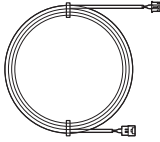
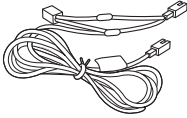


4. Configuring the Remote Controller System

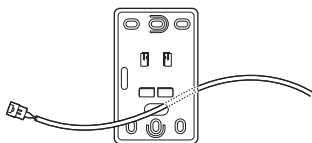
4.1 Included Items

When you open the box, you will find the following items with the remote controller. Check the box for each of the following items before installing the remote controller.

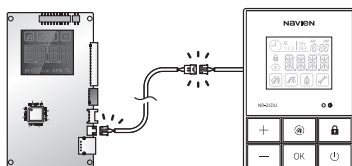
	
Remote Controller	Extension Cable
	
2 Tapping Screws	Wall Mounting Bracket
	
Multi Remote Controller Cable (optional)	

4.2 Connecting the Extension Cable

1. Connect one end of the extension cable to the port on the front panel of the water heater.
2. Pass the other end of the extension cable through the hole in the bracket.

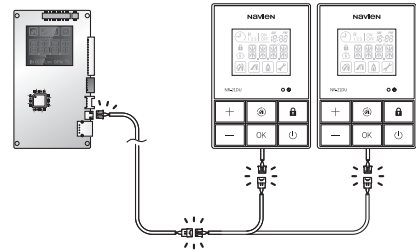


3. Connect the end of the extension cable to the cable connected to the remote controller.



Note

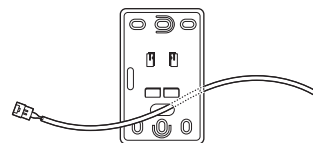
- You can connect up to 2 remote controllers if necessary. (Optional)



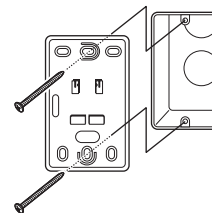
- Connect the wiring from the second remote in parallel with the existing remote controller. One remote must also be designated as the MAIN controller. For more information, refer to "4.5 Multi Remote Controller System" on page 60.
- The length of the extension cable is 7 ft (2 m) and can be extended using 18AWG wire up to 300 ft (91 m).

4.3 Attaching the Wall Mounting Bracket

1. Affix the bracket securely to the wall by fastening 2 screws to the wall or to the 2 holes in the wall receptacle.



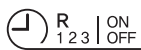
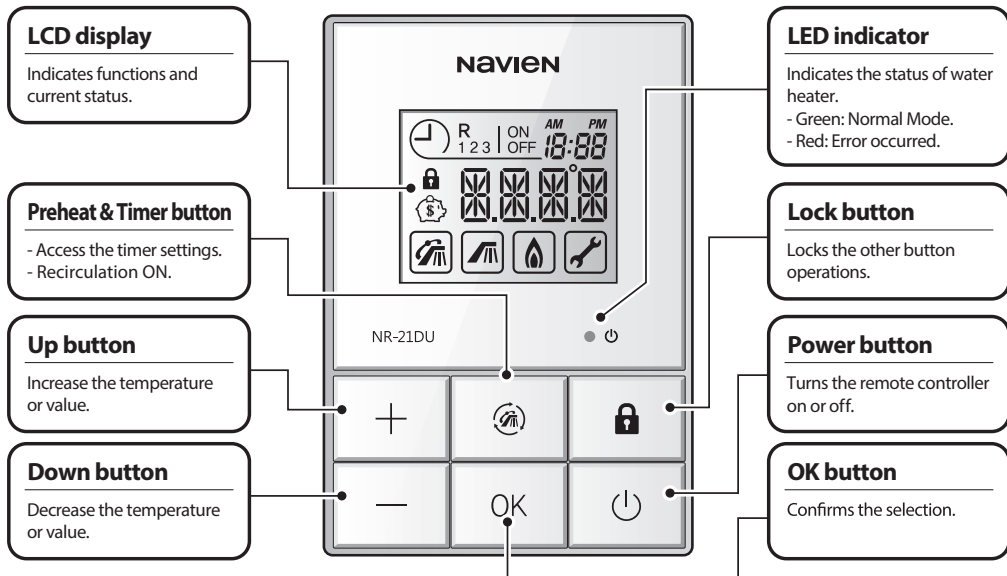
On the wall



In the wall receptacle

2. Hang the remote controller on the bracket by aligning the hooks.

4.4 Remote Controller



Timer is set.



Recirculation Mode.



Displays the current time.



Hot water is in use.



Displays the current set temperature.



Water heater operation is in progress.



Operations are locked.



An error code will appear on the display.

4.5 Multi Remote Controller System

The multi remote controller system (30022717A) consists of one main remote controller and one sub remote controller. The system must have only one main remote controller.

4.5.1 Initially Setting the Multi Remote Controller System

If you turn on the water heater with the front panel connected to two remote controllers, one of the controllers is set to the main controller randomly. The other controller will display "MAIN" on its LCD display and you have to set its operation mode to Sub.



The remote controller that does not display "MAIN" is already operating as the main controller, you don't have to set its operation mode.

You can set the operation mode of the remote controller that displays "MAIN." When you set the controller as a sub, the multi remote controller system configuration completes.

Note

If you press the OK button on the controller displaying "MAIN" and set its operation mode to Main while the main controller has already been determined, the other controller will display "MAIN" to indicate that you must set the main and sub operation modes properly.

1. Press the Down button on the remote controller displaying "MAIN" to set its operation mode to "SUB."



Then, press the OK button to set the operation mode to Sub.

2. "SL.xx" appears on the display.
It represents the standby status to receive the sub remote controller ID from the main remote controller synced to the front panel of the water heater.



3. When the ID is assigned, the ID appears and flashes on the LCD display for 2 seconds.

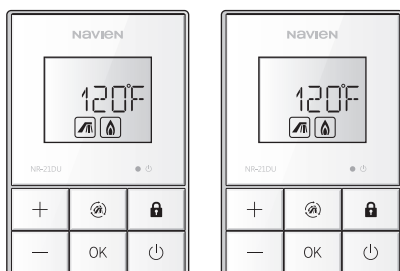


4. "SYNC" appears on the LCD display for 5-10 seconds until it syncs with the connected panel and the main remote controller after the ID is assigned.



5. When the synchronization completes, identical information will appear on the displays of the main and sub controllers.

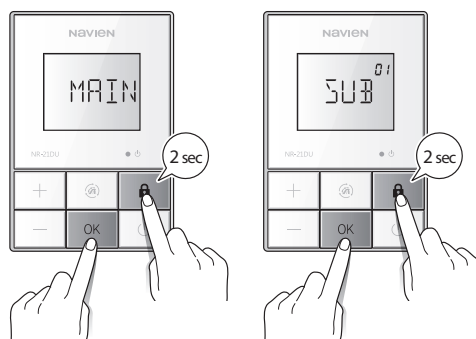
The two controllers and front panel will be controlled simultaneously by controlling only one controller.



4.5.2 Checking the Multi Remote Controller System Setting

After completing the multi remote controller setting, you can check the setting by pressing the OK button and Lock button simultaneously for 2 seconds.

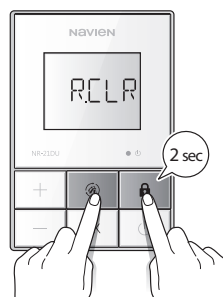
Verify that the setting is successful by confirming that one controller displays "MAIN" and the other one displays "SUB."



4.5.3 Initializing the Multi Remote Controller System Setting

You can initialize the multi remote controller system when you have to reset or replace the multi remote controllers. Press the Preheat & Timer button and Lock button simultaneously for 2 seconds on any of the controllers.

After initializing the setting, repeat the instructions from the "4.5.1 Initially Setting the Multi Remote Controller System" on page 60.



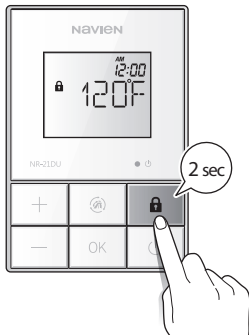
Note

If you initialize only one of the controllers, the other one is initialized automatically.

4.6 Entering Lock Mode

To prevent accidental pressing of the buttons and to prevent children from adjusting the controller, you can activate the Temperature Lock Mode.

To activate or deactivate Lock Mode, press the Lock button for 2 seconds.



When Lock Mode is activated,

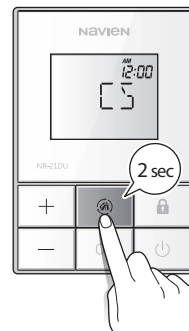
- The Lock icon appears on the display.
- All buttons except for Lock button are locked.

Note

- Resetting errors or alarms is still available with Lock Mode activated.
- You can change the settings from the front panel with Lock Mode activated.

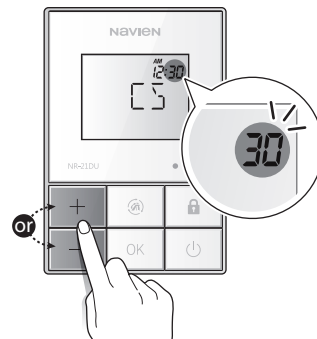
4.7 Setting the Clock

1. Press the Preheat & Timer button for 2 seconds.

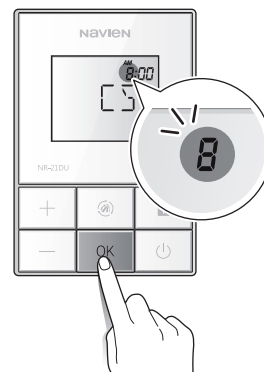


2. Adjust the minutes by pressing the Up or Down Button.

Press the OK button to set the minutes.



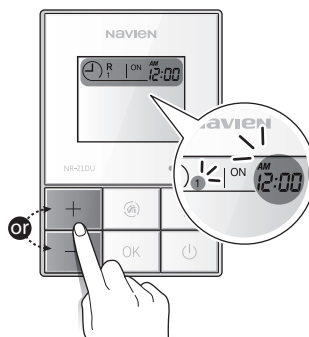
3. Once the minutes are set, adjust the hour by pressing the Up or Down button.



4. Press the OK button to finish and save the updated time.



2. Set the recirculation activation time by pressing the Up or Down button.



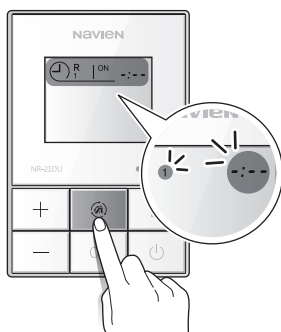
Then, press the OK button to set the deactivation time.

Note

The recirculation timer settings are divided in 30 minute increments.

4.8 Setting the Recirculation Timer

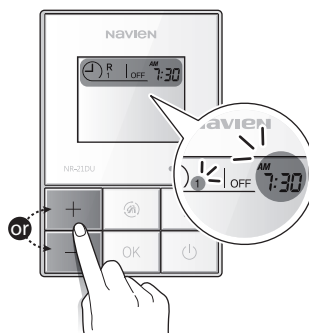
1. Press the Preheat & Timer button to set the Recirculation timer while setting the clock. Reservation Schedule #1 is ready to be set.



Note

This feature is available only when external circulating pumps are connected and ON.

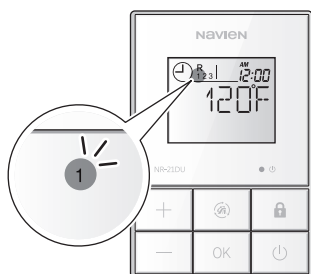
3. Set the deactivation time by pressing the Up or Down button.



4. Press the OK button to save the timer setting. Repeat these procedures for Reservation Schedule Settings #2 and #3.



- During the reservation schedule, the preheating icon turns on and the Reservation area starts flashing.



4.9 Starting Recirculation

Press the Preheat & Timer button to start recirculation immediately, regardless of the reservation schedule.

“HEAT” appears for 4 seconds on the display and then recirculation runs once.



During the recirculation, the preheating icon flashes continuously.

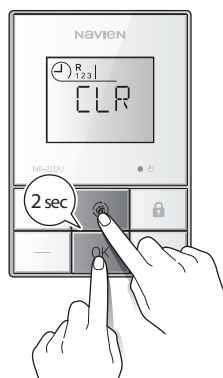
Note

- This feature is available only when external circulating pumps are connected and ON.
- This feature runs during the recirculation time set on the front panel which the remote controller is connected to.

4.10 Canceling all Timer Settings

Press and hold the Preheat & Timer and OK button simultaneously for 2 seconds.

“CLR” appears for 3 seconds and all timer settings are canceled.



5. Installing a Cascade System

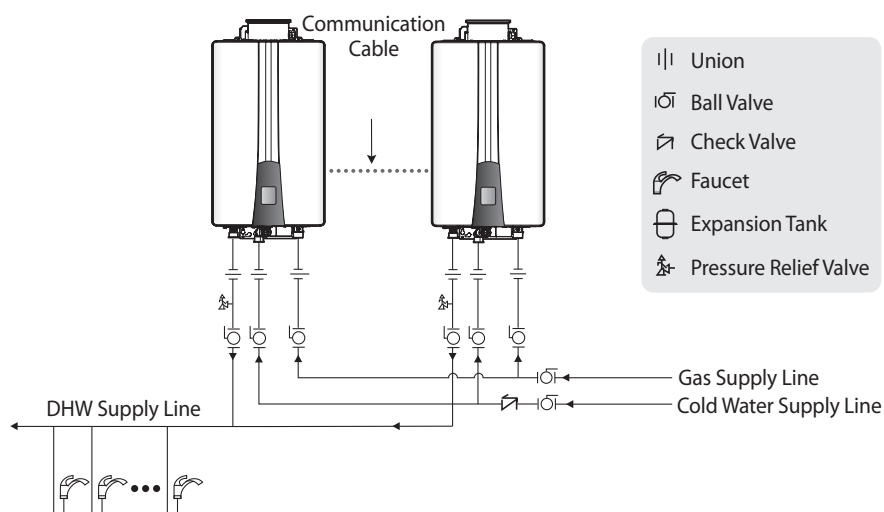
When installing a cascade system, carefully consider the design of the system and the features of the installation location. Follow all local codes and regulations, as well as all guidelines for installing the water heater. The following sections describe additional considerations that are specific to installing cascade systems. Read them carefully before designing or installing the system.

5.1 Connecting Water Supplies

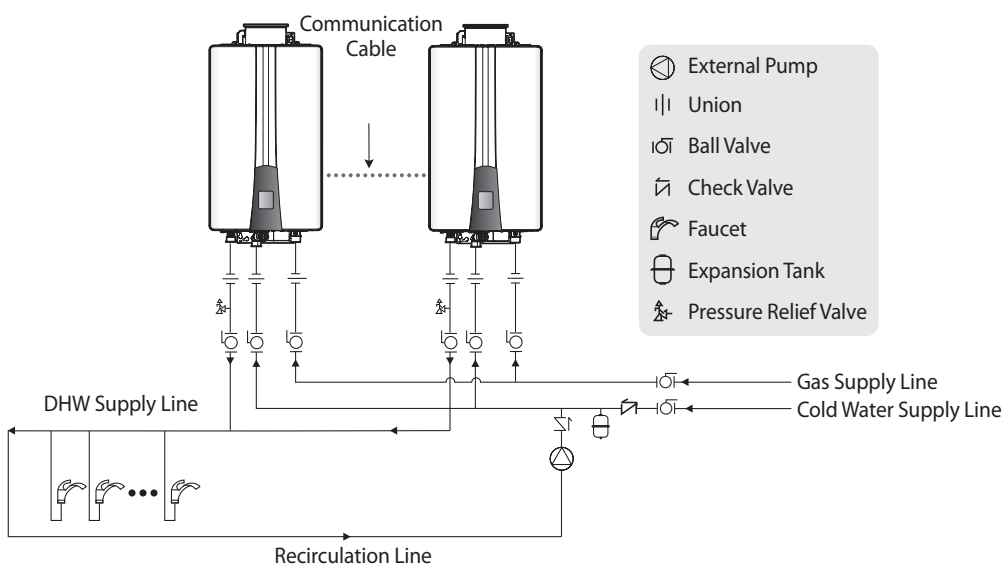
Several options are available for plumbing a cascade system of water heaters. The options shown here are only examples. The setup you choose will vary based on the installation location, local building codes, and other factors. Follow all applicable regulations when installing a cascade system.

You can connect up to two water heaters to meet high-volume hot water demands.

Multiple NHW700-SE/SU Units

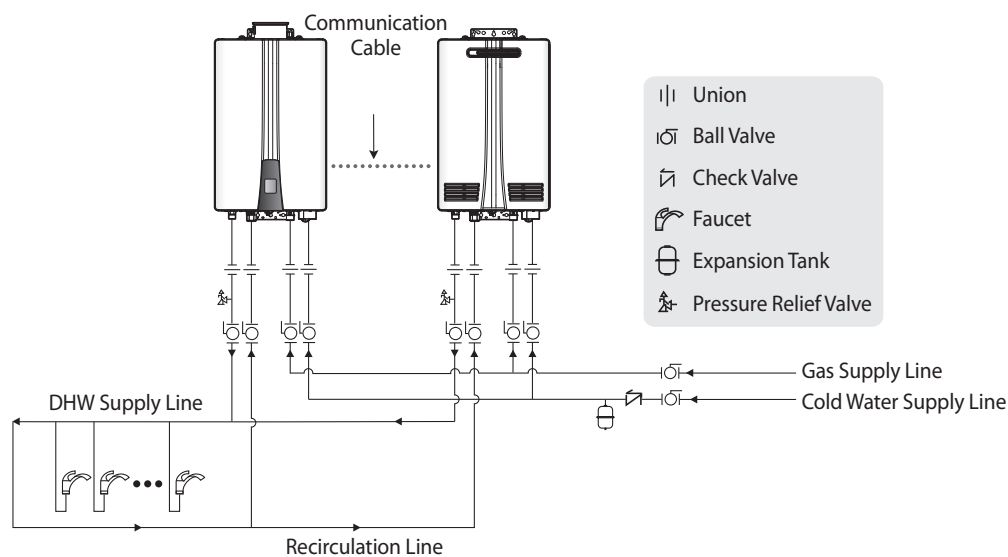


[Example of Water Heater 2-Unit Cascade System]



[Example of Water Heater 2-Unit Cascade System with Recirculation]

Recirculation via Internal Pumps (A Model Only)



5.1.1 Piping Sizes and Considerations

When plumbing a cascade system, consider the following pipe diameters and flow rates. Note that flow rates above 6.6 ft/s may cause pipe erosion. These specifications may vary depending on installation conditions.

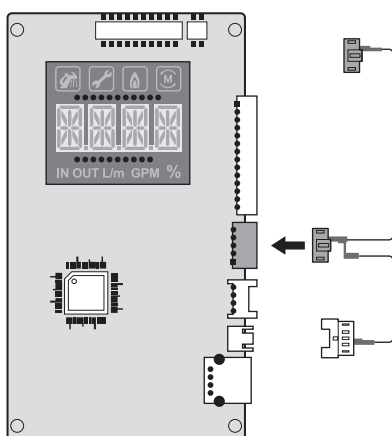
Qty	$\Delta T=54^{\circ}\text{F}$ Flow rate (GPM)	Water Velocity (ft/s)	Pipe Diameter (mm/in)	
1	6.02	4.38	20A	$\frac{3}{4}$ in
2	12.04	4.92	25A	1 in

Note The table above is based on model NHW700-199.

5.2 Connecting the Communication Cables

Two water heaters can be connected with Navien Ready-Link communication cables. Select one of the water heaters in the cascade system as the Main water heater, and then connect the other water heater to it as the Sub. Before making any connections, ensure that the power is turned off to all water heaters.

Connect the Ready-Link cables to the J6 ports on the right side of the front panel:

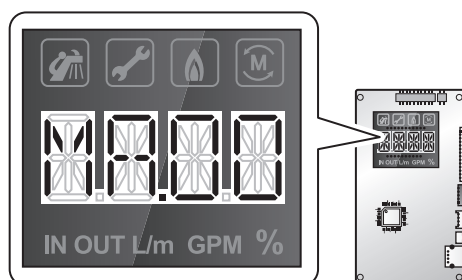


5.2.1 Configuring the Communication Settings

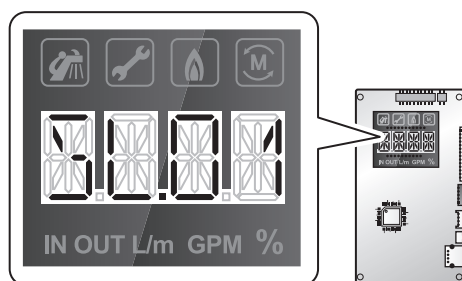
After connecting the Ready-Link communication cables, restore power to the water heater and turn on all water heaters using the Power button.

To configure the communication settings:

1. On the Main water heater, press and hold the **Diagnostic** and **Up (+)** buttons for more than 5 seconds. "MA.00" will appear on the display to confirm that this water heater is set as the Main.



2. On the Sub water heater, press and hold the **Diagnostic** and **Down (-)** buttons for more than 2 seconds. "SL.01" will appear on the display to confirm that this water heater is set as the Sub.



3. On the Main water heater, press and hold the **Diagnostic** and **Up (+)** buttons for more than 5 seconds. The display screen on the configured water heater will return to the temperature display.

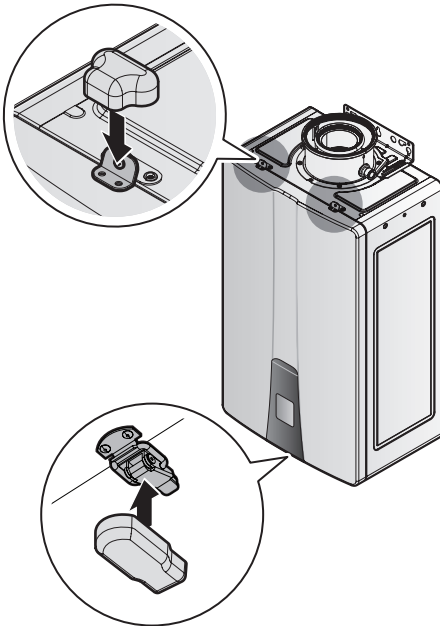
Note

To cancel the cascade communication setup, on the Main water heater, press and hold the **Diagnostic** and **Reset** buttons for more than 5 seconds. The water heater will revert to independent operation. Repeat steps 1-3 to reassign the Main water heater.

6. Appendixes

6.1 Covering the Clamps with Front Cover Cap (for NSF 5 Use Only)

After installing the water heater completely, cover the indicated clamps with the front cover caps provided with the product.

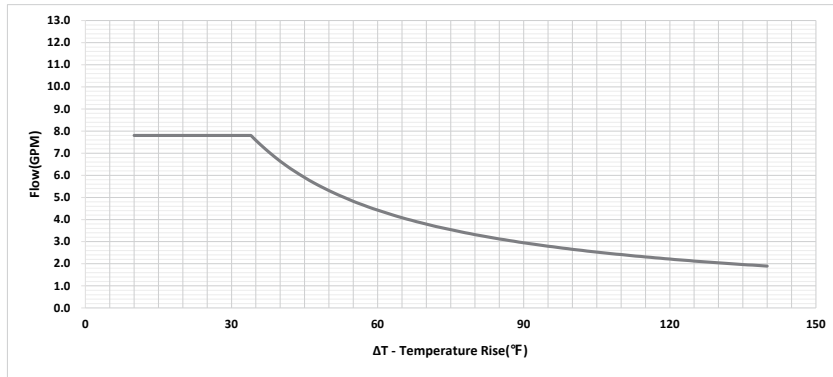


Note

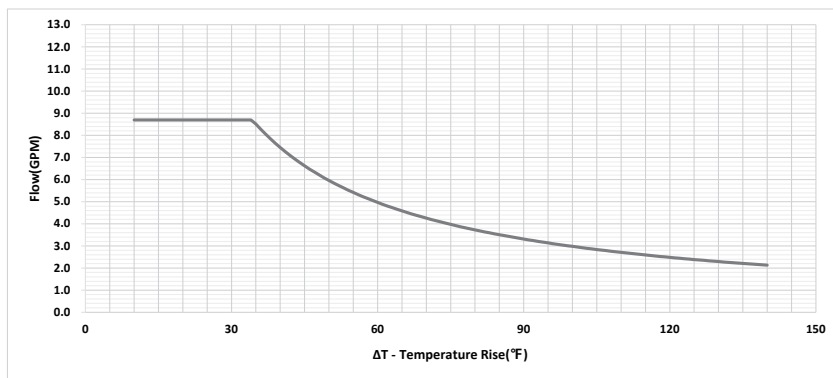
The front cover caps must be used if NSF 5 is required.

6.2 Technical Data

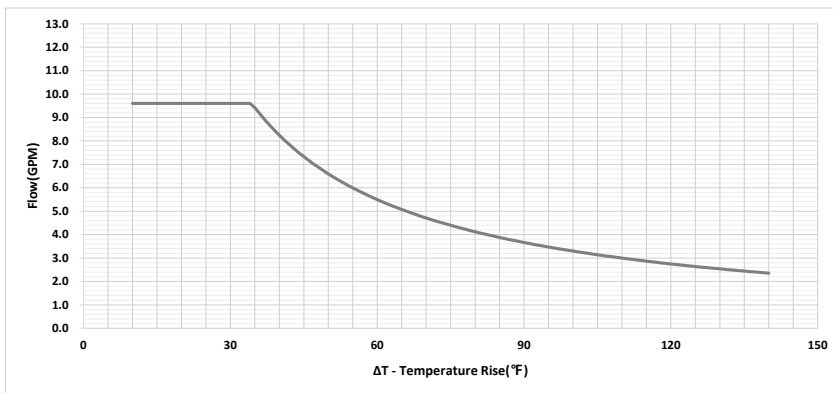
6.2.1 Outlet Flow vs Temperature Rise Curves



[NHW700-160SE/160SU/160AE/160AI]



[NHW700-180SE/180SU/180AE/180AI]

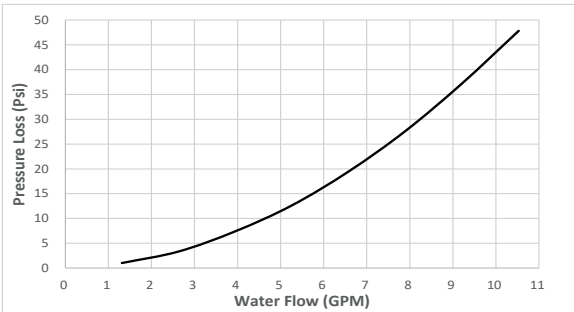


[NHW700-199SE/199SU/199AE/199AI]

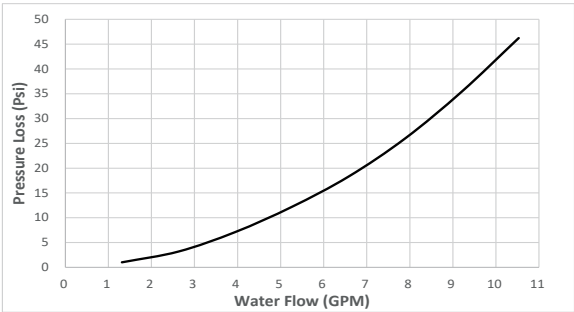
Note

At a high Altitude above 2,000 ft (610 m), the water heater will de-rate by 3% with Natural Gas and by 4% with Propane for each 1,000 ft (305 m) of altitude gain.

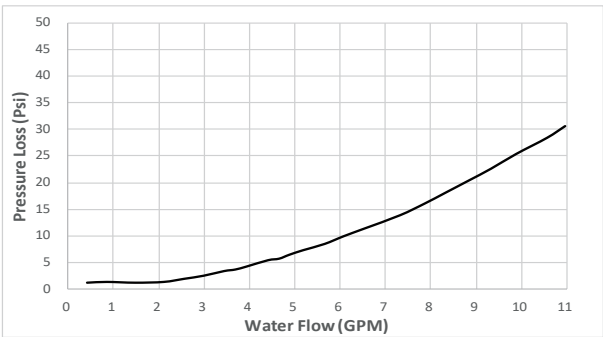
6.2.2 Pressure Drop Curve



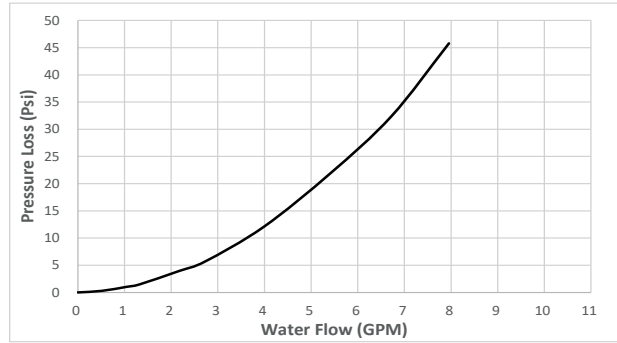
[NHW700-160SE/160SU]



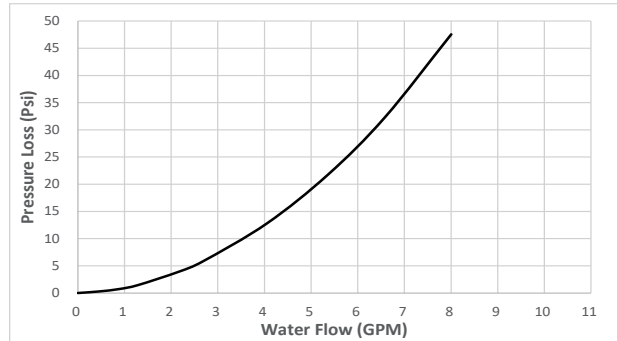
[NHW700-180SE/180SU]



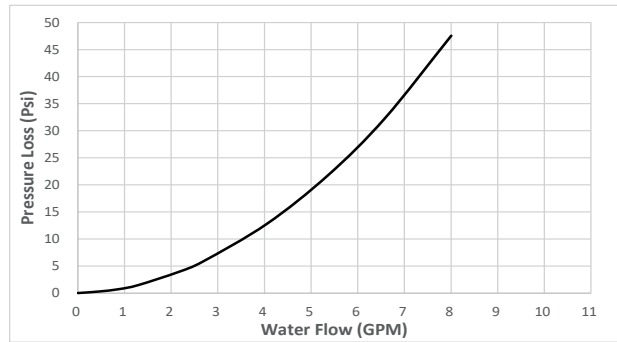
[NHW700-199SE/199SU]



[NHW700-160AE/160AI]

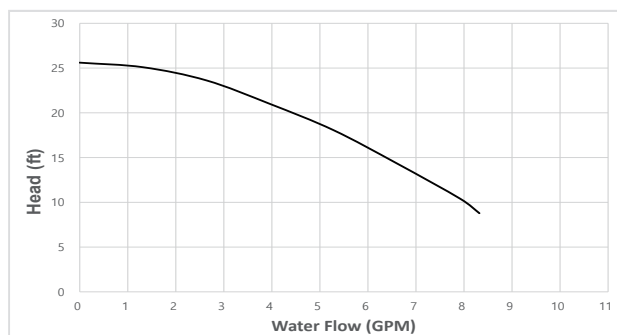


[NHW700-180AE/180AI]

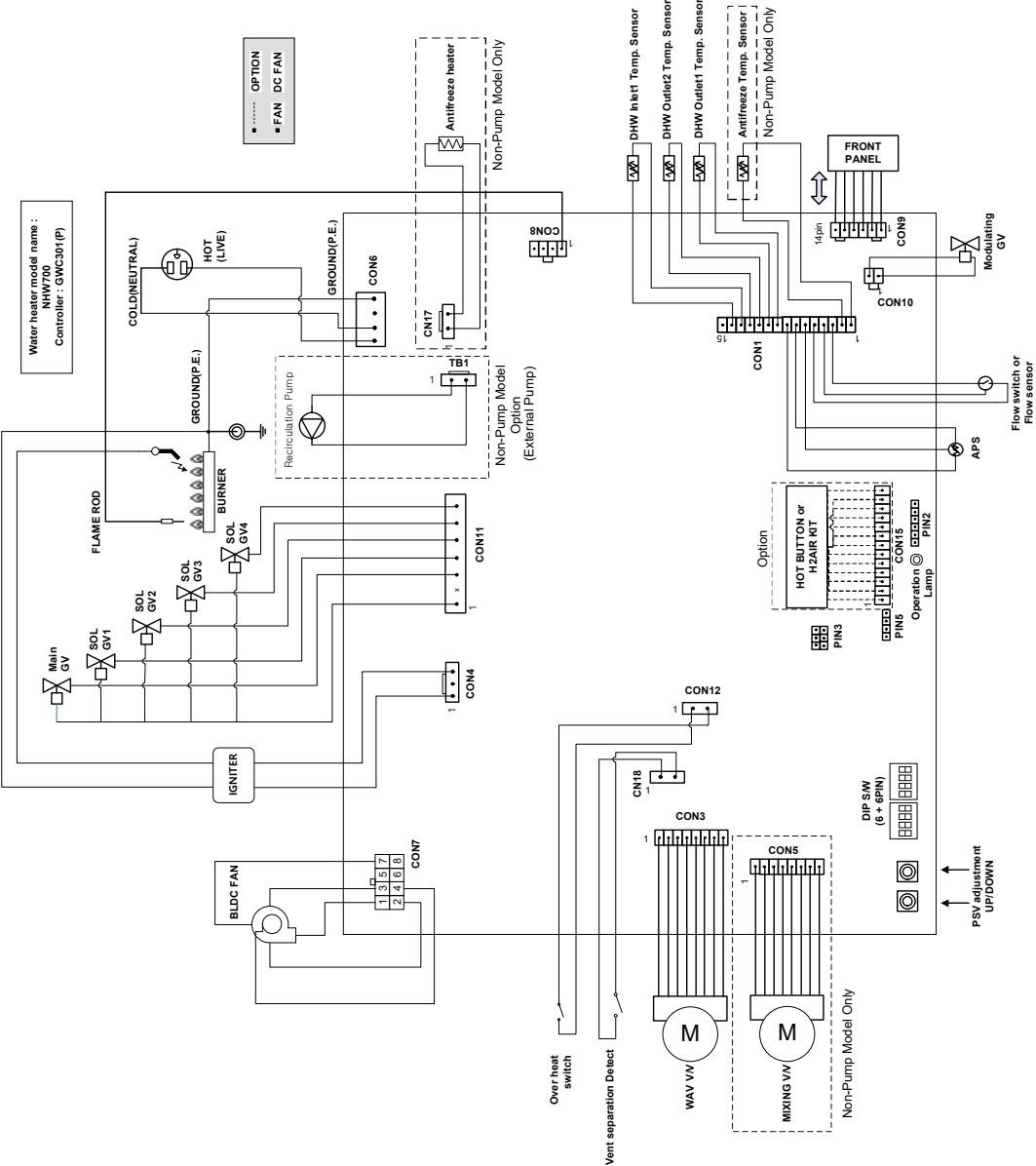


[NHW700-199AE/199AI]

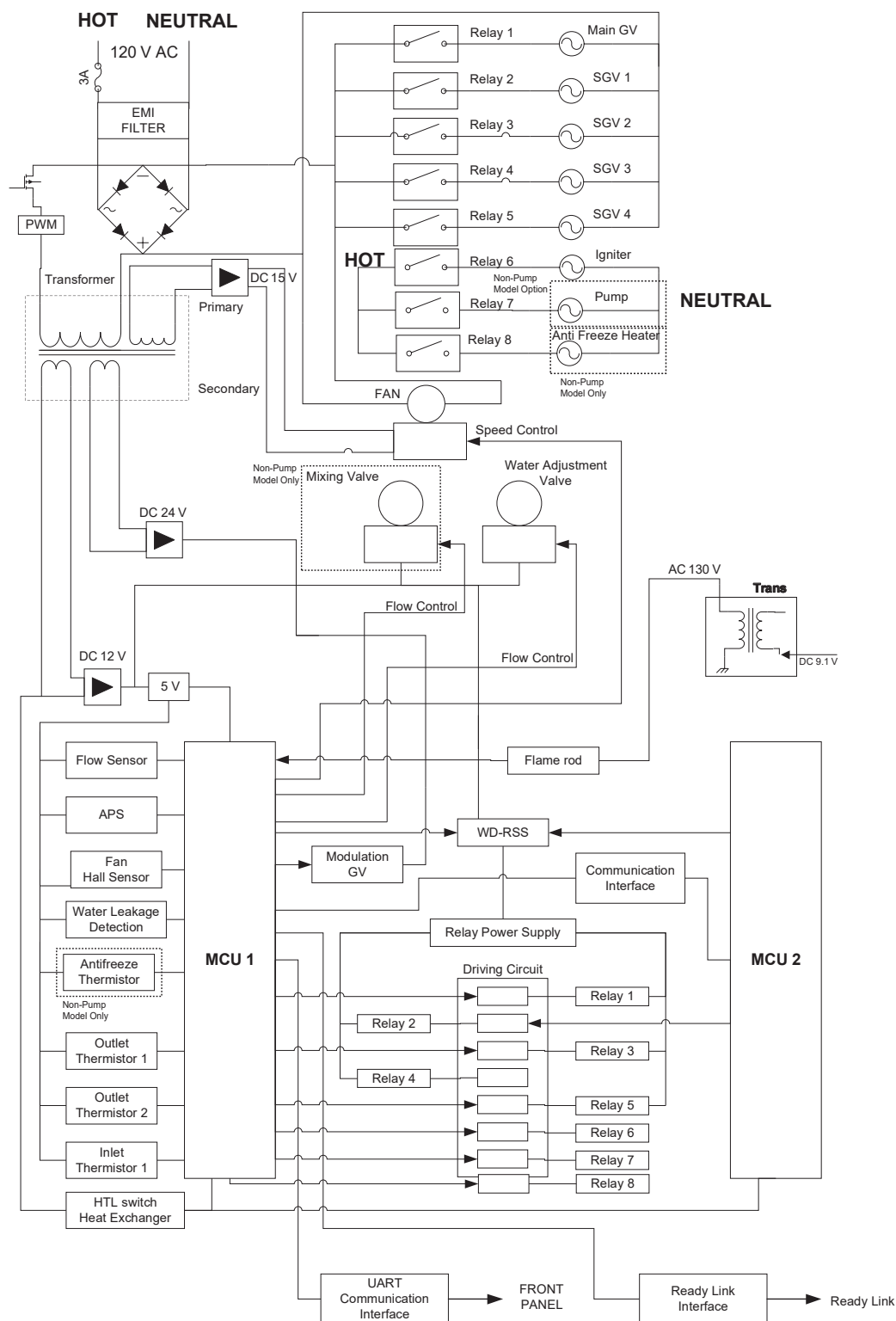
6.2.3 Pump Curve (GPM vs Ft Head)



6.3 Wiring Diagram

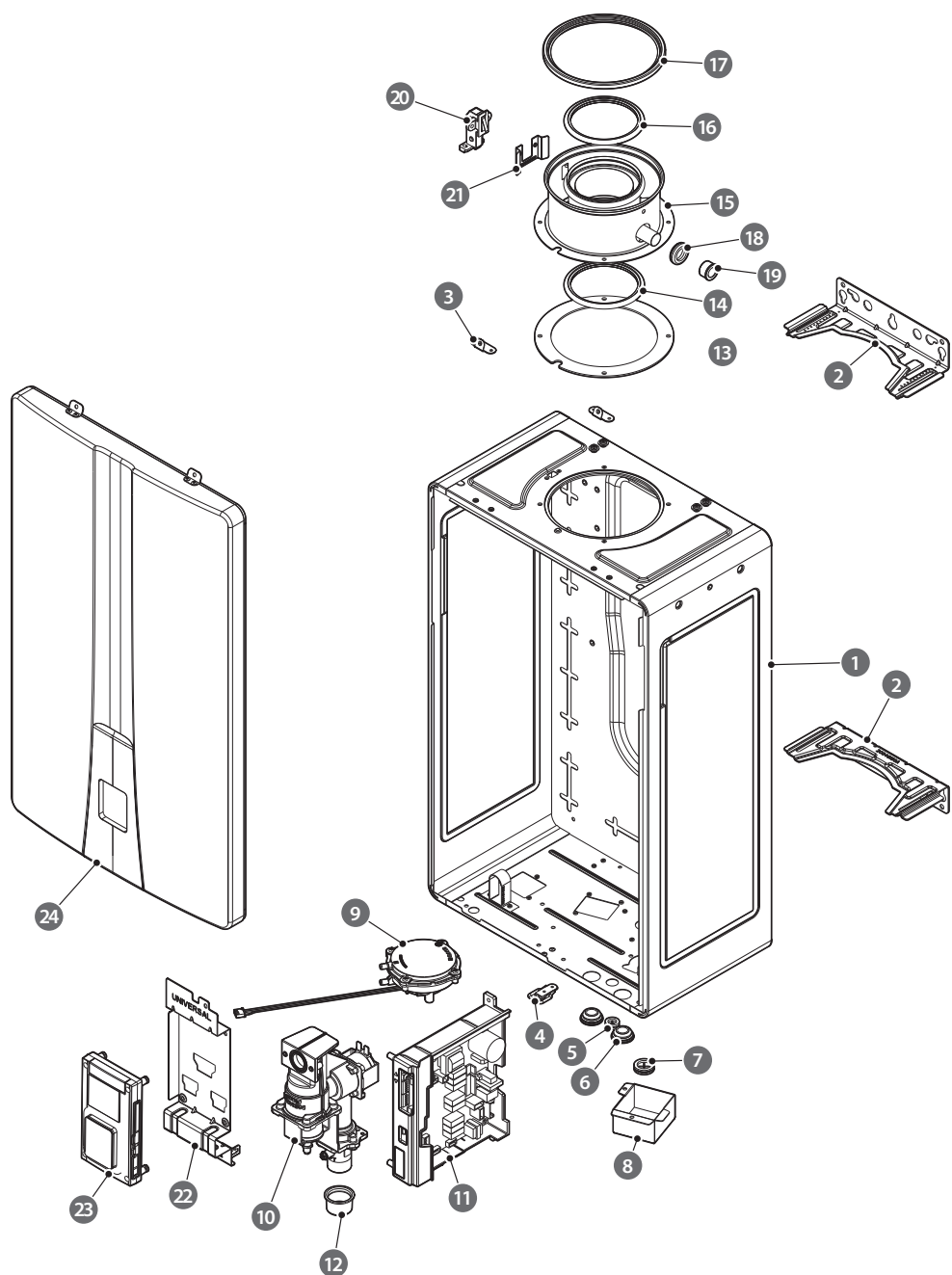


6.4 Ladder Diagram



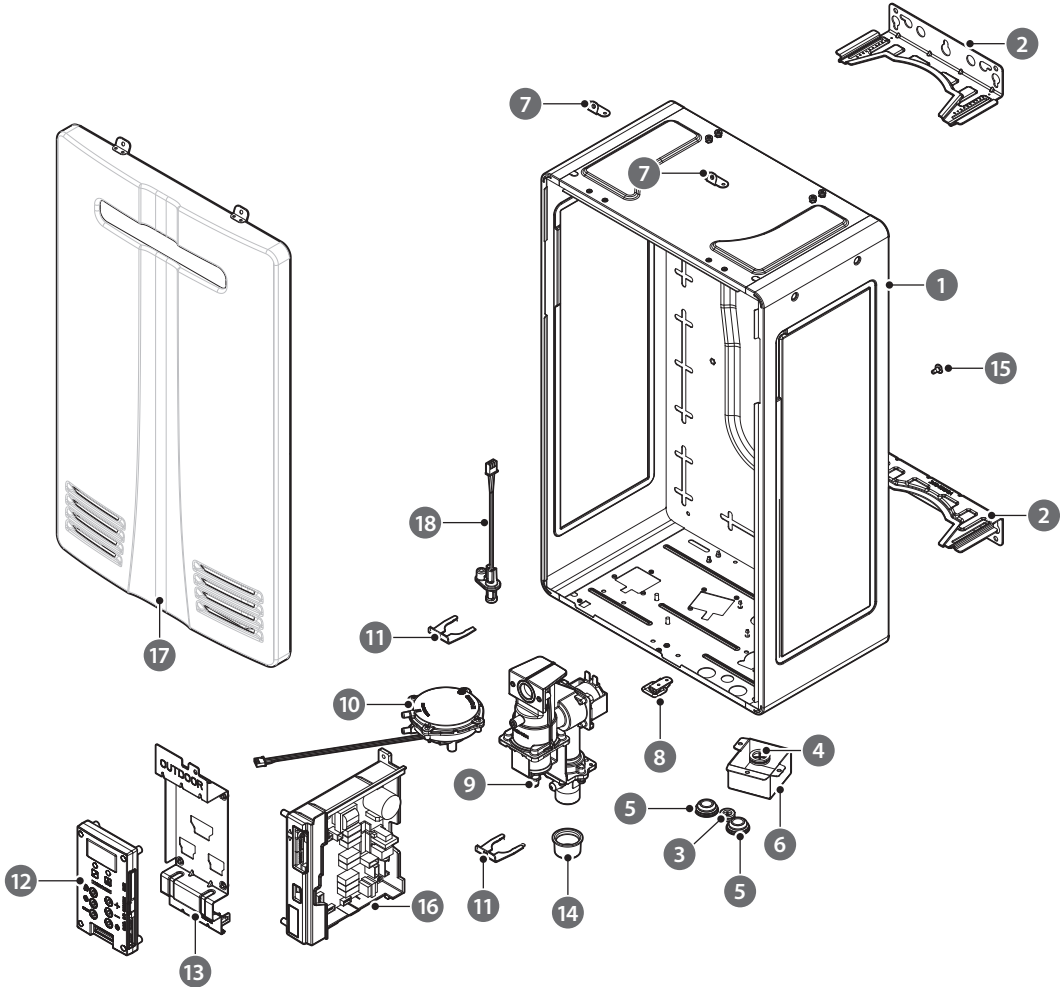
6.5 Component Assembly Diagrams and Parts Lists

6.5.1 Case Assembly (NHW700-160SU/180SU/199SU)



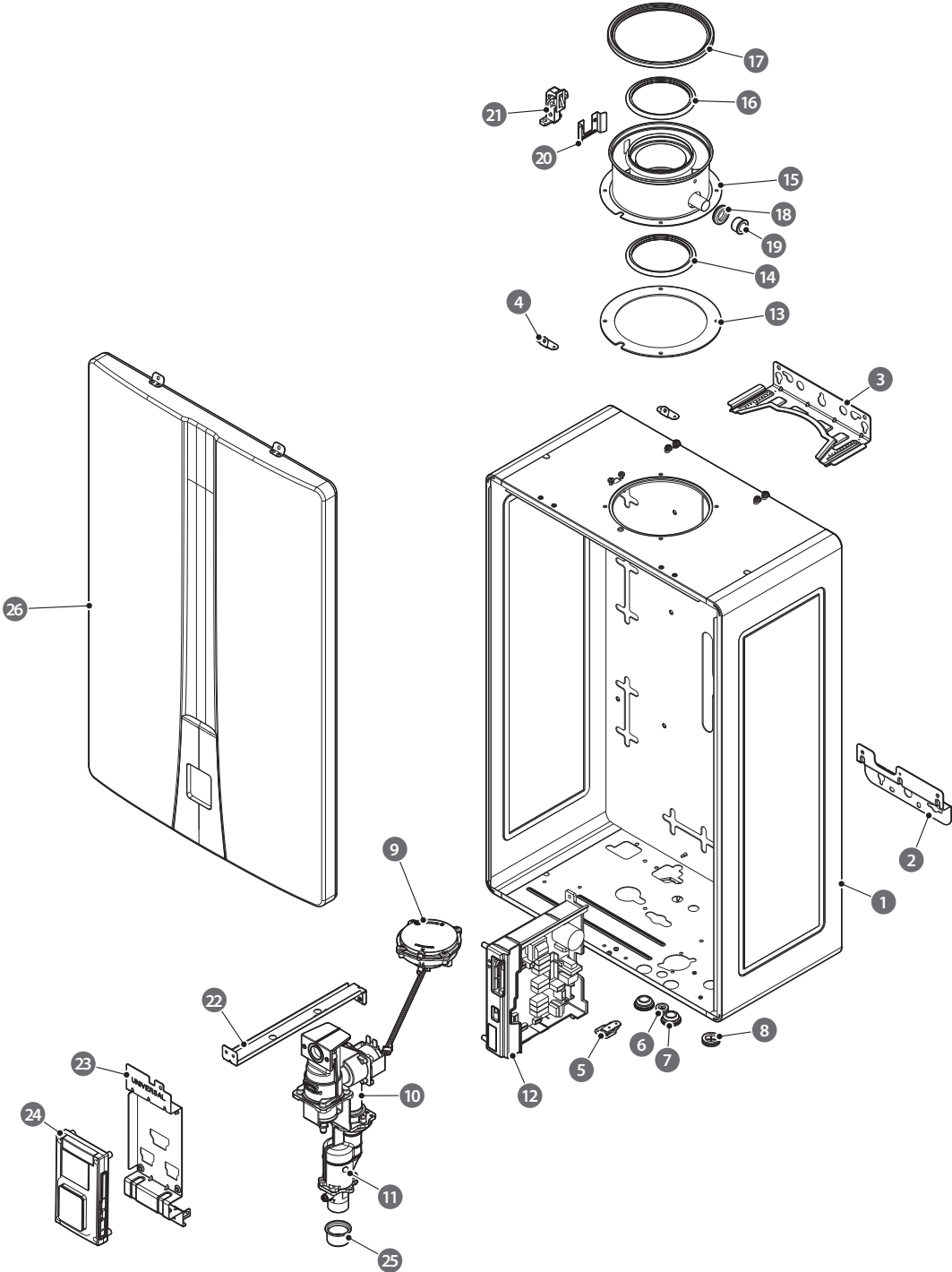
#	Description	Service Part #	Part #	Remark
1	Case	-	20055535A	160SU
		-	20055539A	180SU, 199SU
2	Case Bracket	-	20048190B	
3	Front Cover Bracket	-	20024042A	
4	External Base Toggle Latch	-	20007514B	
5	Rubber Cap	20006973*	20006973B	
6		20025127*	20025127A	
7		20029318*	20029318A	
8	Junction Box	-	20046065B	
9	Air Pressure Sensor	30010238*	30010238B	
10	Gas Control Valve	30022125*	30031342A	
11	PCB	30030638*	30030165A	
12	Pipe Cap	-	20012835A	
13	Exhaust Gasket	30022669*	20047330A	
14	Exhaust Rubber Packing		20046640A	
15	Intake Exhaust Pipe		20052298A	
16	Exhaust Rubber Packing		20046640A	
17	Intake Gasket		20046639A	
18	Condensate Drain Gasket		20046641A	
19	Condensate Drain Cap		20046642A	
20	Exhaust Switch		30024038A	
21	Exhaust Switch Bracket		20048967A	
22	Front Panel Bracket	-	20045993A	
23	Front Panel	30030639*	30022766B	
24	External Cover	30032354*	20046455A	

6.5.2 Case Assembly (NHW700-160SE/180SE/199SE)



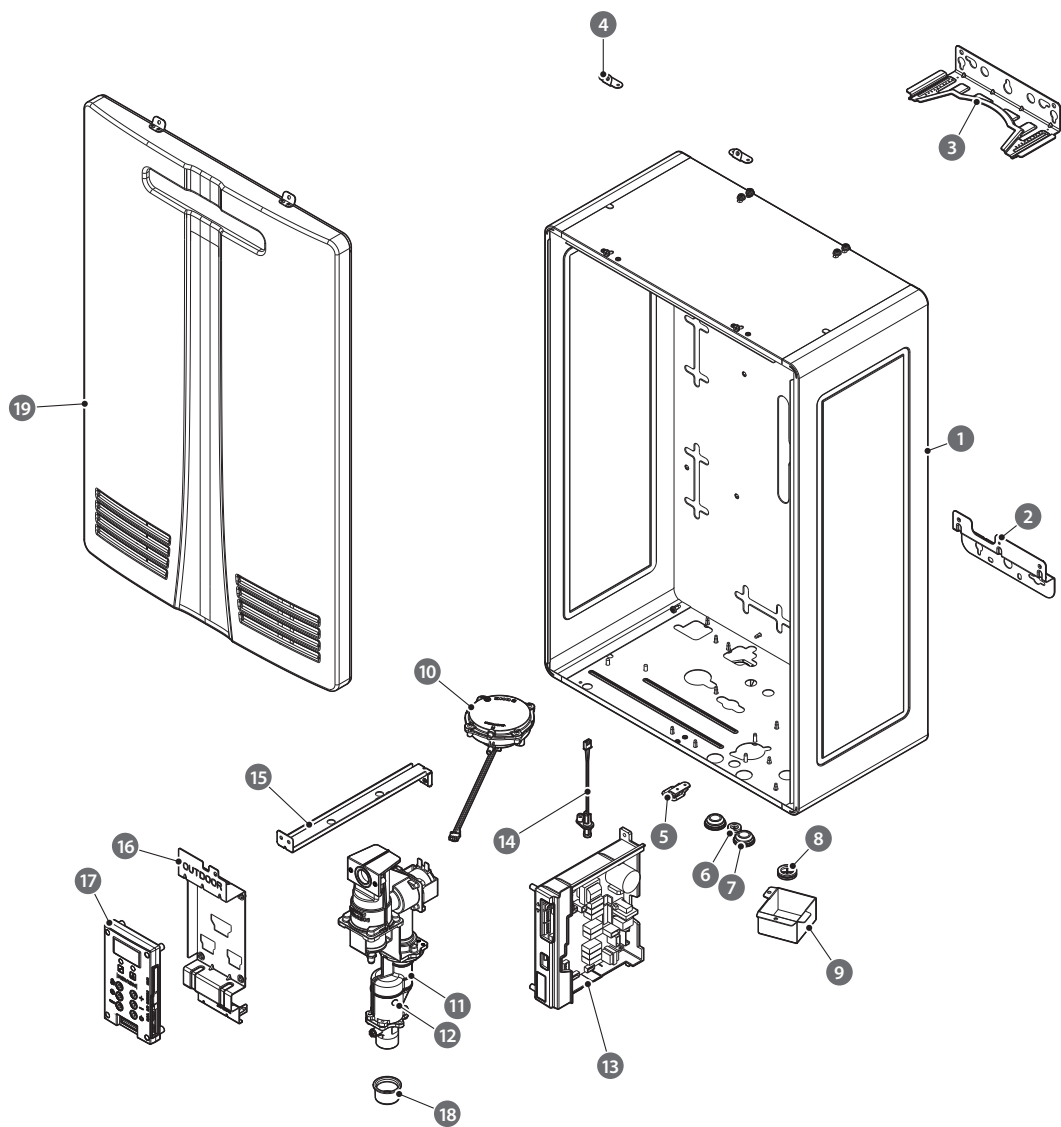
#	Description	Service Part #	Part #	Remark
1	Case	-	20047112B	120SE, 160SE
		-	20046059B	180SE, 199SE
2	Case Bracket	-	20048190B	
3	Rubber Cap	20006973*	20006973B	
4		20025127*	20025127A	
5		20029318*	20029318A	
6	Junction Box	-	20046065B	
7	Front Cover Bracket	-	20024042A	
8	External Base Toggle Latch	-	20007514B	
9	Gas Control Valve	30022125*	30031342A	
10	Air Pressure Sensor	30010238*	30010238B	
11	Pipe Clip	20045992*	20045992A	
12	Front Panel	30030640*	30022765C	
13	Front Panel Bracket	-	20045994A	
14	Pipe Cap	-	20012835A	
15	Rubber Seal Plug	-	20036041A	
16	PCB	30030638*	30030165A	
17	External Cover	30032355*	30022752A	
18	Anti-Freeze Sensor Assembly	30024489*	30024489A	

6.5.3 Case Assembly (NHW700-160AI/180AI/199AI)



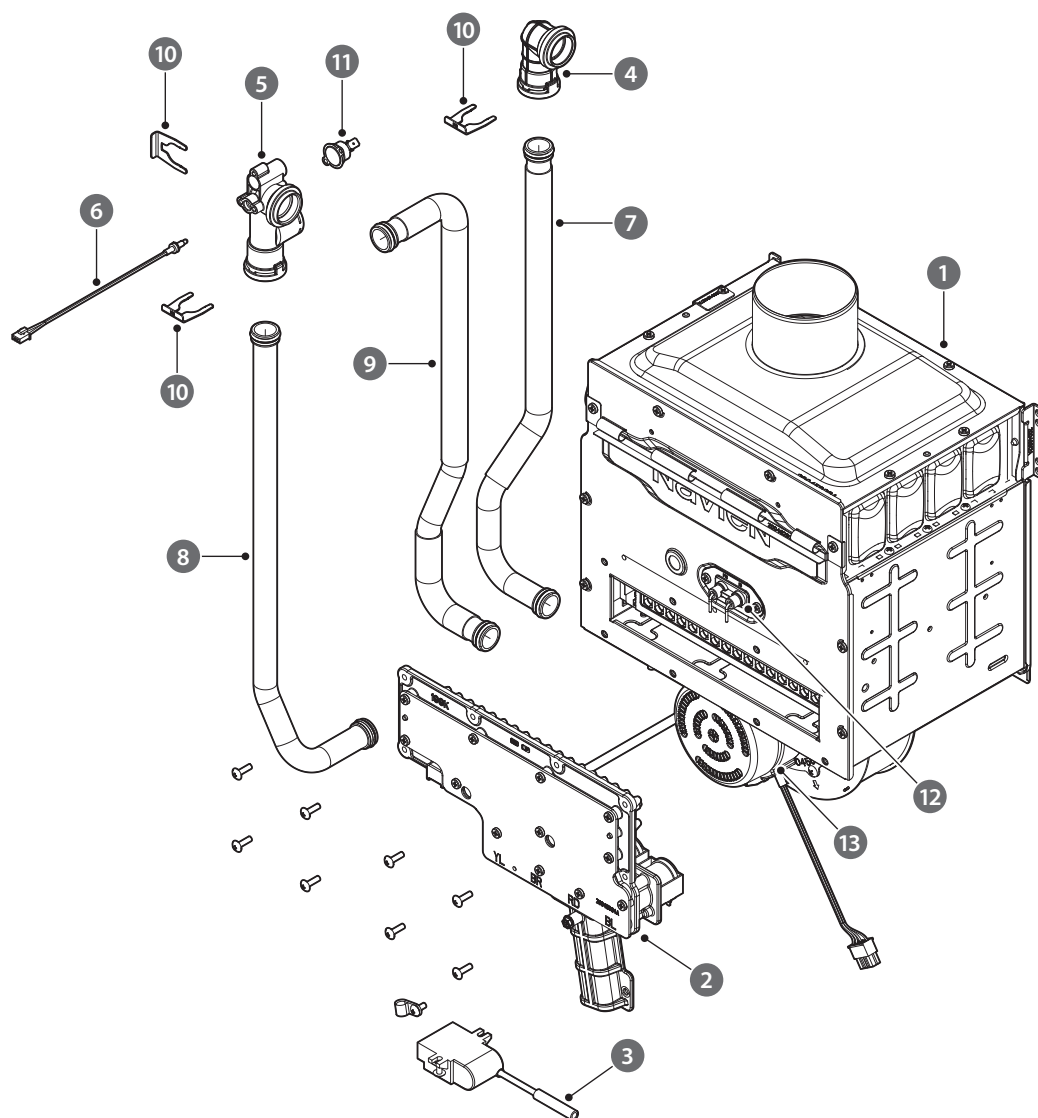
#	Description	Service Part #	Part #	Remark
1	Case	-	20057546A	160AI
		-	20057548A	180AI, 199AI
2	Case Bracket (Lower)	-	20057580A	
3	Case Bracket (Upper)	-	20048190B	
4	Front Cover Bracket	-	20024042A	
5	External Base Toggle Latch	-	20007514B	
6	Rubber Cap	20006973*	20006973B	
7		20025127*	20025127A	
8		20029318*	20029318A	
9	Air Pressure Sensor	30010238*	30010238B	
10	Gas Valve	30022125*	30029845A	
11	Gas Valve Adapter	20057354*	20057354A	
12	PCB	30030638*	30030165A	
13	Exhaust Gasket	30022669*	20047330A	
14	Exhaust Rubber Packing		20046640A	
15	Intake Exhaust Pipe		20052298A	
16	Exhaust Rubber Packing		20046640A	
17	Intake Gasket		20046639A	
18	Condensate Drain Gasket		20046641A	
19	Condensate Drain Cap		20046642A	
20	VID Sensor Bracket		20048967A	
21	VID Sensor		30024038A	
22	Front Panel Support Bracket	-	20057369A	
23	Front Panel Bracket	-	20045993A	
24	Front Panel	30030639*	30022766B	
25	Pipe Cap	-	20012835A	
26	Front Cover	30030636*	30029816A	

6.5.4 Case Assembly (NHW700-160AE/180AE/199AE)



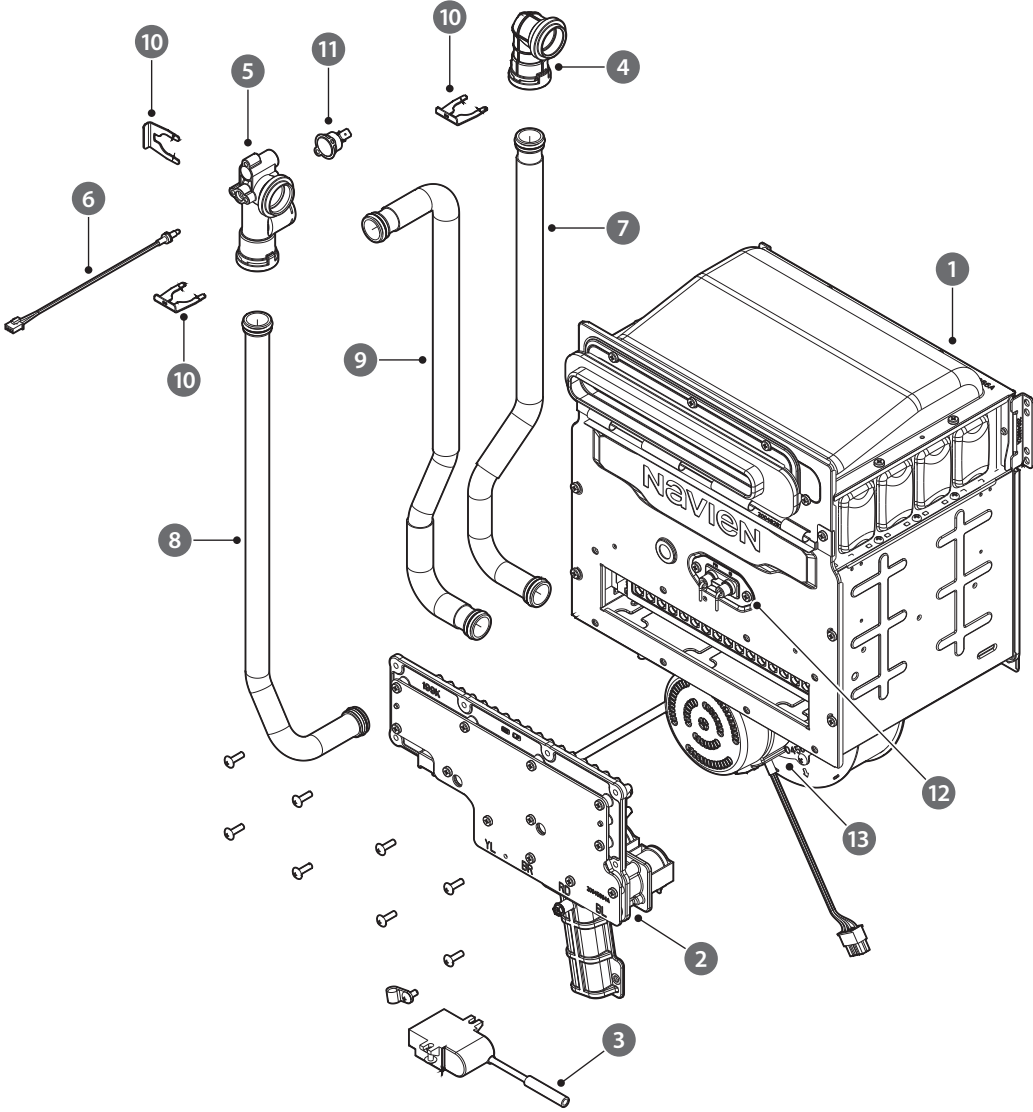
#	Description	Service Part #	Part #	Remark
1	Case	-	20057547A	160AI
		-	20057549A	180AI, 199AI
2	Case Bracket (Lower)	-	20057580A	
3	Case Bracket (Upper)	-	20048190B	
4	Front Cover Bracket	-	20024042A	
5	External Base Toggle Latch	-	20007514B	
6	Rubber Cap	20006973*	20006973B	
7		20025127*	20025127A	
8		20029318*	20029318A	
9	Junction Box	-	20061726A	
10	Air pressure Sensor	30010238*	30010238B	
11	Gas Valve	30029811*	30029845A	
12	Gas Valve Adapter	20057354*	20057354A	
13	PCB	30030638*	30030165A	
14	Freeze Protection Sensor	30024489*	30024489A	
15	Front Panel Support Bracket	-	20057369A	
16	Front Panel Bracket	-	20045993A	
17	Front Panel	30030640*	30022765A	
18	Pipe Cap	-	20012835A	
19	Front Cover	30030637*	30029817A	

6.5.5 Burner Assembly (NHW700-160SU/180SU/199SU)



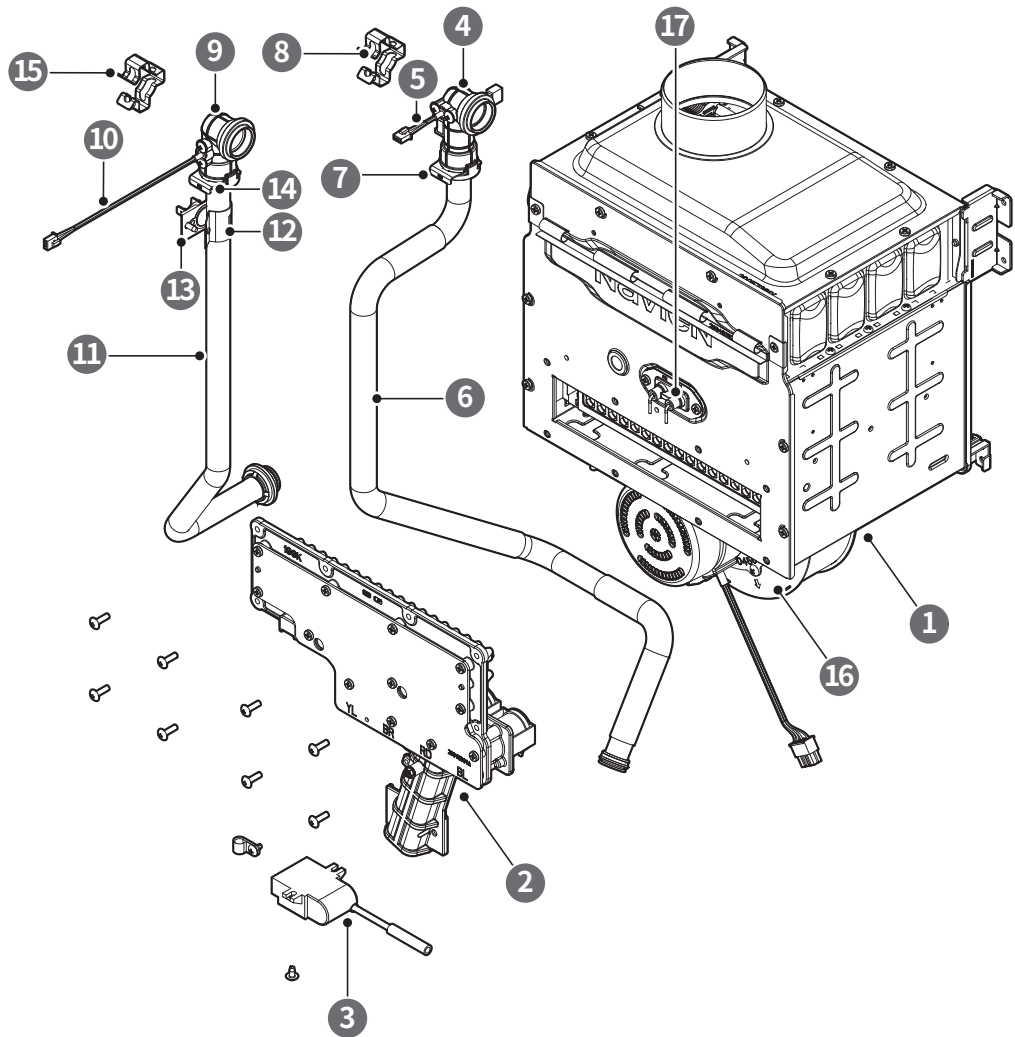
#	Description	Service Part #	Part #	Remark
1	Heat Exchanger Assembly	30032360*	30030237A	160SU
		30032358*	30030238A	180SU, 199SU
2	Gas Manifold	30030545*	30031335A	LNG; 160SU
		30030547*	30031337A	LNG; 180SU, 199SU
		30030546*	30031336A	LPG; 160SU
		30030548*	30031338A	LPG; 180SU, 199SU
3	Ignition Transformer	30023297*	30023297A	
4	Heat Exchanger Inlet Adapter	20045990*	20045990A	
5	Heat Exchanger Outlet Adapter	20045991*	20045991A	
6	Outlet Temperature Sensor	30015178*	30015178A	
7	Inlet Pipe	30022890*	30022890A	160S (U/E Both)
		30022711*	30022711A	180/199 (U/E Both)
8	Outlet Pipe	30022891*	30022891A	160S (U/E Both)
		30022712*	30022712A	180/199 (U/E Both)
9	Mixing Pipe	30022892*	30022892A	160S (U/E Both)
		30022713*	30022713A	180/199 (U/E Both)
10	Pipe Clip	20045992*	20045992A	
11	High Limit Switch	30002577*	30002577A	
12	Flame Rod Assembly	30022787*	30022787B	
13	Fan Assembly	30030134*	30030134A	160SU
		30030133*	30030133A	180SU, 199SU

6.5.6 Burner Assembly (NHW700-160SE/180SE/199SE)



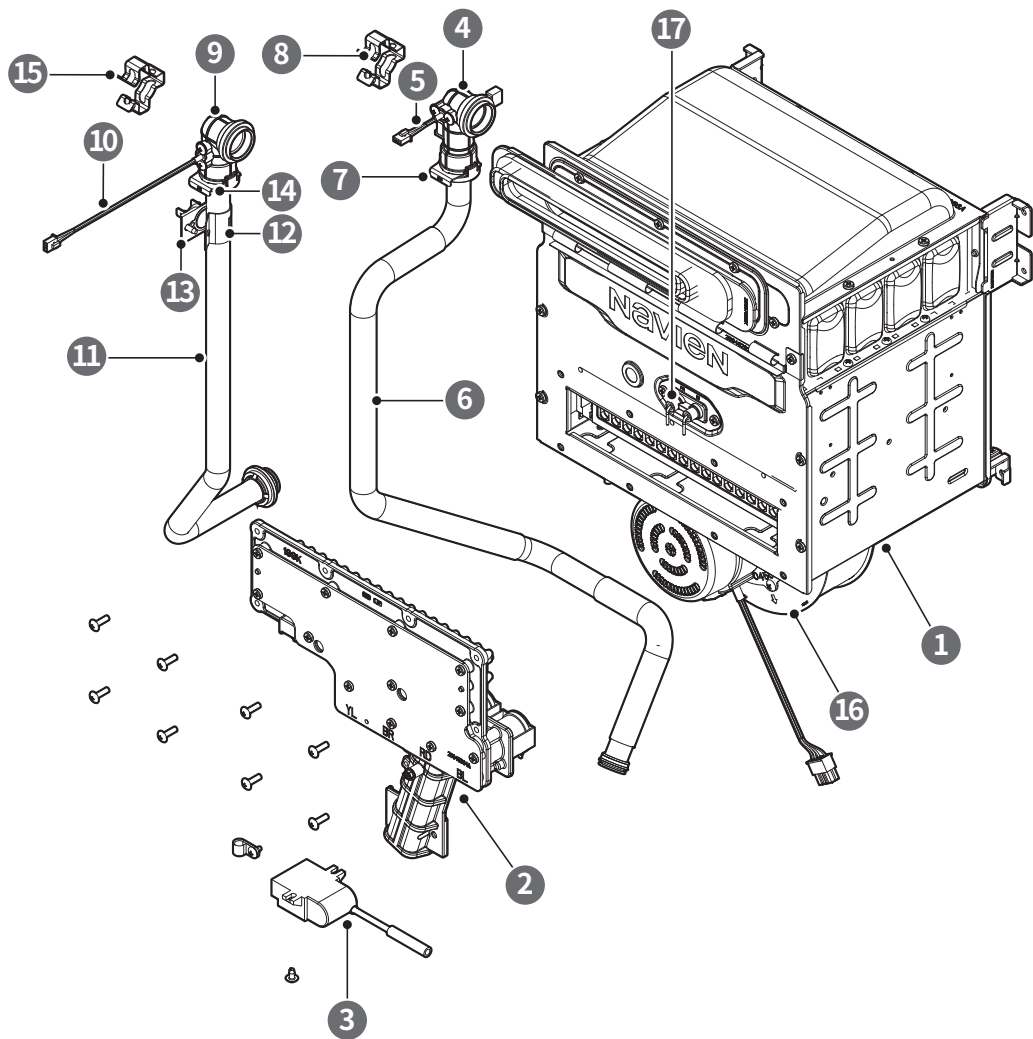
#	Description	Service Part #	Part #	Remark
1	Heat Exchanger Assembly	30032359*	30031377A	160SE
		30032357*	30031378A	180SE, 199SE
2	Gas Manifold	30030545*	30031335A	LNG; 160SE
		30030547*	30031337A	LNG; 180SE, 199SE
		30030546*	30031336A	LPG; 160SE
		30030548*	30031338A	LPG; 180SE, 199SE
3	Ignition Transformer	30023297*	30023297A	
4	Heat Exchanger Inlet Adapter	20045990*	20045990A	
5	Heat Exchanger Outlet Adapter	20045991*	20045991A	
6	Outlet Temperature Sensor	30015178*	30015178A	
7	Inlet Pipe	30022890*	30022890A	160S (U/E Both)
		30022711*	30022711A	180/199 (U/E Both)
8	Outlet Pipe	30022891*	30022891A	160S (U/E Both)
		30022712*	30022712A	180/199 (U/E Both)
9	Mixing Pipe	30022892*	30022892A	160S (U/E Both)
		30022713*	30022713A	180/199 (U/E Both)
10	Pipe Clip	20045992*	20045992A	
11	High Limit Switch	30002577*	30002577A	
12	Flame Rod Assembly	30022787*	30022787B	
13	Fan Assembly	30022990*	30022990A	160SE
		30022770*	30022770A	180SE, 199SE

6.5.7 Burner Assembly (NHW700-160AI/180AI/199AI)



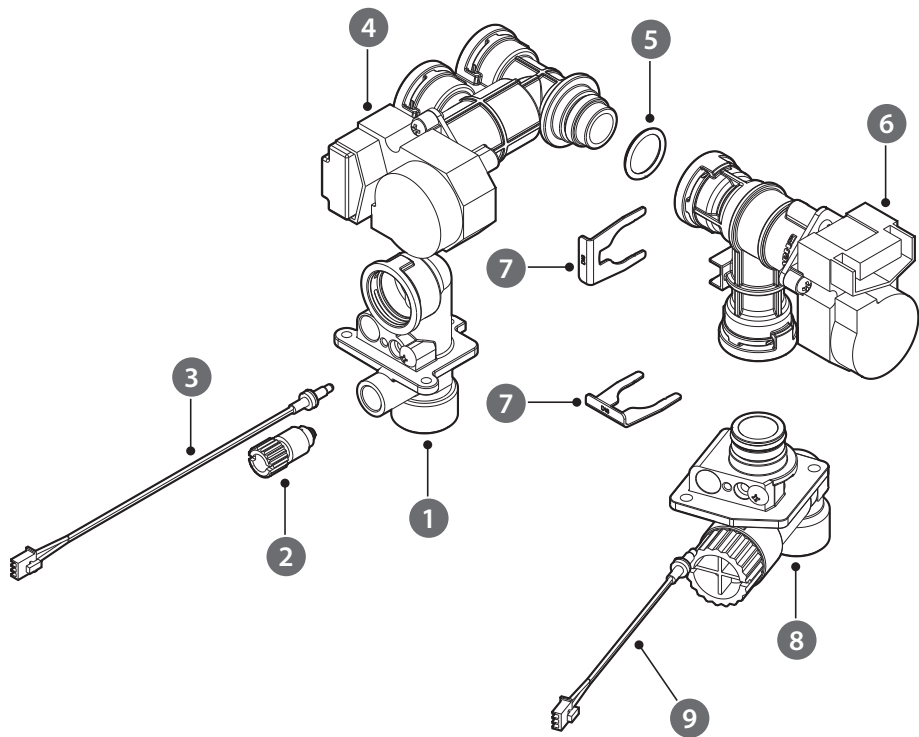
#	Description	Service Part #	Part #	Remark
1	Heat Exchanger Assembly	30030641*	30029771A	160AI
		30030643*	30029787A	180AI, 199AI
2	Gas Manifold	30030551*	20060738A	LNG; 160AI
		30030553*	20060740A	LNG; 180AI, 199AI
		30030552*	20060739A	LPG; 160AI
		30030554*	20060741A	LPG; 180AI, 199AI
3	Ignition Transformer	30023297*	30023297A	
4	Water Flow Sensor	30029799*	30031591A	
5	Inlet Temperature Sensor	30008366*	30008366A	
6	Inlet Pipe	30029798*	30029798A	
7	Clip	20045992*	20045992A	
8	Fastener	20007859*	20007859A	
9	Heat Exchanger Outlet Adapter	30029802*	30029802A	
10	Outlet Temperature Sensor	30015178*	30015178A	
11	Outlet Pipe	30029800*	30029800A	
12	Clamp	-	20027025A	
13	High Limit Switch	30002577*	30002577A	
14	Clip	20045992*	20045992A	
15	Fastener	20007859*	20007859A	
16	Fan Assembly	30030136*	30030136A	160AI
		30030135*	30030135A	180AI, 199AI
17	Flame Rod Assembly	30022787*	30022787B	

6.5.8 Burner Assembly (NHW700-160AE/180AE/199AE)



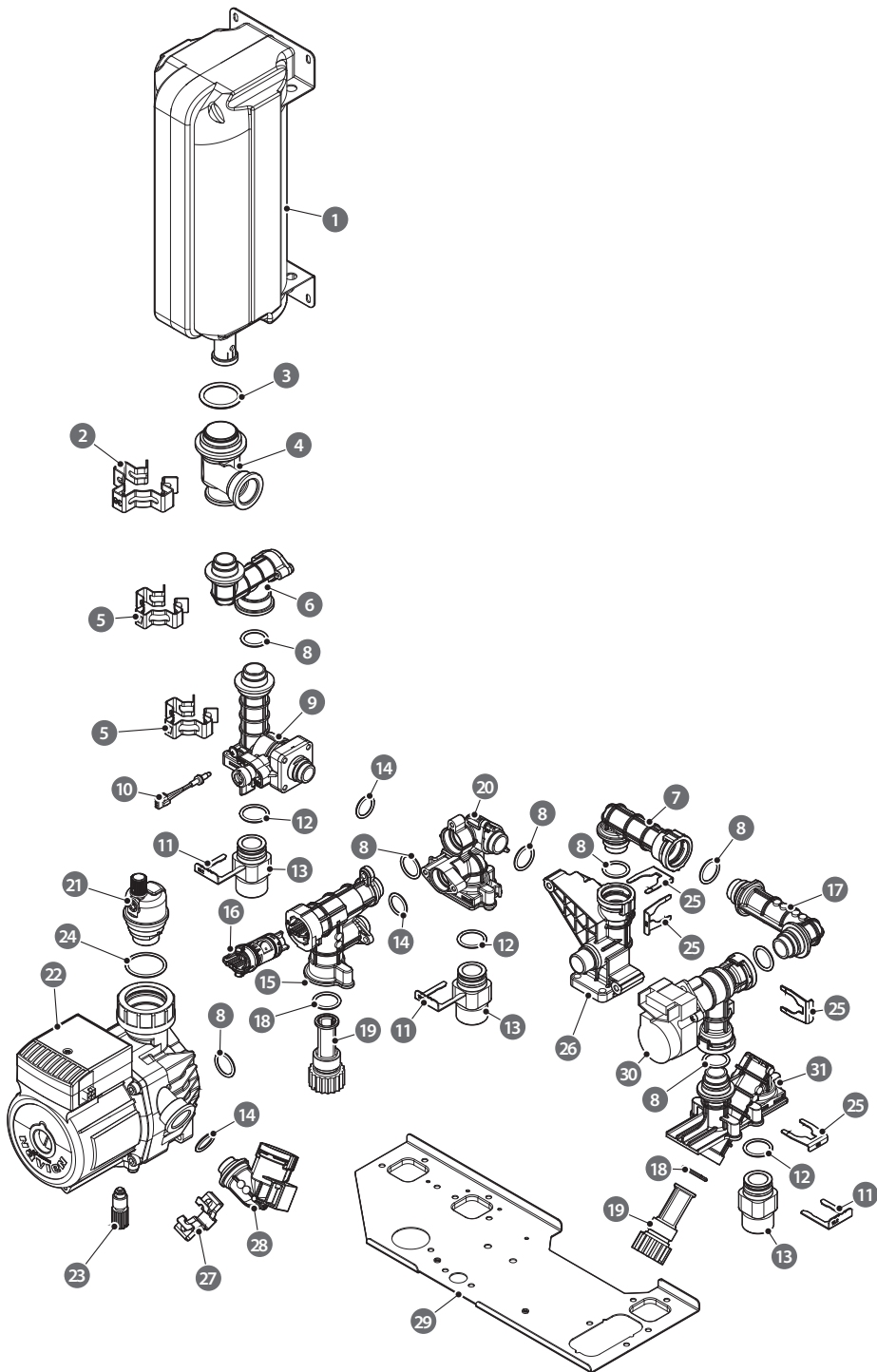
#	Description	Service Part #	Part #	Remark
1	Heat Exchanger Assembly	30030642*	30029772A	160AE
		30030644*	30029788A	180AE, 199AE
2	Gas Manifold	30030551*	20060738A	LNG; 160AE
		30030553*	20060740A	LNG; 180AE, 199AE
		30030552*	20060739A	LPG; 160AE
		30030554*	20060741A	LPG; 180AE, 199AE
3	Ignition Transformer	30023297*	30023297A	
4	Water Flow Sensor	30029799*	30031591A	
5	Inlet Temperature Sensor	30008366*	30008366A	
6	Inlet Pipe	30029798*	30029798A	
7	Clip	20045992*	20045992A	
8	Fastener	20007859*	20007859A	
9	Heat Exchanger Outlet Adapter	30029802*	30029802A	
10	Outlet Temperature Sensor	30015178*	30015178A	
11	Outlet Pipe	30029800*	30029800A	
12	Clamp	-	20027025A	
13	High Limit Switch	30002577*	30002577A	
14	Clip	20007859*	20007859A	
15	Fastener	20007859*	20007858A	
16	Fan Assembly	30030138*	30030138A	160AE
		30030137*	30030137A	180AE, 199AE
17	Flame Rod Assembly	30022787*	30022787B	

6.5.9 Water Assembly (NHW700-SE/SU Models)



#	Description	Service Part #	Part #	Remark
1	Hot Water Supply Adapter	30030380*	30030380A	
2	Drain Cock	30008630*	30008630D	
3	DHW Outlet Temperature Sensor	30015178*	30015178A	
4	Mixing Valve	30022124*	30022124A	
5	O-Ring	20006947*	20006947A	
6	Water Adjustment Valve	30022123*	30022123A	
7	Pipe Clip	20045992*	20045992A	
8	Direct Water Inlet Adapter	30030379*	30030379A	
9	DHW Outlet Temperature Sensor	30008366*	30008366A	

6.5.10 Water Assembly (NHW700-AI/AE Models)



#	Description	Service Part #	Part #	Remark
1	Buffer Tank	30016125*	30016125A	
2	Fastener	20017724*	20017724A	
3	O-Ring	20017923*	20017923A	
4	Buffer Tank Adapter A	20035697*	20035697A	
5	Fastener	20017726*	20017726A	
6	Buffer Tank Adapter B	30029809*	30029809A	
7	Pump Connect Adapter	20048418*	20048418A	
8	O-Ring (P18)	20006947*	20006947A	
9	Hot Water Outlet Adapter	20017729*	30008338A	
10	Thermistor	30008366*	30008366A	
11	Clip	20007733*	20007733B	
12	O-Ring (P20)	20017212*	20017212A	
13	Cold Water Inlet Adapter	20024496*	20024496A	
14	O-Ring (P16)	20017210*	20017210A	
15	Check Valve Adapter	20048412*	20048412A	
16	Check Valve	30024442*	30008359B	
17	WAV Outlet Adapter	20048415*	20048415A	
18	O-Ring (P19)	20017211*	20017211A	
19	Water Filter	30008171*	30008171A	
20	Return Connect Adapter	20048405*	20048405A	
21	Pump Air Separator	30010780*	30013056A	
22	Circulation Pump		30008355D	
23	Drain Plug		30008630D	
24	O-Ring (P30)		20022322A	
25	Clip	20045992*	20045992A	
26	Pump Inlet Adapter	20048414*	20048414A	
27	Fastener	20007859*	20007859A	
28	Pump Outlet Adapter	20048419*	20048419B	
29	Bracket	-	20048396A	
30	Water Adjust Valve	30024183*	30024183A	
31	Cold Water Adapter	20048454*	20048454A	

6.6 Installation Check list

After installing the water heater, review the following checklist. You should be able to answer “Yes” to all of the items in the checklist. If not, review the appropriate sections to complete the installation. To troubleshoot any operational problems refer to “Troubleshooting” in the User’s Information Manual.

If you have additional questions or need assistance with installation, contact Technical Support at 1-800-519-8794 or 1-949-420-0420, or refer to the technical support section of Navien’s website (www.navieninc.com).

Installing the Water Heater	Yes	No
Have you maintained the required clearances from building openings and intake air vents?		
Have you minimized the distance between the water heater and the vent termination?		
Have you minimized the distance between the water heater and major fixtures?		
Have you maintained the proper service and maintenance clearances?		
Is the make-up air supply sufficient for proper operation?		
Is the make-up air supply free from dust, dirt, corrosive elements, and flammable vapors?		
Is the water heater and vent piping clear of combustible materials, including clothing, cleaning materials, and rags?		

Connecting the Gas Supply	Yes	No
Does the gas supply match the type specified on the water heater’s rating plate?		
Is the gas line at least 1/2 in or 3/4 in ID (Inner Diameter)?		
Is the gas supply line sufficient in length and diameter to deliver the required BTUs?		
Have you measured the pressure of the gas supply line?		
Is the gas supply pressure within the recommended ranges specified in this manual?		
Is the gas supply line equipped with a manual full port valve?		
Have you tested the gas line pressure and all fittings for leaks?		
Has the gas company inspected the installation, if required?		

Connecting the Water Supply	Yes	No
Is the water supply pressure sufficient (greater than 40 PSI)?		
Have you installed shut off valves on the inlet and outlet to facilitate cleaning of the inlet water filter?		
Have you bled the air out at each fixture?		
Have you checked each fixture to ensure hot water is being supplied?		
Have you cleaned the inlet water filter?		
If you installed a recirculation line, have you insulated the hot water pipes and the return line?		

Connecting a Pressure Relief Valve	Yes	No
Have you installed an approved pressure relief valve on the water heater?		
Does the rating of the pressure relief valve match or exceed the maximum BTU rating of the water heater?		
Is the pressure relief valve at least $\frac{3}{4}$ in in diameter?		
Have you installed the pressure relief valve on the hot water outlet pipe near the water heater?		
Have you installed a discharge drain tube from the pressure relief valve to within 6–12 in (150–300 mm) of the floor?		

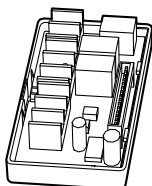
Venting the Water Heater	Yes	No
Have you ensured that there are proper clearances around the vent and air intakes?		
Have you ensured that only the approved vent materials listed in this manual are used as venting for the water heater?		
Have you ensured that 1.3" of vent was inserted into the water heater vent collar then affixed with the included screws?		
Is the vent sloped upward toward the vent termination at a rate of $\frac{1}{4}$ in per foot (2 % grade)?		
Are all vent runs properly supported?		
Have you properly supported the vent termination?		
Have you properly sealed all air intake and exhaust joints, from the flue collar to the to the vent termination?		
Have you installed an end cap on the vent pipe?		
Have you checked the venting for leaks?		
Is the vent termination at least 12 in (300 mm) above the exterior grade?		
Have you ensured that sufficient make-up air is available?		
Is the total vent length within the maximum vent length restriction?		

Connecting the Power Supply	Yes	No
Is the supplied voltage 110-120 V AC?		
Is the water heater plugged into a properly grounded outlet?		
If you have made a direct power supply connection, have you installed a power switch to facilitate end-user maintenance?		
Have you checked the polarity of the electrical connection?		
Is the system properly set up for cascade operation (Main and Sub water heaters), if applicable?		

Setting the DIP Switches	Yes	No
Have you verified the positions of all DIP switches on the circuit board?		
Have you verified the positions of all DIP switches on the front panel?		

Operating the Water Heater	Yes	No
Have you shown the owner how to clean the inlet water filter?		
Have you given the Installation Manual and User's Information Manual to the owner for future reference?		
Have you shown the owner how to shut off the gas in case of an emergency?		

6.7 Navien H2Air Add-on Controller Kit (Optional)



The Navien H2Air is an add-on controller for the water heater. It adds input and output functions to the water heater for a combination application where space heating and domestic hot water (DHW) are supplied simultaneously. With this add-on controller, a thermostat (1 or 2-stage) and an outdoor sensor can be installed along with a hydronic air handler to add space heating functionality to the system.

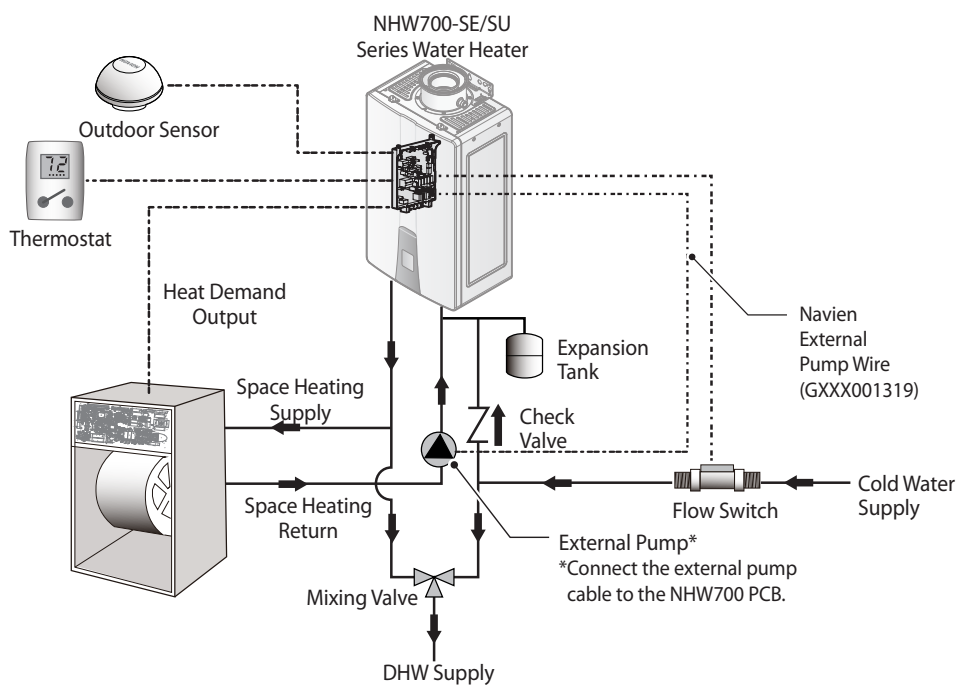
6.7.1 Basic Principles

The following diagram shows the basic operation of the heater system with the Navien H2Air add-on controller.

NOTICE

Do not configure the system for DHW recirculation when it is configured to run an air handler using the H2Air add-on controller. DHW recirculation and Navien H2Air configurations cannot be used at the same time.

System Diagram for NHW700-SE/SU Models

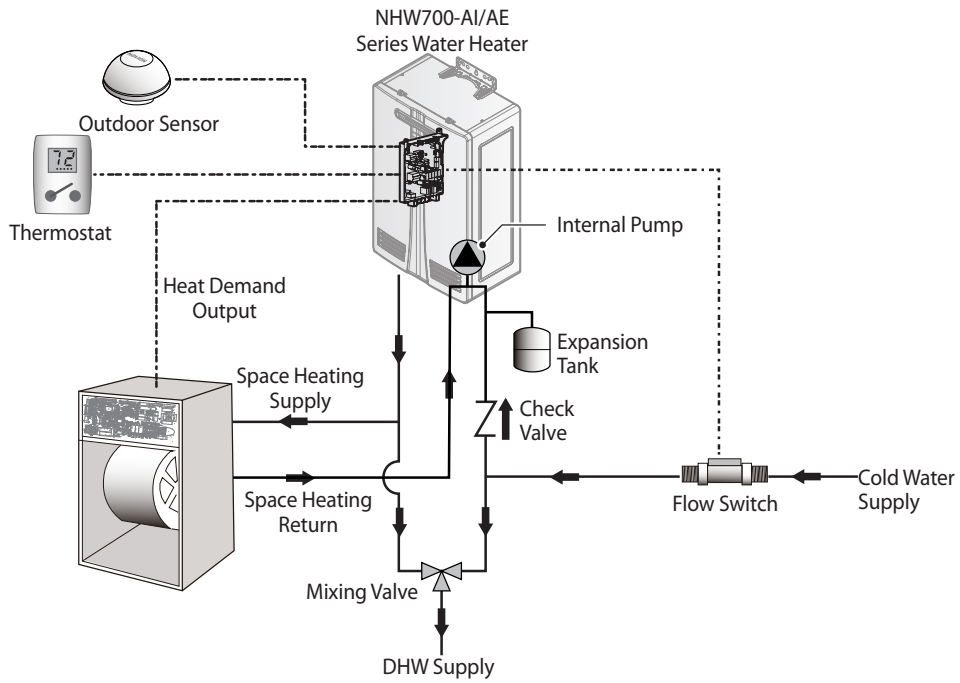


Note

Use a properly sized pump to allow 3-4 GPM of flow through the water heater. Refer to the Appendix for the pressure loss information on page 70.

For details, refer to the installation manual that is provided with the H2Air add-on controller kit.

System Diagram for NHW700-AI/AE Models



6.8 Requirements for the State of Massachusetts

NOTICE BEFORE INSTALLATION

This appliance must be installed by a licensed plumber or gas fitter in accordance with the Massachusetts Plumbing and Fuel Gas Code 248 CMR Sections 4.00 and 5.00.

IMPORTANT: In the State of Massachusetts (248 CMR 4.00 & 5.00)

For all side wall horizontally vented gas fueled equipment installed in every dwelling, building or structure used in whole or in part for residential purposes, including those owned or operated by the Commonwealth and where the side wall exhaust vent termination is less than seven (7) feet above finished grade in the area of the venting, including but not limited to decks and porches, the following requirements shall be satisfied:

1. **INSTALLATION OF CARBON MONOXIDE DETECTORS.** No installation or replacement of a vented gas appliance shall be permitted unless a battery powered or electrically hard wired carbon monoxide detector is present on the same floor as the appliance or on the next adjacent floor when the appliance is located in a crawl space unless the appliance is located in a detached, uninhabitable garage. For all residential dwellings, a carbon monoxide detector must also be present on each habitable level of the dwelling. These requirements shall not be deemed to waive any additional requirements imposed by M.G.L. c. 148 §26F1/2.
2. **APPROVED CARBON MONOXIDE DETECTORS.** Each carbon monoxide detector as required in accordance with the above provisions shall comply with NFPA 720 and be ANSI/UL 2034 listed and IAS certified.
3. **SIGNAGE.** Whenever any through-the-wall vent is installed less than seven feet above the finished grade, a metal or plastic identification plate shall be permanently mounted to the exterior of the building at a minimum height of eight feet above grade directly in line with the exhaust vent terminal. The sign shall read, in print size no less than 0.5 inches in size, **"GAS VENT DIRECTLY BELOW. KEEP CLEAR OF ALL OBSTRUCTIONS"**.
4. **INSPECTION.** The state or local gas inspector of the side wall horizontally vented gas fueled equipment shall not approve the installation unless, upon inspection, the inspector observes carbon monoxide detectors and signage installed in accordance with the provisions of 248 CMR 5.09 and 5.12.

7. LIMITED WARRANTY NAVIEN, INC.

Effective Terms

This 15 year limited warranty on heat exchangers, 5 year limited warranty on parts, and 1 year Limited warranty on labor ("Warranty") covers defects in materials or workmanship when the Navien NHW700 Water Heater ("Product") is installed by a properly licensed plumber or contractor and operated in strict compliance with the Installation & Operations manual procedures, subject to the terms within this Warranty document. Improper installation or use will void this Warranty. This Warranty runs from date of installation and extends to the original purchaser and subsequent owners, but only while the Product remains at the site of the original installation.

What is Covered?

Subject to the foregoing terms, Navien will repair or replace the covered Product or any part or component that is defective in materials or workmanship for a period of five (5) years in regard to parts and up to fifteen (15) Years in regard to the heat-exchanger for a Standard¹ or Controlled-Recirculation² installation in a Residential⁴ application. All repair parts must be genuine Navien parts. All repairs and replacements must be performed by an individual or servicing company that is properly licensed to do the type of repair.

When the Product is being used in an Uncontrolled-Recirculation³ installation in a Residential⁴ application, then the parts warranty will be reduced to three (3) years and the heat exchanger warranty to five (5) years as indicated in the Warranty Coverage Periods table.

When the Product is being used in an Standard¹ or Controlled-Recirculation² installation in a Combi⁴ or Commercial application, then the parts warranty will remain at five (5) years and the heat exchanger warranty will be reduced to five (5) years as indicated in the Warranty Coverage Periods table.

When the Product is being used in an Uncontrolled-Recirculation³ installation in a Combi⁴ or Commercial application, then the parts warranty will be reduced to three (3) years and the heat exchanger warranty to three (3) years as indicated in the Warranty Coverage Periods table.

Navien will pay labor charges for the warranty repair subject to Navien's prior written approval and in accordance with Navien's schedule of approved labor allowances for a period of one (1) year from the date of installation.

During the applicable warranty period, replacement of the Product or components may be authorized by Navien only. Navien does not authorize any person or company to assume for it any obligation or liability in connection with the replacement of the Product or its components. If it is determined that repair or replacement of a part, under warranty, is not possible, the Product will be replaced with a new Product having at least the same BTU capacity as the product at issue. The replacement component or product will be warranted only for the unexpired portion of the applicable warranty period for the original component or Product.

Warranty Coverage Periods				
Application		Labor Warranty	Parts Warranty	H/Ex Warranty
Residential ⁴	Standard ¹ or Cont-Recirc ²	1 year	5 years	15 years
	Uncont.- Recirc ³	1 year	3 years	5 years
Commercial or Combi ⁴	Standard ¹ or Cont-Recirc ²	1 year	5 years	5 years
	Uncont.- Recirc ³	1 year	3 years	3 years

*Applies only to single family, residential locations

¹ **Standard** means there is no recirculation being used

² **Controlled-Recirculation** means recirculation of the water through the water heater is controlled by either the water heater or an external aquastat.

³ **Uncontrolled-Recirculation** External pumps configured to circulate continuously through the water heater are subject to the uncontrolled recirculation warranty terms. An aquastat is the minimum pump control requirement for DHW or storage tank recirculation in order to maintain the full controlled recirculation warranty.

⁴ **Combi** refers to a combination potable water and space heating application. Water Heaters cannot be use in space heating only applications or this warranty will be voided.

How do I get service?

You must contact the original installer of your Product. Your installer will need to contact Navien to report the issue. If the original installer cannot be identified or you no longer choose to use that service provider, you may choose any service provider who is properly licensed to complete the necessary repair. The installer and/or service provider must comply with Navien's warranty service and return policy procedures as available on Navien's website including contacting Navien's Technical Support Department at (800) 519-8794, option 2, prior to commencing any service.

Proof of the date of installation must be provided to Navien. At Navien's request, the defective Product or part must be returned to Navien. When the Product is installed in new construction, the date of installation shall be established as the date upon which the end-user takes title to the real property. If proof of the installation date is unavailable, then six months after the date of manufacture will be used.

Additional terms and conditions are continued on the reverse side.

Customer Name :	
Customer Address :	
Telephone :	Fax :
Email :	
Installer Name :	License No :
Installer Address :	
Place of Purchase :	
Model No :	
Serial No :	
Date of Purchase :	



Navien, Inc.

20 Goodyear, Irvine, CA 92618
Tel : 1-800-519-8794
Fax : 949-420-0430
www.navieninc.com

For instant warranty registration, please register your product online at www.navieninc.com

What is not covered?

Navien's Limited Warranty shall be void in the event of an occurrence of any of the following:

- Improper installation, including but not limited to failure to install in strict compliance with the Installation and Operation Manual, installation in violation of applicable rules, laws or building codes, inadequate water quality, condensate damage, improper venting, incorrect gas type, water pressure, improper conversion from Natural Gas source to Propane, improper conversion from Propane source to Natural Gas, reinstallation at another location, etc.
- Accident, abuse or misuse including but not limited to installation for non-recommended uses, failure to follow or comply with the User's Operational Manual, etc.
- Improper maintenance including but not limited to, scale buildup, vent blockage, failure to maintain, etc.
- Modification, alteration, addition of non-approved components, or misapplication of the Product in any manner.
- Any damage caused by local adverse conditions including but not limited to water quality, hard water deposits, lime or mineral build-up, operating in corrosive atmospheric elements, alterations in smell or taste of water that have an adverse reaction on the unit, etc.
- Damage or problems caused by gas flow issues, electrical surges, flooding, fire, freezing, abnormal external temperature, force majeure, riot, act of war, or any acts of God.
- Performance problems caused by improper sizing of the boiler, the gas supply line, the venting connection, combustion air openings, electric service voltage, wiring, fusing or any other components, parts or specifications.
- Vibration and noise unless caused by a defect in materials or workmanship. Any other causes other than defects in materials or workmanship.
- Operating the Product at water temperatures outside the factory calibrated temperature limits and/or exceeding the maximum setting of the high limit control.
- Subjecting the heat exchanger to pressures or firing rates greater or lesser than those shown on the rating plate or removal of or alteration to the rating plate.
- Installation at any location outside the United States.
- Improper conversion from natural gas to liquid propane gas or liquid propane gas to natural gas or attempt to operate with a type of gas not specified for the boiler.
- Accidental or intentional damage.
- Operating the Product when it is not supplied with potable water at all times.

There is no warranty on any Product purchased through the internet or from any installer that obtained the Product from a supplier or distributor not authorized by Navien.

Warranty Limitations

EXCEPT AS EXPRESSLY PROVIDED HEREIN, THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO WARRANTIES OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH EXTEND BEYOND THE DESCRIPTION OF THE WARRANTY HEREIN AND FURTHER NAVIEN SHALL NOT BE LIABLE FOR INDIRECT, INCIDENTAL, SPECIAL, CONSEQUENTIAL, PUNITIVE OR OTHER SIMILAR DAMAGES THAT MAY ARISE, INCLUDING LOST PROFITS, DAMAGE TO A PERSON OR PROPERTY, LOSS OF USE, INCONVENIENCE, OR LIABILITY ARISING FROM IMPROPER INSTALLATION, SERVICE OR USE OF THE PRODUCT. ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS ARISING UNDER STATE LAW ARE LIMITED IN DURATION TO THE PERIOD OF COVERAGE PROVIDED BY THIS WARRANTY, UNLESS THE PERIOD PROVIDED BY STATE LAW IS LESS.

No one is authorized to make any other warranties on behalf of Navien. Some states do not allow the exclusion or limitation of incidental or consequential damages, or how long an implied warranty lasts, so the above limitation may not apply to you.

This Limited Warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Rev. 9.20.2023

Retain this document for future reference.

