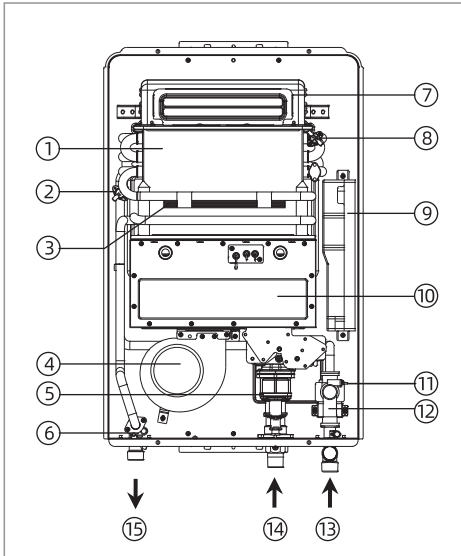


## 2 General Information

### 2.1 Function Introduction and Explanation

- The unit is a box less gas fast water heater designed to effectively supply hot water continuously during proper installation.
- Read all installation instructions thoroughly before installing this product.
- If you have any questions or concerns about this device, please consult the manufacturer or its local agent.
- This water heater can only be installed outdoors for outdoor models.
- The model description is listed on the nameplate, which is located on the side panel of the water heater.

The principle of the water heater is shown below:



- ① Heat exchanger
- ② Over temperature protection thermostat
- ③ Anti-freezing heater
- ④ Fan assembly
- ⑤ Gas proportion valve
- ⑥ Water temperature probe
- ⑦ Flue outlet
- ⑧ Anti-freezing thermostat
- ⑨ Computer board
- ⑩ Burner
- ⑪ Water temperature probe
- ⑫ Water flow sensor
- ⑬ Cold Water Inlet
- ⑭ Gas Inlet
- ⑮ Hot Water Outlet

This series of gas water heaters with solar linkage function by default:

- a. When it is detected that the inlet water temperature reaches a predetermined value, the water heater does not start;
- b. When the combustion work is started, and the inlet water temperature is less than the set temperature by 4 °F (2 °C), the water heater stops working;
- c. When the combustion work is started, if the inlet water temperature is  $\geq 140$  °F (60 °C), the water heater stops working.

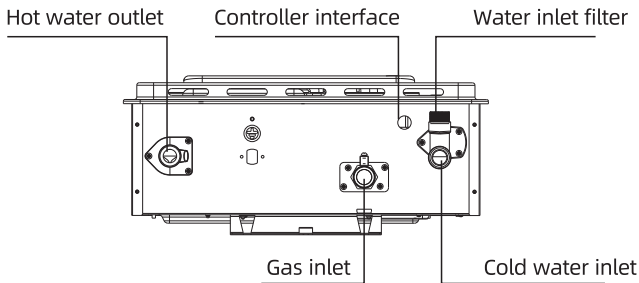
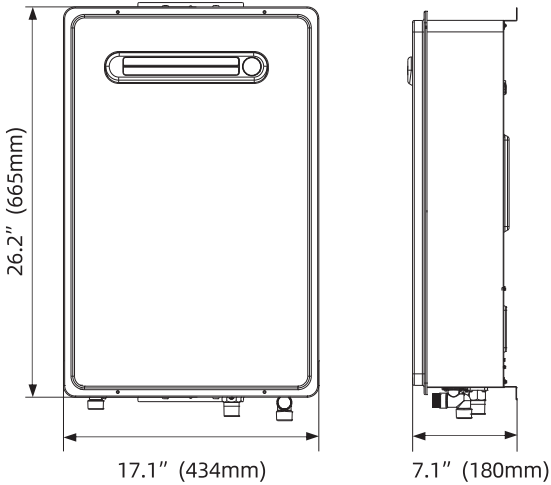
Controller temperature adjustment range		95~158 °F (35 °C~70 °C)
System start condition	Inlet water temperature	< 113 °F (45 °C)
	Set temperature-inlet water temperature	< 39 °F (4 °C)
Normal combustion conditions	Inlet water temperature	< 140 °F (60 °C)
	Set temperature-inlet water temperature	< 35 °F (2 °C)

## 2.2 Dimensions and Connection Points



### NOTICE

The images used in this document are for reference purposes only. Components and component locations may vary according to specific product models. Measurements may vary  $\pm 0.38$  in. (10 mm).

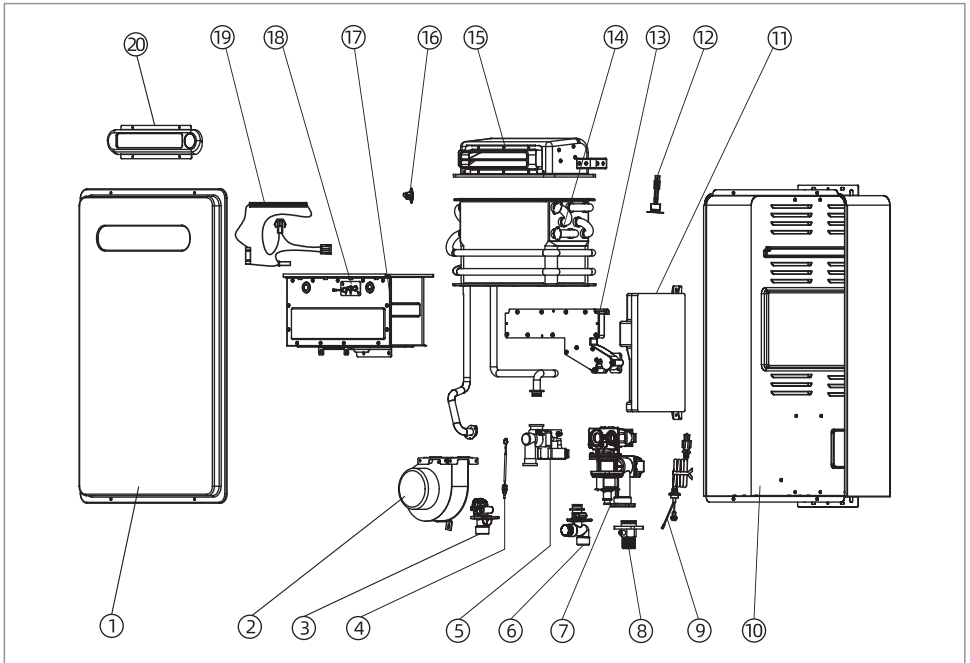


## 2.3 Model and Specification

MODEL		FDG-PM180S	
Part No.		HS180A0W-NG	HS180A0W-LP
Gas Category		NATURAL GAS	PROPANE
Minimum Gas Consumption Btu/h		17,000	
Maximum Gas Consumption Btu/h		180,000	
Hot Water Capacity (Min - Max) *		0.53 - 6.87 GPM (2 - 26 L/min)	
Temperature Setting (no controller)		95-158 °F (35-70°C)	
Maximum Temp Setting		158 °F (70 °C)	
Minimum Temperature Setting		95 °F (35 °C)	
Electrical Data	Normal	40 W	50 W
	Standby	2 W	
	Anti-frost Protection	100 W	
	Max Current	0.57 A	0.71 A
	Fuse	10 A	
Gas Supply Pressure		3.5 - 10.5 inch W.C. (0.87 - 2.61 kPa)	8.0 - 13.5 inch W.C. (1.99 - 3.23 kPa)
By-Pass Control		Fixed	
Type of Appliance		Tankless, Temperature controlled continuous flow gas hot water system	
Connections		Gas Supply: 3/4" MNPT Cold Water Inlet: 3/4" MNPT Hot Water Outlet: 3/4" MNPT	
Ignition System		Direct Electronic Ignition	
Electric Connections		AC 120 Volts, 60Hz	
Water Temperature Control		Simulation Feed forward and Feedback	
Water Supply Pressure		Minimum Water Pressure: 15 PSI (Recommended 30-50 PSI for maximum performance)	
Maximum Water Supply Pressure		150 PSI	

\* Minimum flow may vary slightly depending on the temperature setting and the inlet water temperature. Minimum activation flow is 0.53 GPM (2 L/min).

## 2.4 Component Diagram



- |                                   |  |
|-----------------------------------|--|
| ① Front panel                     | ⑪ Controller                             |
| ② Motor fan assembly              | ⑫ Anti-freezing Thermostat               |
| ③ Water outlet connector          | ⑬ Manifold                               |
| ④ Water outlet temperature sensor | ⑭ Heat exchanger                         |
| ⑤ Water proportional valve        | ⑮ Chimney                                |
| ⑥ Water inlet connector           | ⑯ Over temperature protection thermostat |
| ⑦ Proportional valve              | ⑰ Burner                                 |
| ⑧ Intake connector                | ⑱ Ignition pin assembly                  |
| ⑨ Power line                      | ⑲ Heating device                         |
| ⑩ Back panel                      | ⑳ Decorative smoke hood                  |