

MiniSmart

Instantaneous Water Heater



Product Information - Application Installation Maintenance Guide

WARNING

Before proceeding with installation and operation, read entire manual carefully. Perform all installation steps required in this manual in the proper order given. Failure to adhere to the guidelines within this manual can result in severe personal injury, death or substantial property damage.

NOTICE

When receiving the Mini SMART unit, any claims for damage or shortage in shipment must be filed immediately against the transportation company by the consignee.

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DEFINITIONS

The following terms are used throughout this manual to bring attention to the presence of potential hazards or to important information concerning the product.

DANGER

Indicates the presence of a hazardous situation which, if ignored, will result in death, serious injury or substantial property damage.

WARNING

Indicates a potentially hazardous situation which, if ignored, can result in death, serious injury or substantial property damage.

CAUTION

Indicates a potentially hazardous situation which, if ignored, may result in minor injury or substantial property damage.

NOTICE

Indicates special instructions on installation, operation or maintenance, which are important to the equipment but not related to personal injury hazards.

BEST PRACTICES

Indicates recommendations made by Triangle Tube for the installers which will help to ensure optimum operation and longevity of the equipment.

NOTICE

Triangle Tube reserves the right to modify the technical specifications and components of its products without prior notice.

DANGER

HOT WATER CAN SCALD!

- Water temperatures over 125°F can cause severe burns instantly or death from scalding
- Children, disable and elderly are at highest risk of being scald
- Never leave them unattended in or near shower, bathtub or sink.
- Never allow small children to use a hot water faucet or draw their own bath.
- If anyone using hot water in the building fits the above description or if local codes or state laws require specific water temperatures at hot water faucet, it is recommended:
 - To install a thermostatic mixing valve at this unit or at each water faucet.
 - To set the temperature setting for the lowest temperature, which satisfies your hot water needs.

- Water drained from the system drain valves may be extremely hot. To avoid injury:
 - Make sure all connections are tight
 - Direct water flow away from any person



QUALIFIED INSTALLER

WARNING

Prior to installing this product read all instructions included in this manual. Perform all installation steps required in this manual in the proper order given. Failure to adhere to the guidelines within this manual can result in severe personal injury, death or substantial property damage.

NOTICE

Please reference the unit's model number and serial number from the rating label when inquiring about service or troubleshooting.

HOMEOWNER

NOTICE

This manual is intended for use by a qualified Installer / Service Technician. This product should be maintained / serviced and installed by a qualified installer / service technician.

NOTICE

Triangle Tube accepts no liability for any damage resulting from incorrect installation or from the use of components or fittings not specified by Triangle Tube.

CODE COMPLIANCE

This product must be installed in accordance with the instructions in this manual and where applicable:

- With all local, state, provincial and national codes, laws, regulations and ordinances

Where recommendations in this manual differ from local or national codes, the local or national codes take precedence.

CODE RESTRICTIONS

The Mini SMART contains a single wall heat exchanger and complies with National Standard Plumbing Code provided both:

- Boiler water (including additives) is practically non-toxic having a toxicity rating or a Class of 1 as listed in Clinical Toxicology of Commercial Products, and
- Boiler water pressure is limited to maximum 30 psig by approved relief valve.

Single wall heat exchangers are permitted under Uniform Plumbing Code – Paragraphs L3.2 and L3.3 if they satisfy all of the following requirements:

1. The heat transfer medium is potable water or contains only substances, which are recognized as safe by the US Food and Drug Administration.
2. The pressure of the heat transfer medium is maintained less than the normal minimum operating pressure of the potable water system.
3. The equipment is permanently labeled to indicate that only additives recognized as safe by the FDA shall be used in the heat transfer medium.

Other heat exchangers designs may be permitted where approved by the administrative authority.

OPERATING RESTRICTIONS

Maximum Domestic Hot Water Temperature - 180°F (special applications)

Maximum Boiler Water Temperature - 200°F

Maximum Domestic Operating Pressure – 150 psi

Maximum Boiler Operating Pressure – 30 psi

LOCATION / MOUNTING CONSIDERATIONS

This water heater is not intended for outdoor installations

Maintain minimal piping distance between the boiler and the water heater to:

- Reduce piping heat loss
- Provide minimal friction loss

Locate water heater in a manner that any leakage from the heater or water connections will not cause damage to the area adjoining the water heater or to lower floors in the structure. When such a location is unavoidable, a suitable drain pan with adequate drainage should be placed under the water heater.

NOTICE

The Mini SMART water heater is designed for vertical installation only.

RECOMMENDED CLEARANCES

Install the water heater allowing adequate clearances for servicing.

Recommended top and bottom vertical clearances is 12 inches minimum for servicing

Zero clearance is permissible to either side of the Mini SMART, but information labels may be hidden.

Reference the boiler installation manual for minimum allowable clearances of the boiler.

APPLICATION TYPES

The Mini Smart is provided with a NTC (IWH) sensor compatible with Honeywell's MCBA control module. This control is utilized on Triangle Tube's PRESTIGE Solo Wall Hung Condensing Boilers and is featured in these instructions on pages 8-16. This sensor is also compatible with other boilers equipped with Honeywell's MCBA control or with an optional aquastat see page 17.

GENERAL INSTALLATION REQUIREMENTS

- Ensure all plumbing / piping meets or exceeds all local, state or national codes.
- Use isolation valves to isolate system components.
- Install unions for easy removal of the water heater. Use dielectric unions or couplings to protect fittings from corrosion when connecting dissimilar materials such as copper and galvanized iron pipe.
- Provisions should be provided in the boiler piping to allow air elimination and drainage of the system.
- The boiler system must contain a safety pressure relief valve set to a maximum 30 psig to prevent over-pressurization of the water heater.
- The domestic system must contain a safety pressure relief valve set to a minimum 150 psig to prevent over-pressurization of the water heater.

MOUNTING GUIDELINES

NOTICE

The wall used for mounting the Mini SMART must be vertically plumb and capable of supporting a minimum of 50 pounds.

For applications using wood studs, install the water heater using 3/8" x 3" lag screws provided.

For applications using metal studs, install the water heater using 3/16" toggle bolts and washers.

For applications using solid walls (rock, concrete, brick, cinder block, etc.) install the water heater using 5/16" wall anchors

CAUTION

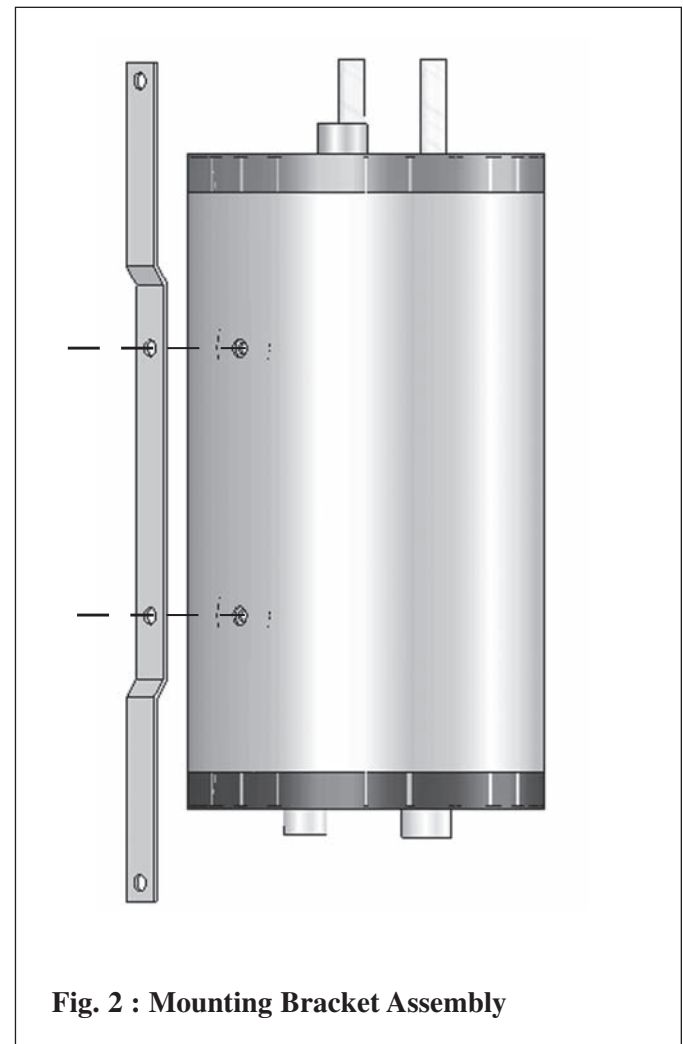
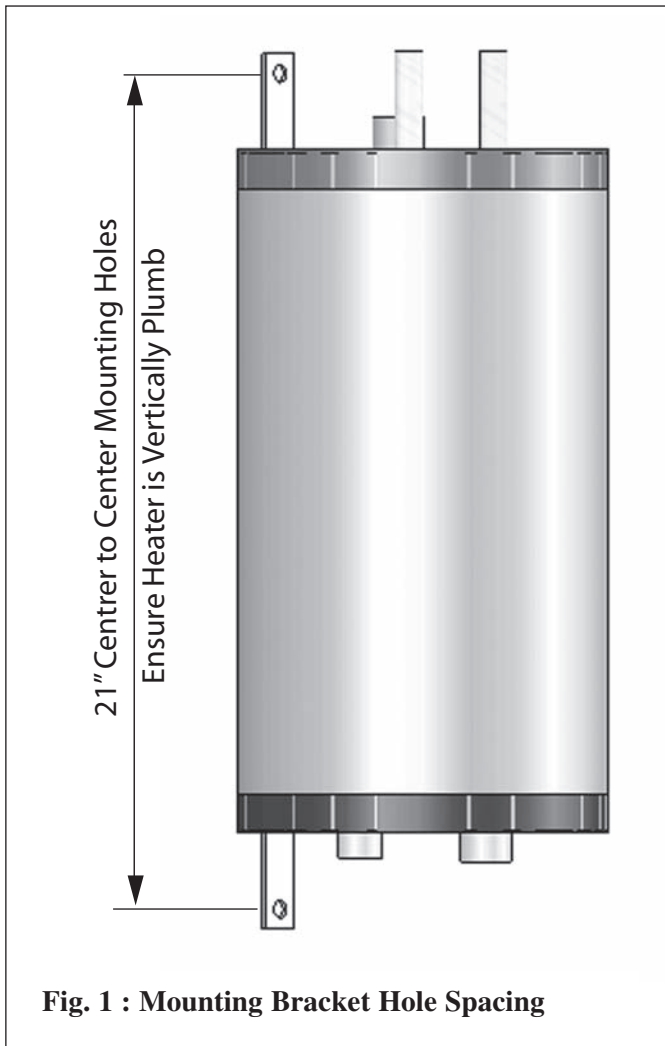
DO NOT mount or attempt to mount the water heater to hollow sheet rock or lathe walls using wall anchors. Only install the water heater to wall studs, solid walls or equivalent wood structure.

MOUNTING INSTALLATION – STUD WALLS

1. Locate a wall stud in the general location of the water heater placement.
2. Place the water heater mounting bracket against the wall centering it along the wall stud.
3. Vertically plumb the mounting bracket while maintaining it's centering with the wall stud and use a pencil to mark the location of the mounting holes. See Fig. 1, page 5.
4. Remove the bracket from the wall and drill 1/4" diameter hole by 3 inches deep, position in the center of each mark. For applications using metal studs and 3/16" toggle bolts, drill the required clearance hole.
5. Mount the bracket onto the water heater using the provided mounting bolts. Ensure the mounting bolts are fully tightened and the bracket is securely fastened to the water heater. See Fig. 2, page 5.
6. Reposition the bracket and water heater onto the wall and align the bracket and wall holes. Insert the two lag screws (wood studs) or toggle bolts (metal studs) through the mounting holes and loosely tighten.
7. Vertically plumb the water heater and tighten the screws (or bolts) securely making sure not to over-tighten to avoid damaging drywell or plaster.

MOUNTING INSTALLATION – SOLID WALLS

1. Locate the general location of the water heater placement.
2. Place the water heater mounting bracket against the wall, vertically plumb the mounting bracket and use a pencil to mark the location of the mounting holes. See Fig. 1.
3. Remove the bracket from the wall and drill the required diameter and depth hole for the wall anchors, position in the center of each mark.
4. Mount the anchors flush or slightly recessed in the drilled holes with threaded side of anchor inside the wall.
5. Mount the bracket onto the water heater using the provided mounting bolts. Ensure the mounting bolts are fully tightened and the bracket is securely fastened to the water heater. See Fig. 2.
6. Reposition the bracket and water heater onto the wall and align the bracket and wall anchor holes. Insert the two mounting bolts through the mounting holes and loosely tighten.
7. Vertically plumb the water heater and tighten the mounting bolts securely.



GENERAL REQUIREMENTS

- All plumbing must meet or exceed local, state or national plumbing codes.
- Support all piping using hangers. DO NOT support piping by the unit or by system components
- Install unions for easy removal of the Mini SMART from the system piping
- Use isolation valves to isolate the Mini SMART and system components.
- Use pipe dope or tape suitable for potable water

PRESSURE RELIEF VALVE

CAUTION

To reduce the risk of excessive pressure in the water heater installation of a pressure relief valve is required on the domestic piping system. The relief valve as a minimum shall be certified by a nationally recognized testing laboratory that maintains periodic inspection of production of listed equipment or materials as meeting the requirements for Relief Valves and Automatic Gas Shut-off Devices for Hot Water Supply Systems ANSI Z21.22. This valve must be marked with the maximum working pressure of 150 psi.

1. Install the pressure relief with discharge piping on the cold water supply to the water heater as shown in Fig. 3, page 7.
2. To avoid potential water damage to the surrounding area or potential scalding hazard due to the operation of the relief valve, the discharge piping:
 - Must be connected to the discharge outlet of the relief valve and directed to a suitable place of disposal.
 - Length should be short and direct as possible. The size of the discharge piping should not be reduced, maintain the same size as the outlet of the relief valve.
 - Should be directed downward towards the floor at all times. The piping should terminate at least 6 inches above any drain connection to allow clear visibility of the discharge.
 - Should terminate with a plain end, not threaded. The material of the piping should have a serviceable temperature rating of 250°F or greater.
 - Should not be subject to conditions where freezing could occur.

- Should not contain any shut-off valves or obstructions. No shut-off valve should be piped between the water heater and the relief valve.

WARNING

Failure to comply with the guidelines on installing the pressure relief valve and discharge piping can result in personal injury, death or substantial property damage.

BACKFLOW PREVENTER

Use a backflow preventer device in the domestic cold water supply to the water heater as required by local codes.

THERMAL EXPANSION

If a backflow preventer, check valve or pressure reducing valve is piped on the domestic cold water supply piping of the water heater, install an expansion tank on the cold supply line to prevent normal thermal expansion from repeatedly forcing open the pressure relief valve.

CAUTION

The pressure relief valve is not intended for constant duty, such as relief of pressure due to repeated normal system expansion. Correct this condition by installing a properly sized and pressure charged expansion tank in the domestic system. Refer to the expansion tank manufacturer's installation instructions for proper sizing.

BEST PRACTICE

When the water supply pressure is higher than 70 psig, it is recommended to install a pressure reducing valve on the domestic cold water supply line to prevent water loss through the pressure relief valve during normal system expansion.

THERMOSTATIC MIXING VALVE

- It is recommended to install an optional mixing valve on the domestic hot water outlet.
- The mixing valve should comply with ASSE 1017 as a minimum
- The installation of a mixing valve is mandatory for all installations in the Commonwealth of Massachusetts.

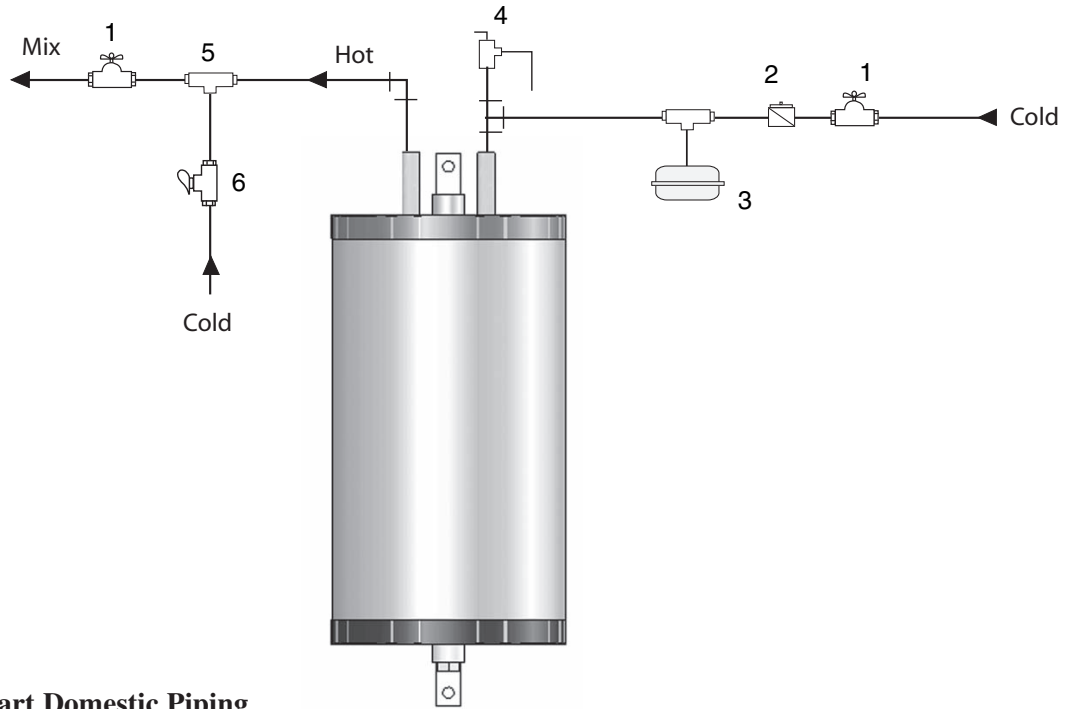


Fig. 3 : Mini Smart Domestic Piping

- | | |
|---|------------------------------------|
| 1. Isolation valve | 4. Pressure relief valve - 150 psi |
| 2. Backflow preventer or pressure reducing valve
(May be required by code) | 5. Mixing valve |
| 3. Thermal expansion tank (optional) | 6. Check valve |

GENERAL REQUIREMENTS

- All plumbing must meet or exceed local, state or national plumbing codes.
- Support all piping using hangers. DO NOT support piping by the unit or by system components
- Install unions for easy removal of the Mini SMART from the system piping
- Use isolation valves to isolate the Mini SMART and system components.
- If plastic pipe is used for boiler water piping, it must have a maximum oxygen diffusion rate of 0.1 mg/liter-day.
- Boiler water (including additives) must be practically non-toxic, having a toxicity rating or Class of 1, as listed in Clinical Toxicology of Commercial Products.

- Reference Fig. 4 for a typical boiler piping diagram.
- Reference the PRESTIGE Boiler Installation Manual for additional information and requirements regarding boiler piping.

If antifreeze is used in the boiler system, local codes may require a backflow preventer on the domestic cold water supply piping. Use antifreeze specifically intended for hydronic heating systems. Inhibited propylene glycol is recommended at a maximum 50/50 mixture.

DANGER

Do not use automotive, ethylene glycol or petroleum-based antifreeze. Do not use any undiluted antifreeze. This can cause severe personal injury, death or substantial property damage.

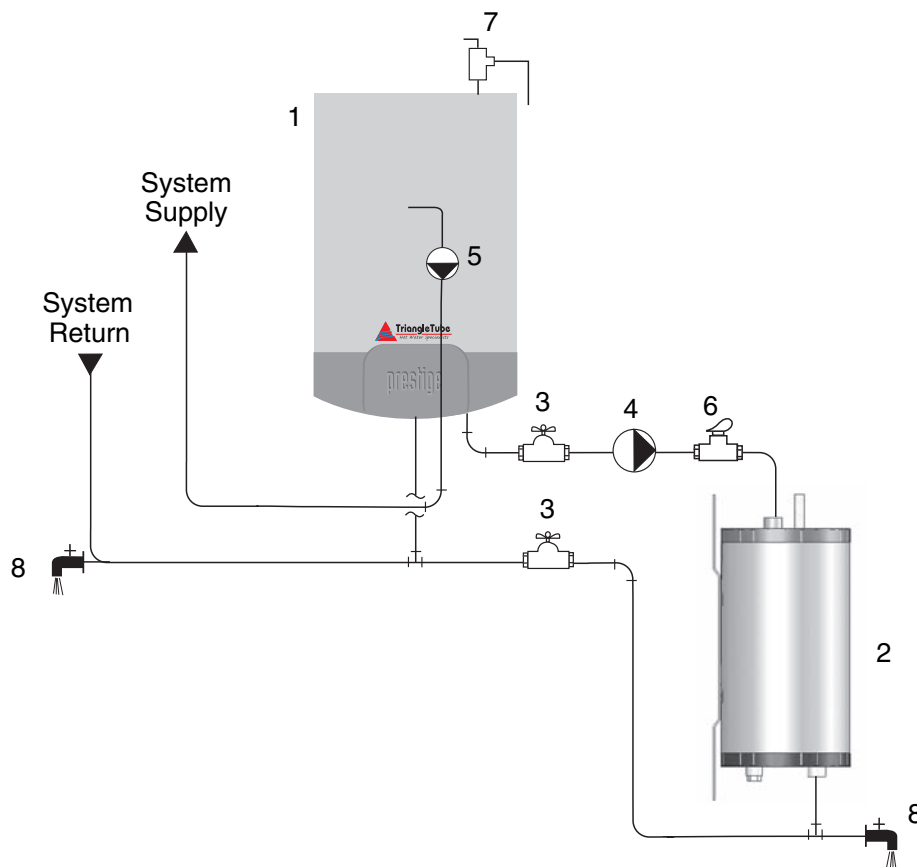


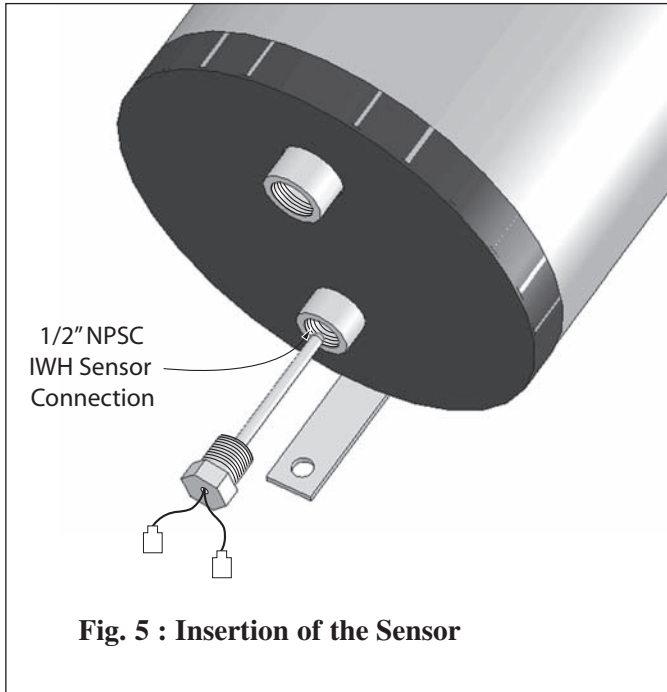
Fig. 4: Boiler Piping - PRESTIGE Solo 110 with a Mini Smart

- | | |
|-----------------------------|--------------------------|
| 1. PRESTIGE boiler | 6. Flow/check valve |
| 2. Mini SMART | 7. Pressure relief valve |
| 3. Isolation valve | 8. Drain/purge valve |
| 4. DHW circulator | |
| 5. CH circulator (provided) | |

IWH SENSOR INSTALLATION

Install the IWH Sensor (provided with water heater) into the bottom coupling of the water heater as shown in Fig.5.

Ensure the IWH Sensor is tight and leak free.



WIRING IWH SENSOR TO PRESTIGE BOILER

WARNING

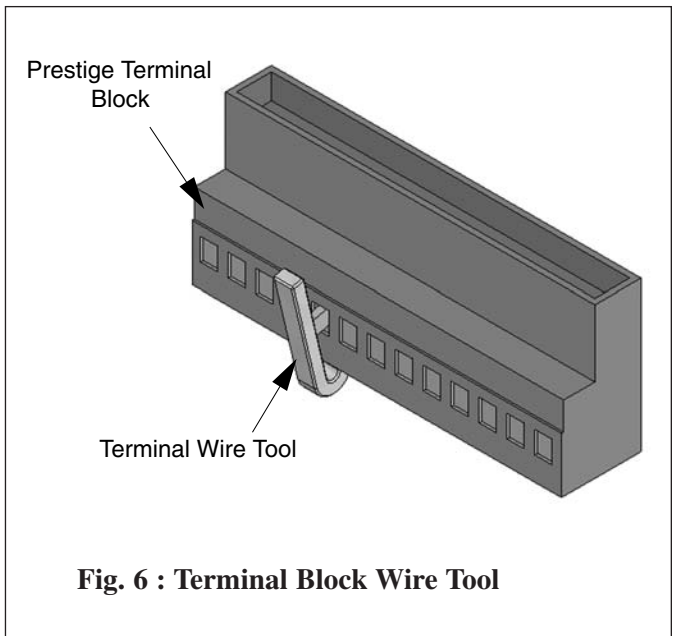
ELECTRICAL SHOCK HAZARD. Turn power off to the PRESTIGE boiler before proceeding with installation of the control wiring. Failure to comply could result in severe personal injury, death or substantial property damage.

1. Connect 18 gauge wire or thermostat type wire to the IWD Sensor terminals on the water heater using standard 1/4" female insulated connectors.

NOTICE

In lieu of using insulated connectors, the IWH Sensor connectors may be removed and standard wire nut or splice connectors may be used. Ensure the Sensor wire ends are stripped a maximum 1/4" from the ends.

2. Remove the front jacket panel of the PRESTIGE by removing the mounting screws along the upper edge with a Phillips-head screwdriver. Once the screws are removed, pull the panel slightly forward and lift up.
3. Route the wiring from the Sensor to the PRESTIGE boiler. Once at the PRESTIGE, route the wiring through the PRESTIGE wire access openings and along the wire ways inside the PRESTIGE.
4. Disconnect the bottom half of the PRESTIGE's low voltage terminal block. Strip the wire ends and attach to terminals 11 and 12 using the terminal block wire tool supplied with the PRESTIGE. See Fig. 6.
5. Once the wiring is attached to the terminal block, reconnect the terminal block to the terminal strip. Ensure the connection is complete and secure.
6. Replace the PRESTIGE front jacket panel and secure with the mounting screws.
7. Restore power to the PRESTIGE boiler.



PROGRAM ACCESS OF THE MCBA CONTROL

NOTICE

The factory default setting for the PRESTIGE Control Module to operate the IWH is through an aquastat control. The PRESTIGE Control Module must be programmed as described in the following instruction to correctly operate the IWH through the IWH sensor.

To adjust the factory parameter settings of the PRESTIGE MCBA Control, the installer must enter into the parameter menu of the control.

WARNING

Do not attempt to revise any other control parameter settings except those listed in this supplement. Perform only those parameter revisions described in this supplement. Failure to comply could result in erratic or unreliable operation of the PRESTIGE resulting in severe personal injury, death or substantial property damage.

NOTICE

For additional information on revising the PRESTIGE MCBA Control Module operational parameter settings, reference the PRESTIGE Control Supplement.

ACTIVATING THE ACCESS CODE

To enter the parameter listing of the MCBA control, the installer must enter the activation code as follows:

1. Press and hold the MODE button
2. Continue holding the MODE and press STEP button until *STBY* appears and hold both STEP and MODE buttons for 2 to 3 seconds.

The display should read *CODE*

3. Release the STEP and MODE buttons on the control panel.
4. Press STEP once.

The display should read *└_XX* (XX should be a random number from 00 to 99)

5. Press the + or - button to change the display number *└_XX* to read *└_05*. Press and release the + or - to change the display one number at a time. Press and hold the + or - to rapidly change the display number.
6. When the display reads *└_05* press STORE to save the activation code. The display *└_05* should flash when the code is entered and saved.

After the activation code is entered press the MODE button until the display shows *AAAA*. At this point the installer can access the parameters required for application.

Once in the parameter mode, press the STEP repeatedly to reach the appropriate parameter setting. The display should show the following sequence, as the STEP button is press repeatedly:

Press STEP once- *1140*
 Press STEP x2 - *2_01*
 Press STEP x3 - *3_01*
 Press STEP x4 - *4185*
 Press STEP x5 - *P_05*
 Press STEP x6 - *P_05*
 Etc.....

After Parameter 4 the display will continue to show P followed by a two-digit number that increases with each press of the STEP button.

NOTICE

The actual parameter values displayed on the unit may vary depending on the application. The parameter sequence will always occur in the order shown.

Once a particular parameter is reached, release the STEP button. Wait a second and the display will show the current setting for that parameter in the right two display digits.

TO CHANGE A PARAMETER SETTING

Use the + or - button to change the value of the display.

Press the STORE button once to save the change.

WARNING

If a parameter setting is changed from the factory default and the STORE button is not pressed to save the setting, the MCBA module will automatically store the setting after 15 minutes. Ensure all parameters settings are either factory default or revised based on the application. Review all parameters settings on page 17 when completed and prior to commission of the boiler. Failure to comply could result in erratic or unreliable operation of the PRESTIGE boiler.

NOTICE

Once a parameter setting value has been revised and stored, if the STEP button is pressed for the next parameter setting the value setting of that parameter will appear. The display will not show P_XX of the next sequential parameter. The sequence of parameters may be scrolled through, as the display will roll over from parameter 42 to parameter 1.

BEST PRACTICES

If sequential parameters are being revised and since the display will not show P_XX of the sequential parameter, it is recommend to press and hold the STEP button to scroll through the entire list of parameters before making any additional changes to avoid any potential confusion.

DANGER**HOT WATER CAN SCALD!**

- Water temperatures over 125°F can cause severe burns instantly or death from scalding
- Children, disable and elderly are at highest risk of being scald
- Never leave them unattended in or near shower, bathtub or sink.
- Never allow small children to use a hot water faucet or draw their own bath.
- If anyone using hot water in the building fits the above description or if local codes or state laws require specific water temperatures at hot water faucet, it is recommended:
 - To install a thermostatic mixing valve at this unit or at each water faucet.
 - To set the temperature setting for the lowest temperature, which satisfies your hot water needs.
- Water drained from the system drain valves may be extremely hot. To avoid injury:
 - Make sure all connections are tight
 - Direct water flow away from any person

**IWH SENSOR PARAMETER**

1. Once the access code number has been stored and accepted in the control module, change the display readout to "Parameter" mode by pressing MODE until the display shows *P P P P*.
2. Press STEP to enter the first parameter setting. Continue pressing STEP until the display shows *P_35*.

NOTICE

By pressing STEP you will sequence through the parameter settings as follows: *1140, 2_01, 3_01, 4186, P_05, P_06, P_07..... P_35*. The display readout will continue showing "P" followed by a 2 digit number that increases after each press of the STEP button after the fourth parameter setting.

NOTICE

The parameter setting will continue for 42 different parameter setting. By continuing to press the STEP button, the display readout will rollover to the first parameter setting.

WARNING

Do not attempt to revise any other control parameter setting except those listed in this supplement. Perform only those parameter revisions described in this supplement. Failure to comply could result in erratic or unreliable operation of the PRESTIGE resulting in severe personal injury, death or substantial property damage.

3. When the display readout shows *P_35*, stop pressing the STEP button. Wait a second and the display will flip over to the current setting of parameter 35 in the right two digits of the display.
4. Press the + or - button to revise the setting until the display shows *_12*.

- Press the STORE button to save the change. The display will flash once to indicate the control module accepts the change.

WARNING

Parameter 35 has several other possible settings available. The factory setting of the IWH is aquastat control or 13. The required revised setting of the IWH sensor control or 12. Any other setting of parameter 35 could result in erratic or unreliable operation of the PRESTIGE and/or Mini Smart resulting in severe personal injury, death or substantial property damage.

Parameter	Factory Setting	Revised Setting
P_35	13	12

- To exit the Code mode, press the RESET button once. The unit will go into a self-check mode upon acceptance of the reset.

DHW TEMPERATURE SETTING

The parameter setting for the domestic storage temperature set point is Parameter 1 and is accessible without having to enter the access code.

To revise the parameter setting within the PRESTIGE Control Module for the set point of the Domestic Storage temperature, the installer can access the parameter setting by entering the Parameter Mode *AAAA* during normal operation, the access code is not required.

Parameter	Factory Setting	Minimum Setting	Maximum Setting
1	140°F	68°F	150°F

- Press MODE once until the display shows *AAAA*.
- Press STEP until the display shows *1140* or *1XXX* (where XXX is a setting other than the factory setting).

- Press the + or - button until the desired DHW storage temperature setting is achieved. Press STORE to save the setting. The display will flash when the revised setting is accepted.

NOTICE

The performance specifications listed are based on a DHW storage temperature setting of 140°F. Setting other than the factory setting of 140°F will effect the actual performance of the water heater.

DHW SET VALUE ADDITION

To achieve the boiler operating temperature during a domestic request for heat the MCBA Control uses Parameter 1 and a second parameter, Parameter 33 DHW Set Value Addition. Parameter 1 plus Parameter 33 will establish the boiler operating temperature limit.

If Parameter 1 is set below 134°F it is recommended that Parameter 33 be reset to a higher setting. The request for domestic heat is based on the temperature reading of the DHW sensor and its relationship to Parameter 1. The operating boiler temperature setpoint is based on Parameter 1 plus Parameter 33 with a maximum operating temperature of 194°F.

To revise the parameter setting within the PRESTIGE Control Module for the DHW Set Value Addition, the installer must activate the access code for the control module as previously described in the Program Access of the MCBA section on page 10.

- Enter into the access code mode.
- Once the access code has been entered and accepted, press MODE until the display shows *AAAA*.
- Press STEP until the display shows *P_33*. This parameter setting is the DHW Set Value Addition parameter. After releasing the STEP button the display will show the current setting.

Parameter	Factory Setting	Minimum Setting	Maximum Setting
33	46°F	00°F	54°F

4. Press the + or - button until the desired “DHW Set Value” setting is achieved. Press STORE to save the setting. The display will flash when the revised setting is accepted.
5. Once the desired parameter setting have been revised and stored within the PRESTIGE Control module, press RESET to exit the CODE mode.

NOTICE

The performance specifications listed are based on a DHW set value setting of 46°F. A setting other than the factory setting of 46°F will effect the actual performance of the water heater.

DHW DETECTION ON PARAMETER

The MCBA Control Module has 2 differential settings for the burner operation when using the IWH Sensor parameter setting. The first differential setting the installer has the option of adjusting is Parameter 26 “Detection ON”. This parameter sets the DHW storage temperature low limit. The burner operation will respond when the DHW storage temperature drops below Parameter 1 setting minus Parameter 26 setting.

A minimum “Detection ON” parameter setting will create a quicker burner operation response to any domestic water draws from the water heater. In contrast, a maximum “Detection ON” setting will result in a delay response to domestic draws.

NOTICE

To achieve the performance specification listed for this water heater, it is recommended the factory setting of 18°F be revised to 2°F.

DANGER

The “Detection ON” setting of Parameter 26 greatly affects the production of domestic hot water. A minimum setting of Parameter 26 could result in a rapid response to a DHW request for heat resulting in a potential scald hazard. It is strongly recommended that the installer utilize a anti-scald thermostatic mixing valve on the hot water outlet of the water heater. Failure to comply could result in severe personal injury, death or substantial property damage.

To revise the parameter setting within the PRESTIGE Control Module for DHW “Detention ON” control, the installer must activate the access code for the control module as previously described in the Program Access of the MCBA section on page 10.

1. Enter into the access code mode.
2. Once the access code has been entered and accepted, press MODE until the display shows *PPAA*.
3. Press STEP until the display shows *P_26*. This parameter setting is the Detection ON parameter. After releasing the STEP button the display will show the current setting.

Parameter	Factory Setting	Minimum Setting	Maximum Setting	Recommended Setting
26	18°F	02°F	54°F	02°F

4. Press the + or - button until the desired DHW “Detection ON” setting is achieved. Press STORE to save the setting. The display will flash when the revised setting is accepted.
5. Once the desired parameter settings have been revised and stored within the PRESTIGE Control module, press RESET to exit the CODE mode.

DHW DETECTION OFF PARAMETER

The second differential setting is Parameter 27 “Detection OFF”. This parameter sets the DHW storage temperature high limit. The burner operation will cease when the DHW temperature rises above Parameter 1 plus Parameter 27.

A maximum “Detection OFF” parameter setting will result in an extended burner firing cycle when responding to any domestic water draws from the water heater. This extended burner firing cycle could result in a final temperature of the domestic hot water that is higher than the desired temperature setting.

NOTICE

To achieve the performance specifications listed for this water heater, it is recommended the factory setting of 0°F be revised to 8°F.

DANGER

The “Detection OFF” setting of Parameter 27 greatly affects the production of domestic hot water. A maximum setting of Parameter 27 could result in an excessive domestic water temperature resulting in a potential scald hazard. It is strongly recommended that the installer utilize a anti-scald thermostatic mixing valve on the hot water outlet of the water heater. Failure to comply could result in severe personal injury, death or substantial property damage.

To revise the parameter setting within the PRESTIGE Control Module for DHW “Detection OFF” control, the installer must activate the access code for the control module as previously described in the Program Access of the MCBA section on page 10.

1. Enter into the access code mode.
2. Once the access code has been entered and accepted, press MODE until the display shows *PPPP*.
3. Press STEP until the display shows *P_27*. This parameter setting is the “Detection OFF” parameter. After releasing the STEP button the display will show the current setting.

Parameter	Factory Setting	Minimum Setting	Maximum Setting	Recommended Setting
27	00°F	(-)36°F	54°F	08°F

4. Press the + or - button until the desired DHW “Detection OFF” setting is achieved. Press STORE to save the setting. The display will flash when the revised setting is accepted.
5. Once the desired parameter settings have been revised and stored within the PRESTIGE Control module, press RESET to exit the CODE mode.

ADDITIONAL DHW FEATURES

Frost Protection

With the addition of the IWH Sensor, the PRESTIGE Control module will now provide a Frost Protection feature to the water heater. This feature becomes active when Parameter 35 is set to 12 and cannot be overridden.

The Frost Protection feature is designed to protect the UNIT from a potential freeze up. The protection is activated once the IWH Sensor records a domestic temperature of 38°F. At that time the PRESTIGE boiler will begin the burner function at low input and the DHW circulator will begin circulating. The burner will continue operating at minimum input with the DHW circulator energized until the IWH Sensor senses a domestic water temperature of 50°F. At that point the boiler will shut down the burner function and the DHW circulator. This feature is always active even if the DHW operation is in the OFF mode.

DOMESTIC PRIORITY

When the Mini SMART is connected to the PRESTIGE’s MCBA control module domestic priority over space heating is automatically activate during any domestic draws.

Misc. Functions

There are several other Parameter settings available for DHW applications, i.e. post pump features, blocking time for burner operation. These features are explained more in detail in the PRESTIGE Control Supplement.

TROUBLESHOOTING

Error Codes

If Parameter 35 setting is 12 (IWH Sensor) the following “soft” lockouts could occur:

b_38 alternating with a status code of 9

The IWH Sensor is not properly connected to the PRESTIGE low voltage terminal strip. Check for proper connections and proper terminals

b_33 alternating with a status code of 9

The IWH Sensor is short-circuited. Check if the DHW is being used and is properly connected to the PRESTIGE low voltage terminals. Ensure Parameter 35 is correctly set for 12 and is stored properly.

Once the condition is corrected the errors will automatically reset and the PRESTIGE will return to normal operation.

PRESTIGE FACTORY SETTING FOR PARAMETERS

Parameter	Factory Setting
1	140°F
2	01
3	01
4	186°F
5	86°F
6	00°F
7	64°F
8	(-)22°F
9	00°F
10	32°F
11	00 minutes
12	00°F
13	53
14	00
15	53
16	00
17	19
18	00
19	36
20	01 minutes
21	03 x 10.2 sec.
22	6
23	6
24	6
25	10
26	18°F
27	00°F
28	03 x 10.2 sec.
29	00 x 10.2 sec.
30	00 x 10.2 sec.
31	44
32	(-)01°F
33	46°F
34	00
35	13
36	(-)01°F
37	41
38	32°F
39	122
40	68
41	10
42	0

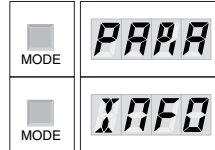
Accessing Boiler Information

In addition to the boiler sensors, the Prestige MCBA can also access information from the Mini Smart sensor.

Information mode 

To switch from STANDBY mode to INFORMATION mode, press MODE twice.

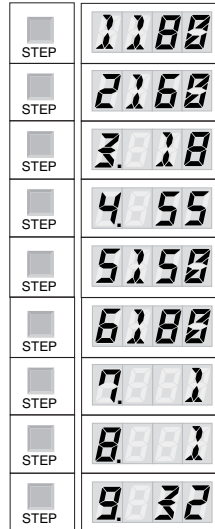
Key: Display


















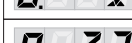


Pressing MODE once

Pressing MODE twice

Key: Display



Description of parameters

		Measured outlet (supply) water temperature
		Measured inlet (return) water temperature
		Measured Mini Smart storage temperature
		Measured outdoor temperature (Optional outdoor sensor required)
		Measured flue temperature
		Calculated (target) outlet water temperature
		Rate of increase in the outlet water temperature °F/sec
		Rate of increase in the return water temperature °F/sec
		Rate of increase in heating of the Mini Smart °F/sec.

Press STEP until the system displays the information you need. The point located behind the first position flashes to indicate that the boiler is in INFO mode.

If STEP is pressed after parameter 9, the display will show **A-32**.

OPTIONAL AQUASTAT INSTALLATION - VARIOUS BOILERS

In lieu of the factory supplied sensor the installer may opt to use an aquastat, for this type of application the following parts must be supplied by the installer:

- Honeywell L4008A1130 or equivalent
- 1/2" NPT X 3" Long Drywell Honeywell 12137A or equivalent

CAUTION

The aquastat used in this application must have a maximum setting of 200°F. Failure to comply can result in severe personal injury, death or substantial property damage.

Install the well and sensing bulb of the above parts in the 1/2" NPSC connection in the bottom of the Mini SMART. using pipe dope or tape, ensure the well is tight and leak

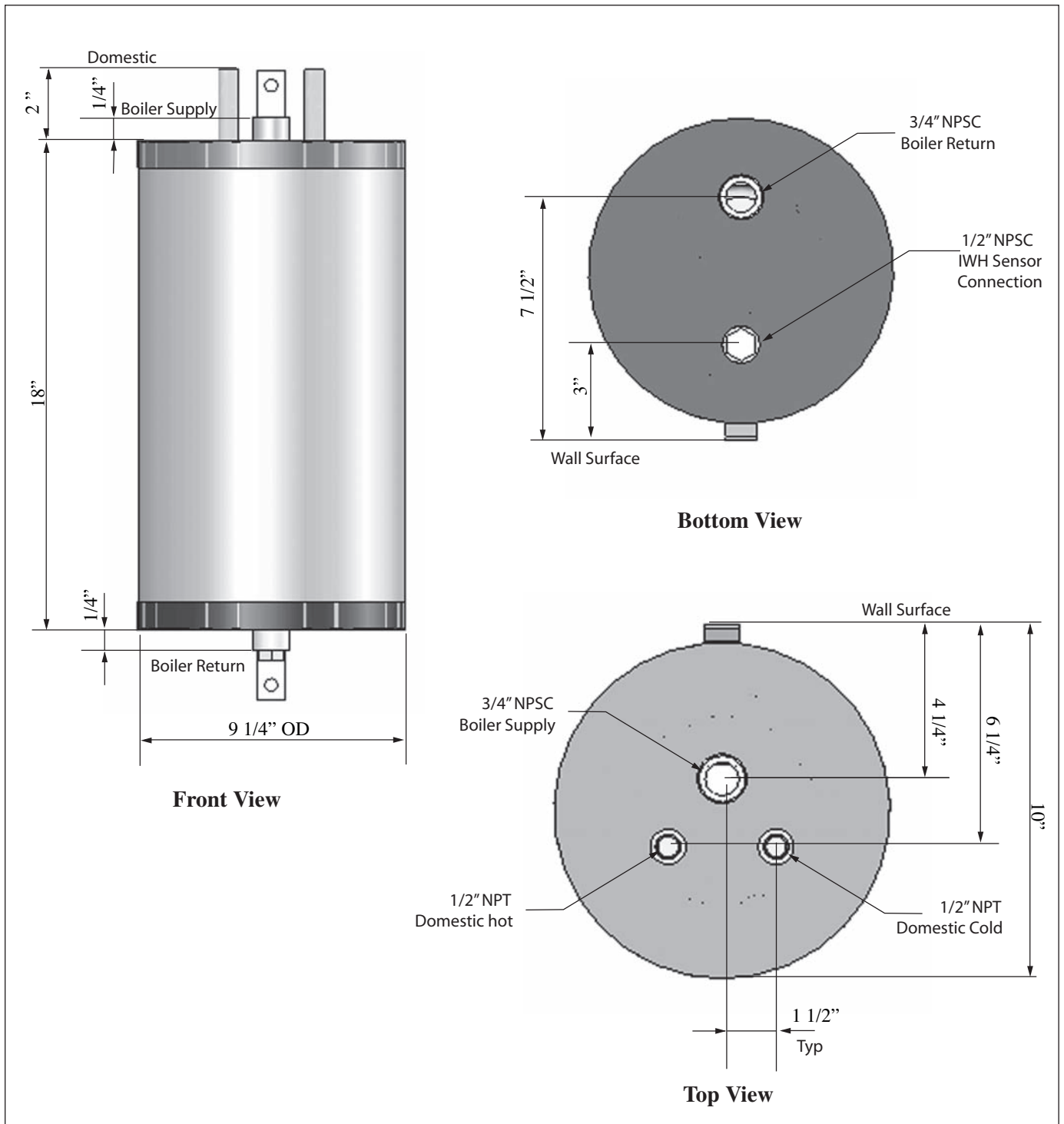
free. Mount the aquastat in a location near the unit for convenient adjustments.

OPTIONAL AQUASTAT WIRING - VARIOUS BOILERS.

WARNING

ELECTRICAL SHOCK HAZARD. Turn power off to the appropriate boiler or control panel before processing with installation of the aquastat wiring. Failure out comply can result in severe personal injury, death or substantial property damage.

1. Connect 18 gauge wire or thermostat type wire to the aquastat terminals and to the appropriate boiler or control panel thermostat contacts.
2. Restore power to the appropriate boiler or control panel.



Domestic Capacity Note 1	Boiler Flow Note 2	Boiler Flow dP	Boiler Volume	Weight		Connections	
				Empty	Filled	Boiler	Domestic
3 gpm	6 gpm	1 ft	2.5 gals	28 lbs	47 lbs	3/4" NPSC	1/2" NPT

NOTE:

- Domestic capacity is based on an intermittent draw with 50°F inlet temperature and 120°F outlet temperature.

Additional quality water heating equipment available from Triangle Tube/Phase III

PRESTIGE CONDENSING WALL MOUNTED BOILERS



- 96% Efficiency (Low temperature application)
- Fully modulating
- Natural gas or propane
- Stainless Steel Construction
- Direct vent with standard schedule 40 PVC
- Outdoor Reset
- Low Nox

PHASE III INDIRECT FIRED WATER HEATERS



- Exclusive tank-in-tank design
- Stainless steel construction
- Available in 8 sizes and 2 models
- Limited LIFETIME residential warranty
- 15 year limited commercial warranty
- Self cleaning/self descaling design

TTP BRAZED PLATE HEAT EXCHANGERS



- For domestic water, snow melting, radiant floor, refrigeration
- Plates made of stainless steel, with a 99.9 % copper and brazed, ensuring a high resistance to corrosion
- Self cleaning and self descaling
- Computerized sizing available from Triangle Tube/Phase III
- Available in capacities from 25,000 BTU/hr to 5,000,000 BTU/hr



Freeway Center - 1 Triangle Lane - Blackwood, NJ 08012
Tel: (856) 228 8881 - Fax: (856) 228 3584
E-mail: Sales@triangletube.com

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