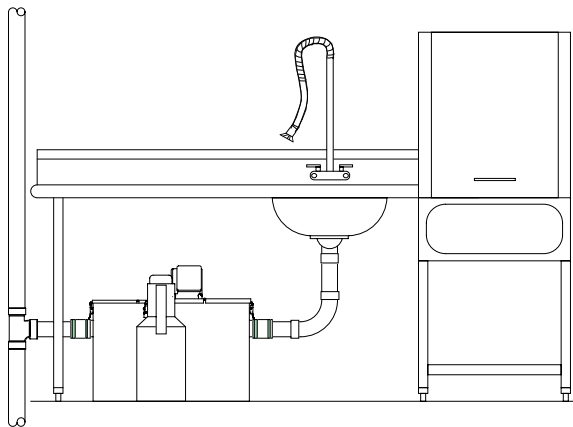
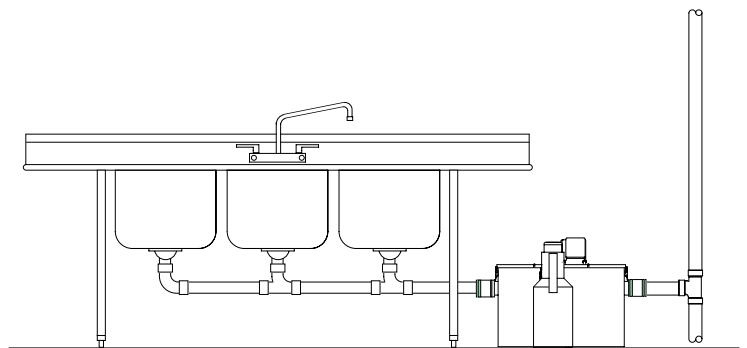


Thermaco® **BIG DIPPER®** *Kitchen Grease Removal*

Installation & Operation Instructions For Big Dipper Internal Strainer (IS) Series Units



**Big Dipper W-200-IS-E Servicing
A Pre-Rinse Sink**



**Big Dipper W-200-IS-E Servicing
A 3-Compartment Sink**



*PDI & ASME Certification for Big Dipper® W-200-IS Only



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Toll Free: (800) 633-4204 • V: (336) 629-4651 • F: (336) 626-5739
E-mail: info@thermaco.com • Online: www.big-dipper.com

Big Dipper® Internal Strainer (IS) System Overview

The **Thermaco, Inc. Big Dipper®** Automatic Grease and Oils Removal System removes free-floating grease & oils from kitchen drain water flows. As most food service facility managers already know, grease buildup within a building's plumbing drainage system is a major cause of problems due to drain line blockages. These problems jeopardize normal operations as well as create health and safety hazards within the facility itself.

The proper installation of a Big Dipper System can reduce or eliminate grease problems. Use of the Big Dipper assures minimization and/or elimination of costly sewer surcharges and fines through efficient separation and removal of free-floating grease & oils. In addition, the Big Dipper also helps reduce and/or eliminate pumping and disposal costs associated with conventional grease traps or interceptors. The recovered grease & oils are virtually water-free so local rendering companies or recyclers can collect it.

The Big Dipper system is an automatic, self-cleaning device. As greasy kitchen effluent drains from kitchen fixtures, the unit traps the grease & oils. These separate from the effluent and rise to the surface of the stainless steel tank. The unit automatically skims the trapped grease & oils at least once per day and transfers the grease & oils to a collection container. A timer controls the self cleaning operation, activating the skimming wheel at the proper time. Only the "cleaned" water exits the unit and flows into the facility drain lines. The Big Dipper IS automatic systems operate most efficiently when servicing single fixtures such as a 1 to 3-compartment sink or a pre-rinse station.

The Big Dipper system's stainless steel construction and compact footprint allows installation directly at the source, where grease problems originate. The system design also allows easy maintenance and operation by non-skilled personnel and requires only a minimal amount of daily and weekly maintenance to maintain peak operating performance.

The Big Dipper system design allows for maximum installation flexibility. Reversing the system operation is as simple as rotating the cover assembly of the unit.





BIG DIPPER[®]

**Big Dipper[®] Internal Strainer (IS)
System Maintenance**

Big Dipper[®] Internal Strainer (IS) System Maintenance

Daily Maintenance:

(A) Empty the clear plastic grease/oils collection container (located beside the unit) once each day (or more frequently, if necessary). The Big Dipper recovers grease and oil virtually water-free so that they can be recycled. The collector container should be washed periodically.

(B) The internal strainer basket should be emptied into a garbage container by shaking briskly. Wash the inside and outside surfaces of the strainer after emptying.

Weekly Maintenance:

(A) Check the collection trough and the wiper blades for any solids build-up. Wipe off any accumulated deposits and assure that the wiper blades are clipped in place properly.

(B) Check the Timer to be sure it is set and operating correctly.

(C) Check the thickness of the grease layer at the top of the unit. There should be no appreciable amount of grease or oil left in the tank immediately after the daily automatic skimming cycle. If there is more than a 1/2" (13 mm) thick layer of grease after the skimming cycle, this indicates a need to increase the skimming time. Increase the timer settings accordingly until a clean unit appearance is obtained after the automatic skimming cycle (A simple guide is to increase the "on" time by 30 minutes for each 1" (25 mm) of grease layer observed after the skimming cycle).

(D) The internal strainer basket in the unit is designed to remove coarse solids from the wastewater. Over a period of time, sediment consisting of very fine particles may begin to accumulate on the bottom of the unit. If this build-up is allowed to continue, it may eventually block the outlet baffle. To prevent this from occurring, remove the lid and stir the bottom of the unit with a long handled spatula while water is flowing to flush out the sediment. It may also be necessary to occasionally drain and clean the unit thoroughly. A wet vac works well for this purpose.

***CAUTION! DISCONNECT POWER TO UNIT BEFORE CLEANING
to prevent damage to the unit and personal injury**

***NOTE: Before energizing unit after cleaning, fill tank with water
to protect wipers and heater from damage**

Big Dipper® IS System Suggested Settings/Timer Operation

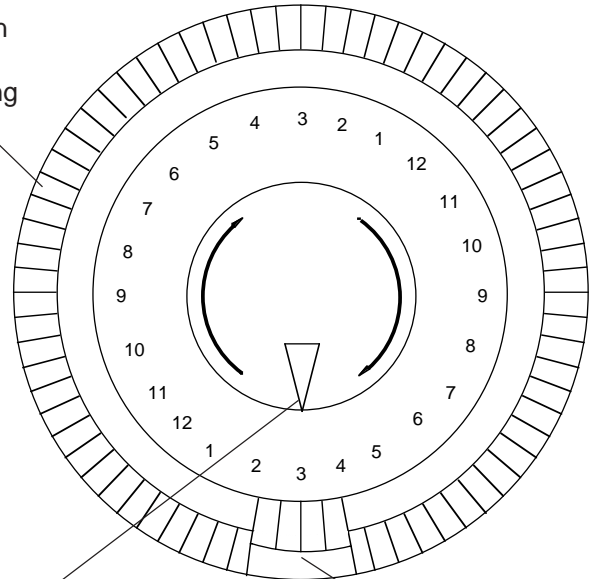
TO SET TIMER:

1. Push on/off tabs on the outer ring of timer inward into dial at desired "**ON**" times. 1 Tab = 15 minutes. Minimum of one (1) tab (15 minutes) recommended.

2. Turn dial **CLOCKWISE** → one or more complete revolutions until the present time is aligned with the time-of-day indicator point.

3. Fill the unit with water by turning on the sink water taps, then plug the Big Dipper unit into grounded electrical outlet.

Labels: Tabs **NOT** punched in indicate "OFF" setting



Labels: Time-of-day indicator point

Labels: Tabs punched in indicate "ON" setting

NOTE: IN CASE OF POWER FAILURE, RESET TIMER. (See Step 2 above).

After the plumbing installation is complete, the Big Dipper unit needs to be set for the proper automatic self-cleaning operation for the facility. All Big Dipper IS models are equipped with a 24 Hour/96 Event time controller. This time controller is located under the lid of the motor housings mounted on top of the Big Dipper lid (See Pages labeled "Electrical Connection Detail" sketches of this location).

Depending upon the amount of accumulated grease and oils, the system may need to be reset to operate more or less time to skim all separated grease and oils. This can be determined by removing the top cover and observing the depth of the separated grease layer shortly after a cleaning cycle is completed. This layer should not be more than 1/2" (13 mm) thick. If this layer is consistently thicker, increase the operating times of the Big Dipper IS System by 30 minutes for each additional 1" (25 mm) of grease not to exceed 2 hours in a complete run cycle. If required, additional run cycles can be added throughout the day.



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**Big Dipper® IS System Series
Troubleshooting**

Big Dipper® IS System Series Troubleshooting

Big Dipper unit overflows

(1) Check to see that the outlet pipe is not reduced to a smaller size, the outlet piping is vented, has as few 90 degree outlet turns as possible, and that no "P" trap is installed on the outlet. Re-plumb the piping, if necessary. Check outlet piping for clogs. Have a plumber clean the line, if necessary.

(2) Make sure that internal strainer basket is in place and is emptied regularly.

(3) Check the bottom of the unit for excessive solids and silt buildup which may be blocking the outlet baffle. Disconnect the power and use a long handled spatula or similar instrument to stir the bottom while water flows through the unit. If necessary, drain and clean the sediment from the unit. To prevent recurrence, schedule this cleaning to be done on a regular basis (a wet vac works well for cleaning sediment from the bottom of the unit).

(4) Make sure the flow rate to the unit does not exceed the maximum flow rate, which is shown on the nameplate. If necessary, have a plumber install an approved flow control to restrict the inlet flow to the specified level or install a properly sized Big Dipper for the application.

Excessive water observed in the grease collection container

(1) Check the timer settings for excessive "on" time.

(2) Make sure that the water flow to the unit does not exceed the rated flow and there are no drain line clogs downstream from the unit.

No grease is collected in the container

(1) Check to be sure the power is on and the time control is set correctly. The "on" time should be no less than 15 minutes per day.

(2) Remove the lid and clean away any buildup that may be present on the wiper blades or collection trough. Make sure the wiper blade(s) are properly in place on the skimmer wheels. Replace wiper blades when worn or warped.

(3) Set the time control to the "ON" position & ensure that the skimmer wheel turns. CAUTION: Keep your hands away from moving parts to avoid possible injury. Check to see if both center cover latches are fastened. If the skimmer motor does not come on, the motor assembly must be replaced.

(4) If none of the above is a problem, check the heater assembly. If the Big Dipper's heating element is not warming the unit, the heating element must be replaced.

Objectionable odor

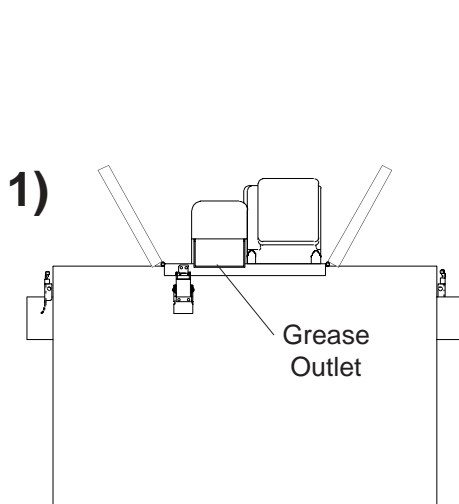
(1) Make sure grease/oil is being skimmed properly from the unit.

(2) If excessive sediment has collected on the bottom of the unit, clean the unit as described in item 3 in "Big Dipper unit overflows."

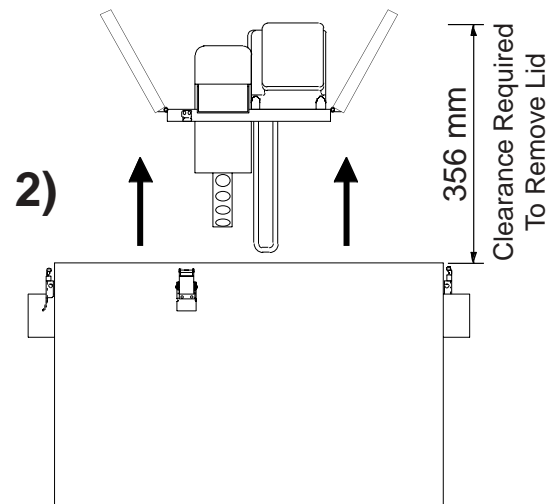
(3) Empty the internal strainer and grease collection container more frequently and clean after emptying.

How To Reverse Big Dipper® IS System Unit Operation

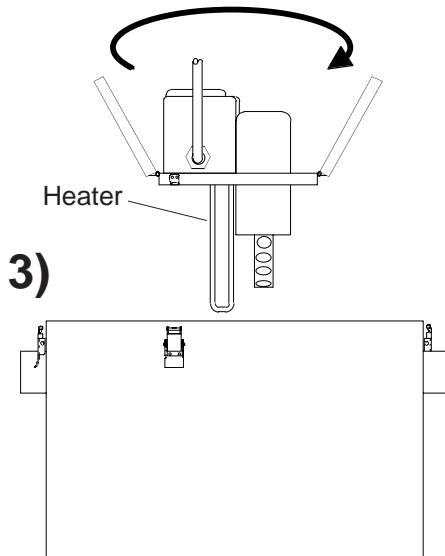
***ALWAYS UNPLUG UNIT BEFORE REMOVING LID**
***SYSTEM WILL NOT OPERATE UNLESS CENTER LID LATCHES ARE FASTENED**



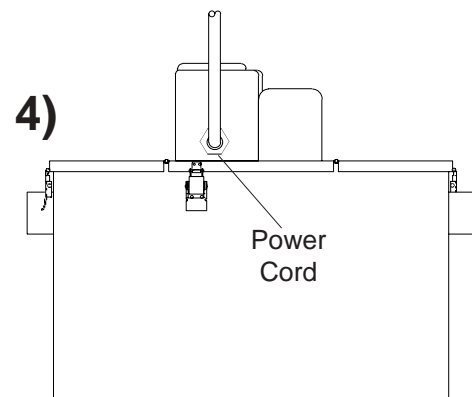
1) Unlatch the Unit lid.



2) Lift the lid up off of the unit, ensuring clearance for the heater.



3) Rotate the lid 180°.



4) Put the lid back down on top of the unit and relatch.



BIG DIPPER®

Big Dipper® IS System Plumbing Installation

Big Dipper® IS System Plumbing Installation

Locating the Unit

To minimize grease build-up in piping, a Big Dipper system should be located as close as possible to the fixture it is serving. The system should be visible and easily accessible for maintenance and inspection. Make sure that adequate room is provided around the system to allow easy removal of the grease collection container and to access the electrical assembly. Make sure the height above the Big Dipper access covers is enough to properly service the system.

Inlet/Outlet Piping

The inlet and outlet piping connections require flexible sleeve pipe couplings. Keep outlet piping as straight as possible. Use only "sweep" connections. Do not reduce the pipe sizing on the outlet piping. Do not install "P" trap on outlet connection of system. (Note: The system already has a internal gas trap).

Flow Controls

Big Dipper systems are equipped with an internal flow control located inside the inlet end of the system. Verify its location and placement prior to connecting the inlet piping.

Fill Unit With Water Before Applying Power

Big Dipper systems, equipped with an electric heating element, MUST be filled with water before energizing the power to the system. *Failure to do so may damage the electric heating element. These elements will NOT be replaced under Thermaco's Limited Warranty.*

Venting the Outlet

An outlet vent or approved vacuum breaker of at least 1/2 the diameter of the system's outlet connection must be present as close as possible to the Big Dipper outlet to prevent possible siphonage problems. *Failure to provide a vent for the system voids Thermaco's Limited Warranty for the system.*

For High Head Height Applications Over Six (6) Feet (1.95 m)

For installations where there is head height of greater than 6 feet (1.95 meters), Thermaco, Inc. recommends installation of the optional VFCA Vented Flow Control. Thermaco, Inc. recommends an inlet vent on the piping connection as close a possible to the inlet of the Big Dipper and tied in to the facility vent. Please see the following page for installation instructions.

Do Not Use With Food Grinders, Potato Peelers or Waste Disposal Units

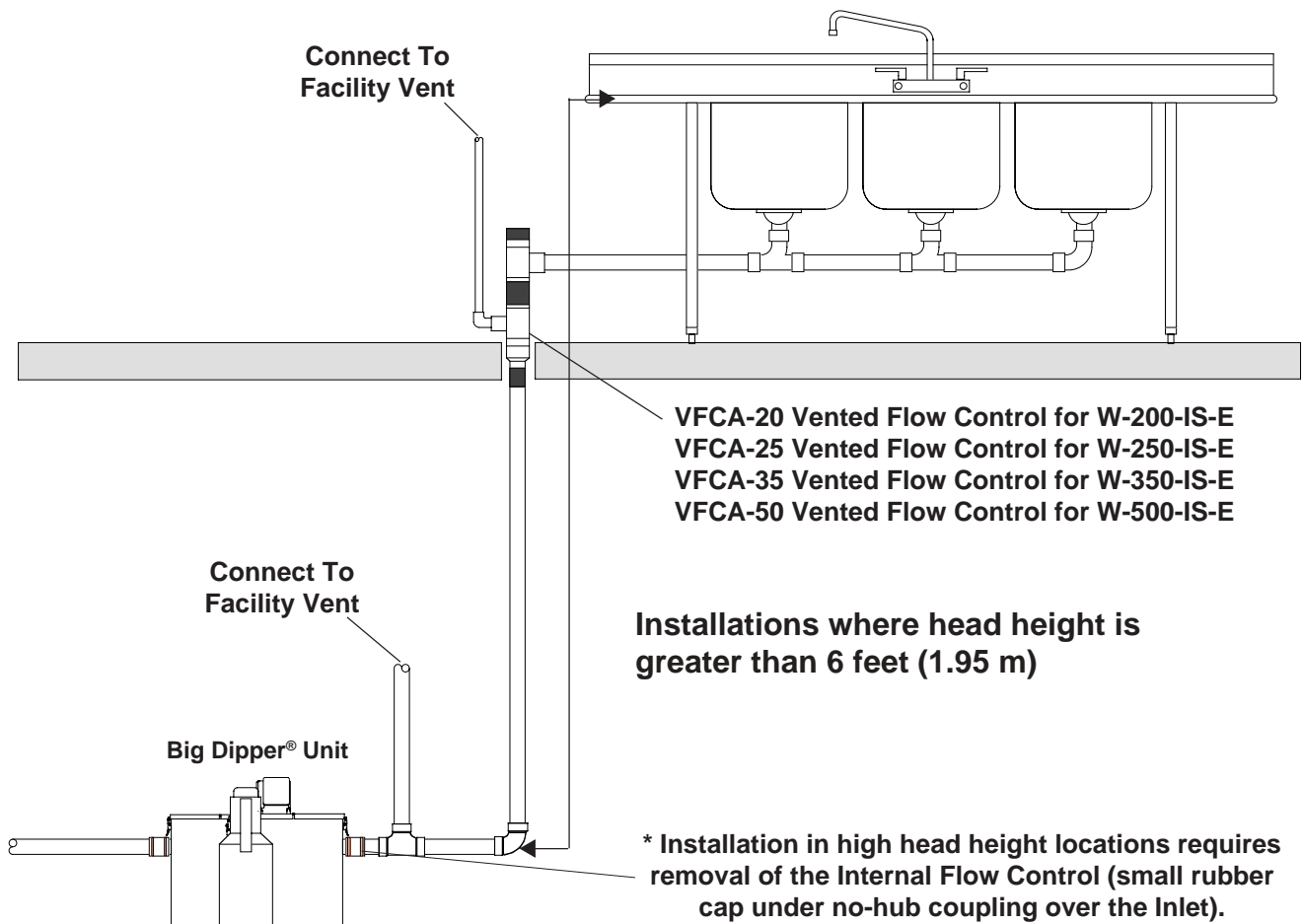
Installations where the internal solids strainer basket is not used or where the system is connected to a Waste Disposal Unit, Garbage Grinder or potato peeler will *void Thermaco's Limited Warranty for the system.*

Note: This equipment must be installed to comply with all applicable national, state, and local plumbing codes for your area. Installation should only be performed by a qualified plumber.

Big Dipper® IS System Plumbing Installation

(For Installations With Head Height Greater Than 6 feet (1.95m))

For installations where there is a significant amount of head height (More than 6 ft./1.95 m), Thermaco, Inc. recommends installation of the optional VFCA Vented Flow Control module.



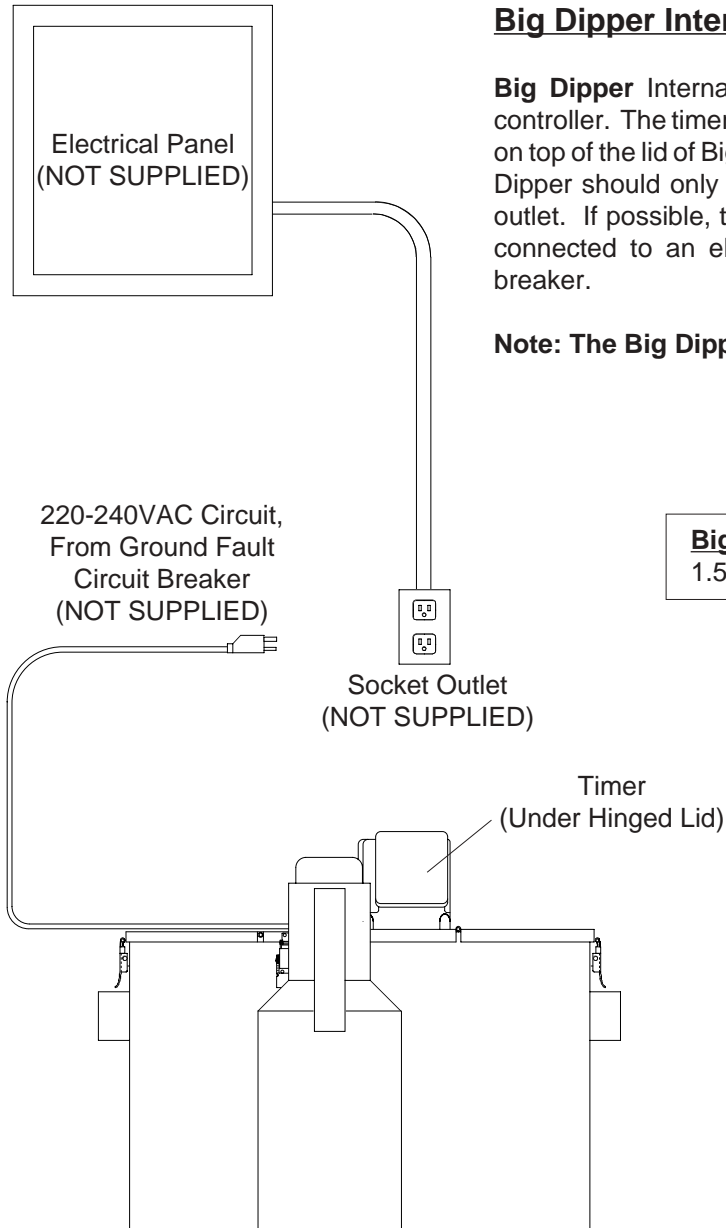
Note: This equipment must be installed to comply with all applicable national, state, and local plumbing codes for your area. Installation should only be performed by a qualified plumber.

Big Dipper® IS System Electrical Installation

Big Dipper Internal Strainer (IS) Models

Big Dipper Internal Strainer Series Models utilize one 24 hour time controller. The timer is located under the hinged lid of the motor enclosure on top of the lid of Big Dipper (See Timer Operation Instructions). The Big Dipper should only be plugged into a properly grounded 220-240 VAC outlet. If possible, the power supply outlet for the Big Dipper should be connected to an electrical circuit controlled by a ground fault circuit breaker.

Note: The Big Dipper unit will not operate when the lid is removed.



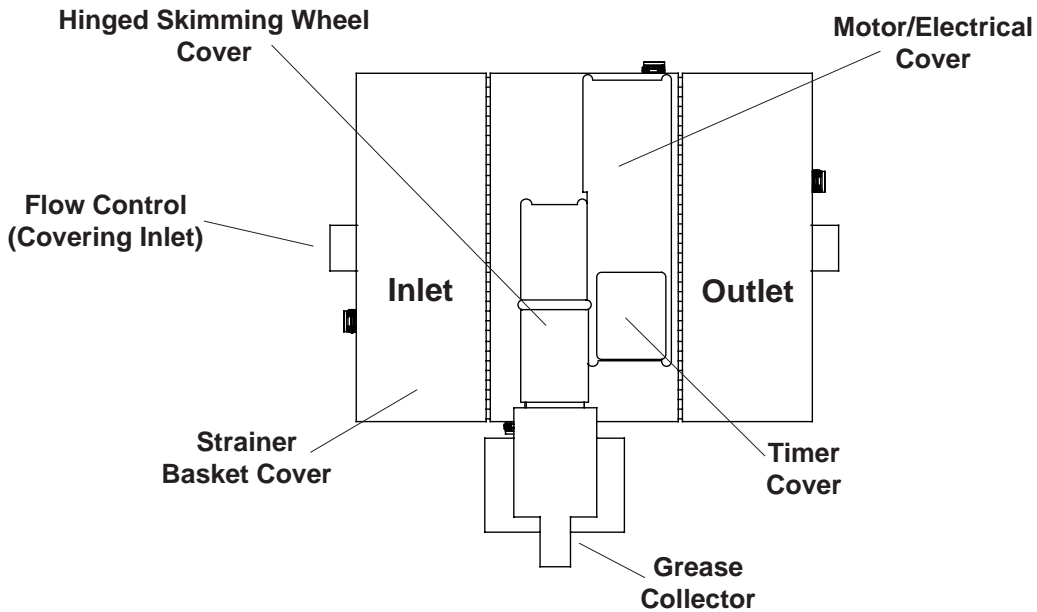
Big Dipper Electrical Requirements
1.5 Amps @ 230VAC 50Hz (360 Watts)

NOTE:

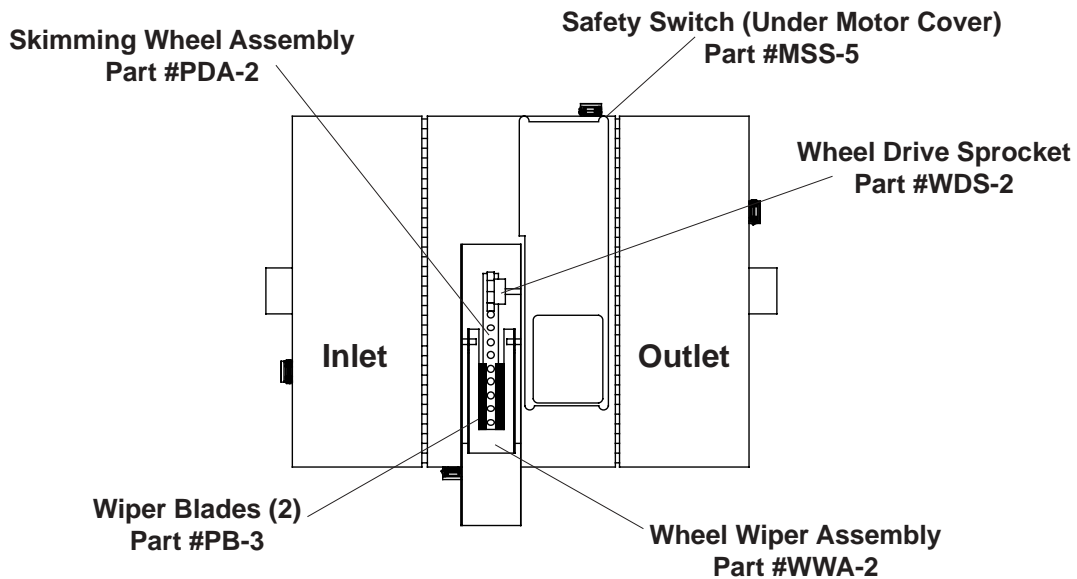
Time Clock is supplied with system.
This equipment must be installed to comply with all national, state and local electrical codes for your area. Installation should only be performed by a qualified electrician.

Big Dipper® IS System Component Identification

Big Dipper Internal Strainer (IS) Lid Components (With Covers In Place)



Big Dipper Internal Strainer (IS) Lid Components (With Wheel Cover Removed)

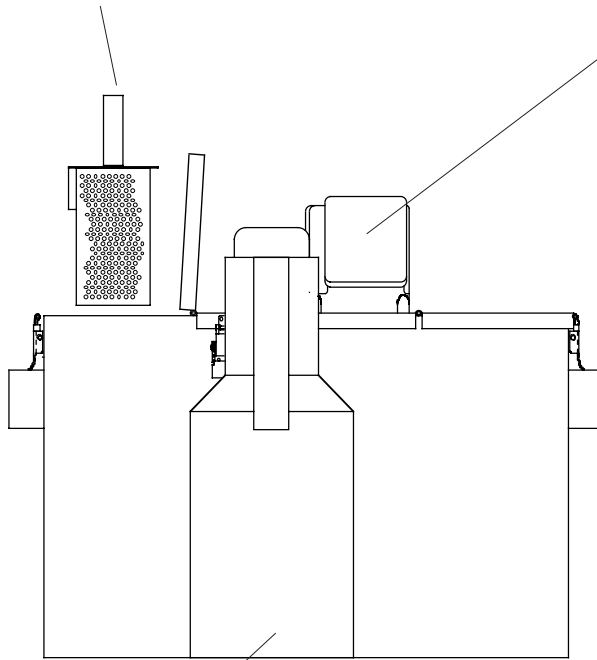


SOLIDS STRAINER BASKET

FOR MODEL# USE PART#

W-200-IS-E and W-250-IS-E ST-17

W-350-IS-E and W-500-IS-E ST-57



TIMER (Under Cover)
FOR ALL MODELS USE PART# ETC-2-E

GREASE/OILS COLLECTION CONTAINER

FOR ALL MODELS USE PART# GC-6

NOT SHOWN:

INTERNAL FLOW CONTROL (1 per unit)

PART# MFC-20 for W-200-IS-E & W-250-IS-E

PART# MFC-35 for W-350-IS-E & W-500-IS-E

LID GASKET

PART# RG-7

WIPER BLADES (2 per unit)

PART# PB-3

WHEEL WIPER ASSEMBLY (1 per unit)

PART# WWA-2

WHEEL DRIVE SPROCKET (1 per unit)

PART# WDS-2

SKIMMING WHEEL ASSEMBLY (1 per unit)

PART# PDA-2



BIG DIPPER®

Big Dipper® Limited Warranty & Remedy

Thermaco, Inc. warrants, to the original user, that those products supplied by it and used in the service and in the manner for which they are intended shall be free from defects in materials and workmanship for a period of one year after installation, but not longer than 15 months from date of shipment from the factory. All replacement parts have a 30 day replacement warranty. Clean defective parts shall be returned, within the warranty period, with proof of purchase to Thermaco's factory, 646 Greensboro Street, Asheboro, NC 27203, transportation charges prepaid, for warranty evaluation. At Thermaco's option, based on the determination of the warranty evaluation, Thermaco may repair or supply a replacement part from its factory. Any and all items which may be returned shall include the serial number from which the item was removed, and a return goods authorization number issued by Thermaco. This warranty is void if the product has been damaged by its customer prior to acceptance or as a result of unreasonable use, neglect, flooding, alteration, damage incurred by/during facility construction, improper installation, improper service, maintenance neglect, improper electrical service, installation and/or operation without timer controls, or other causes not arising out of defects in material or workmanship. Equipment must be installed according to manufacturer's guidelines. This warranty is void if equipment is used in excess of rated flow. Thermaco's products are intended to remove only free floating animal fats, vegetable oils and cooking grease. Thermaco's products do not remove emulsified fats and oils. Thermaco shall not be responsible for damage to equipment which results from vault flooding, sewer line backup, pumping or lift station failure, ambient water flow or other sources of water damage. This warranty is void if the serial number on the product has been altered or defaced. Thermaco will not replace timers which have been installed in underground vaults. This warranty is void should use, installation and application be contrary to a written agreement between Thermaco and the user. Thermaco does not make any other representations or warranties, express or implied, including, but not limited to, any implied warranty of Merchantability and any implied warranty of fitness or performance for a particular purpose.

The sole and exclusive remedy with respect to the above limited warranty or with respect to any other claim relating to defects or any other condition or use of the product supplied by Thermaco, however caused, and whether such claim is based upon warranty, contract, negligence, strict liability or any other theory, is LIMITED to the repair or replacement of the part or product, excluding labor or any other cost to remove or install said part or product or, at Thermaco's option, to repayment of the purchase price. Notice of any such claim must be given in writing to Thermaco, Inc., PO Box 2548, 646 Greensboro Street, Asheboro, NC, USA 27204-2548 within 15 months after the first installation or use of the products. In no event shall Thermaco be liable for special, direct, indirect, incidental, personal, property or consequential damages, including, but not limited to, loss of use or profits or to interruption of business activity. Thermaco neither assumes nor authorizes any representative or any other person to assume any liability in connection with the sale of its products. Thermaco makes no warranties, express or implied, with respect to parts, accessories, components or other goods not manufactured by Thermaco. Alteration and/or substitution of Thermaco parts, assemblies, accessories including electrical and/or mechanical components voids Thermaco's warranty.

Thermaco® Big Dipper® Automatic Grease/Oils Removal Units and system parts may be sold locally by Thermaco Sales Affiliates.