Understanding Automatic Kitchen Grease Trap Systems

Presented by
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Where Does Grease In Kitchen Effluent Originate From?

- Soup Kitchens
- Airports
- Food Processing Plants
- School Cafeterias
- Strip Shopping Centers
- Concession Stands
- Fast Food Restaurants
- Convenience Stores
- Restaurants in High Rise Buildings
- Hospitals
- Sports Arenas Cafeterias
- Hotels
- Casinos
- Grocery Store Kitchens And Delicatessens
- Full Service Restaurants
- Convention Centers
- Correctional Facilities
More and More Money is Being Spent in Restaurants

Restaurant Industry’s Share of the Food Dollar

Note:
US Population in 1955 was 155 Million.
In 2006, 300 million!
Pie chart does not reflect all the new sources for ready made food that can be found today at grocery stores, specialty food stores and delivery from places like Stop and Shop’s Pea Pod home Delivery Service.

Source: National Restaurant Association
Major Grease Entry/ Production Appliances In A Kitchen

1 - Three Compartment Sink 3-10 lbs/ day
2 - Pot-Washing Sink 3-10 lbs/ day
3 - Pre-Rinse Station 1-5 lbs/ day
4 - Wok 7-20 lbs/ day
5 - Exhaust Wet Hood 1-10 lbs/ day
6 - Combi-Oven 1-50 lbs/ day
7 - Rotisserie Oven 5-70 lbs/ day
8 - Rib Cooker 10-150 lbs/ day
9 - Tilt Kettle 1-30 lbs/ day
Three Types of Pretreatment Systems

Large, Pre-cast Concrete Grease Traps

• Passive, Hand-Scooped Grease Traps

• Automatic Removal Systems
Passive Grease Trap
“UNDER THE SINK”

Separated Grease/Oils Layer

Baffles

Inlet

Outlet

Sludge Buildup
Grease Interceptor
“IN THE GROUND”

Access Doors/Manholes

Inlet Pipe From Kitchen

Grease Layer (“Mat”)

Outlet Pipe To Sanitary Sewer Line

Sludge Buildup
Automatic Grease Removal Unit
"UNDER THE SINK"
• There Are Many Places Where The Installation Of An In-ground Grease Interceptor Is Impractical

• Interior Grease Traps Protect The Facility Plumbing

• Interior Grease Traps Reduce The Potential For Back Ups

• Typically, Interior Grease Trap Sizing Is Based Upon The Calculated GPM Discharge Of The Fixture(s) They Are Plumbed To.
  – As A Result, Most Point Source Traps Are Reasonably Compact In Size
INTERIOR GREASE TRAP DEFICIENCIES

• Sizing Does Not Address The Significance Of Daily Loading Of Fats Oils And Grease Into The Trap.

• Seasonal Population Swings, Change Cleaning Needs

• Menu Changes, Effect The Rate Of Grease Loading

• Traps Require Unpredictable Cleaning Frequency

• Hard To Enforce Or Monitor Proper Frequency Of Cleaning To Maintain The Trap’s Performance
Properly Sized Grease Trap With Insufficient Capacity

Example:

- Generating just ¾ of a gallon of oil per day (approx. 5 pounds), an Asian wok will fully load a 50 lb (25GPM) grease trap in 10 days!

- Without proper, consistent, and timely cleaning, after 10 days grease passes through the trap and into the collection system.
A Properly Sized Automatic Grease Trap Maintains Performance

Example:

- An Automatic Grease Trap Removes The Captured Grease Daily

- Connected To The Same Multi-station Wok, It Will Maintain Maximum Efficiency Over Time

- Drains And The Collection System Are Protected From Grease

- Back Ups And Health Risks Due To Grease Blockages And Back Ups Are Minimized
Where In The Facility Would You Install An Automatic Grease Trap?

**Types Of Units**

A - Point Source Removal Unit
B - Central Grease Removal Unit
Big Dipper Point Source Units

Units in the 15-50 GPM Range
**Operation Principle Of A Big Dipper® IS Unit**

- **Skimming Wheel Rotates; Grease Adheres To Wheel**
- **Timer Activates Skimming Wheel Operation**
- **Grease Is Scraped From Wheel Into Discharge Trough**
- **Cleaned Water Flows Into Sanitary Sewer**
- **Grease & Oils Rise To Top Of Baffled Chamber**
- **Flow From Kitchen**
- **Incidental Solids Are Separated In An Internal Strainer Basket**
- **Grease Is Collected For Recycling By Nationwide Network Of Rendering Companies**
Point Source Grease Traps

Bishop's 4th St. Diner

Manual Grease Trap

Automatic Grease Trap
Point Source Grease Traps

Manual Grease Trap

Automatic Grease Trap
Big Dipper Central Grease Removal Units

Units in the 75-125 GPM Range
Operation Principle Of A Big Dipper® AST Unit

- Timer And Heater Operate To Liquefy Grease
- Inlet Baffle Allows Water And Grease To Pass
- Solids Are Separated
- Automatic Solids Transfer To Discharge
- Grease & Oils Rise Immediately To Top Of Tank
- Special Skimming Wheel Attracts Grease
- Grease Is Wiped From Wheel Into Discharge Trough
- Grease Is Collected For Recycling And To Nationwide Network Of Rendering Companies
- Cleaned Water Discharge
Big Dipper Central Grease Removal Units

Systems Rated At 125GPM or 250Lbs Of Grease Retention Capacity
Big Dipper Central Grease Removal Units

System Rated At 125GPM or 250Lbs Of Grease Retention Capacity
Indirect Waste/ Air Gap Solution
Indirect Waste/ Air Gap Solution
Tilt Kettle Application
Chicken Rotisseries produce significant amounts of grease in kitchen drain water flows. As much as 5 gallons per day or 35 pounds!!

Systems equipped with the SWS-1 Supplemental Water Supply are required to manage this type of application.
Installation Considerations

- Installation Of Automatic Grease Traps Should Be Installed According To Local Plumbing Codes

- Systems Should Never Be Installed Down Stream Of A Food Waste Grinder Or Pulper

- Discharge Venting Is Required For Proper Flow
  - Inlet Venting When Required By Local Plumbing Code Should Be To Atmosphere Or A Mechanical Vent
Application Considerations

• Use Of Automatic Grease Traps Should Be Applied Where The Volume Of Grease Generation Warrants It.

• Places Such As Ice Cream Stores And Gas Station Convenience Stores Produce Little To No Grease
  – Automatic Systems In These Type Of Applications Tend To Be “Overkill” and can lead to odor issues

• Easy Access To The Machine Is Important For Routine Collection Of Collected Grease And Maintenance.
Training and Maintenance

AUTOMATIC SYSTEMS REQUIRE SIMPLE ROUTINE MAINTENANCE

- Two Minutes Of “TLC” Is Required Daily, For The Removal Of Solids From The Internal Strainer And The Proper Disposal Of Collected Grease.

- Instructions Are Provided In The Form Of A Poster To Be Located Near The Machine.

- Instructions Are In A Pictorial Form And In Three Languages

- On-site “Start Up” Training Is Only A Phone Call Away

- Easy To Understand Training Videos Are Also Available On YouTube
An Evolution Is Developing In the Field

• With 10’s Of Thousands Of Systems In The Field We Are Responding To Our Customers Needs

• Adaptive, “Smart” Automatic Grease Traps Will Operate And Extract Grease Only When Needed

• From Exceptionally High Grease Generating Customers Using Rotisseries And Woks, To Customers With Seasonal Businesses, To Schools That Close For Weeks Or Months At A Time….All Will Benefit
QUESTIONS?
THANK YOU!

Regional Specialist:
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For more information on pretreatment systems and automatic interceptors, please visit Big Dipper Online at www.BIGDIPPERSALES.com
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