TriangleTube
Hot Water Specialists

prestige

Control Application Supplement

WARNING

This document is intended to be used by a factory trained and qualified heating contractor or service technician only. Read all instructions within this document and within the PRESTIGE Boiler Installation and Maintenance Manual, before proceeding. It is recommended to follow the procedures in the steps given, skipping or missing procedural steps could result in severe personal injury, death or substantial property damage.

IMPORTANT INFORMATION - READ BEFORE PROCEEDING

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This document is intended to be used by a factory trained and qualified heating contractor or service technician only. Read all instructions within this document and within the PRESTIGE Boiler Installation and Maintenance Manual, before proceeding. It is recommended to follow the procedures in the steps given, skipping or missing procedural steps could result in severe personal injury, death or substantial property damage.

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 product without prior notice.

OPERATING INFORMATION

The Prestige SOLO boiler is controlled by the MCBA Control module, which is a microprocessor electronic controller. The MCBA offers various control options which may be adjusted to the various installation applications to achieve optimum boiler efficiency and function.

The MCBA module has the capability to sense the boiler supply and return water temperature, the flue gas temperature, the outdoor temperature and the storage temperature of a SMART / TR Series IDWH or optional DHW kit (when optional NTC is installed). The MCBA uses this information to regulate the boiler's on/off operation and modulate the input rate of the boiler to closely match the required demand of the heating system.

PROGRAM ACCESS OF THE MCBA

To adjust the factory parameter settings of the Prestige MCBA the installer must enter into the parameter listing of the MCBA.

WARNING

Do not attempt to adjust or revise any parameter settings except those listed in detail throughout this manual. A complete listing of factory settings are listed on Page 26 at the end of this manual if there is doubt or concern that a wrong setting was revised. Failure to comply could result in erratic or unreliable operation of the Prestige boiler.

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 C_XX (XX should be a random number from 00 to 99)

5. Press the + or - button to change the display number C_XX to read C_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 C_05 press STORE to save the activation code. The display C_05 should flash when the code is entered and saved.

After the activation code is entered press the MODE button until the display shows PAPA. 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 - 4186
Press STEP x5 - P_05
Press STEP x6 - P_06
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 sequence 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 on the display.

Press the STORE button once to save the change. The display should flash to indicate the new value is stored.

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 using the worksheet on page 26 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 next 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.

To exit the Code mode press the RESET button once.

REVISING APPLICATION SETTINGS

The following sections in this manual cover various parameters settings within the MCBA control that can be revised based on the particular application in which the Prestige is installed. The parameter settings may be combined to provide the optimum application performance of the Prestige.

The installer should record each revision using the worksheet located page 26 in the back of the manual as the parameter changes are being made. Prior to changing any parameters the installer should determine what the application requirements are and determine which parameter revisions are needed.

DOMESTIC HOT WATER DHW APPLICATION PARAMETERS GENERAL GUIDE

Parameter	Description	Factory Setting	Minimum Setting	Maximum Setting
1	NTC Sensor setting for domestic hot water applications depending on the setting of Parameter 35 (storage tank with NTC or storage tank with aquastat). Detection setting for DHW request. See pages 6 and 8 for additional information	140ºF	68ºF	148ºF
2	DHW application selection. Setting of the DHW Burner Function “ON” or “OFF”. Setting of the DHW pump function “continuous” or “aquastat controlled”. See pages 9 through 11 for additional information	01	00	03
21	The DHW circulator post pump time period applied after the completion of a DHW request. Parameter setting is multiplied by 10.2 seconds. See page 11 for additional information	03 x 10.2 sec.	00 x 10.2 sec.	30 x 10.2 sec.
26	DHW differential setting for detection “ON”. Setting is applied on storage tank with NTC sensor applications. See pages 7 and 8 for additional information	02ºF	02ºF	54ºF
27	DHW differential setting for detection “OFF”. Setting is applied on storage tank with NTC sensor applications. See pages 7 through 8 for additional information	18ºF	(-)16ºF	54ºF
29	The time period of blocking the burner function of a secondary DHW request after a completion of the initial DHW request. Parameter setting is multiplied by 10.2 seconds. See page 11 for additional information	00 x 10.2 sec.	00 x 10.2 sec.	30 x 10.2 sec.
30	The time period of blocking the burner function of a CH request after a completion of a DHW request. Parameter setting is multiplied by 10.2 seconds. See page 12 for additional information	00 x 10.2 sec.	00 x 10.2 sec.	30 x 10.2 sec.

Parameter	Description	Factory Setting	Minimum Setting	Maximum Setting
33	Set value addition for DHW. This value is added to Parameter 1 to set the operating temperature of the Prestige during a DHW request. See pages 6 through 9 for additional information	46ºF	00ºF	54ºF
35 See Warning Below	Selection of the DHW application. Storage tank application with NTC sensor (12). Storage tank with aquastat control application (13). See pages 6 through 9 for additional information	13	00	29

WARNING

Parameter 35 has multiple parameter settings available in addition to the settings 12 and 13, which are outlined in detail in this supplement guide. DO NOT set Parameter 35 to any other setting other than 12 or 13. Failure to comply can result in erratic or unreliable operation of the Prestige boiler.

DOMESTIC HOT WATER APPLICATIONS

In all domestic hot water applications the Prestige boiler will provide a domestic priority feature in which the CH circulator will be blocked from providing heated water to the space heating zones during a domestic hot water demand. This feature cannot be adjusted or eliminated from the MCBA program.

DOMESTIC HOT WATER (SMART/TR SERIES OR DHW KIT) WITH NTC SENSOR

This application requires the optional NTC sensor kit for SMART/TR Series Indirect Fired Water Heaters or for DHW kit. In this application the NTC sensor will monitor the domestic water storage temperature of the IDWH. The domestic water storage temperature will determine the ON/OFF operation of the boiler and the modulation input of the boiler.

Parameter Adjustments

The first parameter adjustment needed for this application is Parameter 35, which sets the MCBA control to accept the NTC sensor of the IDWH. Follow the steps given in Program Access Section on page 2 until the display shows P_35. Release the STEP button and display should show the factory setting listed below. Use the + or - to adjust to the revised setting listed below and press STORE to save the setting. The display setting will flash when the setting is stored within the MCBA control.

Parameter	Factory Setting	Revised Setting
P_35	13	12

WARNING

Parameter 35 has multiple parameter settings available in addition to the settings 12 and 13. DO NOT set Parameter 35 to any other setting other than 12 or 13. Failure to comply can result in erratic or unreliable operation of the Prestige Boiler.

The next parameter adjustment for this application is Parameter 1, which is accessible during normal operation and does not require entry into the CODE mode. To exit the CODE mode, press the RESET button once.

Parameter 1 is the set point temperature for domestic water storage in the IDWH. The heat request for domestic heating is based on this parameter setting. To adjust the parameter setting press MODE until display shows PARA. Press STEP once and the display should show factory setting 1140. Use the + or - to adjust the setting. Press STORE to save the setting. The display will flash when the setting is stored into the MCBA control.

Parameter	Factory Setting	Minimum Setting	Maximum Setting
1	140ºF	68ºF	148ºF

If Parameter 1 is set below 134º then it is recommended that Parameter 33 be reset to a higher setting. The request for heat is based on the temperature reading of the DHW NTC sensor and its relationship to Parameter 1. The operating temperature setpoint of the boiler is based on Parameter 1 + Parameter 33 with a maximum operating temperature of 194ºF. The burner ON/OFF and modulation is based on the relationship of the boiler supply temperature and the sum of Parameter 1 and Parameter 33.

To adjust the DHW Set Value Addition follow the steps given in Program Access Section on page 2 until the display shows P_33. Release the STEP button and the display should show the factory setting. Use the + or - to adjust to the revised setting and press STORE to save the setting. The display setting will flash when the setting is stored within the MCBA control

Parameter	Factory Setting	Minimum Setting	Maximum Setting
P_33	46ºF	00ºF	54ºF

Error Codes

If Parameter 35 is set to 12 and no NTC sensor is connected to the 24 volt terminal strip, DHW T-T connection on the Prestige, then a “soft” lockout will occur. The display will show an error code of b_38 alternating with a status code of 9.

If Parameter 35 is set to 12 and the NTC for DHW is short-circuited then a “soft” lockout will occur. The display will show an error code of b_33 alternating with a status code of 9.

Error Code	Reason / Correction
b_33	The NTC sensor is "short circuited". This will also occur if the sensor would detect a false temperature reading above 260ºF. Check wiring of the NTC sensor for proper connections.
b_38	The NTC sensor is open. This will also occur if the sensor would detect a false temperature reading of -32ºF. Check and ensure NTC sensor is properly wired and connect to the proper terminals on the Prestige low voltage terminal strip.

During these "soft" lockout conditions the burner function is blocked for DHW as well as CH request for heat. Only the CH circulator will respond to a request for heat.

Both error codes will reset automatically when the error condition is corrected.

NOTICE

During any DHW error condition the Prestige will continue to maintain normal CH circulator operation on a CH request for heat, but will block the burner function for a CH request for heat. The Prestige will block the burner and DHW circulator operation on a DHW request for heat until the error condition is corrected.

DHW NTC SENSOR DIFFERENTIAL

The MCBA module has 2 differential settings for the burner operation when using a NTC for DHW applications. The first differential setting 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 the Parameter 1 setting minus the Parameter 26 setting.

A minimum "Detection ON" parameter setting will create a quick burner operation response to any domestic water draws from the storage tank. In contrast, a maximum "Detection ON" setting will result in a delay response to domestic draws.

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 rapid responses to a DHW request for heat resulting in a potential scald hazard. It is strongly recommended that the installer utilizes a thermostatic mixing valve on the hot water outlet of the DHW storage tank. Failure to comply could result in severe personal injury, death or substantial property damage.

Parameter Adjustments

To adjust DHW NTC sensor differential "DETECTION ON" value follow the steps given in the Program Access Section on page 2 until the display shows P_26. Release the STEP button and the display should show the factory setting. Use the + or - to adjust to the revised setting and press STORE to save the setting. The display setting will flash when the setting is stored within the MCBA control.

Parameter	Factory Setting	Minimum Setting	Maximum Setting
P_26	02ºF	02ºF	54ºF

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 storage temperature rises above the Parameter 1 setting plus Parameter 27 setting.

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

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 excessive domestic storage temperature resulting in a potential scald hazard. It is strongly recommended that the installer utilize a thermostatic mixing valve on the hot water outlet of the DHW storage tank. Failure to comply could result in severe personal injury, death or substantial property damage.

To adjust DHW NTC sensor differential "DETECTION OFF" value follow the steps given in Program Access Section on Page 2 until the display shows P_27. Release the STEP button and the display should show the factory setting. Use the + or - to adjust to the revised setting and press STORE to save the setting. The display setting will flash when the setting is stored within the MCBA control

Parameter	Factory Setting	Minimum Setting	Maximum Setting
P_27	18ºF	(-)16ºF	54ºF

FROST / FREEZE PROTECTION OF THE IDWH

This feature is only available when the storage tank temperature is controlled by a NTC sensor. If the NTC sensor senses a domestic storage tank temperature of 38ºF then the Prestige will active the DHW burner and circulator function. The burner will operate at minimum input rate and the circulator will energize until the NTC sensor senses 50ºF. At that point the boiler will shut off the DHW burner function and DHW circulator. This feature is always active even if the DHW operation is placed into an OFF mode (See Parameter 2 DHW Burner / Circulator Function Setup, page 9).

DOMESTIC HOT WATER (SMART OR TR SERIES) WITH AQUASTAT CONTROL

This application is the standard factory setup of the MCBA control. In this application the Prestige uses the aquastat of the SMART or TR Series Indirect Fired Water Heaters to initiate a request for heat.

Parameter Adjustments

The first parameter adjustment for IDWH aquastat control application is Parameter 35. Follow the steps given in Program Access Section on page 2 until the display shows P_35. Release the STEP button and thedisplay should show the factory setting list below. Use the + or - to adjust to the revised setting and press STORE to save the setting. The display will flash when the setting is stored in the MCBA control.

Parameter	Factory Setting	Revised Setting
P_35	13	13

WARNING

Parameter 35 has multiple parameter settings available in addition to the settings 12 and 13. DO NOT set Parameter 35 to any other setting other than 12 or 13. Failure to comply can result in erratic or unreliable operation of the Prestige Boiler.

The next parameter adjustment for this application is Parameter 1 and Parameter 33. Parameter 1 is accessible during normal operation and does not require entry into the CODE mode. To exit the CODE mode, press the RESET button once.

Parameter 1 and Parameter 33 combine to create the boiler operating temperature limit during a heat request for DHW. The operation of the burner on/off is controlled by the IDWH aquastat. The modulation of the burner is based on the current boiler temperature and its relationship to the temperature limit established by Parameter 1 plus Parameter 33.
If Parameter 1 is set below 134ºF then it is recommended that Parameter 33 be reset to a higher setting.

Parameter	Factory Default Setting	Minimum Setting	Maximum Setting
1	140ºF	68ºF	148ºF

The request for heat is based on the DHW aquastat closing an end switch which is connected directly to the 24V low voltage terminal of the Prestige. The operating temperature set point of the Prestige boiler is based on Parameter 1 + Parameter 33 with a maximum operating temperature of 194ºF. The burner modulation is based on the relationship of the boiler supply temperature and the sum of Parameter 1 and Parameter 33.

Error Codes

Parameter	Factory Setting	Minimum Setting	Maximum Setting
33	46ºF	0ºF	54ºF

If Parameter 35 is set to 12 (DHW - Storage Tank with NTC Sensor) and a DHW aquastat is connected to the Prestige 24 volt terminal strip connections for DHW, then a “soft” lockout will occur. The display will show an error code of b_33 or b_38 alternating with a status code of 9 depending on the status of the aquastat.

Error Code	Reason / Correction
b_33	Parameter 35 is set as 12 (DHW Type - Storage tank with NTC Sensor) and the IDWH aquastat is in "CLOSED" position. Reset Parameter 35 to 13.
b_38	Parameter 35 is set as 12 (DHW Type- Storage Tank with NTC Sensor) and the IDHW aquastat is in "OPEN" position. Reset Parameter 35 to 13

NOTICE

The error code display on the Prestige will switch from error code b_33 to error code b_38 if the IDWH aquastat is adjusted from a “closed” to “open” position. The error code display on the unit will not switch from an error code b_38 to an error code b_33 when the aquastat is adjusted from an “open” to “closed” position.

DHW BURNER / CIRCULATOR FUNCTION SETUP

The type of DHW/boiler operation can be revised to the application requirements. The Prestige offers 4 different DHW/Boiler Function setup modes. Those function setups are defined as:

- **OFF** In this mode the Prestige will NOT recognize any request for a “call for heat” from a DHW aquastat or NTC sensor. This mode shuts down the DHW operation, both burner and DHW circulator function, of the Prestige control. The Prestige will maintain all CH operation, both burner and CH circulator function, with no domestic priority in this mode.
- **ON** In this mode, factory setting, the Prestige burner and DHW circulator will operate in a response to a “call for heat” by the IDWH. This request can be either a NTC sensor or DHW aquastat. There is domestic priority over central heating in this mode.
- **OFF + Pump Continuous** In this mode of operation the Prestige will block the burner operation during a request for “call for heat” from a NTC sensor or DHW aquastat. The DHW circulator will remain energized at all times even during a CH request for heat. The Prestige will maintain all CH operation, both burner and CH circulator function, with no domestic priority feature.
- **ON + Pump Continuous** The Prestige will maintain continuous circulation on the DHW circulator and will provide burner function when a request for heat is generated by the NTC sensor for DHW or by the DHW aquastat. The Prestige will provide domestic priority by blocking the CH circulator function during a DHW request for heat.

DANGER

When determining the type of DHW operation, especially those applications with continuous pump feature the installer should install a thermostatic mixing valve on the outlet of the domestic tank to prevent a potential scalding hazard. Failure to comply could result in a scalding hazard causing severe personal injury, death or substantial property damage.

Parameter Adjustments - OFF Mode

The parameter adjustment to set the DWH operational option to **OFF** can be done either through the STBY mode during normal operation or by entering into the CODE mode.

When the unit is in normal operation and in the STBY mode, press MODE button once to enter PARA. Press STEP button twice to Parameter 2. Press - button to adjust to the following revised setting and press STORE to save the setting.

Parameter	Factory Setting	Revised Setting
2	2_01	2_00

The unit can also be place into the **OFF** mode when the unit is in normal operation without entering the PARA mode. In the STBY mode press and hold for approximately 2 seconds the - button. The panel display should flash a d followed by a display of dOFF.

NOTICE

This method of using the - button to place the DWH application in the OFF mode only controls the burner operation. If the current parameter setting is set for continuous pump operation the DHW circulator will continue operating in a continuous pump mode. To alter both DHW burner and circulator function the parameter setting must be revised in the PARA mode.

The parameter adjustment of Parameter 2 in the CODE mode is accomplished by following the steps given in Program Access Section on page 2 until the display shows 2_XX. Use the + or - to adjust to the revised setting listed below and press STORE to save the setting.

Parameter	Factory Setting	Revised Setting
2	2_01	2_00

Parameter Adjustments - ON Mode

The Prestige is in factory set to this mode. However, the parameter adjustment to set the DHW operational option to **ON** can be done either through the STBY mode during normal operation or by entering into the CODE mode.

When the unit is normal operation and in the STBY mode, press MODE button once to enter PARA. Press STEP button twice to Parameter 2. Press + or - button to adjust to the revised setting listed below and press STORE to save the setting.

Parameter	Factory Setting	Revised Setting
2	2_01	2_01

The unit can also be placed into the **ON** mode when the unit is in the OFF mode operation without entering the PARA mode. In the STBY mode press and hold for approximately 2 seconds the - button. The panel display should flash a d followed by a display of dXXX. with XXX indicating the current boiler temperature.

NOTICE

Returning the unit to the ON mode using the - button will restore the burner function in response to a "call for heat" request by the IDWH. If the unit is in a continuous pump function the circulator will remain in that mode unless the parameter setting is revised in the PARA mode.

The parameter adjustment of Parameter 2 in the CODE mode is done by following the steps given in Program Access Section on page 2 until the display shows 2_XX. Use the + or - to adjust to the revised setting and press STORE button to save the setting.

Parameter Adjustments - OFF + Continuous Pump Mode

The parameter adjustment to set the DHW operational function option to **OFF + Continuous Pump** can be done either through the STBY mode during normal operation or by entering into the CODE mode.

When the unit is in normal operation and in the STBY mode, press mode button once to enter PARA. Press STEP button twice to Parameter 2. Press + or - button to adjust to the revised setting listed below and press STORE to save the setting.

Parameter	Factory Setting	Revised Setting
2	2_01	2_02

The parameter adjustment of Parameter 2 in the CODE mode is done by following the steps given in Program Access Section on page 2 until the display shows 2_XX. Use the + or - to adjust to the revised setting and press STORE to save the setting.

Parameter	Factory Setting	Revised Setting
2	2_01	2_02

NOTICE

If the unit is currently set in an ON + Continuous Pump mode, the unit can be placed in an OFF + Continuous Pump mode by pressing and holding the - button for approximately 2 seconds. The panel display should flash a d followed by a display of dOFF.

Parameter Adjustments - ON + Continuous Pump Mode

The parameter adjustment to set the DHW operational function option to **ON + Continuous Pump** can be done either through the STBY mode during normal operation or by entering into the CODE mode.

When the unit is in normal operation and in the STBY mode, press MODE button once to enter PARA. Press STEP button twice to Parameter 2. Press + or - button to adjust to the revised setting listed below and press STORE to save the setting.

Parameter	Factory Setting	Revised Setting
2	2_01	2_03

The parameter adjustment of Parameter 2 in the CODE mode is done by following the steps given in Program Access Section on page 2 until the display shows 2_XX. Use the + or - to adjust to the revised setting, listed below and press STORE to save the setting.

Parameter	Factory Setting	Revised Setting
2	2_01	2_03

NOTICE

If the unit is currently set in an OFF + Continuous Pump mode, the unit can be placed in an ON + Continuous Pump mode by pressing and holding the - button for approximately 2 seconds. The panel display should flash a d followed by a display of dXXX, with XXX indicating the current boiler temperature.

DOMESTIC HOT WATER APPLICATION PUMP SETUP

At the completion of a DHW request for heat the amount of time for post pump activity can be determine. The post pump feature allows the stored heat within the boiler to be absorbed in the Domestic Tank, thus preventing any potential overheating of low temperature space heating applications.

DANGER

When utilizing and adjusting the allowable time for DHW post pump activity it is strongly recommended that a thermostatic mixing valve with anti-scald feature be installed on the hot water outlet of the domestic tank. Failure to comply could result in a scalding hazard causing severe personal injury, death or substantial property damage.

Parameter Adjustments

The parameter adjustment for DHW post pump activity is Parameter 21. Follow the steps given in Program Access Section on page 2 until the display shows P_21. Release the STEP button and display should show the factory setting. Use the + or - to adjust to the revised setting and press STORE to save the setting.

NOTICE

The parameter setting is multiplied by 10.2 seconds for the actual setting. For example the factory setting is 3 and the actual time period of the post pump cycle is 30.6 seconds.

Parameter	Factory Setting	Minimum Setting	Maximum Setting
21	03 x 10.2 sec.	00 x 10.2 sec.	30 x 10.2 sec.

DOMESTIC HOT WATER APPLICATION - DHW REQUEST FOR HEAT SETUP

At the completion of a DHW request for heat, the amount of time for delay in reacting to a secondary DHW request for heat can be determined. The "blocking" time feature prevents potential short cycling of the boiler burner and extends the life of the blower/ burner components.

During the blocking period the burner will not fire in response to a secondary DHW. Only the DHW request for heat circulator will begin circulating at the start of the secondary DHW request for heat.

NOTICE

Long "blocking" time will effect the production of domestic hot water and can result in the lack of domestic hot water delivery for the application.

Parameter Adjustments

The parameter adjustment for DHW "blocking" time is Parameter 29. Follow the steps given in Program Access Section on page 2 until the display shows P_29. Release the STEP button and display should show the factory setting. Use the + or - to adjust to the revised setting and press STORE to save the setting.

NOTICE

The parameter setting is multiplied by 10.2 seconds for the actual setting. For example if the parameter setting is 03 and the actual time period of the "blocking" time is 30.6 seconds.

Parameter	Factory Setting	Minimum Setting	Maximum Setting
29	00 x 10.2 sec.	00 x 10.2 sec.	30 x 10.2 sec.

DOMESTIC HOT WATER APPLICATION - DHW TO CH REQUEST FOR HEAT SETUP

At the completion of a DHW request for heat, the amount of time for burner delay in reacting to a CH (space heating) request for heat can be determined. The "blocking" time feature in conjunction with the DHW post pump cycle may prevent any potential overheating of a low temperature CH system. This blocking time period does not affect the production of domestic hot water.

If the parameter setting is 00 (OFF setting for this function feature) and the burner is firing at the completion of a DHW request for heat, then the burner will remain firing and the CH circulator will begin pumping. If there is a blocking time setting, the burner will shut down for that period, while the CH pump will circulator to the system.

NOTICE

Long "blocking" times may affect the comfort level of the occupants in certain CH zones.

Parameter Adjustments

The parameter adjustment for DHW to CH "blocking" time is Parameter 30. Follow the steps given in Program Access Section on page 2 until the display shows P_30. Release the STEP button and display should show the factory setting. Use the + or - to adjust to the revised setting and press STORE to save the setting.

NOTICE

The parameter setting is multiplied by 10.2 seconds for the actual setting. For example if the parameter setting is 03 and the actual time period of the "blocking" time is 30.6 seconds.

NOTICE

A 00 setting of this parameter places the feature in an OFF condition.

Parameter	Factory Setting	Minimum Setting	Maximum Setting
30	00 x 10.2 sec.	00 x 10.2 sec.	30 x 10.2 sec.

CENTRAL HEATING (CH) APPLICATION PARAMETER GENERAL GUIDE

Parameter	Description	Factory Setting	Minimum Setting	Maximum Setting
3	CH application selection. Setting of the CH "ON" or "OFF". Setting of the CH pump function "continuous" or "aquastat controlled". See pages 19 through 21 for additional information	01	00	03
4	CH boiler operating temperature set point. This is the maximum operating temperature. See page 15 for additional information	186ºF	86ºF	194ºF
5	CH boiler operating temperature set point. This is the minimum allowable operating temperature during the warmest outdoor temperature when using the optional outdoor sensor See page 15 for additional information	86ºF	60ºF	140ºF
6 (outdoor sensor required)	The minimum outdoor temperature setting when using the optional outdoor sensor See page 21 for additional information	00ºF	(-)04ºF	50ºF
7 (outdoor sensor required)	The maximum outdoor temperature setting when using the optional outdoor sensor See page 21 for additional information	64ºF	60ºF	78ºF
8 (outdoor sensor required)	The minimum outdoor temperature to initiate the frost protection mode on the boiler See page 22 for additional information	(-)22ºF	(-)22ºF	50ºF
10 (outdoor sensor required)	T4 Block Temperature setting. If the boiler is operating based on outdoor temperature, the heat request is completed if the calculated operating temperature limit is based on outdoor temperature is less the Blocking temperature. See page 22 for additional information	32ºF	32ºF	140ºF
11 (outdoor sensor required)	Boost feature set point. Use to compensate the calculated operating temperature. See pages 22 through 24 for additional information	00 minutes	00 minutes	30 minutes
12 (outdoor sensor required)	Parallel shift setting. When using the optional outdoor sensor this setting is a setback feature. See page 24 for additional information	00ºF	00ºF	144ºF

CENTRAL HEATING (CH) APPLICATION PARAMETERS GENERAL GUIDE

Parameter	Description	Factory Setting	Minimum Setting	Maximum Setting
20	Post pump feature setting for the CH circulator supplied with the boiler. See page 24 for additional information	01 minutes	00 (10 seconds)	99 minutes
28	Blocking time setting between a completed CH request for heat and a secondary request. See page 25 for additional information.	03 x 10.2 sec.	00 x 10.2 sec.	30 x 10.2 sec.
34 (See WARNING Below)	Selection of CH application type based on the response for heat. Room thermostat, Outdoor temperature, external controller. See pages 15 through 18 for additional information	00	00	05
38	Boiler hold temperature setting. Maintains a minimum boiler temperature. See page 25 for additional information	32ºF	32ºF	176ºF

WARNING

Parameter 34 has multiple parameter settings available in addition to the settings 00,01, 04 and 05, which are outlined in detail in this supplement guide. DO NOT set Parameter 34 to any other setting other than 00, 01, 04 or 05. Failure to comply can result in erratic or unreliable operation of the Prestige boiler.

CENTRAL HEATING (CH) APPLICATION PARAMETERS GENERAL GUIDE
CH OPERATIONAL TEMPERATURE SETTING - HIGH AND LOW LIMIT

The boiler high operating limit is adjustable to meet the required system design temperature. This boiler limit setting does not affect the operating temperature limit when the unit is in DHW heating mode.

This high limit setting is the maximum CH temperature setting on the coldest design temperature day when using outdoor reset; see Outdoor Reset Control section on page 20. The setting of the high limit can be done in the STBY operating mode or by entering into the access code of the control.

Parameter Adjustment

When the unit is in normal operation and in the STBY mode, press MODE button once to enter PARA. Press STEP button four times to Parameter 4. Press the + or - button to adjust to the revised setting and press

Parameter	Factory Setting	Minimum Setting	Maximum Setting
4	186ºF	86ºF	194ºF

STORE to save the setting. The display will flash when the new setting is stored into the module.
The parameter adjustment of Parameter 4 in the CODE mode is done by following the steps given in Program Access Section on page 2 until the display shows

Parameter	Factory Setting	Minimum Setting	Maximum Setting
4	186ºF	86ºF	194ºF

4XXX. Use the + or - to adjust to the revised setting and press STORE to save the setting.
The boiler low operating limit is adjustable to meet the required system temperature. This low temperature limit is the boiler operating temperature during the warmest design temperature day when using outdoor reset; see Outdoor Reset Control section on page 20. The setting of the limit can only be done by entering into the access code of the control.

Parameter Adjustment

The parameter adjustment of Parameter 5 in the CODE mode is done by following the steps given in Program Access Section on page 2 until the display shows

Parameter	Factory Setting	Minimum Setting	Maximum Setting
5	86ºF	60ºF	140ºF

5_XX. Use the + or - to adjust to the revised setting and press STORE to save the setting.

CH APPLICATION FUNCTION SETTING - ROOM THERMOSTAT

The CH heat request to the boiler and to control the burner and CH circulator function can be accomplished through the closed contacts of a room thermostat. This request for heat can also be completed by the closing of the boiler X-X or T-T contacts of a standard zone panel relay.

This function, parameter 34, is the factory setting of the MCBA module and can only be revised by entering the access code mode.

Parameter Adjustment

The parameter adjustment of Parameter 34 in the CODE mode is done by following the steps given in Program Access Section on page 2 until the display shows *P_34*. Use the + or - to adjust to the revised setting and press STORE to save the setting.

Parameter	Factory Setting	Revised Setting
P_34	00	00

For additional parameter settings, which relate to **CH type - Room Thermostat** reference:

System Temperature Design Curve - requires the use of an outdoor sensor:

- Outdoor Minimal Design Temperature Minimum (Parameter 6) page 21.
- Outdoor Maximum Design Temperature Maximum (Parameter 7) on page 21

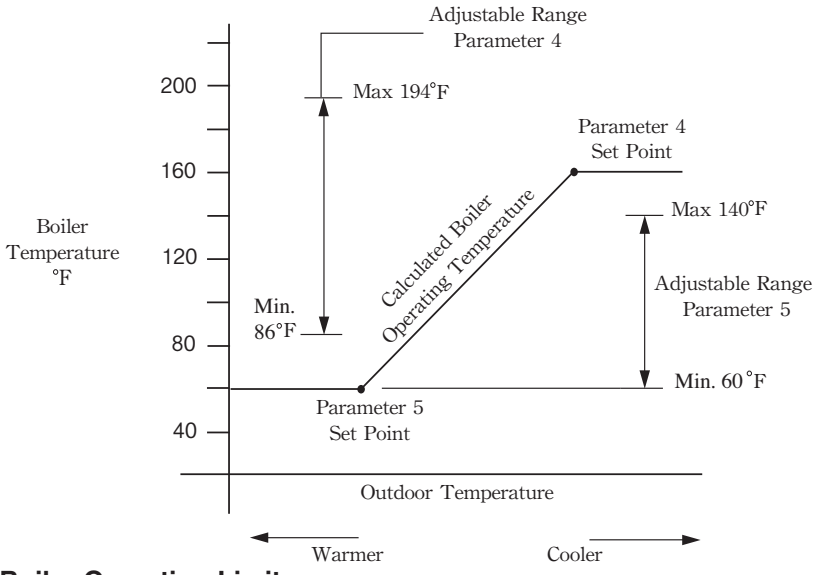

Fig. 1: Setting the Boiler Operating Limits

Boiler Operating Temperature

- Boiler Operating Temperature High Limit (parameter 4) on page 15
- Boiler Operating Temperature Low Limit (parameter 5) on page 15

Boiler Operational Function Options :

- Burner and CH Circulator Function Options (Parameter 3) on pages 19 through 21.
- CH Circulator Post Operation (Parameter 20) on page 24
- CH Heat Request Blocking Time (Parameter 28) on page 25

Application / System Options:

- Burner Blocking Temperature (Parameter 10) on page 22
- System Boost Feature (Parameter 11) on page 22-24

CH APPLICATION FUNCTION SETTING - OUTDOOR TEMPERATURE

The CH operating temperature is controlled and established by the use of an outdoor sensor measuring the outdoor temperature. In this application the Prestige can maintain constant flow through the system and maintain a constant request for heat. The burner function is based on the outdoor temperature reading and its relationship to the maximum and minimum allowable operating temperature in Parameters 4 and 5. This application requires the use of a 12k NTC sensor, reference Triangle Tube's Outdoor Sensor Kit, connected to the appropriate 24V terminals on the Prestige.

NOTICE

The use of a room thermostat is not required typically in this application. The room thermostat has no control over the CH burner function or the CH circulator function. The room thermostat does provide other application options such as Parallel Shift / Night Setback.

To operate the Prestige under this application mode several Parameters must be revised to establish the required operating temperatures for the application. To configure the MCBA control to react based on the outdoor temperature, Parameter 34 must be revised accordingly and any corresponding parameters will be defined in detail in later sections.

NOTICE

In this application mode the domestic priority function will remain, resulting in the CH circulator being blocked and the boiler operating temperature will reset to Parameter 1 plus Parameter 33.

Parameter Adjustment

The parameter adjustment of Parameter 34 in the CODE mode is done by following the steps given in Program Access Section on page 2 until the display shows P_34. Use the + or - to adjust to the revised setting, listed below and press STORE to save the setting.

Parameter	Factory Setting	Revised Setting
P_34	00	01

To control the burner and CH circulator function when in this **Heat Request - Outdoor Sensor** mode the installer has 2 options:

- **Option 1** is to install a summer / winter switch in parallel to the outdoor sensor on the 24 volt terminals. The switch would create a false outdoor temperature that would block the CH burner and CH circulator function. Domestic hot water would remain functional and would respond to any request for heat from the IDWH.
- **Option 2** is to reference the section on Burner Blocking Temperature and revise the parameter setting accordingly.

BEST PRACTICE

It is important that the installer references the section regarding the Burner Blocking Temperature. The consideration and implementation of this operating feature will prevent the need of a summer / winter switch.

For additional parameter setting, which relate to **CH type -Outdoor Temperature** reference:

System Temperature Design Curve:

- Outdoor Minimal Design Temperature Minimum (Parameter 6) on page 21.
- Outdoor Maximum Design Temperature Maximum (Parameter 7) on page 21.

Boiler Operating Temperature:

- Boiler Operating Temperature High Limit (Parameter 4) on page 15.
- Boiler Operating Temperature Low Limit (Parameter 5) on page 15.

Boiler Operational Function Options :

- Burner and CH Circulator Function Options (Parameter 3) on page 19 through 21.
- CH Circulator Post Operation (Parameter 20) on page 24.
- CH Heat Request Blocking Time (Parameter 28) on page 25.

Application / System Options:

- Burner Blocking Temperature (Parameter 10) on page 22.
- System Boost Feature (Parameter 11) on page 22 and 24.
- Parallel Shift / Night Setback (Parameter 12) on page 24.

If an outdoor sensor is not properly connected to the Prestige low voltage terminals and Parameter 34 is revised to **Heat Request - Outdoor Senso**r as outlined in this section, the unit will operate at the temperature limit established in Parameter 4. The operating temperature of the Prestige cannot be calculated without sensing the outdoor temperature.

CH APPLICATION FUNCTION SETTING - 0 TO 10V EXTERNAL CAPACITY WITH AM4 INTERFACE

This application is generally for multiple boilers in which there is an external boiler control to stage the boilers and control the burner modulation. In this application the external controller will control the burner modulation based on the system load requirements.

The external controller will provide a 0 to 10V analog input to the Prestige AM4 interface module based on the time to meet the system load requirements. The initial analog input of 1.8V or less will indicate the minimum load. An analog input of 10V will indicate the maximum load requirements. The actual function of the external controller will vary from manufacturer to manufacturer.

To operate the Prestige under this application mode several parameters must be revised to establish the

required operating temperatures for the application. To configure the MCBA control to react based on the output signal of an external controller Parameter 34 must be revised accordingly and any corresponding parameters will be defined in detail in later sections.

Parameter Adjustment

The parameter adjustment of Parameter 34 in the CODE mode is done by following the steps given in Program Access Section on page 2 until the display shows P_34. Use the + or - to adjust to the revised setting, listed below and press STORE to save the setting.

Parameter	Factory Setting	Revised Setting
P_34	00	04

For additional parameter setting, which relate to CH type 0 - 10V External Capacity with AM4 Interface reference:

- Boiler Operating Temperature High Limit (Parameter 4) on page 15
- Boiler Operating Temperature Low Limit (Parameter 5) on page 15

Boiler Operational Function Options:

- Burner and CH Circulator Function Options (Parameter 3) on page 19 through 21
- CH Circulator Post Operation (Parameter 20) on page 24.
- CH Heat Request Blocking Time (Parameter 28) on page 25.

CH APPLICATION FUNCTION SETTING - 0 TO 10V EXTERNAL TEMPERATURE WITH AM4 INTERFACE

This application is generally for multiple boilers in which there is an external boiler control to stage the boilers and control the burner modulation. In this application the external controller will control the burner modulation based on the system temperature requirements.

The external controller will provide a 0 to 10V analog input to the Prestige based on the system temperature to meet the load requirements. An analog input of 0V will indicate the minimum system temperature of 32ºF and an analog input of 10V relates to a maximum system temperature of 212ºF. **Because these temperatures are outside the normal operating limits of the Prestige, the minimum and maximum system temperature must be set using Parameter 4 and 5**. The actual function of the external controller will vary from manufacturer to manufacturer.

To operate the Prestige under this application mode,several parameters must be revised to establish the required operating temperatures for the application. To configure the MCBA control to react based on the output signal of an external controller Parameter 34 must be revised accordingly and any corresponding parameters will be defined in detail in later sections.

Parameter Adjustment

The parameter adjustment of Parameter 34 in the CODE mode is done by following the steps given in Program Access Section on page 2 until the display shows P_34. Use the + or - to adjust to the revised setting, listed below and press STORE to save the setting.

Parameter	Factory Setting	Revised Setting
P_34	00	05

For additional parameter setting, which relate to CH type 0 - 10V External Capacity with AM4 Interface reference:

Boiler Operating Temperature:

- Boiler Operating Temperature High Limit (Parameter 4) on page 15.
- Boiler Operating Temperature Low Limit (Parameter 5) on page 15.

Boiler Operational Function Options:

- Burner and CH Circulator Function Options (Parameter 3) on page 19 through 21.
- CH Circulator Post Operation (Parameter 20) on page 24.
- CH Heat Request Blocking Time (Parameter 28) on page 25.

CH BURNER / CIRCULATOR FUNCTION SETUP

The type of CH burner and CH circulator operation can be revised to meet specific application requirements. The Prestige offers 4 different CH operation setup modes. Those operational setups are defined as:

- **OFF** In this mode the Prestige will NOT recognize any request for a "call for heat" for space heating. This mode shuts down the CH operation, both burner and CH circulator function, of the Prestige control. The Prestige will maintain all DHW operation, both burner and DHW circulator function, as well as the freeze protection of the boiler.
- **ON** In this mode, factory setting, the Prestige operates the CH burner and circulator when a request for a "call for heat" occurs. This request can be from the end switch of either a room thermostat or a zone panel relay.
- **OFF + Pump Continuous** In this mode of operation the Prestige will block the burner operation during a request for "call for heat" from the CH system. The CH circulator will become blocked during a DHW request for heat. The Prestige will maintain all DHW operation, both burner and DHW circulator function, with domestic priority feature. When in the **Heat Request - Outdoor Sensor** application mode the summer / winter switch or block temperature (Parameter 10) won't shut down the CH circulator function.
- **ON + Pump Continuous** The Prestige will maintain continuous circulation by energizing the CH circulator and only the burner function will be determined on a request for heat from the system. The DHW function will remain, as well as domestic priority.

Parameter Adjustments - OFF Mode

The parameter adjustment to set the CH operational option to **OFF** can be done either through the STBY mode during normal operation or by entering into the CODE mode.

When the unit is in normal operation and in the STBY mode, press MODE once to enter PARA. Press STEP three times to Parameter 3. Press - or + button to adjust to the following revised setting and press STORE to save the setting.

Parameter	Factory Setting	Revised Setting
3	3_01	3_00

The unit can also be place into the **OFF** mode when the unit is in normal operation without entering the PARA mode. In the STBY mode press and hold for approximately 2 seconds the + button. The panel display should flash a c followed by a display of **cOFF**.

NOTICE

This operational function only controls the burner operation. If the current parameter setting is set for continuous pump operation, that circulator function will remain when the + button is press. To alter both CH burner and circulator function the parameter setting must be revised in the PARA mode.

The parameter adjustment of Parameter 2 in the CODE mode is done by following the steps given in Program Access Section on page 2 until the display shows **3_XX.** Use the + or - to adjust to the revised setting listed below and press STORE to save the setting.

Parameter	Factory Setting	Revised Setting
3	3_01	3_00

Parameter Adjustments - ON Mode

The Prestige is factory set to this mode. However, the parameter adjustment to set the CH operational option to **ON** can be done either through the STBY mode during normal operation or by entering into the CODE mode.

When the unit is in normal operation and in the STBY mode, press MODE button once to enter PARA. Press STEP button three times to Parameter 3. Press - or + button to adjust to the revised setting listed below and press STORE to save the setting.

Parameter	Factory Setting	Revised Setting
3	3_01	3_01

The unit can also be place into the ON mode when the unit is in normal operation without entering the PARA mode. In the STBY mode press and hold for approximately 2 seconds the + button. The panel display should flash a c followed by a display of **cXXX**. The last 3 digits is the set point temperature of Parameter 4.

Parameter	Factory Setting	Revised Setting
3	3_01	3_01

NOTICE

If currently in a continuous pump application mode, the ON mode does not affect the pump status. The continuous pump application mode will remain.

The parameter adjustment of Parameter 3 in the CODE mode is done by following the steps given in Program Access Section until the display shows **3_XX**. Use the + or - to adjust to the revised setting listed below and press STORE to save the setting.

Parameter	Factory Setting	Revised Setting
3	3_01	3_01

Parameter Adjustments - OFF + Continuous Pump Mode

The parameter adjustment to set the CH operational option to **OFF + Continuous Pump** can be done either through the STBY mode during normal operation or by entering into the CODE mode.

When the unit is in normal operation and in the STBY mode, press MODE button once to enter PARA. Press STEP button three times to Parameter 3. Press - or + button to adjust to the revised setting listed below and press STORE to save the setting.

Parameter	Factory Setting	Revised Setting
3	3_01	3_02

The parameter adjustment of Parameter 3 in the CODE mode is done by following the steps given in Program Access Section until the display shows **3_XX**. Use the + or - to adjust to the revised setting, listed below and press STORE to save the setting.

Parameter	Factory Setting	Revised Setting
3	3_01	3_02

Parameter Adjustments - ON + Continuous Pump Mode

The parameter adjustment to set the DWH operational option to **ON + Continuous Pump** can be done either through the STBY mode during normal operation or by entering into the CODE mode.

When the unit is in normal operation and in the STBY mode, press MODE button once to enter PARA. Press STEP button three times to Parameter 3. Press - or + button to adjust to the revised setting listed below and press STORE to save the setting.

Parameter	Factory Setting	Revised Setting
3	3_01	3_03

The parameter adjustment of Parameter 3 in the CODE mode is done by following the steps given in Program Access Section on page 2 until the display shows **3_XX**. Use the + or - to adjust to the revised setting listed below and press STORE to save the setting.

Parameter	Factory Setting	Revised Setting
3	3_01	3_03

CH APPLICATION FUNCTION SETTING - OUTDOOR RESET CONTROL

This application requires the use of the Triangle Tube Outdoor sensor kit. Under this application the system operating temperature curve will be establish based upon the outdoor temperature.

NOTICE

If any other type of NTC / outdoor sensor is used, ensure the sensor is rated for 12k resistance. Failure to comply with this requirement will result incorrect outdoor temperature readings and boiler operating temperature.

In this application the coldest design temperature day can be determined and set along with the warmest design temperature day. These 2 settings in conjunction with the system minimum and maximum operating temperatures (Parameters 4 and 5) will create the system operating curve.

The Prestige with an outdoor sensor can respond to a request for heat through the outdoor sensor or through a room thermostat. To configure the MCBA control to react based on the outdoor temperature or room thermostat Parameter 34, see pages 15 through 17, must be revised accordingly and any corresponding parameters as defined in detail in later sections.

OUTDOOR TEMPERATURE - MINIMUM SETTING

Parameter Adjustment

To revise the coldest design temperature day adjustment of Parameter 6 in the CODE mode is done by following the steps given in Program Access Section on page 2 until the display shows P_06. Use the + or - to adjust to the revised setting and press STORE to save the setting.

Parameter	Factory Setting	Minimum Setting	Maximum Setting
6	00ºF	(-)04ºF	50ºF

OUTDOOR TEMPERATURE - MAXIMUM SETTING

Parameter Adjustment

To revise the warmest design temperature day adjustment of Parameter 7 in the CODE mode is done by following the steps given in Program Access Section on page 2 until the display shows P_07. Use the + or - to adjust to the revised setting and press STORE to save the setting.

Parameter	Factory Setting	Minimum Setting	Maximum Setting
7	64ºF	60ºF	78ºF

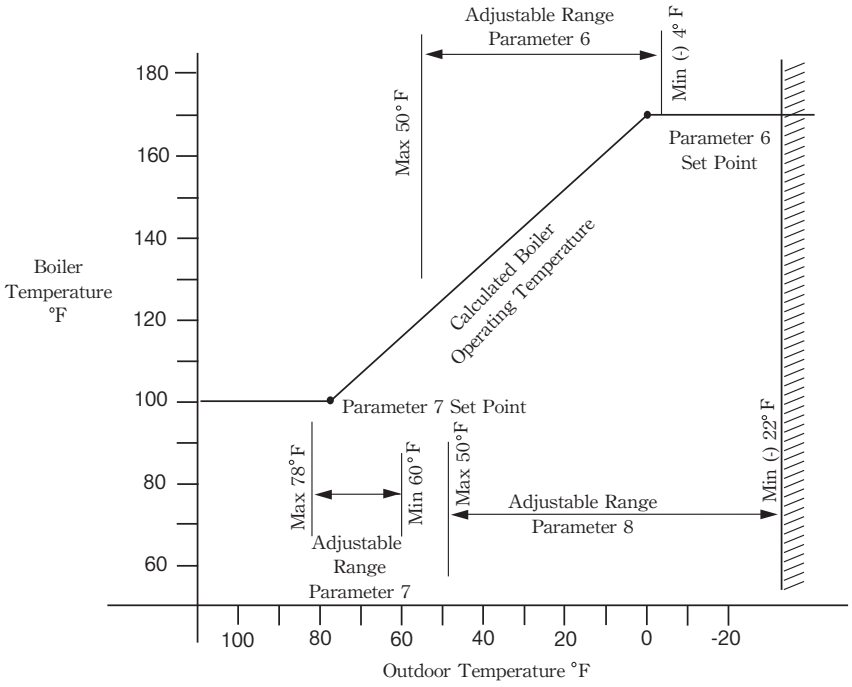

Fig. 2: Setting the Outdoor Temperature Limits

OUTDOOR TEMPERATURE - FROST PROTECTION

This feature is in conjunction with the built-in Freeze Protection of the MCBA control module and is active when an outdoor sensor is used. If the outdoor sensor senses the outdoor temperature below the setting of Parameter 8 during a non-heating request, then the Prestige will activate the CH circulator function. The burner will not operate during this condition unless a heat request is initiated. There is no means to deactivate this protection function.

Parameter Adjustment

To revise the frost protection temperature setting adjustment of parameter 8 in the CODE mode is done by following the steps given in Program Access Section on page 2 until the display shows P_08. Use the + or - to adjust to the revised setting and press STORE to save the setting.

Parameter	Factory Setting	Minimum Setting	Maximum Setting
8	(-)22ºF	(-)22ºF	50ºF

NOTICE

The Frost Protection feature of Parameter 8 is different than the Freeze Protection safety feature of the boiler control. The Frost Protection is based on the outdoor temperature. The Freeze Protection feature is based on the system temperature of the boiler and is a boiler protection feature.

The Freeze Protection feature will:

- Energize the CH circulator when the boiler temperature falls below 46ºF without a call for heat from the building.
- Initiate the burner ignition sequence when the boiler temperature falls below 38ºF without a call for heat from the building.

The boiler will maintain the Freeze Protection mode until the boiler temperature rises above 50ºF, then it is return ed back to standard operation.

CH OPERATION OPTIONS - BLOCK TEMPERATURE

When the application is basing the heat request in relation to the outdoor temperature (see **CH Application Function Setting - Outdoor Temperature on page 16**) the installer can set a desired temperature in which the request for heat has ended.

Once the calculated operating boiler temperature (based on the outdoor temperature) falls below the setting of the T4 Block Temperature the request for heat ends and the boiler will begin any post pump activity. If the calculated operating temperature is above the Block Temperature setting the burner will modulate based on that setting and the CH circulator will continue circulating through the system.

Parameter Adjustment

To revise the block temperature setting adjustment of Parameter 10 in the CODE mode is done by following the steps given in Program Access Section until the display shows P_10. Use the + or - button to adjust to the revised setting and press STORE to save the setting.

Parameter	Factory Setting	Minimum Setting	Maximum Setting
10	32ºF	32ºF	140ºF

The factory setting of 32ºF is the **OFF** position of the Blocking Temperature. With this setting the Blocking Temperature is not applied.

CH OPERATION OPTIONS - BOOST FEATURE

When the application is using an outdoor sensor to establish a system operating temperature curve the Boost Feature can be applied to compensate for a potential low system operating temperature.

The Boost Feature is a time setting in minutes, in which the boiler operating temperature is increased 18ºF every adjustable time period if the request for heat is not satisfied during that time period. The Boost will continue increasing the system operating temperature in increments of 18ºF for every time period setting in Parameter 11 until the maximum operating temperature setting in Parameter 4 is met.

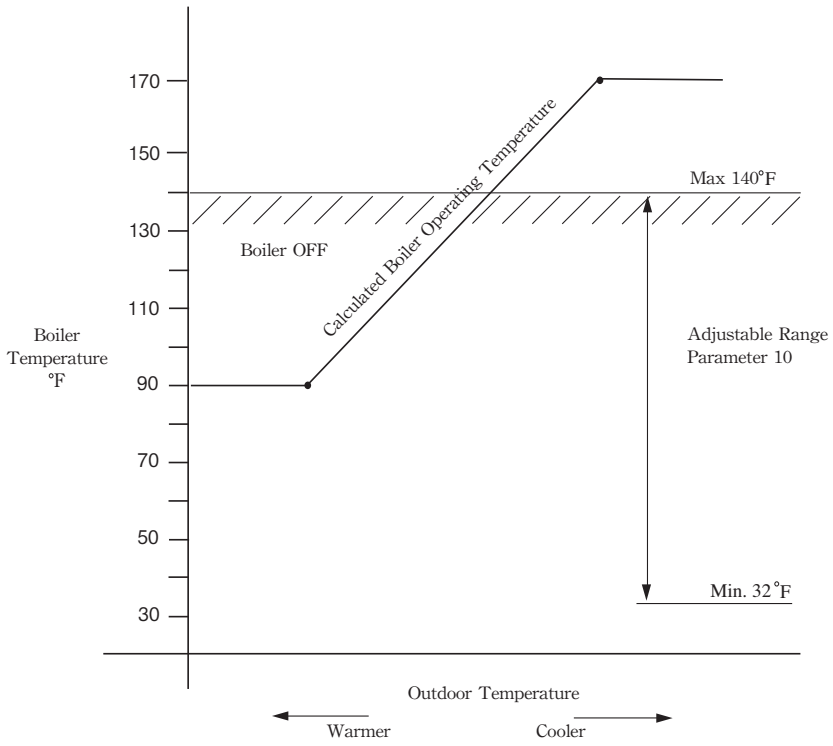

Fig. 3: Setting the Block Temperature Set Point

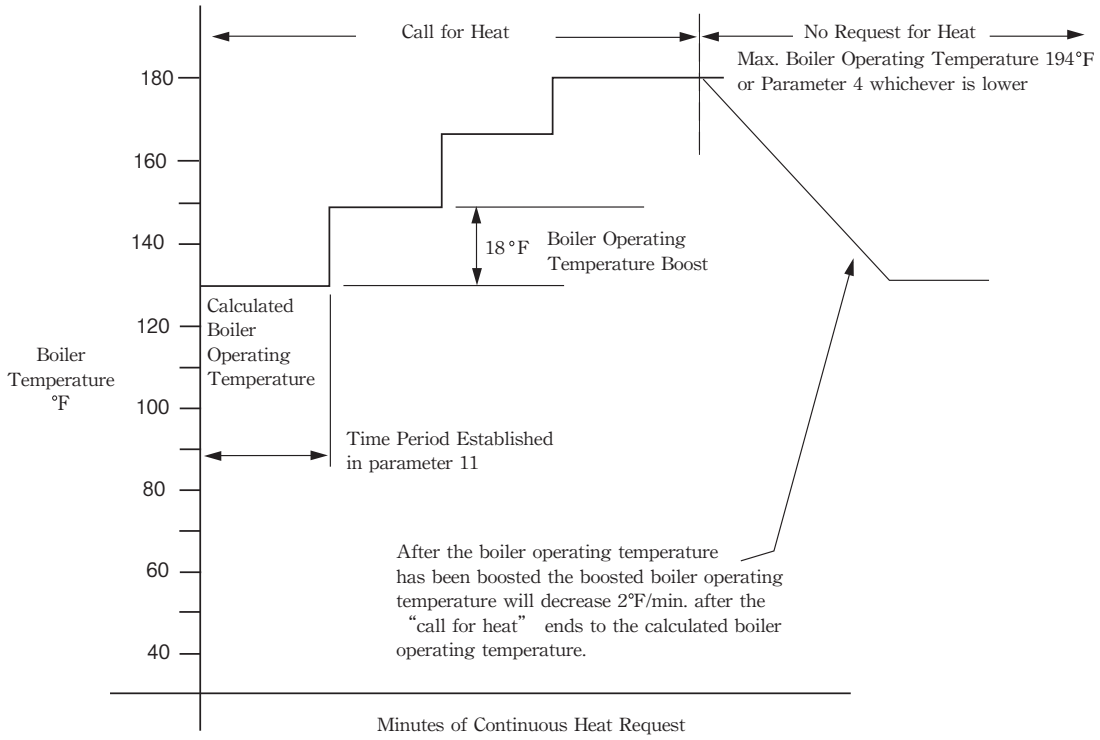

Fig. 4: Setting the Boost Feature Parameter

Once the request for heat is completed the system temperature setting will decrease by 2ºF per minute until the calculated system temperature is met. If a second call for heat is generated it would operate at the current system operating temperature based on the amount of Boost temperature at 18ºF / Parameter 11 minus the amount of decrease of 2ºF/minute since the completion of the first heat request.

Parameter Adjustment

To revise the Boost feature setting adjustment of Parameter 11 in the CODE mode is done by following the steps given in Program Access Section on page 2 until the display shows P_11. Use the + or - button to adjust to the revised setting and press STORE to save the setting.

Parameter	Factory Setting	Minimum Setting	Maximum Setting
11	00	0	30

The factory setting of 00 is the **OFF** position of the Boost feature. With this setting the Boost feature is not applied.

CH OPERATION OPTIONS - PARALLEL SHIFT (SETBACK FEATURE)

When the application is using an outdoor sensor to establish a system operating temperature curve and the heat request, a Parallel shift can be applied as a setback feature.

The Parallel Shift is applied when the Room Thermostat contacts on the Prestige are “open”. In the application of **Heat Request - Using Outdoor Sensor** (Parameter 34) on page 16, the burner is modulating to maintain a system temperature and the CH circulator is circulating through the system. When the Room Thermostat contacts “open”, the calculated system temperature will decrease the amount of the Parallel Shift in Parameter 12.

Parameter Adjustment

The parameter adjustment for Parallel Shift is Parameter 12. Follow the steps given in Program Access Section on page 2 until the display shows P_12. Release the STEP button and display should show the factory default setting. Use the + or - button to adjust to the revised setting and press STORE to save the setting.

Parameter	Factory Setting	Minimum Setting	Maximum Setting
12	00ºF	00ºF	144ºF

BOILER CH APPLICATION PUMP SETUP

At the completion of a CH request for heat the amount of time for post pump activity can be determined. The post pump feature allows the stored heat within the boiler to be absorbed in the system piping to gain additional efficiency from the boiler.

NOTICE

The MCBA Control has a minimum 10 second post pump cycle. There is no setting on Parameter 20 that deactivates this post pump cycle. A parameter setting of 00 is the minimum setting.

Parameter Adjustment

The parameter adjustment for CH Post Pump Activity is Parameter 20. The parameter setting is a unit of time defined in minutes. Follow the steps given in Program Access Section on page 2 until the display shows P_20 Release the STEP button and display should show the factory setting. Use the + or - button to adjust to the revised setting and press STORE to save the setting.

Parameter	Factory Setting	Minimum Setting	Maximum Setting
20	01 minutes	00 10 seconds	99 minutes

SPACE HEATING APPLICATION - CH REQUEST FOR HEAT SETUP

At the completion of a CH request for heat the amount of time for delay in reacting to a secondary CH request for heat can be determine and set. The "blocking" time feature prevents potential short cycling of the boiler.

During the blocking period the burner will not fire. Only the CH circulator will begin circulating at the start of the secondary CH request for heat.

Parameter Adjustment

The parameter adjustment for CH "Blocking" Time is Parameter 28. Follow the steps given in Program Access Section on page 2 until the display shows *P_28*. Release the STEP button and display should show the factory setting. Use the + or - button to adjust to the revised setting and press STORE to save the setting.

Parameter	Factory Setting	Minimum Setting	Maximum Setting
28	03 x 10.2 sec.	00 x 10.2 sec.	30 x 10.2 sec.

NOTICE

The parameter setting is multiplied by 10.2 seconds for the actual setting. For example if the parameter setting is 3 and the actual time period of the "blocking" time is 30.6 seconds.

BOILER CONTROL FUNCTION - BOILER HOLD TEMPERATURE

The boiler can maintain a minimum boiler temperature based on the setting of Parameter 38. The burner will modulate on low input firing rate when the supply temperature of the boiler is measured below the parameter setting.

Once the boiler supply temperature is measured 10ºF above the parameter setting for the Boiler Hold Temperature, the heat request ends and the burner shuts down. The CH circulator is off during the burner firing as the boiler tries to maintain the boiler hold temperature and there is no CH Block Time period at the completion of the burner firing.

Parameter Adjustment

The parameter adjustment for CH Hold Temperature is Parameter 38. Follow the steps given in Program Access Section on page 2 until the display shows *P_38*. Release the STEP button and display should show the factory setting. Use the + or - button to adjust to the revised setting and press STORE to save the setting.

Parameter	Factory Setting	Minimum Setting	Maximum Setting
38	32ºF	32ºF	176ºF

The factory setting of 32ºF is the **OFF** position of the Boiler Hold Temperature feature. With this setting the Boiler Hold Temperature feature is not applied.

PARAMETER WORKSHEET AND RECORDED SETTINGS

Parameter	Description	Factory Setting	Minimum Setting	Maximum Setting	Adjusted Setting
1	NTC Sensor setting for domestic hot water applications depending on the setting of Parameter 35 (storage tank with NTC or storage tank with aquastat). Detection setting for DHW request. See pages 6 and 8 for additional information	140ºF	68ºF	148ºF	
2	DHW application selection. Setting of the DHW "ON" or "OFF". Setting of the DHW pump function "continuous" or "aquastat controlled". See pages 9 through 11 for additional information	01	00	03	
3	CH application selection. Setting of the CH Burner Function "ON" or "OFF". Setting of the CH pump function "continuous" or "aquastat controlled". See pages 19 through 21 for additional information	01	00	03	
4	CH boiler operating temperature set point. This is the maximum operating temperature. See page 15 for additional information	186ºF	86ºF	194ºF	
5	CH boiler operating temperature set point. This is the minimum allowable operating temperature during the warmest outdoor temperature when using the optional outdoor sensor. See page 15 for additional information	86ºF	60ºF	140ºF	
6	The minimum outdoor temperature setting when using the optional outdoor sensor. See page 21 for additional information	00ºF	(-)04ºF	50ºF	
7	The maximum outdoor temperature setting when using the optional outdoor sensor. See page 21 for additional information	64ºF	60ºF	78ºF	
8	The minimum outdoor temperature to initiate the frost protection mode on the boiler. See page 22 for additional information	(-)22ºF	(-)22ºF	50ºF	
9	**Do Not Adjust this Parameter**	00			
10	Block Temperature setting. If the boiler is operating based on outdoor temperature, the heat request is completed if the operating temperature limit based on outdoor temperature is less the Blocking temperature. See page 22 for additional information	32ºF	32ºF	140ºF	

Parameter	Description	Factory Setting	Minimum Setting	Maximum Setting	Adjusted Setting
11	Boost feature set point. Use to compensate the calculated operating temperature. See pages 22 through 24 for additional information	00 minutes	00 minutes	30 minutes	
12	Parallel shift setting. When using the optional outdoor sensor this setting is a setback feature. See page 24 for additional information	00ºF	00ºF	144ºF	
13	**Do Not Adjust this Parameter**	53			
14	**Do Not Adjust this Parameter**	00			
15	**Do Not Adjust this Parameter**	53			
16	**Do Not Adjust this Parameter**	00			
17	**Do Not Adjust this Parameter**	19			
18	**Do Not Adjust this Parameter**	00			
19	**Do Not Adjust this Parameter**	36			
20	Post pump feature setting for the CH circulator supplied with the boiler. See page 24 for additional information	01 minutes	00 10 seconds	99 minutes	
21	The DHW circulator post pump time period applied after the completion of a DHW request. Parameter setting is multiplied by 10.2 seconds. See page 11 for additional information	03 x 10.2 sec.	00 x 10.2 sec.	30 x 10.2 sec.	
22	**Do Not Adjust this Parameter**	6			
23	**Do Not Adjust this Parameter**	6			
24	**Do Not Adjust this Parameter**	6			
25	**Do Not Adjust this Parameter**	10			

Parameter	Description	Factory Setting	Minimum Setting	Maximum Setting	Adjusted Setting
26	DHW differential setting for detection “ON”. Setting is applied on storage tank with NTC sensor applications. See pages 7 and 8 for additional information	02ºF	02ºF	54ºF	
27	DHW differential setting for detection “OFF”. Setting is applied on storage tank with NTC sensor applications. See pages 7 and 8 for additional information	18ºF	(-)16ºF	54ºF	
28	Blocking time setting between a completed CH request for heat and a secondary request. Parameter setting is multipled by 10.2 seconds. See page 25 for additional information	03 x 10.2 sec.	00 x 10.2 sec.	30 x 10.2 sec.	
29	The time period of blocking the burner function of a secondary DHW request after a completion of the initial DHW request. Parameter setting is multipled by 10.2 seconds. See pages 11 and 12 for additional information	00 x 10.2 sec.	00 x 10.2 sec.	30 x 10.2 sec.	
30	The time period of blocking the burner function of a CH request after a completion of a DHW request. Parameter setting is multipled by 10.2 seconds. See pages 12 for additional information	00 x 10.2 sec.	00 x 10.2 sec.	30 x 10.2 sec.	
31	**Do Not Adjust this Parameter**	44			
32	**Do Not Adjust this Parameter**	(-)01			
33	Set value addition for DHW. This value is added to Parameter 1 to set the operating temperature of the Prestige during a DHW request. See pages 6 through 9 for additional information	46ºF	00ºF	54ºF	
34 (See WARNING Below)	Selection of CH application type based on the response for heat. Room thermostat, Outdoor temperature, external controller. See pages 15 through 18 for additional information	00	00	05	
35 (See WARNING Below)	Selection of the DHW application. Storage tank application with NTC sensor. Storage tank with aquastat control application. See pages 6 through 9 for additional information	13	00	29	

WARNING

Parameter 34 has multiple parameter settings available in addition to the settings 00,01, 04 and 05, which are outlined in detail in this supplement guide. DO NOT set Parameter 34 to any other setting other than 00, 01, 04 or 05. Failure to comply can result in erratic or unreliable operation of the Prestige boiler.

WARNING

Parameter 35 has multiple parameter settings available in addition to the settings 12 and 13, which are outlined in detail in this supplement guide. DO NOT set Parameter 35 to any other setting other than 12 or 13. Failure to comply can result in erratic or unreliable operation of the Prestige boiler.

Parameter	Description	Factory Setting	Minimum Setting	Maximum Setting	Adjusted Setting
36	**Do Not Adjust this Parameter**	(-)01			
37	**Do Not Adjust this Parameter**	41			
38	Boiler hold temperature setting. Maintains a minimum boiler temperature. See page 25 for additional information	32ºF	32ºF	176ºF	
39	**Do Not Adjust this Parameter**	122			
40	**Do Not Adjust this Parameter**	68			
41	**Do Not Adjust this Parameter**	10			
42	**Do Not Adjust this Parameter**	0			

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

MODULATING DELTA

- Heat and hot water in one footprint
- Up to 292 gph domestic hot water
- Completely piped and wired from the factory
- Zero clearance to combustibles
- Available in direct vent
- Limited LIFETIME warranty
- Exclusive “tank-in-tank” design

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

CERTIFIED ISO 9001 2000 STANDARD

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