronic equipment (WEEE).

This symbol indicates that this product shall not be disposed with other household wastes at the end of its service life. Used device must be returned to official collection point for recycling of electrical electronic devices. To find these collection systems please contact to your local authorities or retailer where the product was purchased. Each household performs important role in recovering and recycling of old appliance. Appropriate disposal of used appliance helps prevent potential negative consequences for the environment and human health.



Compliance with RoHS Directive

The product you have purchased complies with EU RoHS Directive (2011/65/EU). It does not contain harmful and prohibited materials specified in the Directive.

DATA PROTECTION NOTICE

For the provision of the services agreed with the customer, we agree to comply without restriction with all stipulations of applicable data protection law, in line with agreed countries within which services to the customer will be delivered, as well as, where applicable, the EU General Data Protection Regulation (GDPR).

Generally, our data processing is to fulfil our obligation under contract with you and for product safety reasons, to safeguard your rights in connection with warranty and product registration questions. In some cases, but only if appropriate data protection is ensured, personal data might be transferred to recipients located outside of the European Economic Area.

Further information are provided on request. You can contact our Data Protection Officer via **MideaDPO@midea.com**. To exercise your rights such as right to object your personal data being processed for direct marketing purposes, please contact us via **MideaDPO@midea.com**. To find further information, please follow the QR Code.