Thermaco®

40000 Series Big Dipper®

Technical Support Instructions

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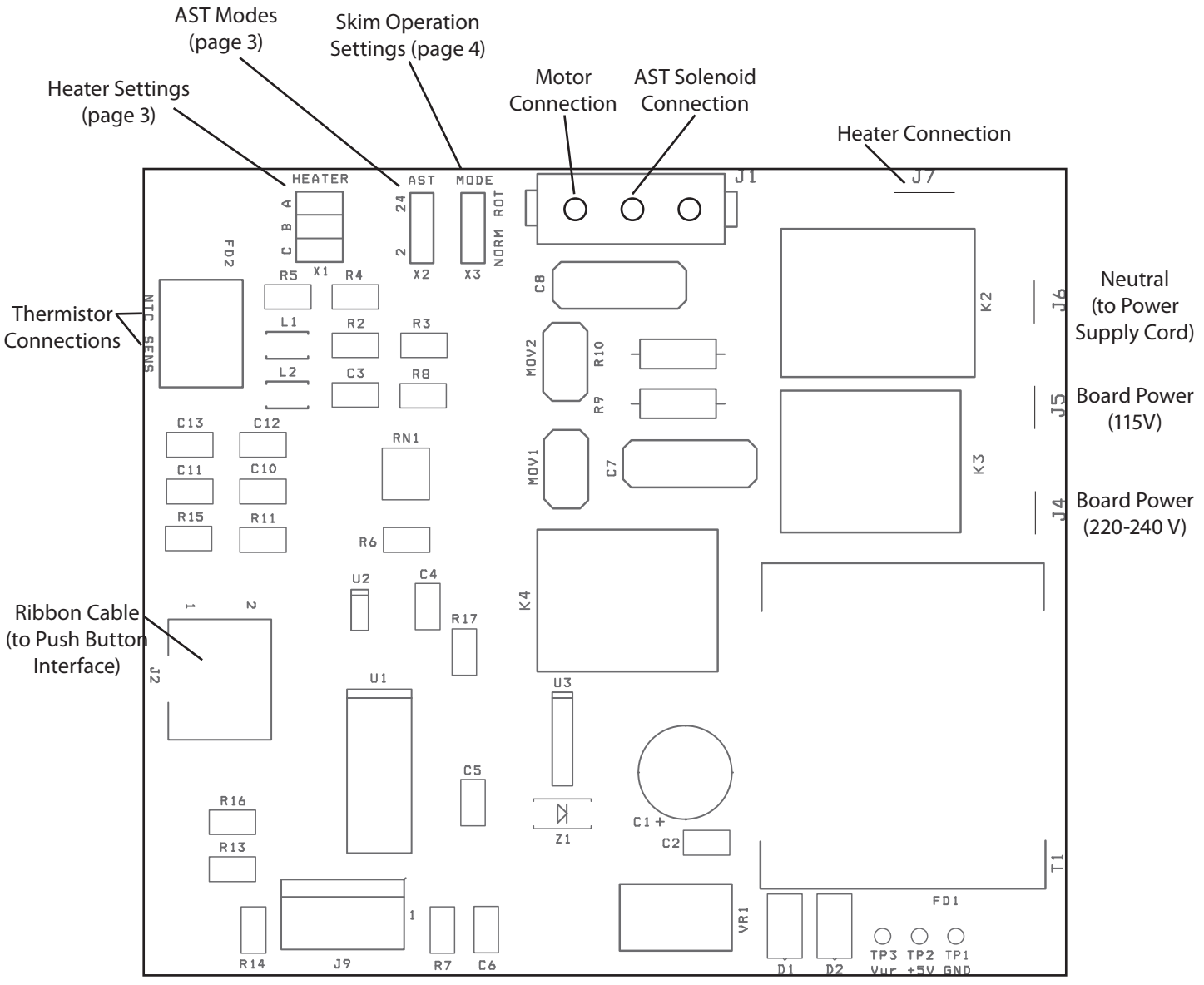
Board Diagram for 40000 Series Big Dipper

Printed Circuit Board

The 40000 Series Big Dipper uses a Digital Control Timer with pre-set skim times and frequencies hard programmed into a circuit board within the Center Lid Assembly. Below you will find a diagram of the board, standard settings for various modes and the procedures for changing these settings on the board.



Board Settings for 40000 Series Big Dipper

NOTICE:

This document contains information on changing the settings inside the Center Lid Assembly of a 40000 Series Big Dipper. **DISCONNECT POWER TO CENTER LID ASSEMBLY BEFORE MAKING CHANGES.**
Contact a Thermaco representative before making changes to settings.
Use needle nose pliers to remove and replace jumpers.

Heater Settings

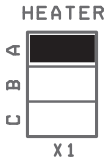
There are three separate options for heater operation in the 40000 Series Big Dipper. Settings are enabled by moving the jumper to the correct position on the jumper block marked HEATER.

Simultaneous Heat Operation (Standard)

Units Ship with jumper in Position B, which results in Simultaneous Heater Operation meaning the Heater will activate anytime the motor is engaged.

Fluid Preheat Operation

To activate Fluid Preheat setting, move jumper to Position C on the jumper block using needle nose pliers. In this setting, heater will activate prior to skim cycle, which will begin once the liquid temperature has reached 130° F or after a maximum of 2 hours has passed. The heater will continue to operate under Thermistor control until skim cycle is complete.

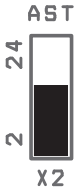


No Heater Operation

To deactivate heater, move jumper to Position A. In situations with low water turnover or grease production, a heater may not be necessary. Contact a Thermaco representative before deciding to deactivate heater operation.

AST Settings

The AST Settings only affect operation of the unit when the AST Solenoid is wired to the board. This comes standard in the AST line of Big Dipper Units and the setting chosen determines how often and for how long the AST function operates.



2 Hour Interval (Standard for W-750-AST and W-1250-AST Models)

In this setting, used with W-750-AST and W-1250-AST Models, the AST Feature will operate for 15 seconds every 2 hours, flushing incidental solids from the system. The jumper will be placed on the lower two jumper pins to activate this setting.

24 Hour Interval (Standard for W-250-AST)

In this setting, used with the W-250-AST, the AST Feature will operate for 10 seconds every 24 hours, flushing incidental solids from the system. The jumper will be placed on the upper two jumper pins to activate this setting.

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Board Settings for 40000 Series Big Dipper

Skim Operation Settings

There are two separate options for timer operation in the 40000 Series Big Dipper. Settings are enabled by moving the jumper to the correct position on the jumper block marked MODE.

Normal Time-Based Operation

IS and AST Big Dippers ship in Normal Timer Operation which includes both Default and Extreme Skim Modes with the jumper on the lower two pins closest to "NORM" on the jumper block.

Default Mode

Button Selected	Skim Time	Delay Between Skims*
Light (I)	15 Minutes	76 Hours
Moderate (II)	30 Minutes	19 Hours
Heavy (III)	60 Minutes	19 Hours

Extreme Mode**

Button Selected	Skim Time	Delay Between Skims*
Light (I)	90 Minutes	19 Hours
Moderate (II)	120 Minutes	19 Hours
Heavy (III)	120 Minutes	9.5 Hours

Rotisserie/Thermistor Operation

Big Dipper Models shipped with a Supplemental Water Supply (SWS) for use with Rotisseries and Combi-Ovens are preset in Rotisserie Mode with the jumper on the upper two pins closest to "ROT" on the jumper block. When this jumper position is selected, normal, time-based skimming is discontinued and operation is controlled by rises in temperature. When the temperature increases by 15° F or more, the skim cycle is immediately initiated. The skim time is determined by the mode selected and operates for the duration designated in the table below. Toggling between default and extreme modes is achieved by the same method described previously.

If no temperature change occurs during the setting's maximum delay between skims (see tables below), the Big Dipper reverts to operating in standby mode and operates at the preset skim frequency. If a Supplemental Water Supply (SWS) is used in conjunction with this mode, the SWS will operate whenever the motor is engaged.

Default Mode

Button Selected	Skim Time	Delay Between Skims*
Light (I)	30 Minutes	6 Hours
Moderate (II)	60 Minutes	6 Hours
Heavy (III)	90 Minutes	6 Hours

Extreme Mode**

Button Selected	Skim Time	Delay Between Skims*
Light (I)	30 Minutes	2 Hours
Moderate (II)	60 Minutes	2 Hours
Heavy (III)	90 Minutes	2 Hours

* Delay between Skims is the time from the start of the 1st skim to the start of the next skim. This is the maximum amount of time the unit will go between skims in Rotisserie Operation if a temperature change of 15° F or greater does not occur.

**Access Extreme Mode by interrupting power from unit (disengage safety switch or unplug from electrical socket) and then holding down Heavy (III) Button while resuming power supply to unit. To return to Default Mode, interrupt power and hold down Light (I) Button while supplying power.

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Board Settings Quick Reference Guide

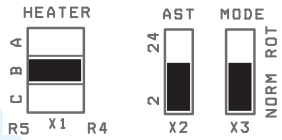
IS Unit Jumper Settings

At right are standard jumper settings for the Printed Circuit Board on the Internal Strainer Line of Big Dipper Units.

HEATER: Jumper on Position B for Silmutaneous Heat

AST: N/A

MODE (Skim Operation): Jumper on NORM for Normal Time-Based Operation



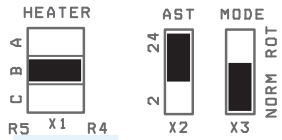
W-250-AST Jumper Settings

At right are standard jumper settings for the Printed Circuit Board on the W-250-AST.

HEATER: Jumper on Position B for Silmutaneous Heat

AST: Jumper on upper two pins; AST function operates 10 seconds every 24 hours

MODE (Skim Operation): Jumper on NORM for Normal Time-Based Operation



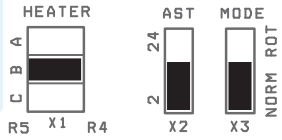
W-750-AST and W-1250-AST Jumper Settings

At right are standard jumper settings for the Printed Circuit Board on the W-750-AST and W-1250-AST.

HEATER: Jumper on Position B for Silmutaneous Heat

AST: Jumper on lower two pins; AST function operates 15 seconds every 2 hours

MODE (Skim Operation): Jumper on NORM for Normal Time-Based Operation



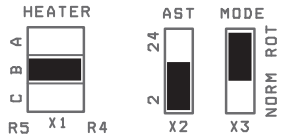
Rotisserie Operation Jumper Settings (for use with SWS)

At right are standard jumper settings for the Printed Circuit Board on Big Dipper units shipped with Supplemental Water Supplies for use with Rotisseries or Combi-Ovens.

HEATER: Jumper on Position B for Silmutaneous Heat

AST: N/A

MODE (Skim Operation): Jumper on ROT for Rotisserie/Thermistor Operation



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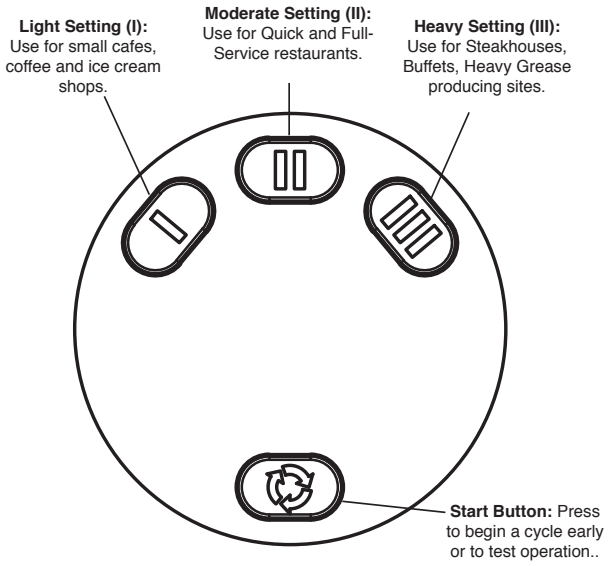
Light Codes for 40000 Series Big Dipper

Push Button Interface

Three separate silicone momentary contact buttons for Light (I), Moderate (II), and Heavy (III) skimming modes and a Start Button for testing and immediate operation. Built-in LED's behind buttons indicate mode chosen and blink during operation.



Startup

****Before applying power to unit, always make sure tank is full of water****

1. Upon applying power to the unit, all lights will activate for 1 second.
2. If the (I) Button blinks 4 times, the unit is operating in Default Mode.
3. If the (III) Button blinks 4 times, the unit is operating in Extreme Mode.
4. The last setting chosen will remain illuminated. See corresponding chart (page 4) to determine skim time and frequency chosen.

Operation

1. During a skim cycle, the skim setting will remain illuminated.
2. The Start Button will light up during a skim cycle.

Error Codes

In Error Code events, all four lights on the Push Button Interface will flash in one of the following sequences:

1. 3 Flashes - There is no information coming from the thermistor. Check to ensure the wire is properly connected to the board and there are no frays in the wires. If wiring is correct, replace thermistor.
2. 4 Flashes - The thermistor is reading an extremely high temperature inside the tank, meaning the water level inside the unit has dropped below the heater. Check to verify the tank is full of liquid and cycle power. If error code repeats despite the heater sitting in liquid, replace the thermistor.
3. 5 Flashes - There is a voltage out of range on the printed circuit board. Verify that all wiring connections are secure and there are no frayed wires inside the Center Module. If wiring is correct, printed circuit board (PCB-2) will need to be replaced.

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