

FOG Fact Sheet 3

TREATMENT REQUIREMENTS - AUTOMATIC GREASE RECOVERY UNITS (AGRU)



An AGRU must be installed immediately downstream of each fixture(s) listed below:

- Pot sinks
- Pre-rinse sinks
- Any sink into which fats, oils, or grease are likely to be introduced
- Soup kettles or similar devices
- Wok stations
- Floor drains or sinks into which kettles may be drained
- Automatic hood wash units
- Dishwashers without pre-rinse sinks¹
- Any other fixtures or drains that are likely to allow FOG to be discharged

Please note that food grinder or food pulpers should not discharge to AGRU. Additionally, wastewater flows connected to the grease interceptor must be screened to prevent solids from entering the treatment unit.

An AGRU must meet the following requirements:

- Designed and installed in accordance with the manufacturer's specifications
- Sized to properly pre-treat the measured or calculated flows for all connected fixtures or drains
- Constructed using corrosion-resistant material such as stainless steel or plastic
- Equipped with an internal or external strainer mechanism to intercept and separate solids from the effluent flow
- Include a skimming device, automatic draw-off, or other mechanical means to automatically remove separated fats and oils. Such skimming device must be:
 - ✦ Hard wired or cord & plug connected electrically and controlled using a timer or level control
 - ✦ Field adjustable
- Fitted with an internal or external flow control device
- Located so as to permit easy access for maintenance

No fixture or drain other than those listed above must be connected to the AGRU unless approved by an authorized agent. Additionally, the AGRU must be operated no less than once per day.

Please note that other more detailed requirements such as unit installation and public health code requirements apply. Review the General Permit for details prior to designing and installing an AGRU.

¹ Food preparation establishments should either have a pre-rinse sink or follow Best Management Practices to eliminate FOG in discharge waters from dishwaters.

60300A SERIES

GI 2000A AUTOMATIC GREASE RECOVERY DEVICE

APPLICATION

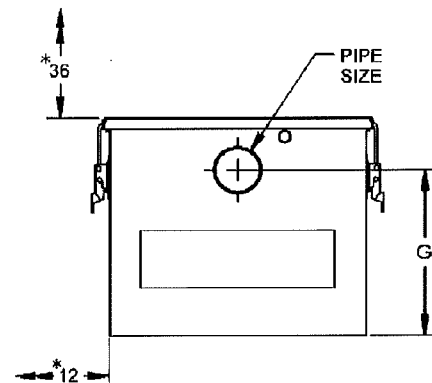
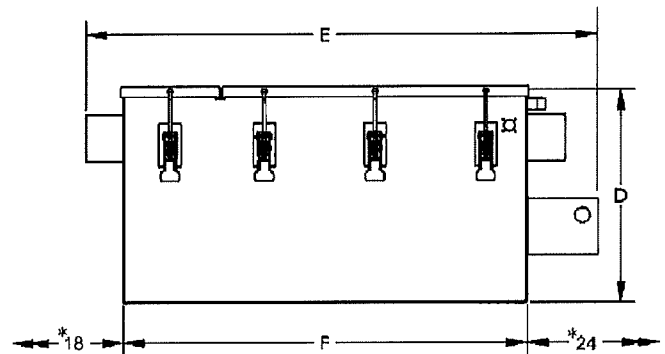
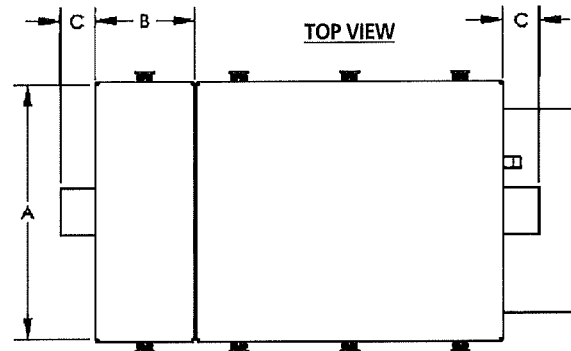
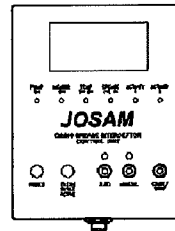
For use in restaurant and institutional kitchens and all types of food handling and processing areas where waste water contains, fats, oil and grease (FOG).

SPECIFICATION

JOSAM 60300A Series fully automatic Grease Recovery Device (GRD) is constructed of 304 grade stainless steel with supplemental solids interceptor, removable basket, stainless steel draw latches, non-adhesive "U" channel gasket, 55 gallon polypropylene reclaim tank with alarm and pump, may be floor mounted, partially recessed, or below grade in vaulted enclosure and is capable of measuring grease, heating congealed grease, and transferring grease via pump to a remote reclaim tank. The data is then sent to a Nema encased controller with an LCD display and LED indicators to provide current system status. The micro-processor records and displays clean cycles on a daily, weekly, monthly and yearly basis.

Available Options

- 23 Remote Monitoring Package
 - (-23 A) Monitoring Plan
 - (-23 B) Monitoring Plan
 - (-23 C) Monitoring Plan
- 24 Extended Warranty Package
- 33 55-Gallon Stainless Steel Reclaim Tank
- 34 55-Gallon Steel Reclaim Tank



| TYPE NO. | FLOW RATE GPM | GREASE CAP LBS. | PIPE SIZE | A | B | C | D | E | F | G | LBS. |
|----------|---------------|-----------------|-----------|--------|---|-------|--------|---------|--------|--------|------|
| 60306A | 25 | 50 | 3 | 24-3/8 | 9 | 3-1/2 | 16 | 35-1/2 | 25-5/8 | 11 | 220 |
| 60307A | 35 | 70 | 3 | 24-3/8 | 9 | 3-1/2 | 20 | 40-5/8 | 31-1/2 | 15-1/2 | 340 |
| 60308A | 50 | 100 | 3 | 25-7/8 | 9 | 3-1/2 | 22-1/2 | 42-3/8 | 33 | 17-1/2 | 425 |
| 60309A | 75 | 150 | 4 | 25-7/8 | 9 | 3-1/2 | 26 | 56-1/8 | 46-3/4 | 21-1/2 | 700 |
| 60310A* | 100 | 200 | 4 | 35 | 9 | 3-1/2 | 31 | 67-1/2 | 58 | 23 | 800 |
| 60311A* | 150 | 300 | 4 | 39 | 9 | 3-1/2 | 35 | 73-3/4 | 64 | 27 | 1100 |
| 60312A* | 200 | 400 | 6 | 43 | 9 | 3-1/2 | 41 | 80-3/4 | 71 | 31-1/2 | 1250 |
| 60313A* | 250 | 500 | 6 | 47 | 9 | 3-1/2 | 44-3/4 | 85-3/4 | 76 | 35-1/2 | 1400 |
| 60314A* | 350 | 700 | 6 | 47 | 9 | 3-1/2 | 48 | 105-1/2 | 96 | 39-1/2 | 1525 |
| 60315A** | 500 | 1000 | 6 | 47 | 9 | 3-1/2 | 51 | 130-7/8 | 120 | 44 | 1650 |

- 55-GAL. RECLAIM TANK NOT SHOWN
- * RECOMMENDED CLEARANCES
- INCLUDES EXTERNAL MACERATING PUMP
- ** UTILIZES TWO PUMPS & RECLAIM TANKS

60100H SERIES

MANUAL CLEANING, ON-FLOOR TYPE

APPLICATION

For use in restaurant and institutional kitchens and all types of food handling and processing areas where waste water contains fats, oil and grease (FOG). Adequate space and head room for removal of cover must be available for manual cleaning.

SPECIFICATION

JOSAM 60100H Series epoxy coated fabricated steel Grease Interceptor, no-hub connections, internal trap, removable diffuser baffle, gasketed non-skid cover, flow control fitting and PDI Seal of Approval. Conforms to Plumbing & Drainage Institute Standard PDI-G101.



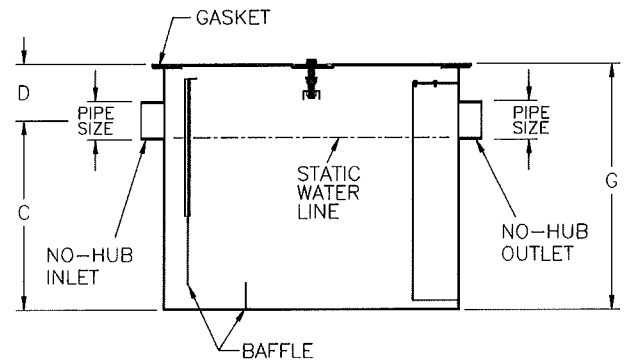
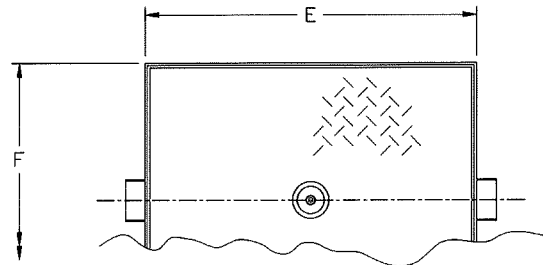
Conforms to Plumbing and Drainage Institute Standard PDI-G101.

Available Options

- 40 Cover Recess for Floor Finish
- 61 Flange and Clamp Device
- * -ISI Integrated Solids Interceptor
- ▼ -EXT Extension, 6" Standard. (Specify Extension Height)
- ▼ -RT Recessed Type
- ▼ -ET Enclosed Type
- HD Heavy-Duty Cover
- SS Stainless Steel Interceptor
- ▼ -GRD* Grease Removal Device, 60104H-60110H
- † -GRDP Grease Recovery Device with Probe
- SAP Sensing and Alarm Probe

* -ISI and -GRD cannot be furnished together. † 60100H-GRDP meets ANSI A112.14.4

| TYPE NO. | FLOW RATE GPM | GREASE CAP LBS. | PIPE SIZE | ROUGH-IN CENTERS | | LGTH. E | WIDTH F | HGT. G | LBS. |
|----------|---------------|-----------------|-----------|------------------|-------|---------|---------|--------|------|
| | | | | C | D | | | | |
| 60102H | 7 | 14 | 2 | 8-1/4 | 3-3/8 | 14-7/8 | 13 | 11-5/8 | 35 |
| 60103H | 10 | 20 | 2 | 8-1/2 | 3-3/8 | 16-5/8 | 14-1/2 | 11-7/8 | 45 |
| 60104H | 15 | 30 | 2 | 9-1/2 | 3-3/8 | 20-3/8 | 17 | 12-7/8 | 60 |
| 60105H | 20 | 40 | 3 | 12 | 4-7/8 | 20-7/8 | 19 | 16-7/8 | 70 |
| 60106H | 25 | 50 | 3 | 13 | 4-7/8 | 23-3/8 | 21-1/2 | 17-7/8 | 90 |
| 60107H | 35 | 70 | 3 | 14-1/2 | 4-7/8 | 26-1/8 | 23 | 19-3/8 | 110 |
| 60108H | 50 | 100 | 3 | 16-1/2 | 4-7/8 | 27-7/8 | 25-1/2 | 21-3/8 | 135 |
| 60109H | 75 | 150 | 3 | 21 | 6 | 41 | 31 | 27 | 220 |
| 60110H | 100 | 200 | 4 | 23 | 8 | 47 | 35 | 31 | 325 |



60100H-GRD SERIES

with Grease Removal Device

APPLICATION

For use in restaurant and institutional kitchens and all types of food handling and processing areas where waste water contains fats, oil and grease (FOG). The Grease Removal Device (GRD), with programmable timer, controls the internal pump to remove grease on schedule.

SPECIFICATION

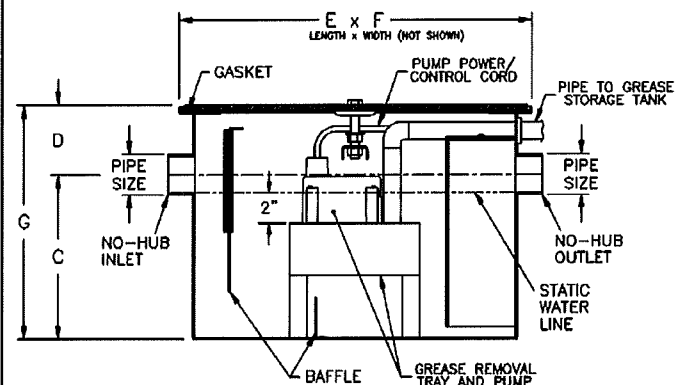
JOSAM 60100H-GRD Series epoxy coated fabricated steel Grease Interceptor, no-hub connections, internal trap, removable baffle, gasketed non-skid cover, flow control fitting and PDI Seal of Approval. Programmable timer controls internal pump for removal of grease at predetermined intervals.

OPTION N/A:

-ISI



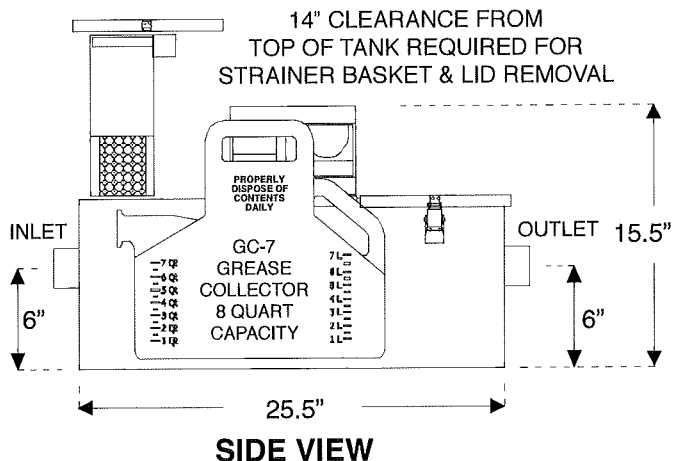
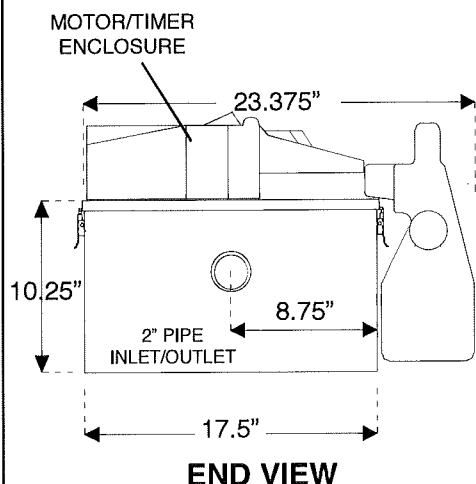
| TYPE NO. | FLOW RATE GPM | GREASE CAP LBS. | PIPE SIZE | ROUGH-IN CENTERS | | LGTH. E | WIDTH F | HGT. G | LBS. |
|------------|---------------|-----------------|-----------|------------------|-------|---------|---------|--------|------|
| | | | | C | D | | | | |
| 60104H-GRD | 15 | 30 | 2 | 9-1/2 | 3-3/8 | 20-3/8 | 17 | 12-7/8 | 90 |
| 60105H-GRD | 20 | 40 | 3 | 12 | 4-7/8 | 20-7/8 | 19 | 16-7/8 | 100 |
| 60106H-GRD | 25 | 50 | 3 | 13 | 4-7/8 | 23-3/8 | 21-1/2 | 17-7/8 | 120 |
| 60107H-GRD | 35 | 70 | 3 | 14-1/2 | 4-7/8 | 26-1/8 | 23 | 19-3/8 | 140 |
| 60108H-GRD | 50 | 100 | 3 | 16-1/2 | 4-7/8 | 27-7/8 | 25-1/2 | 21-3/8 | 165 |
| 60109H-GRD | 75 | 150 | 3 | 21 | 6 | 41 | 31 | 27 | 250 |
| 60110H-GRD | 100 | 200 | 4 | 23 | 8 | 47 | 35 | 31 | 355 |





Big Dipper® IS Point Source Automatic Grease Removal Systems

W-200-IS Specifications



FEATURES:

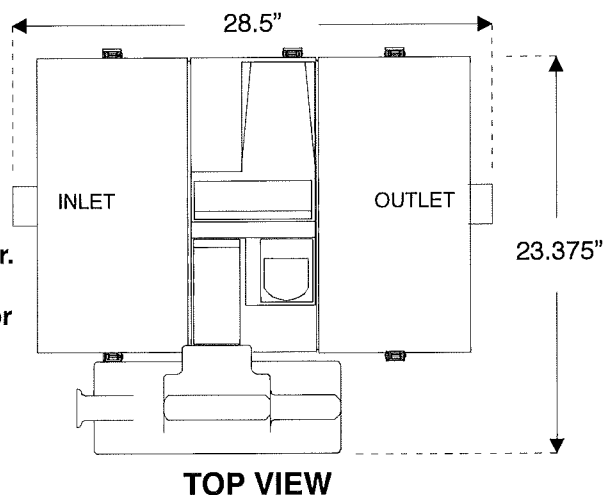
- Fully automatic self cleaning cycle. Removes collected grease & oils from tank without any operator assistance. Comes complete with 24-hour timer and Grease Collector.

- Constructed of corrosion resistant materials suitable for installation in virtually any location. Attractive sanitary Stainless Steel exterior.

- Integrated Motor/Grease Outlet/Heater/Lid enables a fast, do-it-yourself unit operation reversal.

- Compact footprint.

- Two (2) No-Hub Connectors provided.



TECHNICAL DATA

Materials: _____ Exterior: 304 Stainless Steel, Bright Finish
 Interior: Rotationally Molded Polyethylene

Electrical: _____ 115 VAC, 60 Hz, 520 Watts (4.5 Amps)

Maximum Inlet Flow Rate: _____ 20 GPM

Number of Skimming Wheels: _____ 1

Skimming Rate: _____ 20 Pounds Per Hour

Grease Retention Capacity: _____ 40+ Pounds

Internal Solids Strainer Capacity: _____ 1.85 Gallons



Conforms to ASME Standard
ASME A112.14.3 and A112.14.4



ASME A112.14.3



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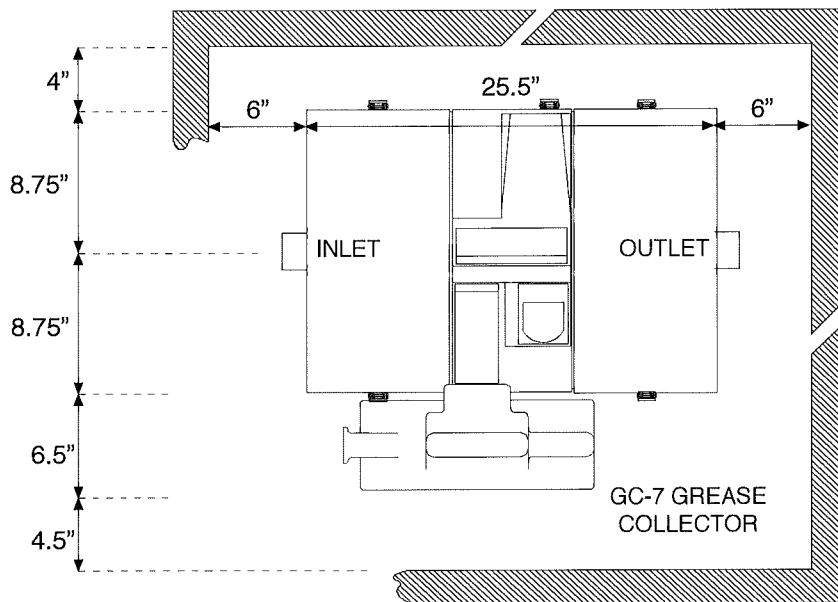


Big Dipper® IS Point Source Automatic Grease Removal Systems

W-200-IS Specifications

INSTALLATION INFORMATION

Suggested Minimum Footprint Dimensions



DO . . .

Allow a minimum of 14" clearance from top of tank for removal of unit lid.

READ instruction manual included with system before doing anything.

Install unit allowing for the minimum clearances shown.

Make sure the height above the Internal Strainer Access Cover is enough to remove the strainer.

Make piping connections with rubber "No Hub" connectors (provided).

Keep outlet piping as straight as possible. Use only "sweep" connections.

Install vent on outlet piping.

Fill the tank with water before energizing the power to the motor and heater.

Set Programmable Time Controller for proper operating times.

DON'T . . .

Install "P" trap on outlet connection of tank. (Note: the unit already has an internal gas trap). Reduce pipe size on outlet piping.

NOTE: Drawing for reference only. Equipment must be installed in compliance with all applicable laws, regulations and codes, including plumbing codes. Installation should be performed by a qualified plumber.

Job Specification:

Grease and oils separator(s) shall be Thermaco **Big Dipper** automatic grease/oil recovery system(s) as manufactured by Thermaco, Inc., Asheboro, North Carolina as noted on plans.

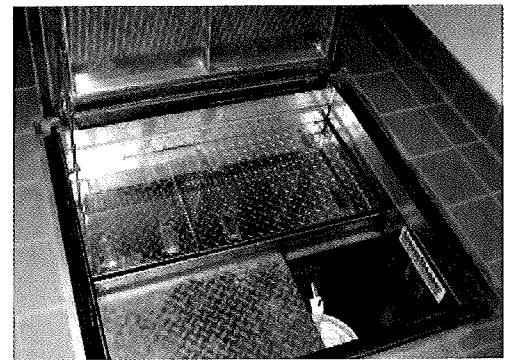
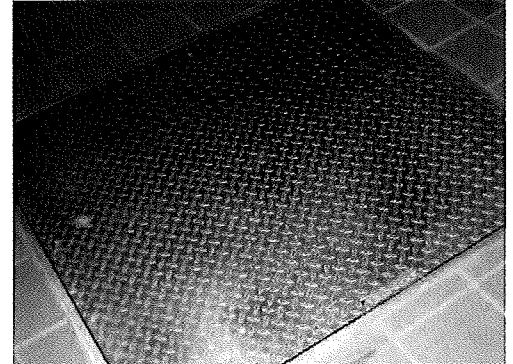
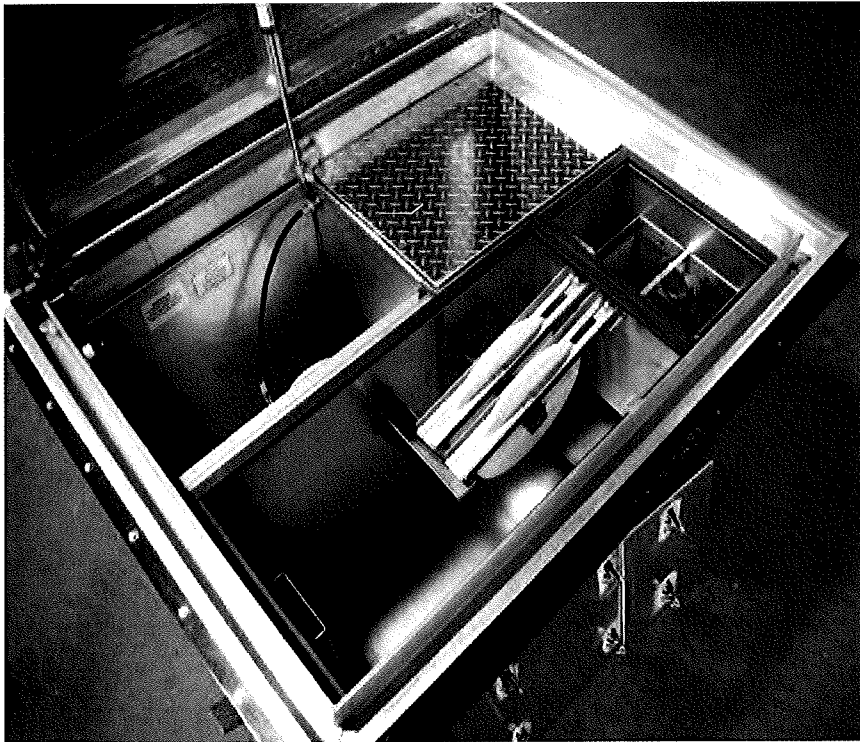
Separator Specifications:

Furnish and install ____ Thermaco **Big Dipper** Model No. W-200-IS, bright finish type 304 stainless steel exterior, rotationally molded polyethylene interior automatic self-cleaning grease and oil recovery separator(s) for floor mounted or partially recessed installation, rated at 20 gallons per minute peak flow, 40 pounds of grease capacity and including as an integral part of the unit, 1 rotating gear hydrophobic wheel assembly for automatic grease/oil removal, an integral flow control device, self-regulating enclosed electric immersion heater, a vessel vent, an integral gas trap, an integral programmable 24-hour multi-event time control, a field reversible motor location, a field reversible grease/oil sump outlet, quick release stainless steel lid clamps, a gasketed and fully removable 304 stainless steel lid, a lift-out strainer basket access, an internal stainless steel strainer basket for collection of coarse solids, and a separate grease and oils collection container. Electric assembly shall be tested to comply with pertinent sections of the Standards for Safety ANSI/UL 73 and/or ANSI/UL 1004. Electric motor equipped with overload protection. Two (2) no-hub connectors for plumbing connection provided.

Flush With Floor AGI

Designed for Dependability!

Highland Tank®



Designed for Dependability

The Flush with Floor GreaseStopper® is recessed with its top flush with the floor in order to intercept kitchen fixtures and floor drains, save valuable above floor space, or accommodate existing piping and structural conditions. This specialized grease removal device features an integral Automatic Grease Interceptor with separate grease storage and dry electrical compartments.

Ideal For On Slab Installations

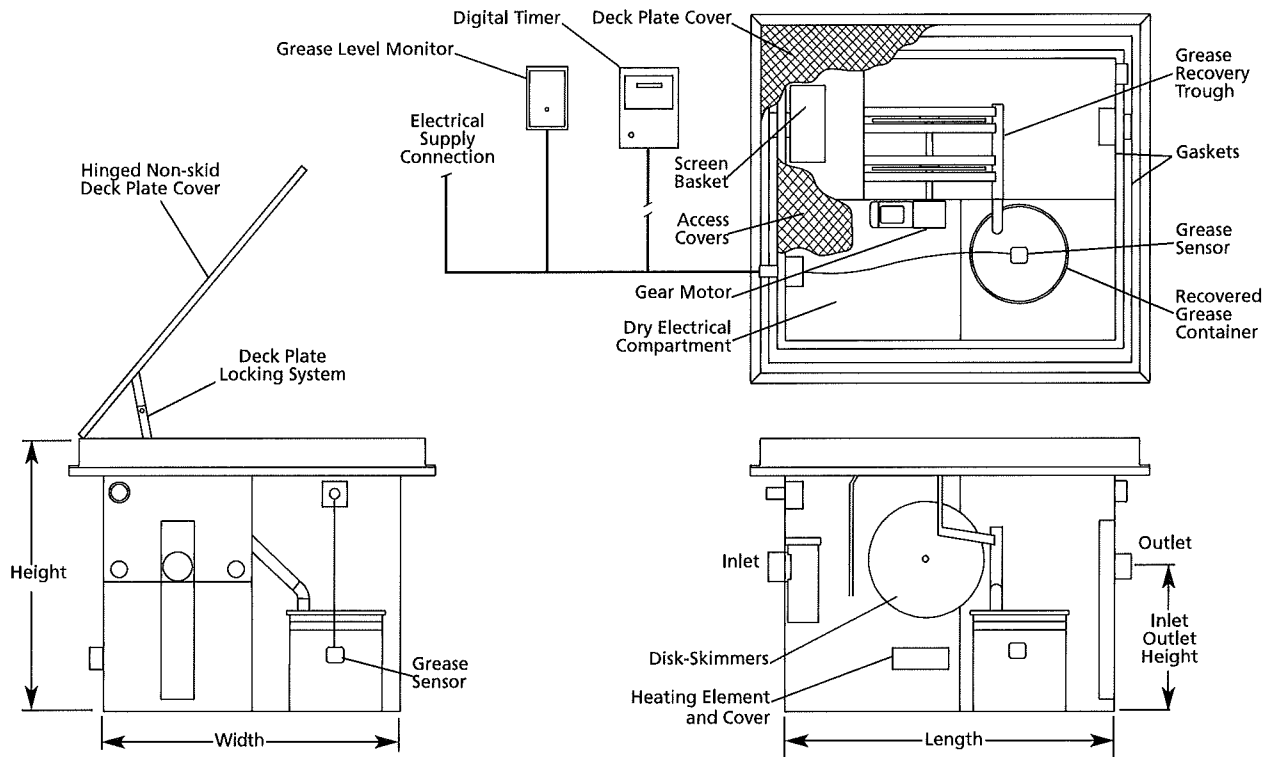
The grease interceptor is equipped with a hinged access cover that opens to reveal the entirety of the unit for easy cleaning and maintenance. Additionally, internal water-tight covers with quick-release, flush-mounted latches prevent wash water from intruding into

the compartments. The covers are constructed of lightweight aluminum deck plate rated for foot traffic and are provided with an anti-slip finish for safety wherever it is installed.

Standard Features

- Constructed of 304 stainless steel for maximum strength and durability
- Hinged non-skid deck plate cover for ease of maintenance
- Extra-heavy leak proof gaskets
- Locking system to secure the cover to prevent closure of the lid when open
- Automatic grease removal system
- Integrated flow control device
- Removable solids strainer basket
- Electric powered grease diskimmers
- Dry electric compartment with internal lid to protect the electronics and power connections
- Grease storage compartment with removable container with high-level alarm
- Integral perimeter channel to allow floor wash-down to drain into the grease interceptor
- Concrete anchors to resist the effects of ground water lift

Flush With Floor AGI Sizing Guide



| Model Flow Rate Gal/Min | Length | Dimensions Width | Height | Inlet & Outlet Diameter | Inlet & Outlet Height |
|-------------------------------|--------|---------------------|--------|-------------------------------|-----------------------------|
| FF - AGI - 20 | 36" | 36" | 32" | 3" | 15" |
| FF - AGI - 25 | 36" | 36" | 32" | 3" | 15" |
| FF - AGI - 30 | 36" | 36" | 32" | 3" | 15" |
| FF - AGI - 35 | 36" | 36" | 32" | 3" | 15" |
| FF - AGI - 50 | 40" | 36" | 33" | 4" | 18" |
| FF - AGI - 75 | 48" | 36" | 35" | 4" | 22" |
| FF - AGI - 100 | 60" | 38" | 35" | 4" | 22" |

National plumbing codes require a minimum 2 lbs. of grease retention for each gal/min of flow. Grease holding capacity at breakdown is determined by a minimum 90% efficiency rating in real life applications and installed according to specification.

The Grease Removal Device That Eliminates Vault Requirements!

Highland grease removal systems set the standard for reliability. When installed below ground level to intercept kitchen fixtures and floor drains, our Flush with Floor Automatic Grease Interceptor maintains a dry environment which is conducive to maintaining the electrical and mechanical equipment in good working condition.



One Highland Road
Stoystown, PA 15563
814-893-5701
FAX 893-6126

4535 Elizabethtown Road
Manheim, PA 17545
717-664-0600
FAX 664-0617

958 19th Street
Watervliet, NY 12189
518-273-0801
FAX 273-1365

2700 Patterson Street
Greensboro, NC 27407
336-218-0801
FAX 218-1292

2225 Chestnut Street
Lebanon, PA 17042
717-664-0602
FAX 664-0631

1510 Stoystown Road
Friedens, PA 15541
814-443-6800
FAX 444-8662

GreaseStopper®

Automatic Grease Interceptors

Models 15 - 100



Highland Tank®



Digital Timer is preset at the factory and can easily be reprogrammed for specific site conditions and requirements.

Listings and Approvals

Designed and constructed in accordance with Underwriters Laboratories UL430 Standard (Control Number 1D42).

Tested by Chemir Analytical Services to conform to PDI G101 and certified to ASME A112.14.3 & 14.4.

IAPMO Research and Testing, Inc.
Certificate of Listing (UPC)

City of New York Material and Equipment
Acceptance - MEA No. 251-91E2

Massachusetts State Plumbing Code - CMR-248

Foxwoods Resorts Casino Vendor I.D. MPGE#6451

New Jersey Casino Control Commission
Vendor I.D. NO. 02066

Washington Suburban Sanitary Commission (WSSC)

U.S. Patent #'s 4,051,024, 4,268,396, 5,030,357

Canadian Patent # 1,097,227

U.K. Patent # 1,584,095



LISTED

1D42

WASTE DISPOSER



GreaseStopper® Automatic Grease Interceptors

Highland Tank GreaseStopper® Automatic Grease Interceptors (AGI) are designed to intercept and remove large quantities of fats, oils, and grease (FOG) discharged from food service facilities and large commercial/institutional kitchens, which might interfere with the proper drainage and treatment of municipal wastewater.

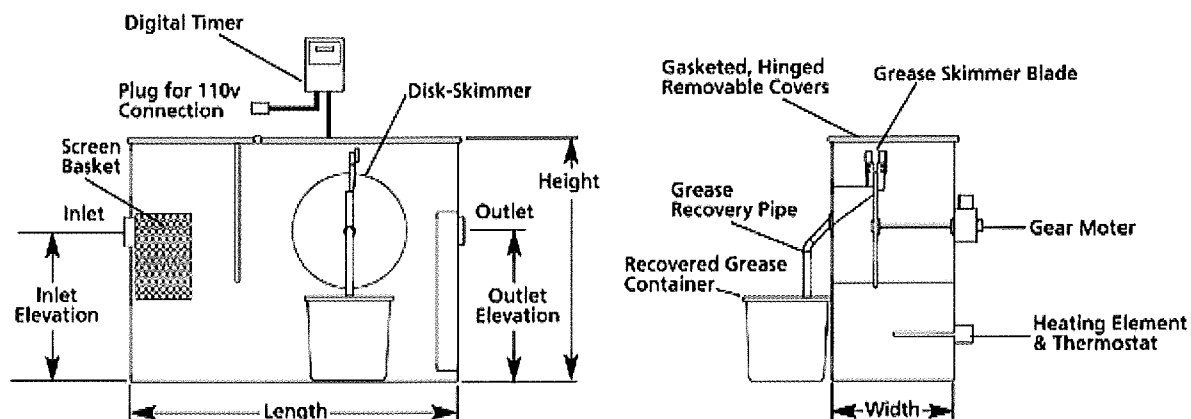
GreaseStopper® AGIs are relatively small, allowing installation in a kitchen under a sink or other limited space. GreaseStoppers® incorporate an electrically powered grease-skimming device.

During operation, the grease is separated by gravity flotation. Since grease is lighter than water, it floats and can be skimmed off the top surface of the water on a time or event controlled basis. The skimmed grease is essentially scraped or wiped from the skimmer surface, removed from the interceptor, and collected in a waste disposal container. The accumulated grease and oils can be disposed of or recycled. GreaseStopper® units ship with a UL-Approved, heavy-duty plug for use with a properly installed GFI outlet, according to appropriate electrical code. The plug can be removed for direct wiring if required by authority having jurisdiction.

Proven Performance

- Recovers, removes and recycles fats, oils and grease.
- Extremely low maintenance - only one moving part!
- Quality design and construction
- The Lowe Engineering Automatic Grease Interceptor - The Original Automatic - Still the best available interceptor!

General Arrangement



| Model | Static | †Grease Holding | Dimensions | | | Inlet / | Inlet / |
|-------------|-----------|-----------------|------------|-------|--------|----------|---------|
| Flow Rate | Water | Capacity | Length | Width | Height | Outlet | Outlet |
| Gal/Min | (Gallons) | (lbs.) | | | | Diameter | Height |
| *AGI - 15 | 9.2 | 50 | 22.25" | 12" | 16.5" | 2"/2" | 9"/9" |
| *AGI - 20 | 12.7 | 69 | 26.25" | 14" | 18" | 2"/2" | 9"/9" |
| *AGI - 25** | 17.1 | 91 | 33" | 16" | 18" | 3"/3" | 9"/9" |
| AGI - 25L | 19 | 83 | 40" | 22" | 18" | 2"/2" | 6"/6" |
| AGI - 30 | 23 | 124 | 36" | 17" | 19" | 3"/3" | 10"/10" |
| AGI - 35 | 43.5 | 253 | 36" | 18" | 26" | 3"/3" | 17"/17" |
| AGI - 50 | 50 | 292 | 40" | 18" | 32" | 3"/3" | 18"/18" |
| AGI - 75 | 75 | 458 | 48" | 18" | 35.75" | 4"/4" | 22"/22" |
| AGI - 100 | 104 | 636 | 60" | 20" | 33.75" | 4"/4" | 22"/22" |

† National Plumbing Code requires a minimum 2 lbs. of grease detention for each gal./min of flow.

* Low inlet/outlet height (at 6") available on AGI models 15, 20 & 25.
Custom sizes, inlet/outlet elevations available, consult factory.



Advantages

- Removes and recovers nearly 100% of the fats, oils and grease from kitchen and food processing drains.
- New Digital Technology removes grease automatically on a pre-programmed, timed basis.
- Constructed of stainless steel and other corrosion resistant materials - suitable for installation in almost any location.
- Includes an electric immersion heater to maintain grease temperature and consistency for effective removal.
- Recovered grease is collected in an external Waste Grease Container.
- Easy access to interior for maintenance and cleaning.
- Eliminates costs of cleaning pipes and/or holding tanks inside and outside of the building.
- Removable screen basket collects and contains solids.
- Automatic timing device assures removal of grease on a daily basis.
- Removal of grease quickly eliminates decomposition and rancid chemical reactions.
- Reduces Total Suspended Solids (TSS) and Biological Oxygen Demand (BOD) loading.
- Recycled grease conforms to most environmental protection programs.
- Extensive range of standard sizes and capacities; Custom manufacturing is available.
- Plug in unit can be hard-wired if required by authority having jurisdiction.



Please visit us at www.greasestopper.com

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