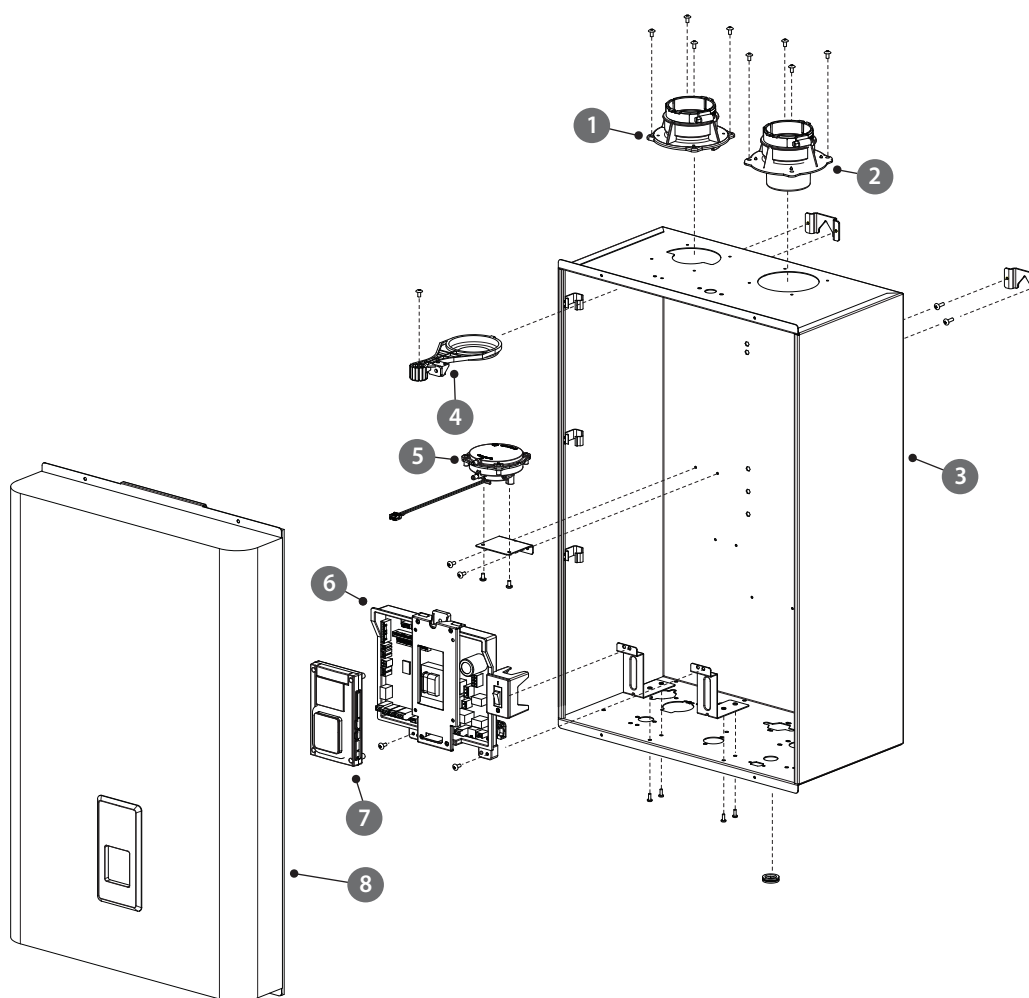


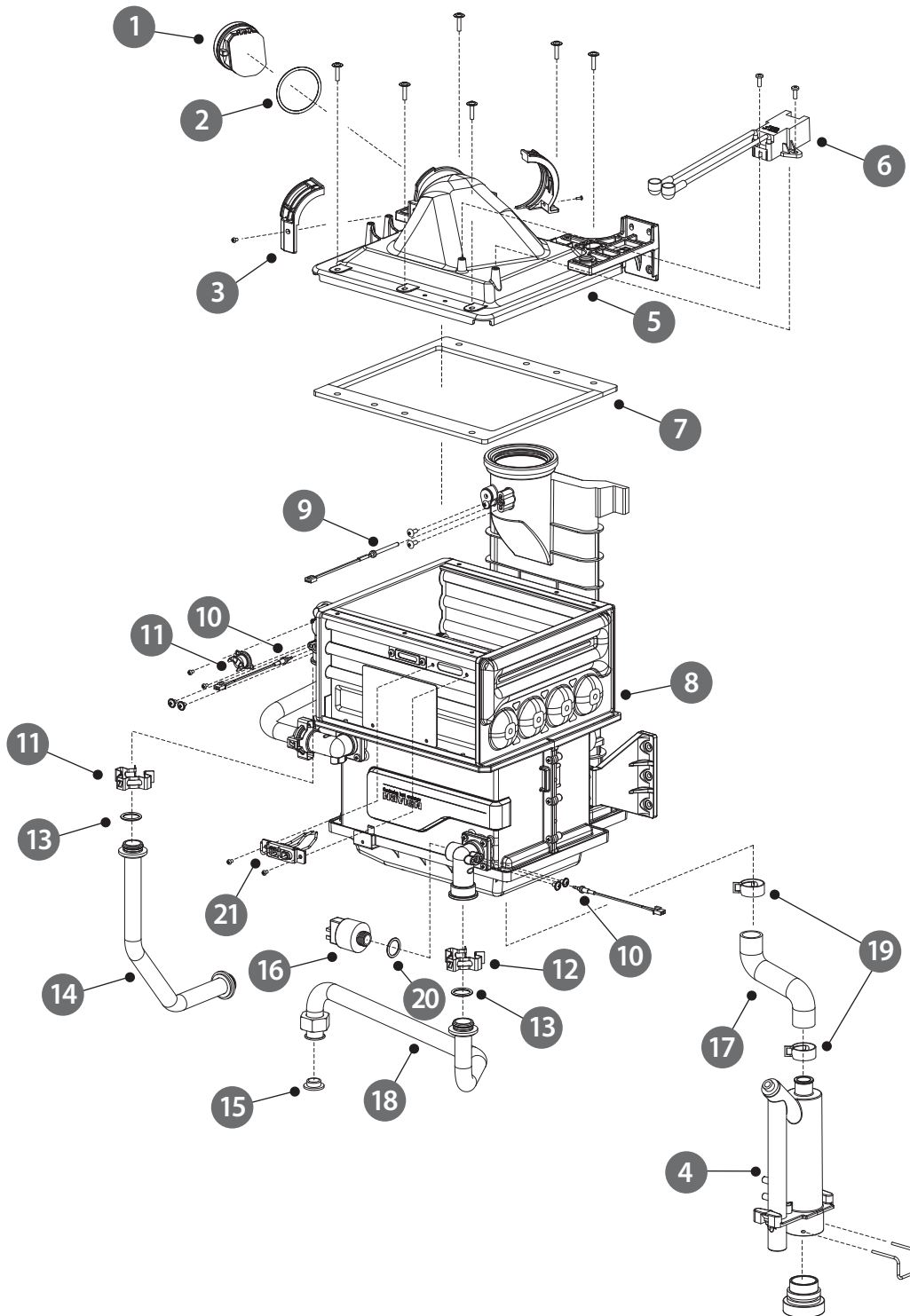
## 11.4 Component Assembly Diagrams and Parts Lists

### 11.4.1 Case Assembly



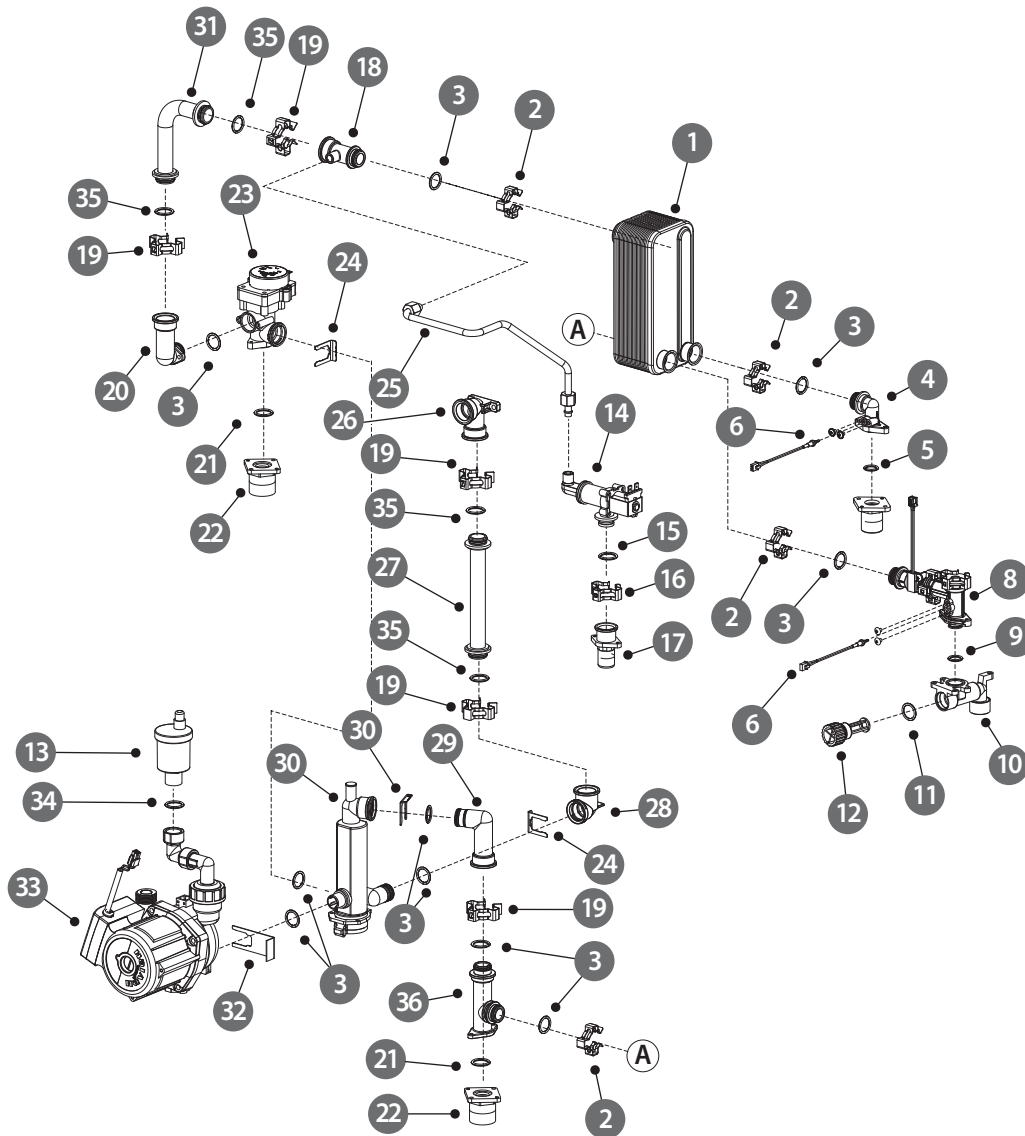
| # | Description              | Part #    | Remark |
|---|--------------------------|-----------|--------|
| 1 | Intake Air Duct Assembly | 30008662B |        |
| 2 | Exhaust Pipe Assembly    | 30008673A |        |
| 3 | Case                     | 20027375A |        |
| 4 | Intake Air Filter        | 20007668A |        |
| 5 | Air Pressure Sensor      | 30010346A |        |
| 6 | PCB                      | 30012262A |        |
| 7 | Front Panel              | 30012269A |        |
| 8 | Cover                    | 30012276A |        |

## 11.4.2 Burner Assembly



| #  | Description                | Part #    | Remark      |
|----|----------------------------|-----------|-------------|
| 1  | Damper                     | 30008825A |             |
| 2  | O-Ring (G50)               | 20003019A |             |
| 3  | Fan Bracket                | 20022095A |             |
| 4  | Siphon                     | 30012280A |             |
| 5  | Burner Chamber Ass'y       | 30010353A | NCB-180     |
|    |                            | 30008440A | NCB-210/240 |
| 6  | Ignition Transformer       | 30010455A |             |
| 7  | Burner Packing             | 20021677A | NCB-180     |
|    |                            | 20021672A | NCB-210/240 |
| 8  | Heat Exchanger Ass'y       | 30012322A | NCB-180     |
|    |                            | 30012321A | NCB-210     |
|    |                            | 30012317A | NCB-240     |
| 9  | Thermistor (Exhaust)       | 30009478A |             |
| 10 | Thermistor (Water)         | 30008366A |             |
| 11 | High Limit Switch          | 30002558A |             |
| 12 | Fastner                    | 20007859A |             |
| 13 | O-Ring (P19)               | 20017211A |             |
| 14 | Heat Exchanger Outlet Pipe | 30011913A | NCB-180     |
|    |                            | 30011912A | NCB-210/240 |
| 15 | Packing (Circulation Pump) | 20027617A |             |
| 16 | LWCO (Pressure Sensor)     | 20007924A |             |
| 17 | Siphon Hose                | 20027671A |             |
| 18 | Return Pipe                | 30011903A | NCB-180     |
|    |                            | 30011927A | NCB-210/240 |
| 19 | Siphon Fastner             | 20007833A |             |
| 20 | LWCO Packing               | 20006873A |             |
| 21 | Ignitor                    | 30012226A |             |

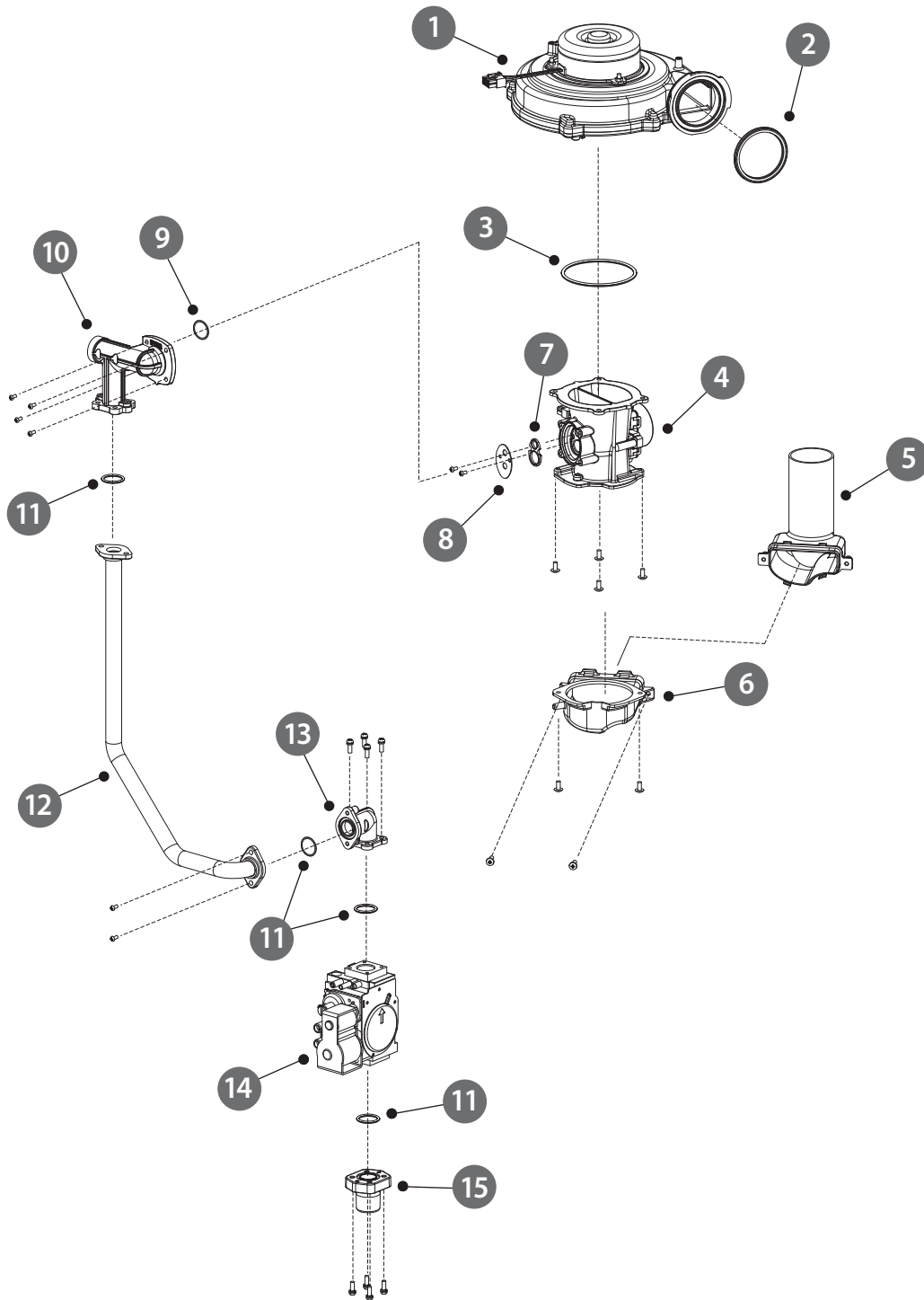
### 11.4.3 Waterway Assembly



| # | Description        | Part #    | Remark      |
|---|--------------------|-----------|-------------|
| 1 | DHW Heat Exchanger | 30008181A | NCB-180     |
|   |                    | 30005017A | NCB-210/240 |
| 2 | Thermistor         | 30008366A |             |
| 3 | O-Ring (P18)       | 20006954A |             |
| 4 | DHW Outlet Elbow   | 30012328A |             |
| 5 | Packing            | 20006852A |             |
| 6 | Thermistor         | 30008366A |             |

| #  | Description                    | Part #    | Remark  |
|----|--------------------------------|-----------|---------|
| 7  | DHW Outlet Adaptor             | 30003747A |         |
| 8  | DHW Flow Sensor                | 30012033A |         |
| 9  | O-Ring (P14)                   | 20006952A |         |
| 10 | DHW Cold Water Adaptor         | 30010315A | NCB-180 |
|    |                                | 30010316A | NCB-210 |
|    |                                | 30010317A | NCB-240 |
| 11 | O-Ring (P20)                   | 20017212A |         |
| 12 | DHW Cold Water Filter          | 30007878A |         |
| 13 | Air Vent                       | 30012277A |         |
| 14 | Auto Fill Valve                | 30012241A |         |
| 15 | O-Ring (P16)                   | 20017210A |         |
| 16 | Fastner                        | 20007859A |         |
| 17 | Auto Fill Valve Adaptor        | -         |         |
| 18 | 3-Way Outlet Adaptor B         | 30012332A |         |
| 19 | Fastner                        | 20017726A |         |
| 20 | 3-Way Outlet Adaptor A         | 30012331A |         |
| 21 | Packing                        | 20011380A |         |
| 22 | Connection Adaptor             | 20011408A |         |
| 23 | 3-Way Valve                    | 30004831B |         |
| 24 | Fastner                        | 20007733A |         |
| 25 | Water Fill Pipe                | 30012247A |         |
| 26 | Space Heating Supply Adaptor A | 20026931A |         |
| 27 | Space Heating Supply Pipe      | 30011905A |         |
| 28 | Space Heating Supply Adaptor B | 20026930A |         |
| 29 | Space Heating Return Adapter A | 30012329A |         |
| 30 | Space Heating Strainer         | 30002513D |         |
| 31 | 3-Way Outlet Pipe              | 30011906A |         |
| 32 | Circulation Pump Fastner       | 20007877A |         |
| 33 | Circulation Pump               | 30012177A |         |
| 34 | Air Vent Packing               | 20028337A |         |
| 35 | O-Ring (Ø18.8x2.6t)            | 20003022A |         |
| 36 | Space Heating Return Adapter B | 30012330A |         |

#### 11.4.4 Fan (Gas) Assembly

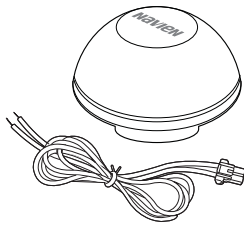


| #  | Description       | Part #    | Remark           |
|----|-------------------|-----------|------------------|
| 1  | Fan Assembly      | 30008834A |                  |
| 2  | Fan Packing       | 20022744A |                  |
| 3  | O-Ring (G75)      | 20018079A |                  |
| 4  | Dual Venturi      | 30010672A | NCB-180          |
|    |                   | 30008909A | NCB-210/240      |
| 5  | Silence           | 20019142A | NCB-180          |
|    |                   | 20023829A | NCB-210/240      |
| 6  | Silence Adaptor   | 20023861A | NCB-180          |
|    |                   | 20019141A | NCB-210/240      |
| 7  | Venturi Packing   | 20022660A | NCB-180          |
| 8  | Gas Orifice       | 20024159A | NCB-180 (NG)     |
|    |                   | 20019144B | NCB-210/240 (NG) |
|    |                   | 20024190A | NCB-180 (LP)     |
|    |                   | 20024189A | NCB-210/240 (LP) |
| 9  | O-Ring (P34)      | 20019090A |                  |
| 10 | Gas Adapter       | 30008431A |                  |
| 11 | O-Ring (P20)      | 20006934A |                  |
| 12 | Gas Pipe          | 30012338A | NCB-180          |
|    |                   | 30012058A | NCB-210/240      |
| 13 | Gas Connector     | 20027149A |                  |
| 14 | Gas Valve         | 30011586A | NCB-180          |
|    |                   | 30008429A | NCB-210/240      |
| 15 | Gas Inlet Adaptor | 20027748A |                  |

## 11.5 Outdoor Temperature Sensor (Optional)

### Outdoor Temperature Sensor Installation

1. Pull out the sensor body from the cap.
2. Attach the body to the wall using the screws/anchors provided with the device.
3. Run the wires into the device body through the grommet opening.
4. Connect the wires to the terminal block.
5. Attach the cap to the body.



Navien Outdoor Temperature Sensor Kit

### Outdoor Temperature Sensor Installation Guidelines

- Avoid areas with temperature fluctuations by direct sunlight, and where the temperature may not be representative of true outdoor temperature.
- Best location to install the temperature sensor is on a North or Northeast side of a structure under eaves where the sensor is shielded from direct sunlight.
- Avoid placing sensor in close proximity of heat sources that may affect correct temperature sensing. (fans, exhausts, vents, lights)
- Avoid installing the sensor in areas where the sensor is subjected to excessive moisture.
- Use 18 gauge wiring (thermostat wiring) with no splices. (except at the unit harness connection with yellow leader wire.)
- Caution should be taken to avoid potential electromagnetic interference (EMI) by routing separately from potential sources such as line voltage wiring. When necessary, shielded cable may be used.
- Make sure wiring connections are secure before closing the cap.
- The sensor is a water resistant device.
- Any damage to the device may require the replacement of the entire component.

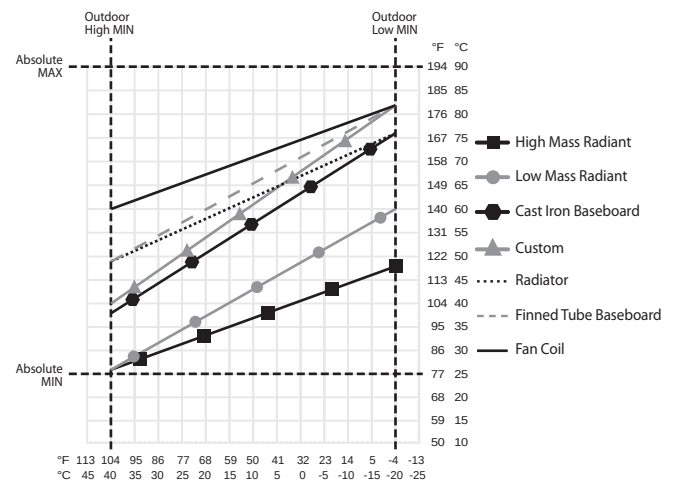
## 11.6 Outdoor Reset Control (Available with Optional Outdoor Temperature Sensor)

The Outdoor Reset Control feature may be used to enhance energy efficiency while maintaining optimal heating performance. With the Outdoor Reset Control, the space heating temperature setting automatically changes according to the outdoor temperature and the current space heating system application (system load).

You can configure the Outdoor Reset Control settings on the front panel by entering the Special Parameter Setting mode. Refer to "10.5 Setting the Parameters" on page 54.

### Note

The Outdoor Reset Control feature requires installation of an outdoor temperature sensor, and it only works when the boiler is running in the normal operation mode. It does not work when the boiler is running in either the Minimum (MIN) or Maximum (MAX) mode, or when the boiler's front panel displays a fault.



Space Heating Temperature Setting for the Outdoor Reset Control Feature

The following tables list the default space heating temperature range by system heat load and the applicable outdoor temperature ranges.

### Outdoor Temperature Sensor Installation Guidelines

| Heat Load                       | Supply Set-point Range                       | Return Set-point Range                       |
|---------------------------------|----------------------------------------------|----------------------------------------------|
| Finned Tube Baseboard (default) | 120-180°F (48.5-82°C)                        | 101-147°F (38-63.5°C)                        |
| Fan Coil                        | 140-180°F (60-82°C)                          | 116-147°F (46.5-63.5°C)                      |
| Cast Iron Baseboard             | 100-170°F (37.5-76.5°C)                      | 86-139°F (30-59°C)                           |
| Low Mass Radiant                | 80-140°F (26.5-60°C)                         | 70-116°F (21-46.5°C)                         |
| High Mass Radiant               | 80-120°F (26.5-48.5°C)                       | 70-101°F (21-38°C)                           |
| Radiators                       | 120-170°F (48.5-76.5°C)                      | 101-139°F (38-59°C)                          |
| Custom                          | Supply Control (Absolute MIN/ MAX set point) | Return Control (Absolute MIN/ MAX set point) |

### Outdoor Temperature Range and Default Temperature Settings

| Set Point                | Range                                                          | Remarks               |
|--------------------------|----------------------------------------------------------------|-----------------------|
| Outdoor Low Temperature  | -4 to 59°F (-20 to 15°C)                                       | Default: 14°F (-10°C) |
| Outdoor High Temperature | Outdoor Low Temperature Set Point + 41°F (5°C) to 104°F (40°C) | Default: 70°F (21°C)  |