Thermodyne®
FOODSERVICE PRODUCTS, INC.

150NDNL / 250NDNL INSTALLATION & OPERATION MANUAL

For additional information on Thermodyne Foodservice Products, Inc.,
or to locate an authorized parts and service provider in your area,
visit our website at www.tdyne.com.

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(03-19)

IMPORTANT FOR YOUR SAFETY

THIS MANUAL HAS BEEN PREPARED FOR PERSONNEL QUALIFIED TO INSTALL ELECTRICAL EQUIPMENT, WHO SHOULD PERFORM THE INITIAL FIELD STARTUP AND ADJUSTMENTS OF THE EQUIPMENT COVERED BY THIS MANUAL.

This manual covers the Oven Controller circuit board and Application supplied by Thermodyne Foodservice Products, Inc. **only**. Refer to the manufacturer's manual for information on any other equipment. Do not attempt any service or maintenanece without consulting **all** manufacturer manuals.

READ THIS MANUAL THOROUGHLY BEFORE OPERATING, INSTALLING OR PERFORMING MAINTENANCE ON THE EQUIPMENT.

⚠ WARNING: Failure to follow all the instructions in this manual can cause property damage, injury or death.

⚠ WARNING: Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death.

⚠ WARNING: Electrical connections should be performed only by a certified professional.

⚠ WARNING: Electrical and grounding connections must comply with the applicable portions of the National Electric Code and/or all local electric codes. Failure to comply with this procedure can cause property damage, injury or death.

⚠ WARNING: Before connecting the unit to the electrical supply, verify that the electrical and grounding connections comply with the applicable portions of the National Electric Code and/or other local electrical codes. Failure to comply with this procedure can cause property damage, injury or death.

⚠ WARNING: Before connecting the unit to the electrical supply, verify that the electrical connection agrees with the specifications on the data plate. Failure to comply with this procedure can cause property damage, injury or death.

⚠ WARNING: UL73 grounding instructions: This appliance must be connected to a grounded, metal, permanent wiring system. Or an equipment-grounding conductor must be run with the circuit conductors and connected to the equipment-grounding terminal or lead on the appliance. Failure to comply with this procedure can cause property damage, injury or death.

⚠ WARNING: Appliances equipped with a flexible electric supply cord, are provided with a three-prong grounding plug. It is imperative that this plug be connected into a properly grounded three-prong receptacle. Failure to comply with this procedure can cause property damage, injury or death.

⚠ WARNING: If the receptacle is not the proper grounding type, contact an electrician. Do not remove the grounding prong from the plug. Failure to comply with this procedure can cause property damage, injury or death.

⚠ WARNING: Before performing any service that involves electrical connection or disconnection and/or exposure to electrical components, always perform the Electrical LOCKOUT/TAGOUT Procedure. Disconnect all circuits. Failure to comply with this procedure can cause property damage, injury or death.

⚠ WARNING: Before removing any sheet metal panels or servicing this equipment, always perform the Electrical LOCKOUT/TAGOUT Procedure. Be sure all circuits are disconnected. Failure to comply with this procedure can cause property damage, injury or death.

⚠ WARNING: Do not operate this equipment without properly placing and securing all covers and access panels. Failure to comply with this procedure can cause property damage, injury or death.

⚠ WARNING: Do not use or store gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance. Failure to comply can cause property damage, injury or death.

⚠ WARNING: In the event of a power failure, do not attempt to operate this appliance. Failure to comply can cause property damage, injury or death.

CAUTION: These models have glass doors. Remove carton carefully.

FOR YOUR SAFETY

DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS OR LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE. FAILURE TO COMPLY CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

TABLE OF CONTENTS

GENERAL INFORMATION

UNPACKING

NOTE: All Thermodyne cabinets are factory tested for performance and certified free from defects.

Thermodyne Damaged Goods Policy

There are two types of damaged merchandise: A.Visible Damage and B. Concealed Damage.

A. Visible Damage: The product being received is visibly damaged.

1. The receiver should refuse the damaged merchandise.
2. Receiver should sign the bill of lading indicating which merchandise is being refused due to damage.
3. Contact Thermodyne Customer Service Representatives immediately.

B. Concealed Damage: Damaged merchandise cannot be externally detected.

Your receiving operation should inspect for this type of damage. Please inspect your delivery carefully.

If the product is damaged:

1. Save all packing material.
2. Contact Thermodyne Customer Service Representatives immediately.
3. Receiver must call the carrier to schedule an inspection of the damaged merchandise within 5 business days.

INSTALLATION CODES AND STANDARDS

In the United States, the Thermodyne cabinet must be installed in accordance with:

1. State and local codes.
2. National Electrical Code (ANSI/NFPA No. 70, latest edition) available from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

In Canada, the cabinet must be installed in accordance with:

1. Local codes.
2. Canadian Electrical Code (CSA C22.2 No. 3, latest edition) available from the Canadian Standards Association, 5060 Spectrum Way, Mississauga, Ontario, Canada L4W 5N6.

INSTALLATION

Before installing, verify the required electrical supply agrees with the specifications on the data plate located on the back or side of the unit. If the supply and equipment requirements do not agree, do not proceed with installation. Contact your dealer or Thermodyne Foodservice Products, Inc. immediately.

CAUTION

Use leather work gloves and safety glasses when unpacking. Be aware of sharp edges and banding material.

1. Allow ample overhead clearance for removal of carton.
2. Cut nylon banding.
3. To remove cabinet from carton, slide carton up and off the cabinet.
4. Check packing list against items received:
   A. Thermodyne Heat Transfer Fluid.
   B. Installation & Operation Manual.
5. Use proper lifting equipment to raise the cabinet.
6. Set cabinet on a level surface.

OPERATION

OVEN CONTROLLER

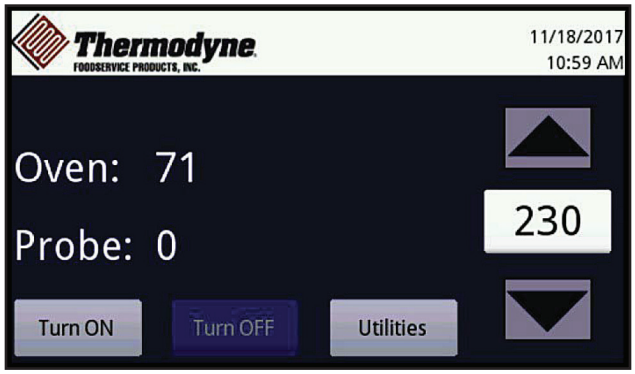
SYSTEM DESCRIPTION

The Oven Controller is designed to provide a complete embedded system to run the different oven configurations manufactured at Thermodyne. The Oven Controller provides a simple, yet powerful user friendly LCD display with touch screen interface to start, stop, and program cooking recipes. Along with stored recipes, the Oven Controller contains a WiFi chip that allows the Oven Controller to upload and download recipes and control the oven remotely.

MAIN OPERATOR INTERFACE

The operator interface panel contains a number of control switches and indicators. These are explained as follows:

Oven Controller Main Screen:



Oven Controller Main Screen

This screen is main view of all operations that occur during the operation of the oven.

This screen shows the date/time, the temperature of the oven/shelf and food probe if connected.

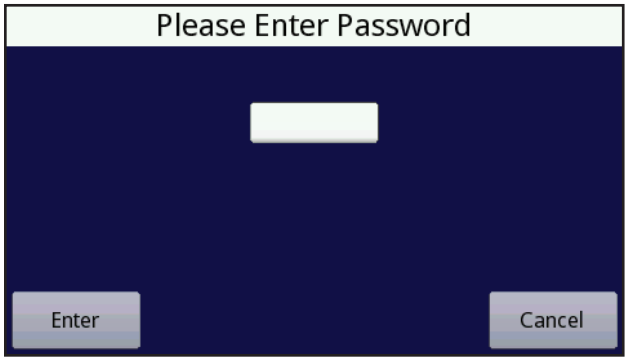
- The temperatures that are displayed are the current temperature of the oven/shelf and probe.
- Touching the "**Turn ON**" button will turn the unit on.
- Touching the "**Turn OFF**" button will turn the unit off.
- Touching the "**UP**" and "**DOWN**" arrow buttons will adjust the temperature of the unit.
- Touching the "**Utilities**" button will display the Oven Utilities screen once the correct password has been entered.

Using Your Thermodyne Unit

1. To start your Thermodyne unit, simply press the toggle switch to the "ON" position.
2. Wait approximately 10 seconds for the unit to boot up, then press the "**Turn ON**" button located in the lower left corner of the controller.
3. You can now set the temperature.
   - Use the "**UP**" (▲) arrow to set the maximum temperature of 60 °F (Chill Mode) or 230 °F (Heat Mode).
   - Use the "**DOWN**" (▼) arrow to set the lowest temperature of 34 °F (Chill Mode) or 60 °F (Heat Mode).

UTILITY SCREENS

Password Screen:



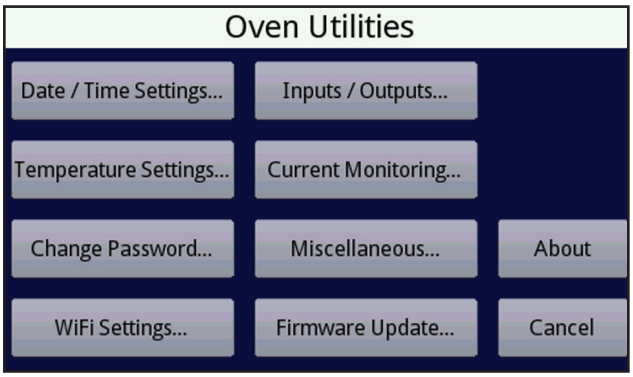
Password Screen

When the "**Utilities**" button is selected from the Main screen, the user will be presented with the Password Entry screen. Enter the password and select the "**Enter**" button. If the password is correct, the Oven Utilities screen will be displayed. If the password is incorrect, then the user will be returned to the Main screen.

The default password for the oven is: 1514.

- The "**Enter**" button will validate the entered password and allow the user to view the Oven Utilities screen.
- The "**Cancel**" button will return to the previous screen without performing any actions.

Oven Utilities Screen:



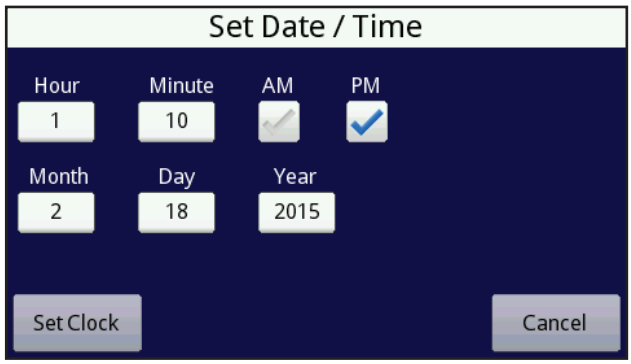
Oven Utilities Screen

This screen is a menu of options that can be performed. These options are designed to be startup configuration and troubleshooting screens that once the oven is operational should not need to be accessed.

- The "**Set Date / Time**" button will allow the user to set the date and time of the oven. When this button is selected a pop up screen will indicate to the user that setting the date and time will result in rebooting the system.
- The "**Temperature Options**" button will allow the user to perform temperature based operations on the oven. These include: setting temperature offsets, setting the display mode of temperatures in degrees F or C, and monitoring the temperature sensors if there is a problem.
- The "**Change Password**" button will allow the user to change the default password to a new password.
- The "**Network Options**" button will allow the user to perform network based operations on the oven. These include: enabling WiFi on the oven, setting addresses, monitoring network status, etc.
- The "**Set Outputs**" button will allow the user to change the state of the outputs of the oven to aid in troubleshooting problems with the oven. **THIS OPTION SHOULD ONLY BE ACCESSED BY A TRAINED TECHNICIAN! FAILURE TO HEED THIS WARNING WILL RESULT IN VOIDING OF THE OVENS WARRANTY.**
- The "**Miscellaneous**" button will allow to change oven settings that don't have a specific category they fit in.

- The "**About**" button will display information about the oven.
- The "**Cancel**" button will return to the previous screen without performing any actions.

Set Date / Time Screen:



Set Date / Time Screen

This screen will allow setting the date and time of the ovens clock. Simply touch the fields and enter the appropriate values and select the "**Set Clock**" button.

- **Hour** – This field will contain the hour of the system clock. Valid hour range is: 1 to 12 hours.
- **Minute** – This field will contain the minutes of system clock. Valid minute range is: 0 to 59 minutes.
- **AM / PM** – Corresponds to the hours of the system clock.
- **Month** – This field will contain the month of the system clock. Valid month range is: 1 to 12 months.
- **Day** – This field will contain the day of the system clock. Valid day range is: 1 to 24 hours.
- **Year** – This field will contain the year of the system clock. Valid year range is: 2015 and up.
- The "**Set Clock**" button will set the date and time of the oven and cause it to reboot. The reboot is necessary due to the timing functions of the oven controller.
- The "**Cancel**" button will return to the previous screen without performing any actions.

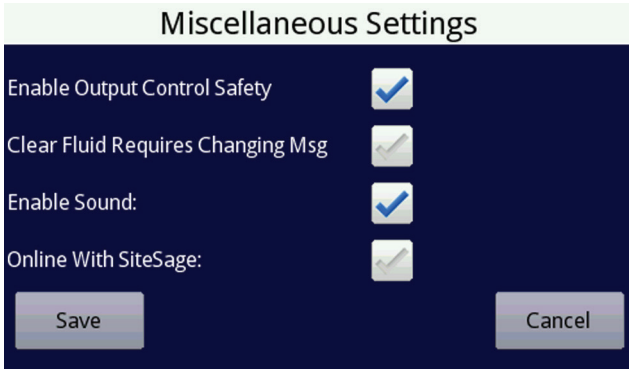
Change Password Screen:

Change Password Screen

This screen will allow the changing of the password that allows access to the Utilities screen. Touching the password field will cause a keyboard to be displayed. Simply enter the new password. This can be any combination of letters and numbers. Blank passwords and passwords containing spaces are not acceptable and the oven will ask to re-enter a different password.

- The "**Save Setting**" button will store the new password and return to the previous screen.
- The "**Cancel**" button will return to the previous screen without performing any actions.

Miscellaneous Screen:



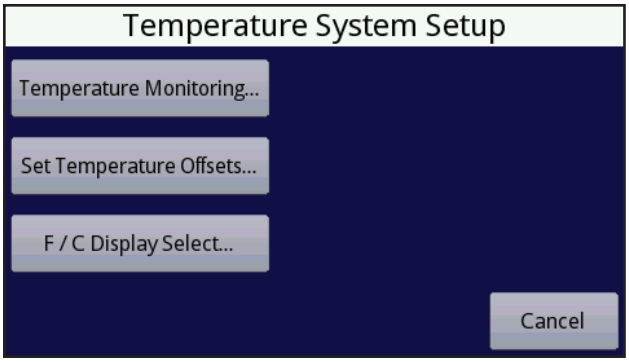
Miscellaneous Settings Screen

This screen is designed to show different settings of the oven that don't have a specific category they fit in.

- The "**Enable Output Control Safety**" checkbox (default is checked) will cause the outputs screen to revert the state of the outputs back to their default setting after a 30 second timeout. Unchecking this box will cause the 30 second timer to be bypassed thus allowing the output to be left on indefinitely (extremely dangerous).
- The "**Clear Fluid Requires Changing Msg**" checkbox will cause the controller to clear displaying the Fluid Requires Changing message for another year. The user is responsible for changing the fluid before setting this checkbox.
- The "**Enable Sound**" checkbox will enable the sound when touching buttons if checked.
- The "**Online With SiteSage**" checkbox will only indicate that the smart controller is communicating with the SiteSage controller. This is only a feedback mechanism and placing a check in the checkbox will **NOT** enable the communications.
- The "**Save**" button will save the setting changes made on this screen.
- The "**Cancel**" button will return to the previous screen.

TEMPERATURE SYSTEM

Temperature Options Screen:

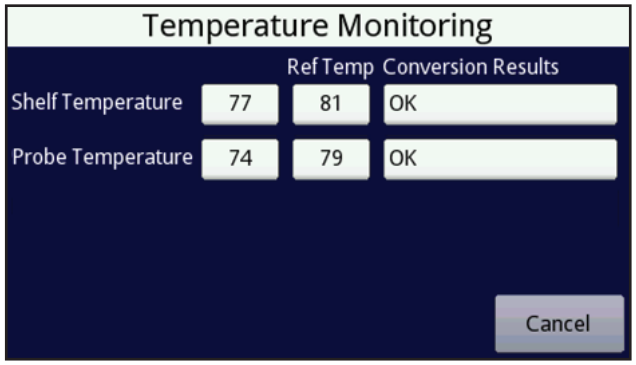


Temperature Options Screen

This screen is a menu of options that can be performed on the temperature system.

- The "**Temperature Monitoring**" button will allow the user to view the state of the temperature sensors in the oven.
- The "**Set Temperature Offsets**" button will allow the user to change the raw temperature reading to a reading that is adjusted after a temperature calibration has been performed.
- The "**F / C Display Select**" button will allow the user to change the displaying of the temperatures in degrees F or C.
- The "**Cancel**" button will return to the previous screen without performing any actions.

Temperature Monitoring Screen:

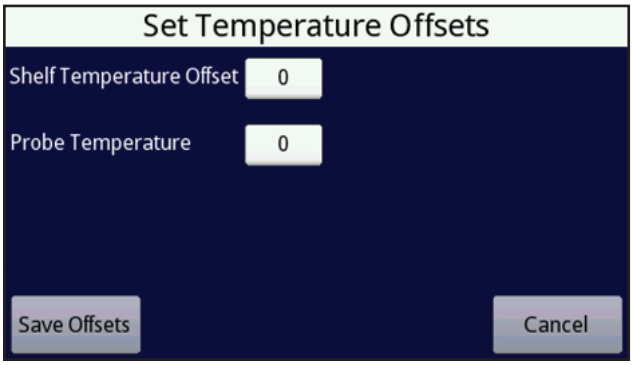


Temperature Monitoring Screen

This screen will display the temperatures of the different sensors in the oven in real time. This will aid in troubleshooting problems related to the temperature sensors. The sensors monitored are: shelf and food probe.

- The first column displays the actual temperature of the sensor (+- the temperature offset set in the **Temperature Offsets** screen.
- The second column displays the reference temperature of the sensor chip on the circuit board.
- The third column displays the results of the conversion of the temperature sensor.
  - **OK** – Temperature conversion successful
  - **OPEN CIRCUIT** – Temperature sensor has a loose or broken lead.
  - **SHORT TO GROUND** – One of the temperature sensor leads is touching ground.
  - **SHORT TO VCC** – One of the temperature sensor leads is touching +3 to +5VDC.
  - **NO SENSOR DETECTED** – The temperature sensor is not present or the conversion chip has failed.
  - **READING OUT-OF-RANGE** – The temperature sensor has gone bad and causing an invalid reading to be generated.
- The "**Cancel**" button will return to the previous screen without performing any actions.

Set Temperature Offsets Screen:

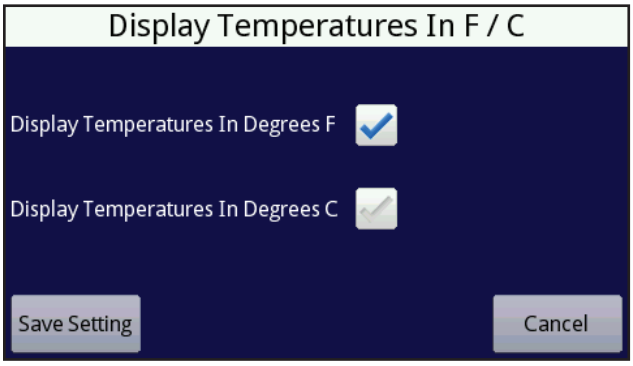


Set Temperature Offsets Screen

This screen will display the offsets of the different sensors in the oven. This screen will allow changing the fine tuning of the factory calibrated temperature readings. This is accomplished by adding or subtracting an offset value to correct the temperature reading. **THIS OPTION SHOULD ONLY BE ACCESSED BY A TRAINED TECHNICIAN! FAILURE TO HEED THIS WARNING WILL RESULT IN VOIDING OF THE OVENS WARRANTY.**

- The first column displays the actual offset value for the temperature sensor. Valid range is: -100 to 100.
- The "**Save Offsets**" button will store the offsets and return to the previous screen.
- The "**Cancel**" button will return to the previous screen without performing any actions.

Display Temperatures In F / C Screen:



Display Temperatures In F / C Screen

This screen will allow the selection of displaying temperatures in degrees F or C.

- The "**Save Setting**" button will store the selection and return to the previous screen.
- The "**Cancel**" button will return to the previous screen without performing any actions.

WIFI NETWORKING SYSTEM

Network Options Screen:

Network Options Screen

This screen is a menu of options that can be performed on the network WiFi system.

- **WiFi Enabled** – This checkbox will enable or disable the WiFi networking subsystem. Once enabled the other WiFi buttons on this screen will become enabled and allow access.
- The "**Setup A WiFi Connection**" button will allow setting up a new WiFi connection either automatically or manually.
- The "**View Remote Access Status**" button will allow viewing the current state of the WiFi connection to the internet.
- The "**Registration Info**" button will allow the viewing of the data that is used to register the oven with Thermodyne's servers.
- The "**Advanced Settings**" button will allow the setting up of advanced network settings in accessing the internet.
- The "**Cancel**" button will return to the previous screen without performing any actions.

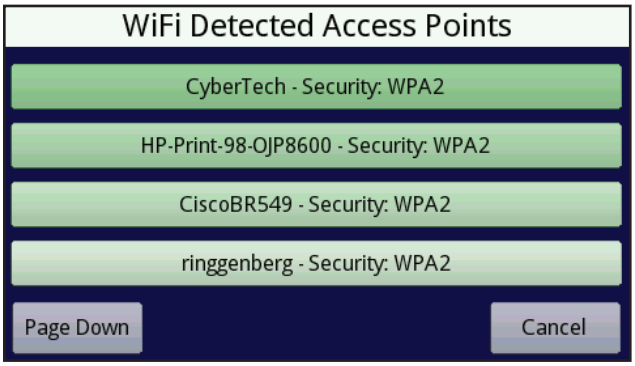
Setup A WiFi Connection Screen:

Setup A WiFi Connection Screen

This screen is a menu of options that can be performed on setting up a new WiFi connection to the internet.

- The "**Scan For Available Access Points**" button will allow automatically scanning for WiFi access points that may be used by the oven for internet access.
- The "**Manual Access Point Setup**" button will allow the manually configuring of a WiFi connection to the internet.
- The "**Cancel**" button will return to the previous screen without performing any actions.

Scan For Available Access Points Screen:



Scan For Available Access Points Screen

This screen is a list of WiFi access points that will be populated automatically by the system. The list is populated with the strongest signal at the top to the weakest. Select the access point by touching it and the Manual Settings screen will be displayed where the WiFi Security Key may be entered.

- The "**Page Down**" button will show the continued list of access points (if more than 4 are seen by the WiFi system).
- The "**Cancel**" button will return to the previous screen without performing any actions.

Manual WiFi Setup Screen:

Manual WiFi Setup Screen

This screen will display the network connection data if the access point was selected from the **Scan For Available Access Points** screen or it will be empty if accessed from the **Manual Access Point Setup** screen. The Network SSID and WiFi Security fields on the screen will be grayed out if the screen was accessed from the scanning screen.

NOTE: The setting up of the WiFi networking on the oven requires knowledge of wireless networking and should be performed by a qualified person.

- **Network SSID** – (Service Set Identification "access point name") This field contains the name of the access point if selected from the scanning screen. If entered as a manual setup this field will be empty. Enter the name of the access point that the oven controller should connect too in this field. Access Point names are case sensitive.
- **WiFi Security** – This field contains the type of security of the access point if selected from the scanning screen. If entered as a manual setup this field will be empty. Select the security type that the access point requires.
- **WiFi Security Key** – This field is used to enter the access point's security key to gain access to the network. This field will be blank when this screen is displayed for security purposes. Touch this field and enter the security key. Security keys are case sensitive.
- The "**Connect**" button will display the **WiFi Connecting Status** screen and use the settings that have been entered on this screen to connect to the access point.
- The "**Cancel**" button will return to the previous screen without performing any actions.

WiFi Connecting Status Screen:

WiFi Connecting Status Screen

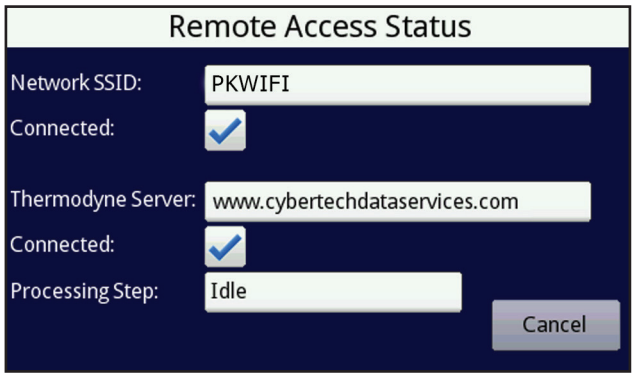
This screen will display the status of the oven controller when attempting to connect to the configured access point. The screen will display the access points name and the current connecting status. If the connection to the access point is successful the screen will display "**Connected**". If the connection to the access point fails the screen will display "**Failed To Connect**".

NOTE: The process of connecting to an access point can take several minutes to complete.

- The "**Retry**" button will be enabled if the connection to the access point fails and will return to the **Manual WiFi Setup** screen to allow changing of the connection parameters.
- The "**Continue**" button will save the current WiFi settings and display the **WiFi Setup** screen.

NOTE: Once the oven controller has been successfully connected and the continue button is pressed the oven will pop up a message box indicating that it needs to be rebooted to fully enable the WiFi subsystem. Clicking the "**OK**" button will cause the system to reboot.

View Remote Access Status Screen:

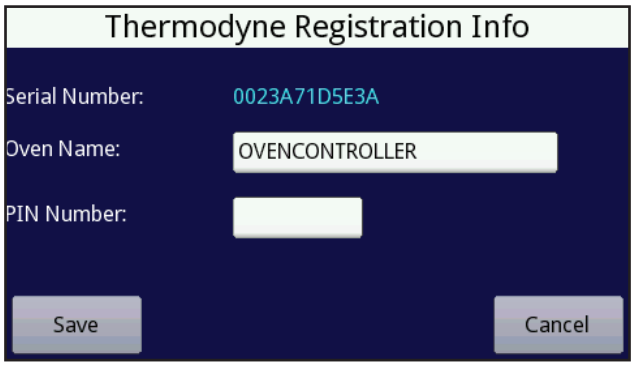


View Remote Access Status Screen

This screen will display the current status of the WiFi connection to the configured access point and the Thermodyne server. This screen will update every 250ms to show detailed "**Processing Step**" data when interacting with the Thermodyne server.

- **Network SSID** – (Service Set Identification "access point name") This field contains the name of the access point.
- **Connected** – Indicates the connection status to the access point. A blue checkmark indicates the oven controller is connected to the access point.
- **Thermodyne Server** – This field contains the web address name of the Thermodyne server.
- **Connected** – Indicates the connection status to the Thermodyne server. A blue checkmark indicates the oven controller is connected to the Thermodyne server.
- **Processing Step** – This field contains the current step in the processing messages sent to the Thermodyne server. This is a diagnostic tool that a technician can use to troubleshoot connection issues.
- The "**Cancel**" button will return to the previous screen without performing any actions.

Registration Info Screen:

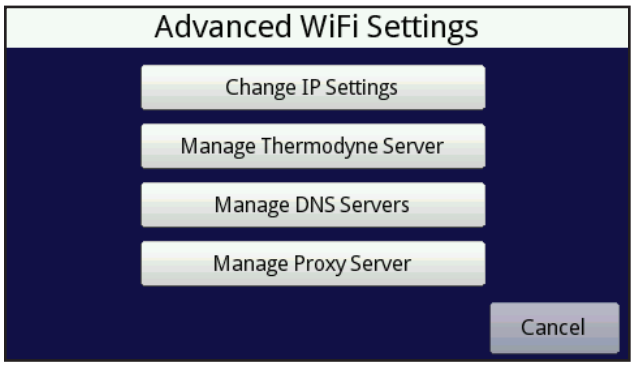


Registration Info Screen

This screen will display the registration information for the oven controller to connect Thermodyne server. This screen will allow the user to enter a special PIN number that becomes a password for the user to access the oven from the Thermodyne mobile application.

- **Serial Number** – This is the unique number that identifies this specific oven to the Thermodyne server. No two ovens have the same serial number.
- **Oven Name** – Allows the user to change the name of the oven. This can be helpful if multiple ovens are at the same site and the user wants to give them unique names.
- **PIN Number** – This field contains the user entered number that acts like a password on the mobile application to access the oven remotely. This can be any combination of letters and numbers.
- The "**Save**" button will save the oven name and PIN number before returning to the previous screen.
- The "**Cancel**" button will return to the previous screen without performing any actions.

Advanced Settings Screen:

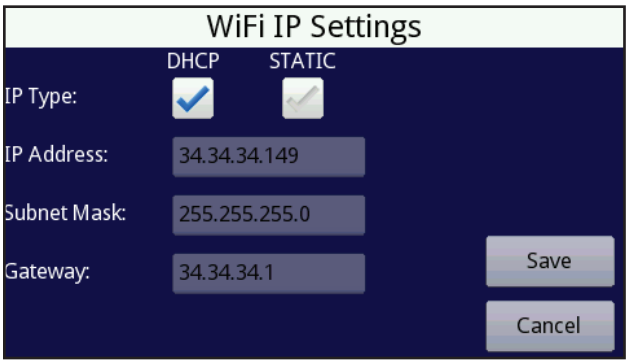


Advanced Settings Screen

This screen is a menu of advanced WiFi options that can be performed on setting up a WiFi connection to the internet.

- The "**Change IP Settings**" button will allow the user to change the TCP/IP settings of the oven controller.
- The "**Manage Thermodyne Server**" button will allow the user to change the address of the Thermodyne server that the oven controller communicates with.
- The "**Manage DNS Servers**" button will allow the user to change the DNS address of the WiFi subsystem to aid in the connecting to the internet.
- The "**Manage Proxy Server**" button will allow the user to configure the WiFi subsystem to communicate to the Thermodyne server via a Proxy server.
- The "**Cancel**" button will return to the previous screen without performing any actions.

Change IP Settings Screen:

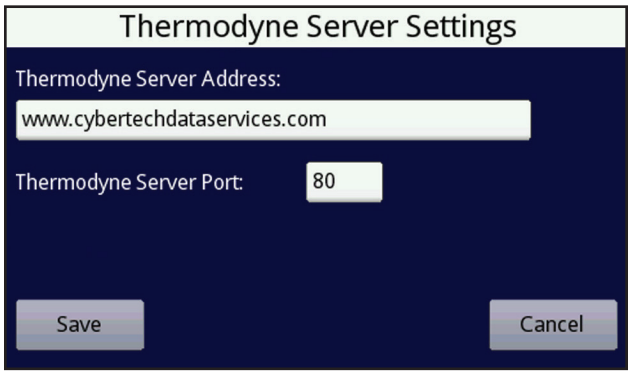


Change IP Settings Screen

This screen will allow the user to change the TCP/IP setting from **DHCP** to **Static** or **Static** to **DHCP**. If the settings are Static, the user will be able to enter the IP address, Subnet Mask, and Gateway manually if **DHCP** is not an option with the available access point.

- **IP Type** – Can be DHCP (Dynamic Host Control Protocol) where the access point gives the oven its IP address. Static indicates that the user wants to set the address manually.
- **IP Address** – Displays the TCP/IP address that the DHCP access point has given to the oven controller. This field will be grayed out in DHCP mode. In Static mode this field can be changed by the user to specify the address the oven controller should use.
- **Subnet Mask** – This field contains the mask that the access point requires to access the internet. This field will be grayed out in DHCP mode. In Static mode this field can be changed by the user to specify the mask the oven controller should use.
- **Gateway** – This field contains the TCP/IP address of the access point. This field will be grayed out in DHCP mode. In Static mode this field can be changed by the user to specify the TCP/IP address the oven controller should use.
- The "**Save**" button will save the configuration parameters, reconfigure the WiFi subsystem to use the new settings, and then return to the previous screen.
- The "**Cancel**" button will return to the previous screen without performing any actions.

Manage Thermodyne Server Screen:

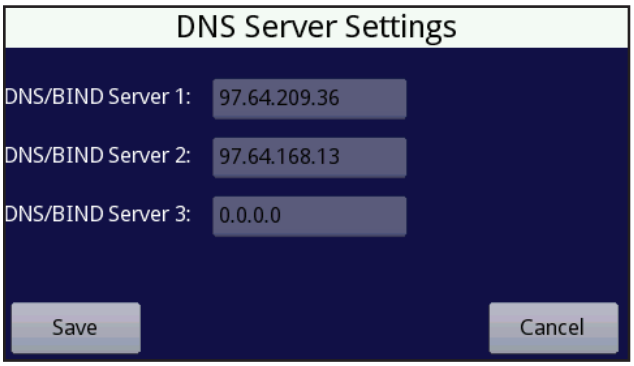


Manage Thermodyne Server Screen

This screen will allow the user to change the Thermodyne server that the oven controller communicates with.

- **Overwrite Defaults** – Allows overwriting of the defaults if YES is selected.
- **Thermodyne Server Address** – The actual web address of the Thermodyne server that the oven uses communicate with.
- **Thermodyne Server Port** – This field contains the port of the Thermodyne server that the oven controller needs to communicate through.
- The "**Save**" button will save the configuration parameters, reconfigure the WiFi subsystem to use the new settings, and then return to the previous screen.
- The "**Cancel**" button will return to the previous screen without performing any actions.

Manage DNS Servers Screen:

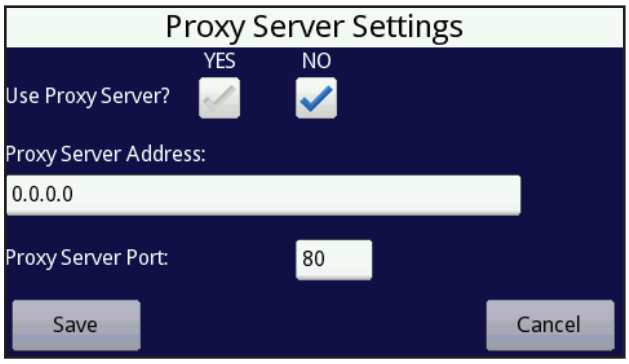


Manage DNS Servers Screen

This screen will allow the user to change the DNS address that the oven controller must use to resolve the Thermodyne server address that the oven controller communicates with. If the IP Settings are in DHCP mode, these fields will be grayed out (disabled). If the IP Settings are in Static mode, these fields will be enabled and allow the user to change.

- **DNS/BIND Server 1** – First DNS server that should be used to resolve the Thermodyne server web address.
- **DNS/BIND Server 2** – Second DNS server that should be used to resolve the Thermodyne server web address if the first address fails.
- **DNS/BIND Server 3** – Third DNS server that should be used to resolve the Thermodyne server web address if the first two addresses fail.
- The "**Save**" button will save the configuration parameters, reconfigure the WiFi subsystem to use the new settings, and then return to the previous screen.
- The "**Cancel**" button will return to the previous screen without performing any actions.

Manage Proxy Server Screen:

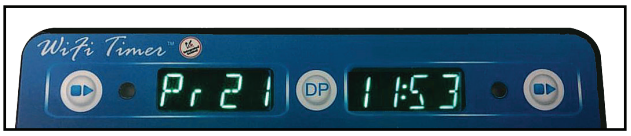


Manage Proxy Server Screen

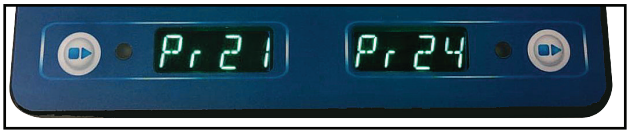
This screen will allow the user to change how the oven controller gets to the internet to communicate with the Thermodyne server.

- **Use Proxy Server** – Allows the setting of the proxy server address if YES is selected.
- **Proxy Server Address** – The actual address of the proxy server that the oven uses communicate with. This is normally a TCP/IP address.
- **Proxy Server Port** – This field contains the port of the proxy server that the oven controller needs to communicate through.
- The "**Save**" button will save the configuration parameters, reconfigure the WiFi subsystem to use the new settings, and then return to the previous screen.
- The "**Cancel**" button will return to the previous screen without performing any actions.

TIMER



Two Channel, Front Timer



Two Channel, Back Timer

Configuration:

- Two Channel, Front and Back, Timer. (Two items timing at once.)
- Four (4) character Alphanumeric Display.
- Multi-Color LED.
- Daypart Switch with three (3) Dayparts.
- Alarm.
- WiFi Radio for product programming.

Description:

The Two (2) Channel, Front and Back Timer is an easy to use Timer that is mounted to a Product Holding Cabinet and will display two (2) Timing Slots for Products in Holding. There are two (2) Displays for two-sided operation and viewing. Timer is programmed through WiFi and a Smart device, laptop or tablet.

A four (4) character Alphanumeric Display, multi-color LED, and Sounder are used to communicate to the operator what product is timing and time remaining on that product and slot.

Timer can be started and stopped from either side.

The Timer can display three (3) Dayparts for a total of two (2) products per Daypart. Daypart can be selected from the "**DP**" Button located between two (2) Timer Buttons on either display.

Timer Display:

The four (4) character Alphanumeric Display will alternate between Product Name and Time Remaining for that product.

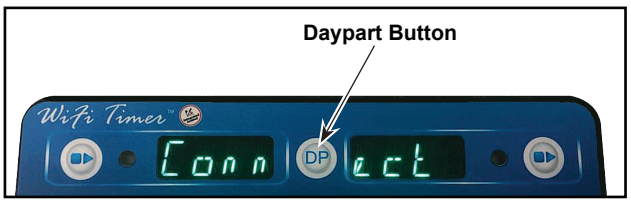
Button Functions:

Timer Button: **Press** one (1) Timer Button to "**START**" Timer. When Timer is active, **Press** one (1) Timer Button to "**STOP**" Timer.

Daypart Button: **Press** the Daypart Button to change between Daypart Products and Holding Profile.

Daypart Function:

Timer can switch between three (3) Dayparts to account for Product Names and Timing Profiles for Breakfast, Lunch and Dinner. Each Timer has a button between both Timing Buttons which controls Daypart. A total of six (6) products can be programmed into the Timer.



Daypart Button Location

LED Indicator:

Blank LED: Product is NOT timing.

Green LED: Product is timing.

Flashing Green LED: Product Hold Time is within the Cook Time and nearing expiration.

Flashing Red with Alarm: Product is expired.

Press Timer Button once to "**STOP**" Timer flashing and sounding.

First In / First Out Protocol

First Pan:

- **GREEN LED**: Product is timing.
- **Flashing GREEN LED**: Product Hold Time is within the 5 minute "**WARNING**".
- **Flashing RED LED and Sounding Alarm**: Product has expired.

Second Pan when First Pan is live:

- **RED LED**: Product is timing.
- **Flashing YELLOW LED**: Product Hold Time is within the 5 minute "**WARNING**".
- **Flashing RED LED and Sounding Alarm**: Product has expired.

Second Pan when First Pan is expired or emptied:

- **GREEN LED**: Product is timing.
- **Flashing GREEN LED**: Product Hold Time is within the 5 minute "**WARNING**".
- **Flashing RED LED and Sounding Alarm**: Product has expired.

Programing Product Name and Hold Time via WiFi:

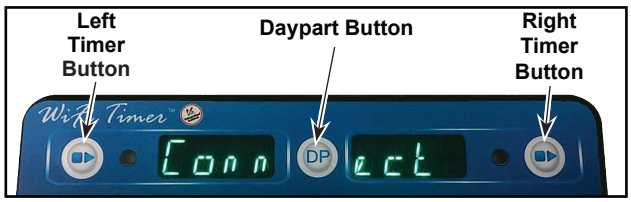
Link Timer to Smart Device or Laptop

1. Identify the side of the Timer with the Daypart Button in the middle of the two (2) Timer Buttons.

   Press and **Hold** the Left Timer Button followed by the Right Timer Button the display will show

   "**Connect**."

   Press either Right or Left Timer Button to Exit "**Connect**" Command.

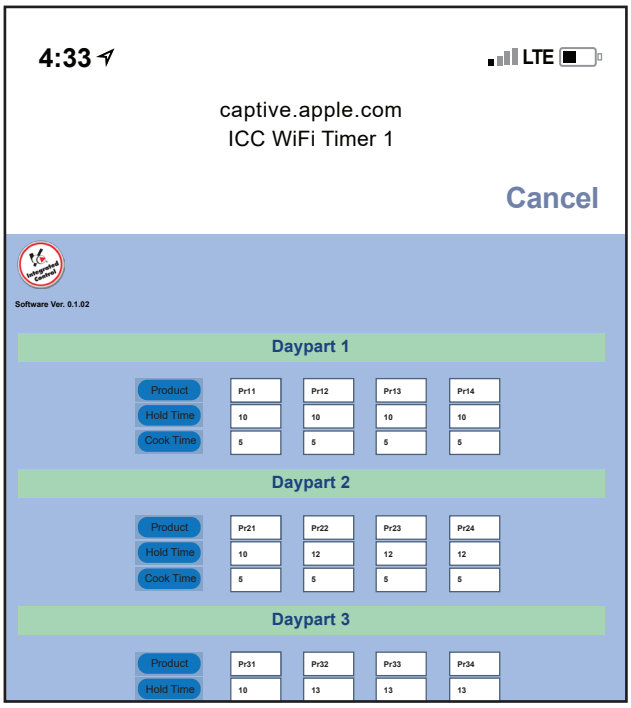


Two Channel, Front Timer

2. On a Smart device, tablet or laptop find the WiFi Search Interface, go to List of Available WiFi Sources and select "**ICC WiFi Timer1**".
3. Once device connects to "**ICC WiFi Timer1**" a Splash Page will appear.

Note: If using an android device and splash page does not appear, see below.

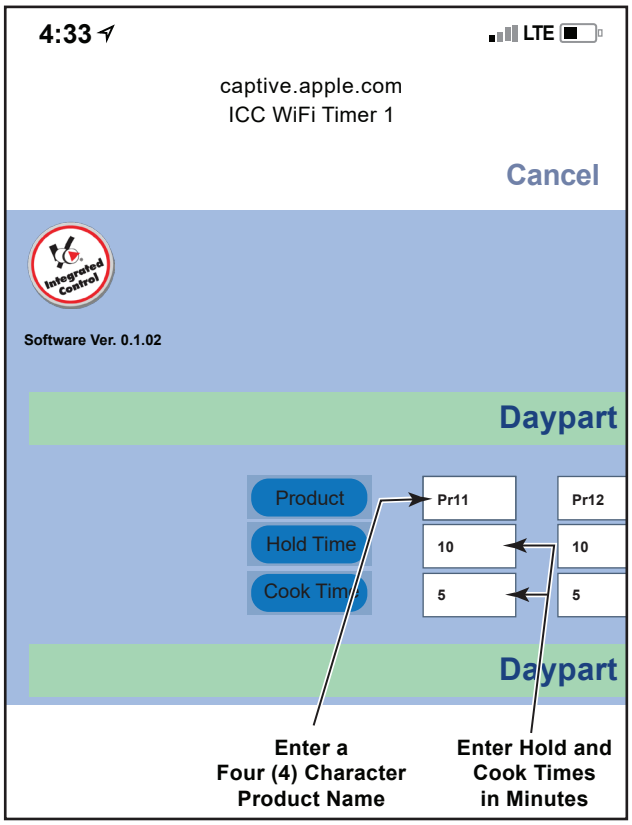
Go to Settings > Select the "ICC WiFi Timer1" > See the "Go to Web Page" and Select the IP Address > and Splash Page will appear.



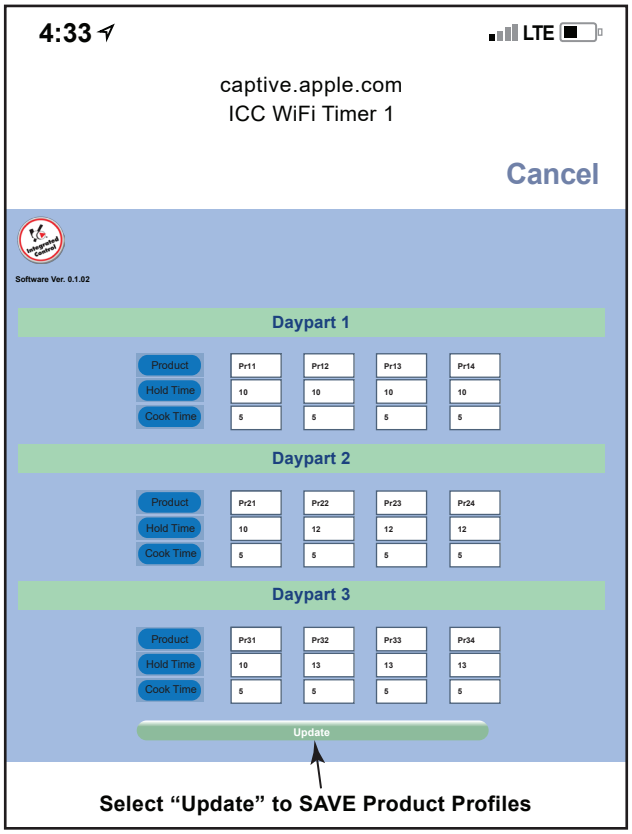
IP Address Splash Page

Program Product Name and Hold Time:

1. **Select** the "**Text Box**" for the product in the desired Daypart.
2. "**Enter**" in the four (4) character Name, Hold Time and Cook Time in minutes.
3. "**Click**" the "**Update**" bar on the bottom of the page.



Product Name, Hold and Cook Time Location



Save Product Profiles

ELECTRICAL LOCKOUT/TAGOUT PROCEDURE

***WARNING*: Before performing any service that involves electrical connection or disconnection and/or exposure to electrical components, always follow the Electrical LOCKOUT/TAGOUT Procedure. Disconnect all circuits. Failure to comply can cause property damage, injury or death.**

The Electrical LOCKOUT/TAGOUT Procedure is used to protect personnel working on an electrical appliance. Before performing any maintenance or service that requires exposure to electrical components, follow these steps:

1. In electrical box, place appliance circuit breaker into OFF position.
2. Place a lock or other device on electrical box cover to prevent someone from placing circuit breaker ON.
3. Place a tag on electrical box cover to indicate that appliance has been disconnected for service and power should not be restored until tag is removed by maintenance personnel.
4. Disconnect appliance power cord from electrical outlet.
5. Place a tag on the cord to indicate that unit has been disconnected for service and power should not be restored until tag is removed by maintenance personnel.

CLEANING

WARNING

DISCONNECT ELECTRICAL POWER TO THE THERMODYNE UNIT AND FOLLOW LOCKOUT/TAGOUT PROCEDURES BEFORE CLEANING.

CAUTION

Stainless steel lids may have sharp edges; handle with extreme care while cleaning.

WHEN TO CLEAN

It is recommended that all stainless steel equipment be cleaned on a regular basis. Any piece of stainless steel equipment that is soiled should be cleaned daily to ensure the long life of the equipment. Routine cleaning will also lessen stainless steel abrasion.

HOW TO CLEAN

To remove most soil, use a non-abrasive, non-chlorinated soap solution. Rinse thoroughly with warm water and wipe dry using an absorbent cloth. To remove heavy soil, rub the area with a non-metallic, fine-grain scouring cloth. Be sure to rub in the same direction as the metal grain. Rinse thoroughly with warm water and wipe using a soft absorbent cloth. As a final step, a stainless steel polish may be applied. The polish will shine the stainless steel and provide a protective finish to reduce future soiling.

Cleaning Safeguards

1. Always rub in the direction of the metal grain. Never use steel wool or metallic scouring cloths. These two measures will help prevent scratching and possible damage to the surface finish.
2. Use the recommended dilution. Do not exceed concentration levels as this may cause long term deterioration of the surface. Be certain to rinse surface thoroughly to prevent buildup of cleanser.
3. Never use chlorine or bleach solutions. Check the ingredients of cleaning solutions or disinfectants used as they may contain chlorinated solvents.
4. Always read the label of the cleaning solutions. Check for warnings about use on stainless steel or aluminum products. Repeated use of chlorinated solvents may cause a chemical reaction with stainless steel or aluminum; resulting in damage to the surface and rusting.

Sterilizing Stainless Steel

When sterilizing stainless steel equipment, pay particular attention to agents containing chlorine compounds such as potassium hypochlorite. These compounds may break down and release free chlorine or hydrolyze to form hydrochloric acid. Stainless steel can resist attack by the compounds for up to 2 hours. Severe localized pitting may occur with longer exposure. For safe use of the agents, keep contact time short, flush thoroughly with water, and operate equipment normally between applications. Using these precautions, the sterilization process can be repeated as often as necessary.

Cleaning Heat Transfer Plates

The Thermodyne unit operates on the principle of conduction, rather than convection. Therefore, it is very important to keep the heat transfer shelves clean, so heat transfer may take place with maximum efficiency. It is also very important to keep the bottom contact surfaces of pots and pans as clean as possible to ensure even and complete heat transfer.

The surface and flat coating of the thermal heat transfer shelf is extremely hard, but will react with strong caustic cleaning solutions and deteriorate.

CAUTION

Most concentrated soaps and ammonia cleaners are too caustic to be used on the Thermodyne unit.

CAUTION

If the coating is destroyed, the heat transfer shelves will lose their non-stick properties and their surface hardness.

The cleaners should always be used at the recommended concentrations. In the case of dry powders, the powders must not be placed directly on the surface of the heat transfer plate. Care must be taken not to scratch the shelf surfaces when using brushes or pads. If harsh scouring is needed, use a nylon type scouring pad. Never use steel wool.

It is recommended that a weekly cleaning schedule be followed to avoid the buildup of heavy food product deposits. In the event heavy deposits occur that are difficult to remove with ordinary cleaning procedures, stronger chemical cleaning agents may be applied if the products are intended for food service use and are also compatible with hard coat anodized aluminum surfaces. When using these stronger solvents, it is very important that heat transfer shelves are rinsed thoroughly with clean potable water after cleaning. Be sure to remove all traces of the cleaning agent. Between the regular scheduled cleaning, wipe off the anodized aluminum surfaces periodically with a clean damp cloth.

Stainless Steel Cabinet

1. Any pot and pan detergent acceptable for food service cleaning and compatible with aluminum and stainless steel may be used on shelf and cabinet surfaces.
2. A #20 plastic bristled brush used with the appropriate detergent is acceptable for cleaning. It is very important when cleaning the heat transfer shelves that the undersides of the shelves are thoroughly cleaned also.
3. Hot water hose rinsing is preferred. If a hose is not available, rinsing with a sponge or cloth and clean hot water is acceptable. Be sure all surfaces are completely rinsed during the rinsing procedure. Do not allow water to come in contact with the Powerhead located on the top of the Thermodyne unit.
4. The glass doors can be cleaned with any commercial window-cleaning product, provided they are free of ammonia or chlorine and are food service compatible.

Door Gasket (CT Units)

Clean the gasket-sealing surface of the Thermodyne doors to remove food product acids for maximum gasket life. Do not use any solvents or sharp instruments as these will damage the gasket. Wash with a cloth moistened in a solution of mild detergent and warm water. Rinse with a fresh cloth moistened with warm water to remove all traces of detergent.

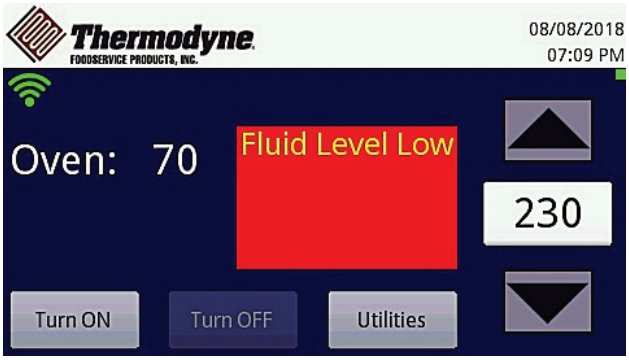
Wipe dry with a clean cloth. Never apply food product oils or petroleum lubricants directly to the door gasket as these will reduce gasket life.

MAINTENANCE

PREHEATING

Preheat the Thermodyne cabinet when first used for the day or whenever the unit is cold. Preheating takes approximately 30 minutes at which time the temperature set point and the actual temperature will display the same temperature. If the cabinet has door(s), keep the doors closed during the preheat cycle.

RESERVOIR FLUID REPLENISHMENT



FLUID LEVEL LOW Indicator

CAUTION

Use only supplied Thermodyne Heat Transfer Fluid.

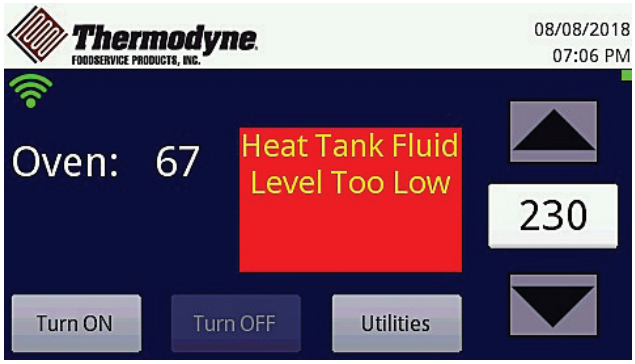
1. Using a Phillps head screwdriver, remove the bottom screw securing the fill cap cover and turn 180°.
2. Insert fill bottle into the reservoir tank hole and add fluid until FLUID LEVEL LOW indicator turns off.
3. Re-install the fill cap cover and replace the screw.

Fill Cap Cover

NOTE: FLUID LEVEL LOW Indicator will automatically clear as soon as fluid has reached the correct level.

NOTE: If the FLUID LEVEL LOW Indicator remains on after the Thermodyne unit has been filled, refer to TROUBLESHOOTING.

HEATER TANK FLUID REPLENISHMENT



Heat Tank Fluid Level Low Indicator

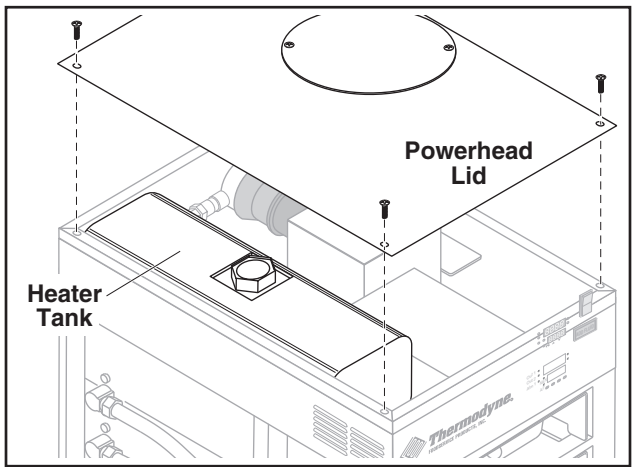
CAUTION

Use only supplied Thermodyne Heat Transfer Fluid.

WARNING

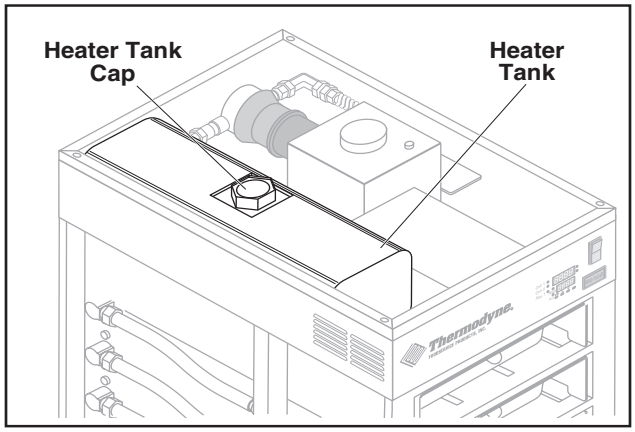
DISCONNECT THE ELECTRICAL POWER TO THE THERMODYNE UNIT AND FOLLOW LOCKOUT/TAGOUT PROCEDURES.

1. Disconnect the unit from its power source and ***allow the unit to cool completely***.
2. Remove the powerhead lid; 4 screws.



Powerhead Lid

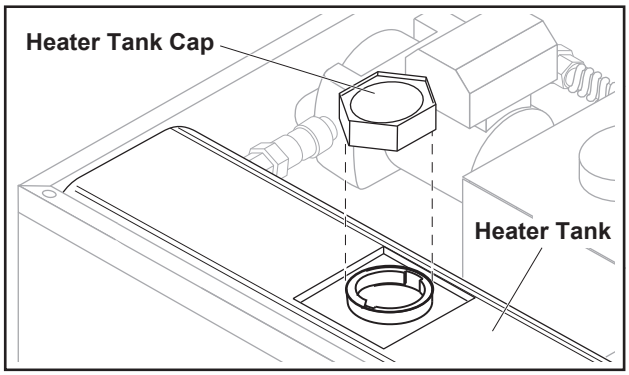
3. Locate heater tank and remove cap.



Heater Tank Cap

4. Fill the unit with Thermodyne Heat Transfer Fluid only. Never substitute with water or other liquids.
5. Return heater tank cap.
6. Place lid back on, but do not tighten screws.
7. Unit may run briefly and shut off due to low fluid level.
8. Remove powerhead lid and heater tank cap and fill heater tank.

NOTE: After filling the heater tank, the unit must be rebooted in order to remove the heat tank fluid level low indicator.

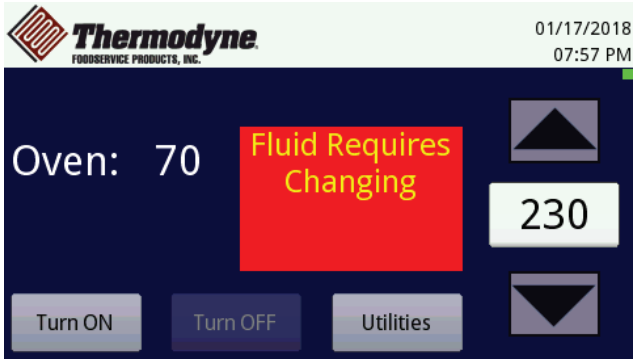


Fill Heater Tank

9. Repeat steps 6-9 until unit is completely full of fluid.
10. Once unit is completely filled, place powerhead lid back on unit and tighten screws snug.
11. If FLUID LEVEL LOW Indicator is on, add fluid to reservoir tank until indicator goes out. (See page 19)
12. Let unit run until maximum temperature is reached.

CHANGING FLUID

NOTE: The Thermodyne Heat Transfer Fluid has lubricating additives, anticorrosion additives, and heat transfer properties that may decrease with the passing of time. Thermodyne Heat Transfer Fluid will protect the unit indefinitely if the fluid is changed on an annual basis.



Heat Tank Fluid Requires Changing Indicator

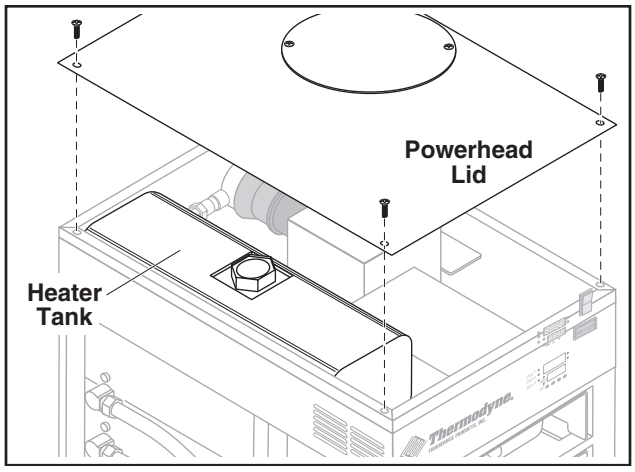
CAUTION

The following procedure is to be performed by a qualified service technician only.

WARNING

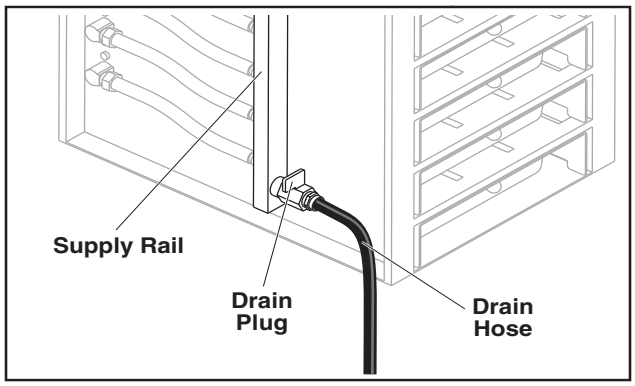
DISCONNECT THE ELECTRICAL POWER TO THE THERMODYNE UNIT AND FOLLOW LOCKOUT/TAGOUT PROCEDURES.

1. Disconnect the unit from its power source and ***allow the unit to cool completely***.
2. Remove the stainless steel panel covering the left side of the unit.
3. Remove the powerhead lid; 4 screws.



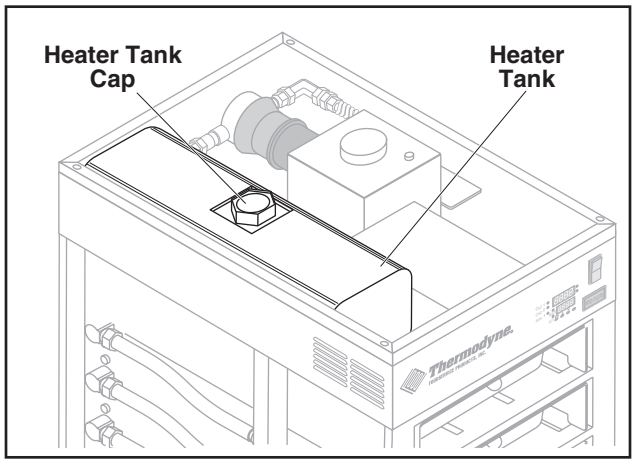
Powerhead Lid

4. Place a pan or bucket beside drain plug in order to catch drained fluid.



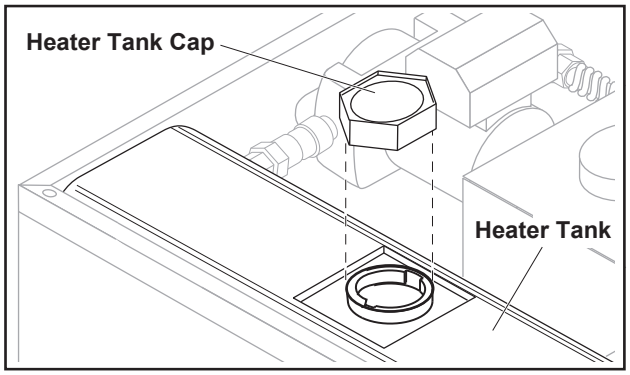
Drain Hose

5. Aim drain hose into pan or bucket and turn valve to open position.
6. Locate heater tank and remove cap.



Heater Tank Cap

7. Once oven has drained completely turn valve to off position and place drain hose back in cabinet.
8. Return stainless steel panel to left side.
9. Refill the unit with Thermodyne Heat Transfer Fluid only. Never substitute with water or other liquids.
10. Return heater tank cap.
11. Place lid back on, but do not tighten screws.
12. Plug unit in and turn on.
13. Unit will run briefly and shut off due to low fluid level.
14. Remove powerhead lid and heater tank cap and fill heater tank.



Fill Heater Tank

15. Repeat steps 11-15 until unit is completely full of fluid.
16. Once unit is completely filled, place powerhead lid back on unit and tighten screws snug.
17. If ADD FLUID Indicator is on, add fluid to reservoir tank until indicator goes out.
18. Let unit run until maximum temperature is reached.
19. Once full temperature is reached, shut unit down and let it cool down to at least 100°F.
20. Turn unit back on, and if ADD FLUID Indicator is on again, continue adding fluid to reservoir tank until indicator goes out (See page 19).

NOTE: Steps 19 and 20 are very critical in order to purge oven from any air trapped in unit.

HOW TO CLEAR THE "FLUID REQUIRES CHANGING" INDICATOR

1. Go to the "Utilities" menu.
2. Enter password: 1514.
3. Select Miscellaneous.
4. Check the "Clear Fluid Requires Changing Msg" box.
5. Press Enter, indicator will now be cleared.

TROUBLESHOOTING

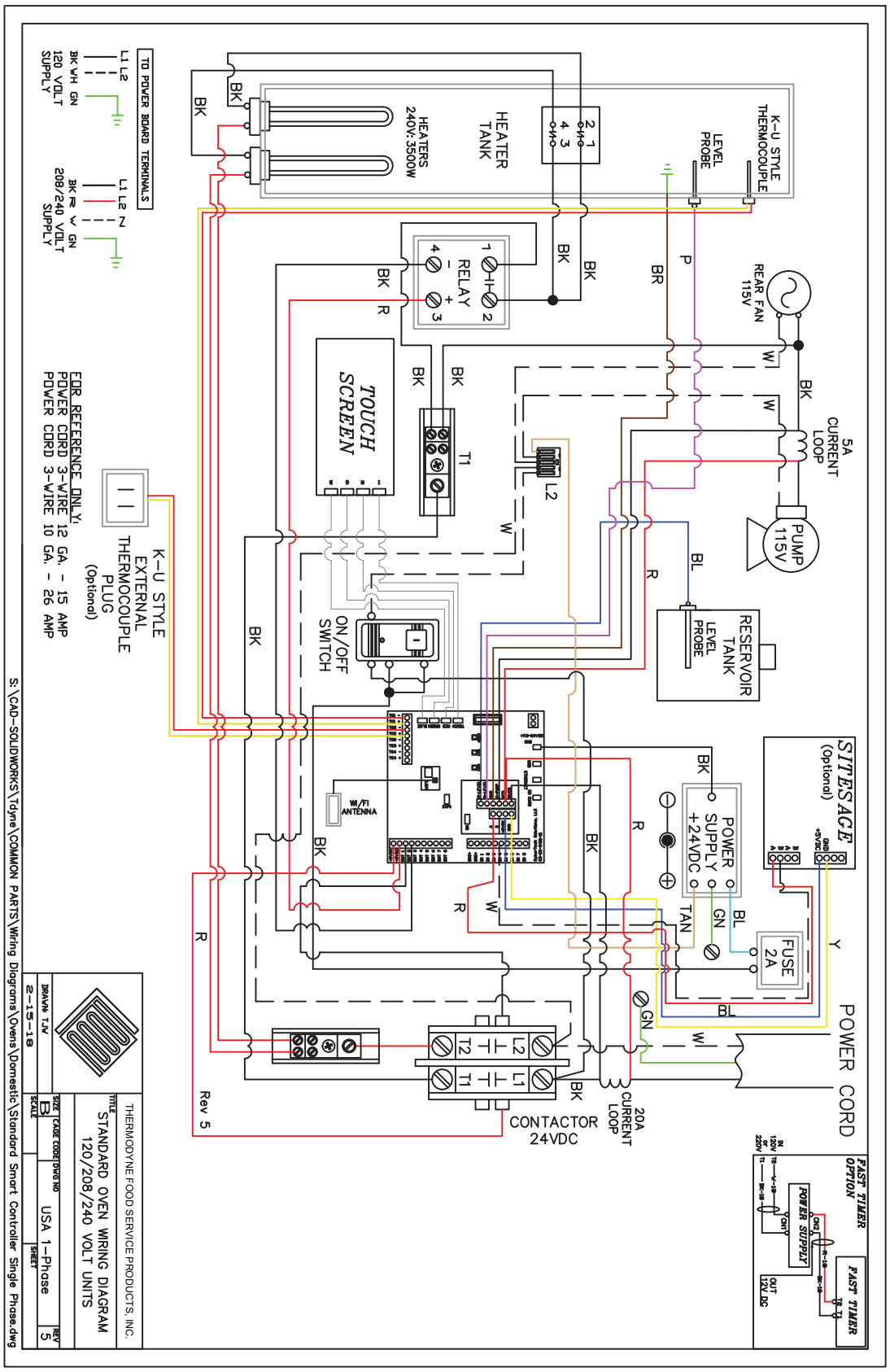
Most problems associated with the holding unit are due to low fluid level. Always check fluid level first.

PROBLEM	POSSIBLE CAUSE	SOLUTION
No Power:	1. Main power switch off. 2. Not plugged in. 3. Breaker off or tripped. 4. Bad contactor.	1. Turn switch on. 2. Check plug. 3. Check breaker. 4. Replace contactor.*
LOW FLUID light is on - Oven heating properly:	1. Oven is low on fluid.	1. Add Thermodyne Heat Transfer Fluid per instructions.
LOW FLUID light is on - Oven not heating properly:	1. Oven disabled due to low fluid level cut out. 2. Fluid level probe defective. 3. System leak.	1. Main heater tanks low on fluid. Add Thermodyne Heat Transfer Fluid and determine cause of fluid loss. 2. Repair or replace.* 3. Repair leak.*
Heater(s) not working:	1. Unit not properly wired. 2. Bad heater(s). 3. Contactor or solid state relays not working. 4. Off due to low fluid cut out. 5. Failed temperature controller. 6. High limit snap disc tripped.	1. Check wiring.* 2. Replace heater(s).* 3. Repair or replace.* 4. Add Thermodyne Heat Transfer Fluid per instructions. 5. Replace temperature controller.* 6. Reset snap disc and check for cause.*
Shelves hotter than set point:	1. Temperature controller out of calibration. 2. Thermocouple defective. 3. Solid state relay(s) stuck on. 4. Failed temperature controller.	1. Recalibrate temperature controller. * 2. Replace thermocouple.* 3. Replace solid state relay(s).* 4. Replace temperature controller.*
Shelves colder than set point:	1. Low fluid in tank. (LOW FLUID light should be lit) 2. Failed temperature controller. 3. Heater(s) not working. 4. Pump failure. 5. Thermocouple failure.	1. Add Thermodyne Heat Transfer Fluid per instructions. 2. Replace temperature controller.* 3. See “Heater(s) not working”. 4. Repair or replace pump. 5. Replace thermocouple.*
Oven heats up too slow:	1. Heater(s) not working.	1. See “Heater(s) not working”.

*Recommended to be done by a qualified service agency.

NOTE: Most problems associated with the Thermodyne cabinet are due to failure to add Thermodyne Heat Transfer Fluid. Check fluid level first. In the event service is required on your Thermodyne Oven, please call: (800) 526-9182.

SCHEMATIC WIRING DIAGRAMS



Standard Smart Controller Single Phase – Newer Units

WARRANTY

Thermodyne Foodservice Products, Inc. warrants to the original purchaser for use of each new Thermodyne Conductive Cooking/ Holding Oven the following: Any part which proves to be defective in materials or workmanship within the warranty period will, subject to the terms of this warranty, be repaired or replaced at Thermodyne Foodservice, Inc.'s option. Claims under this warranty must be presented to Thermodyne Foodservice Products, Inc. in writing, promptly.

Thermodyne stainless steel cabinets are warranted for 5 years and all other original equipment parts such as heat transfer plates, doors, casters, fluid system components and electrical components are warranted against defect for 2 years from the date of purchase.

This warranty applies only to Thermodyne Conductive Cooking/Holding Ovens in the Continental United States. This warranty shall not apply if the oven or any part is subjected to accident, casualty, alteration, misuse, abuse, neglect, faulty installation, or if the date of manufacture is altered or removed.

The obligation of Thermodyne Foodservice Products, Inc. is limited specifically to the aforementioned. No additional guarantees or warranty, expressed or implied, to include without limitation warranties of Fitness or Merchantability with respect to Thermodyne Conduction Ovens and Thermodyne Foodservice Products, Inc. regarding other liability with respect thereto including, without limitation, liability for incidental, special, or consequential damages.

RESPONSIBILITIES OF PURCHASER

It is the responsibility of the purchaser to:

1. Arrange on site electrical services in accordance with Thermodyne specifications.
2. Receive shipment of Thermodyne conduction oven to include unloading, uncrating, inspecting for damage in shipment, and installation of the oven in its proper location; in accordance with installation instructions.
3. Arrange that the electric services are connected properly by a qualified technician. All such connections must be in accordance with applicable code requirements and Thermodyne installation procedures.

Please note the specific details on the Warranty and make certain that service connections are made to the proper utility services. This warranty and purchasers responsibility information should be retained for future reference.

For assistance please call:

Toll Free: (800) 526-9182

Local: (260) 428-2535

HEAT TRANSFER FLUID MSDS

Dow Chemical U.S.A.
Midland, MI 48674
Emergency Phone: 517-636-4400
Product Code: 23545
Product Name: PROPYLENE GLYCOL HEAT TRANSFER FLUID
Effective Date: 03-02-88
Date Printed: 06/02/88
MSDS: 000130

1. INGREDIENTS:
   Propylene glycol CAS# 000057-55-6 95%
   Dipotassium phosphate CAS# 007758-11-4 <5%
   Deionized water CAS# 007732-18-5 <5%

   This document is prepared pursuant to the OSHA Hazard Communication Standard (29CFR 1910.1200). In addition, other substances not 'Hazardous' per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.
2. PHYSICAL DATA:
   BOILING POINT: 370F, 188C
   VAP. PRESS: 0.22 mmHg @ 20C, 68F
   VAP. DENSITY: 2.62
   SOL. IN WATER; Complete
   SP. Gravity: 1,050 @ 60/60F, 16C
   APPEARANCE: Colorless.
   ODOR: Odorless liquid.
3. FIRE AND EXPLOSION HAZARD DATA:
   FLASH POINT: 215F, 102C
   METHOD USED: COC
   FLAMMABLE LIMITS
   LFL: 2.6% @ 100C
   UFL: 12.5% @ 130C
   EXTINGUISHING MEDIA: Water fog, alcohol foam, dry chemical
   FIRE AND EXPLOSION HAZARDS: None.
   FIRE-FIGHTING EQUIPMENT: None.
4. REACTIVITY DATA:
   STABILITY: (CONDITIONS TO AVOID) Stable over normal
   Operating temperature range of –30F to 250F.
   INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID)

   Oxidizing material.
   HAZARDOUS DECOMPOSITION PRODUCTS: None
   HAZARDOUS POLYMERIZATION: Will not occur,
5. ENVIROMENTAL AND DISPOSAL INFORMATION:
   ACTION TO TAKE FOR SPILLS/LEAKS: Cover with absorbent material, soak up and sweep into bag.
6. HEALTH HAZARD DATA:
   EYE: May cause slight transient eye irritation. Corneal injury is unlikely.
   SKIN CONTACT: Essentially nonirritating to skin on prolonged contact.
   SKIN ABSORPTION: A single prolonged skin exposure is not likely to result in absorption of harmful amounts. The LD50 for skin absorption in rabbits is >10,000 mg/kg.
   Repeated exposures may cause slight flaking, tenderness and softening of skin.
   INGESTION: Single does oral toxicity is low. The LD50 for female rats is about 20.3 g/kg
   INHALATION: A single prolonged (hours) inhalation exposure is not likely to cause adverse side effects. Mists are not to be hazardous.
   SYSTEMIC & OTHER EFFECTS: Repeated excessive ingestion may cause central nervous system effects. No carcinogenic effects have been seen in long-term animal studies. Birth defects are unlikely. Exposures having no adverse effects on the mother should have no effect on the fetus. In animal studies, has been shown not to interfere with reproduction. Results of mutagenicity tests in vitro (test tube) and in animals have been negative.
7. FIRST AID
   EYES: Irrigate immediately with water for at least 5 minutes.
   SKIN: wash off in flowing water or shower
   INGESTION: Induce vomiting if large amounts are ingested, consult medical
   INHALATION: Remove to fresh air if effects occur. Consult medical.
   NOTE TO PHYSICIAN: No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.
8. HANDLING PRECAUTIONS:
   EXPOSURE GUIDELINE (S): Dow IHG is 10mg/m3 for propylene glycol mist. Dow IHG 440 ppm for propylene glycol vapors.
   VENTILATION; Good general ventilation sufficient.
   RESPIRATORY PROTECTION: No respiratory protection should be needed.
   SKIN PROTECTION: No precautions other than clean body covering should be needed.
   EYE PROTECTION: Use safety glasses.
9. ADDITIONAL INFORMATION:
   REGULATORY REQUIREMENTS:
   SARA HAZARD CATEGORY: This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Section 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: A delayed hazard.
   SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Exercise reasonable care and caution.
   MSDS STATUS: Revised Section 9

NOTES