

## Which System Do I Use?

Thermaco, Inc. offers two different styles of Automatic Grease & Oils Removal Systems. These include the IS (Internal Strainer) system and the AST (Automatic Solids Transfer) system. What's the difference between the two, and which one works best in what setting?

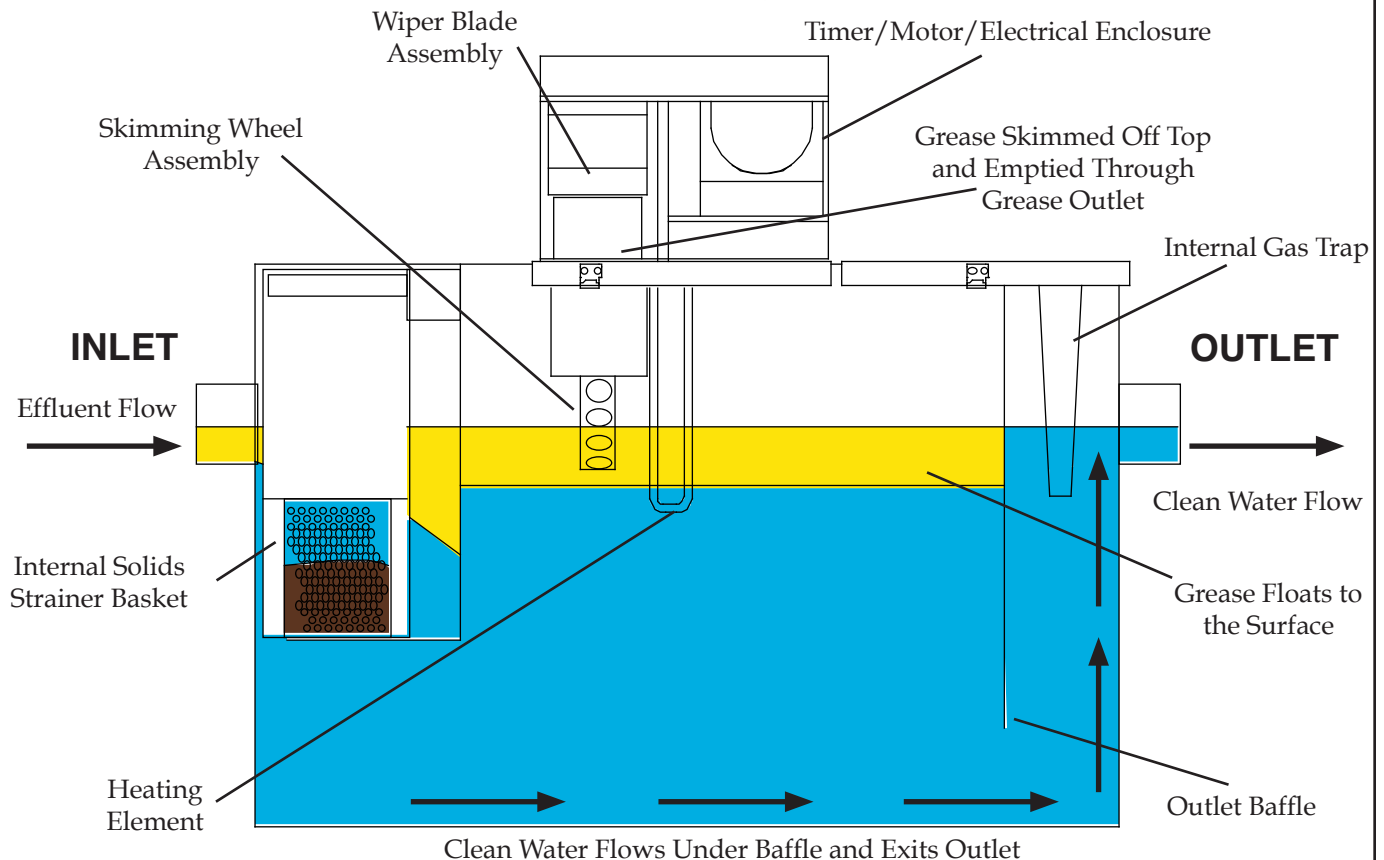
**Big Dipper Internal Strainer (IS)** series units utilize an internal strainer basket to capture incidental solids in kitchen waste water flows. A skimming wheel system inside the unit skims the grease & oils out of the retention area when activated by a programmable timer. IS units work well inside fast food-type restaurants or food preparation facilities where grease removal directly at the source is important. Big Dipper IS Point Source Grease Removal Units treat kitchen flows of 15 to 50 gallons per minute. There are also larger Grease Removal Units in the IS category that pretreat wastewater flows of 75 and 125 gallons per minute.



**Big Dipper Automatic Solids Transfer (AST)** series units provide full automatic grease removal and incidental solids handling. Incidental solids are strained out of the kitchen waste water and trapped in the solids chamber. Periodically, a water-driven eductor automatically empties the incidental solids out of the solids chamber. Like the IS series, the AST series has a skimming wheel system inside the unit which skims the grease & oils out of the retention area when activated by an integral timer. AST models pretreat kitchen waste water flows of 75 and 125 gallons per minute. The W-750-AST and W-1250-AST Grease Removal Units are geared towards larger facilities like hospitals or casinos, where grease removal from multiple kitchen drain points is important.



# Internal Strainer (IS) System Operation



During system operation, **Big Dipper IS** systems utilize two processes. The first is the **separation process**, where free-floating grease and oils separate from the kitchen flow. This occurs continuously as drain water passes through the system. The second is the **self-cleaning process**, which is controlled automatically by a timer. This timer operates the system's motor/skimming wheel assembly at a preset time to assure the most efficient operation.

### The Separation Process

As drain water containing free-floating grease and oils enters the **Big Dipper** system, the lighter fats and oils immediately separate, rise to the top and remain trapped in the retention area of the tank. The heavier clean water portion of the flow is allowed to exit under the outlet baffle and is discharged into the drain lines. The internal solids strainer basket collects food scraps and other incidental solids that may be present in the drain water. The top lid has a removable section over the internal strainer basket that allows easy access for the removal and emptying of the solids strainer.

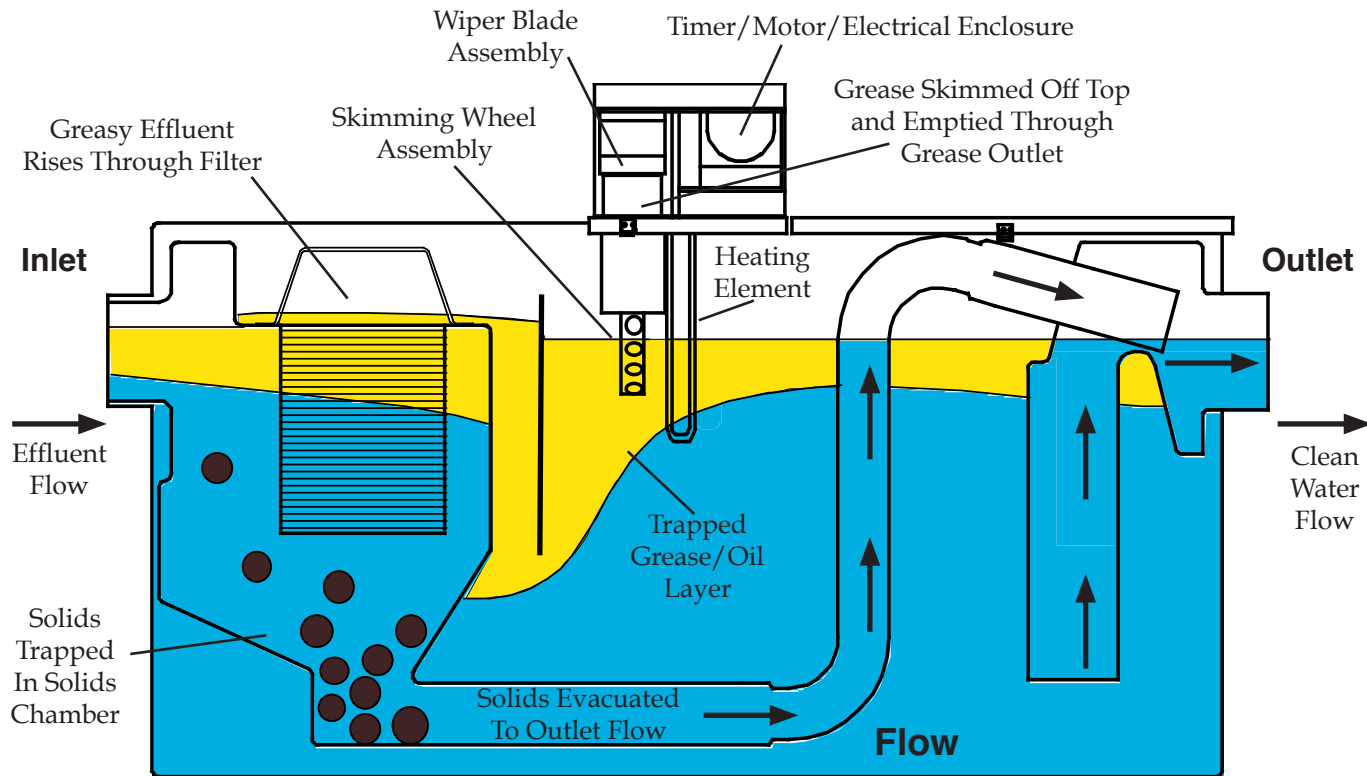
### The Self-Cleaning Process

At a preset time of day, determined by the timer settings, the self-cleaning process is started. An internal heater heats the unit to a temperature of 115-130°F (46-54°C). This ensures that all fats and oils are liquefied before being removed from the retention area of the tank.

When the timer reaches an "on" position, the motor rotates the skimming wheel. This wheel is made of a special type of material which causes grease and oils to adhere to it. A wiper blade assembly removes the grease and oils from the wheel. The skimmed grease and oils are collected in the collection container supplied with the Big Dipper.

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## Automatic Solids Transfer (AST) System Operation



**Big Dipper** AST systems automatically separate and remove grease, fat, and oil from drain water flow. A patented technological breakthrough allows incidental food solids and other debris found in the effluent to be separated from the grease and pumped out of the solids retention area to the drain. The entire process is controlled automatically by a timer. The operation of the Big Dipper AST can be broken into two components.

### **The Separation Process**

As drain water containing free-floating grease and oils enters the Big Dipper, the lighter fats and oils immediately separate, pass through the solids filter basket to the top of the tank, and are trapped in the grease retention area. Heavier clean water exits under the outlet baffle. Any food solids or debris contained in the drain water entering the Big Dipper are separated by the filter basket and held in the solids retention area.

### **The Self-Cleaning Process**

Incidental solids and trapped grease are automatically removed from the Big Dipper. An internal timer periodically activates the solids transfer pump, which whisks the trapped solids out of the solids retention area and discharges them to the outlet of the Big Dipper to join the cleaned water exiting the system.

Another independent timer is set to activate the grease removal process. When the timer reaches the "on" position, the electric heating element is activated and heats the system to 115-130° F. This ensures that all fats and oils are liquefied before they are automatically removed from the tank.

Simultaneously, the motor which rotates the skimming wheel is activated. Grease and oil adhere to the sides of the specially designed skimming wheel. A wiper blade assembly scrubs the grease and oil from the wheel. The skimmed fats/oils are discharged to the collection container supplied with the Big Dipper.



**BIG DIPPER®**

**Product Listings**

Thermaco products are widely accepted and approved for use throughout the nation. If local code approval is required in your area, please contact us. Our products may already be approved. If not, we will make every effort to obtain approval in your area so that you can also benefit from Thermaco products!



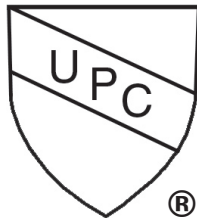
**Conforms to ASME Standards\***  
**ASME A112.14.3**  
**ASME A112.14.4**



**Conforms To Plumbing & Drainage Institute Standard**  
**PDI-G101\***



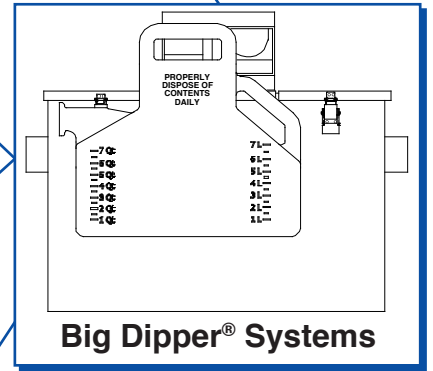
**Tested and Certified by:\***  
**CSA (Canadian Standards Association)**  
to comply with:  
CAN/CSA-C22.2 No. 68-92  
CAN/CSA-C22.2 No. 88-1958



**Accepted for Listing By:\***  
**IAPMO**  
(International Association of Plumbing and Mechanical Officials)



**Accepted for Listing By:\***  
**NSF**  
**ASME A112.14.3**



\* Please consult Thermaco for details on the specific models tested, certified, accepted and/or listed by these organizations.



**BIG DIPPER®**

**Additional Information & Listings**

### **THIRD PARTY EVALUATIONS AND LISTINGS\***

- PLUMBING & DRAINAGE INSTITUTE\*
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS\*
- NSF INTERNATIONAL\*
- CANADIAN STANDARDS ASSOCIATION
- CITY OF LOS ANGELES TESTING LABORATORY
- SOUTHERN BUILDING CODE CONGRESS INTERNATIONAL, INC.
- INTERNATIONAL CODE COUNCIL

### **APPROVALS AND LISTINGS**

- IAPMO
- UNIFORM PLUMBING CODE
- SOUTH FLORIDA PLUMBING CODE
- METROPOLITAN DADE COUNTY BUILDING CODE
- CITY OF CLEARWATER
- CITY OF LAS VEGAS
- CITY OF LOS ANGELES
- CITY OF NEW ORLEANS (ORLEANS PARISH)
- CITY OF NEW YORK -  
    **MATERIAL AND EQUIPMENT ACCEPTANCE (MEA) DIVISION**
- CITY OF PHILADELPHIA
- CITY OF PUNTA GORDA
- CITY OF SAN DIEGO
- COMMONWEALTH OF MASSACHUSETTS
- NARRAGANSETT BAY COMMISSION
- OHIO PLUMBING CODE
- PALM BEACH COUNTY
- STATE OF CALIFORNIA
- STATE OF NORTH CAROLINA HEALTH DEPARTMENT
- STATE OF OHIO HEALTH DEPARTMENT
- STATE OF OREGON

**Further listings /approvals are available upon request. Please contact Thermaco, Inc. for information.**

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