

Jay R. Smith Mfg. Co.

Pioneering New Solutions

Guide To Interception

Traditional G.I.
Semi-Automatic Draw-off G.I.
Custom Made, Special
Quote, Interceptors



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THE TRADITIONAL GREASE INTERCEPTOR 8000 SERIES



Overview

The Traditional grease interceptor line is the cornerstone product of the Pioneering concept. For more than fifty years, Jay R. Smith Mfg. Co. has conducted hundreds of tests, in the laboratory and in the field, in order to offer the most efficient Grease Interceptors with improved operational characteristics suitable for most applications. The Traditional Grease Interceptor is designed for practical applications. These interceptors bear the certification seal of the Plumbing and Drainage Institute (PDI). Rating, sizing and special features of these units can be found in the Smith Yellow Pages® Catalog, 8000 Series Interceptors. The Traditional line may be installed either on-grade, semi-recessed or fully recessed in the floor. In addition, the fully recessed installations have the option of a partially or completely enclosed cradle to act as a drip pan.

When to Use the Traditional Unit

The Traditional Grease Interceptor is recommended for areas where the accumulation of grease, fat, oil or other similar line-clogging contaminants should be prevented from entering the drainage line. The Traditional Grease Interceptor should always be considered when designing the plumbing drainage system in any restaurant, cafeteria, hotel, school, hospital, institutional or commercial building as well as food processing plants, dairies and other industries having facilities for the preparation and serving of food in quantity. In these installations, where grease and fats are by-products, an efficient Smith interceptor should be installed to prevent this material from entering the drainage line.

Maintenance

Even the best designed interceptors that are properly installed will fail if they are not maintained. Maintenance must be performed before the grease in the waste water down stream of the interceptor exceeds 100 parts per million (100 milligrams per liter) or in accordance with local code*. If user must comply with a code which limits grease to 100 parts per million, cleaning is recommended every 2 or 3 days. When cleaning is performed, it should be understood to always include the removal of grease from the top of the separation chamber as well as any solids which have accumulated along the bottom. See Figure 1.

**See PDI Guide to Grease Interceptors, Eliminating the Mystery, page 8 for greater detail on maintenance.*

How the Traditional Grease Interceptor Works

The Traditional Grease Interceptor has an external flow control fitting properly sized and installed to regulate the flow into the unit. This allows the grease-laden water to enter at a controlled rate of flow, free of turbulence. The water interacts with strategically located baffles to separate the grease from the water. Once separated, the grease contaminants rise to the surface of the water in the unit by natural flotation and are accumulated until removed. A regular manual cleaning interval must be established for maintaining proper discharge efficiency.

Traditional Interceptor Guide Specification

The Traditional Grease Interceptor, which is often referred to as a passive or manual unit, utilizes the gravity separation principle. The rate of flow into the interceptor is controlled by a flow control fitting, enabling the interceptor to collect over 90% of the grease which flows into it. "Uni-lock" cover design permits convenient cover removal for periodic cleaning. The interceptor may be set on the floor, semi-recessed or recessed with cover flush with finished floor. Low rough-in designs are available for use with low roughing sinks. The unit is constructed from gray duco coated fabricated steel complete with removable baffles, gasketed cover, external flow control fitting, internal air relief by-pass, cleanout plug and visible double wall trap seal. Available options include lift out sediment bucket and aluminum cover or cover recessed for terrazzo or tile. These units may also be fabricated from type 304 stainless steel.

FIGURE 1: Grease Interceptor Cleaning And Maintenance

- Remove cover.
- Inspect Interceptor.
- Remove grease (FOG) from top of separation chamber.
- Remove any solids from bottom of chamber.
- Make certain all passages, including air relief, are clear of obstructions.
- Check integrity of baffles and make sure they are in place.
- Check cover gasket for any damage. Replace if necessary.
- Reinstall cover.
- Tighten cover hold down apparatus.

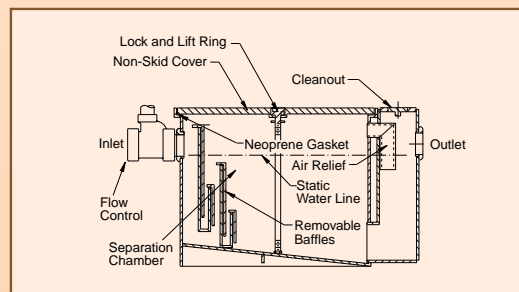


Figure 1



TRADITIONAL GREASE INTERCEPTOR W/SEMI-AUTOMATIC DRAW-OFF 800GT SERIES



Overview

Smith "GT" Series Semi-Automatic Draw-off Grease Interceptors offer the same intercepting efficiency as the Traditional manually cleaned models, but minimize the effort involved in the unsanitary and undesirable job of removing the accumulated grease manually.

The Semi-Automatic Draw-off Interceptor eliminates:

- Cover removal and
- Manually removing accumulated grease.

Since cleaning a "GT" interceptor is simple, fast and efficient, maintenance personnel will more likely follow the regular cleaning schedule. This is a distinct advantage over the Traditional units which are frequently left unattended. The Semi-Automatic Draw-off Grease Interceptors are designed for floor mount installation.

When to Use the Semi-Automatic Unit

The Semi-Automatic Draw-off Grease Interceptor is recommended for areas where a regular cleaning schedule is difficult to maintain, and when no one wants to deal with removing the accumulated grease from a Traditional Grease Interceptor. The Semi-Automatic Draw-off Grease Interceptor makes it easy for maintenance personnel to extract grease, fat, oil, or other similar line-clogging contaminants that would otherwise enter the drainage line. Like the Traditional Grease Interceptors, the Semi-Automatic Draw-off is ideal for plumbing drainage

systems in any restaurant, cafeteria, hotel, school, hospital, institutional or commercial building, or food processing plant having facilities for preparing and serving food in quantity. The frequency of the draw-off cycle is determined by the use load factor of the interceptor. The cleaning cycle can be set after the unit is in operation for several weeks. By observing the amount of grease collected and the frequency of use, the operator can determine a practical cleaning cycle.

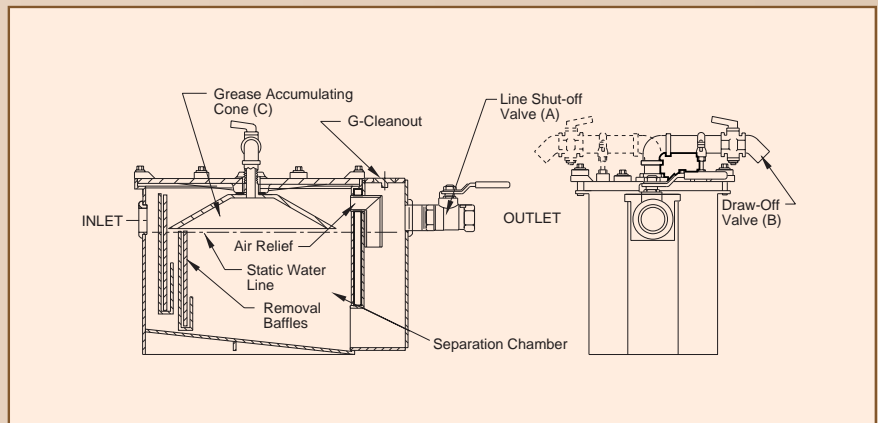
How the Semi-Automatic Interceptor Works

1. Unit in normal use has the line shut-off valve open and draw-off valve closed. When cleaning is required*, run a full stream of hot water through interceptor. It is preferable to have this water at 140° or higher, running for a period of at least two minutes.
2. Turn off hot water running into the interceptor and wait for a period of three to five minutes for the grease to liquefy.
3. Draw-off cycle can now be started. Close the line shut-off valve (A).
4. Open draw-off valve (B) at top of the interceptor and place a container underneath this valve. Run hot water through interceptor at a rate between 1-1/2 and 2-1/2 G.P.M.
5. After water has run into interceptor at this rate for a short period, the unit will fill. Accumulated liquefied grease will be raised into cone (C) and draw-off piping.

6. Allow accumulated liquefied grease to flow out of draw-off valve until clear water appears.
7. When clear water appears, shut off flow of hot water into interceptor, turn line shut-off valve to open position.
8. Close draw-off valve at top of interceptor.
9. Interceptor at this stage is ready again for normal use.

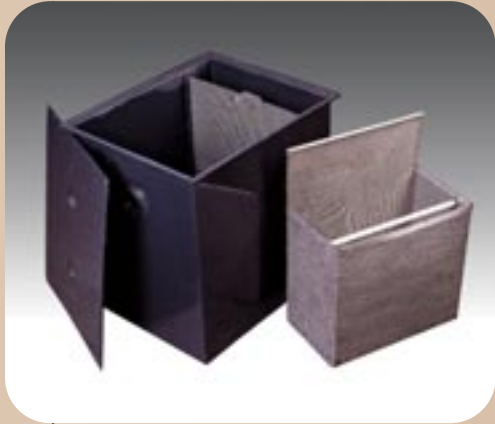
"GT" Series Semi-Automatic Draw-Off Grease Interceptor Guide Specification

The "GT" Series Semi-Automatic Draw-Off Grease Interceptor utilizes the gravity separation principle along with a unique semi-automatic draw-off design which permits removal of accumulated grease without cover removal. The rate of flow into the interceptor is controlled by a flow control fitting enabling the interceptor to collect over 90% of the grease which flows into it. Cover and Grease Accumulating Cone design permits fast removal of accumulated grease during established cleaning intervals. Low rough-in designs are available for use with low roughing sinks. The unit is constructed from gray duco coated fabricated steel complete with grease accumulating cone, line shut-off valve, draw-off valve, removable baffles, gasketed cover, external flow control fitting, internal air relief by-pass, cleanout plug and visible double wall trap seal. These interceptors may also be fabricated from type 304 stainless steel.





CUSTOM MADE, SPECIAL QUOTE, INTERCEPTORS



Overview

When a job specification or construction project requires an interceptor to do more than just prevent fat, oil, and grease (FOG) from entering the city's sanitary sewer system, Jay R. Smith Mfg. Co. offers a variety of interceptors to meet your specific needs — from the innovative Remediator® Grease Treatment System, as well as a variety of specialty interceptors.

Specialty Engineering

For a complete line of specialty interceptors, look to Jay R. Smith Mfg. Co. Our in-house staff of engineers possess the technical knowledge to confer with engineers and contractors to design an interceptor to meet a special application, product modification, or installation need. We look forward to the challenge of designing and manufacturing special products which solve our customer's needs. No cookie cutter approach here, our designs are customer specified to get the job done.

Specialty Interceptors

Our full line of interceptors are designed for adaptability, conformance to code, ease of installation, and maximum performance efficiency. Some of the specialty interceptors available from Jay R. Smith Mfg. Co.:

- Fish Scale Interceptor, SQ-8-1164
- Slurry/Pulper Waste Retention Interceptor, SQ-8-1637
- Animal Fur/Hair Interceptor, SQ-8-2180
- Sand Sump with Solids Interceptor, SQ-8-1099
- Solids Interceptors, 8700 Series
- Sand Interceptors, 8800 Series
- Lint and Sediment/Oil Interceptors, 8900 Series

Custom Made, Special Quote, Products

We have more than 77 years of experience in designing new products to meet unusual specification requirements for particular jobs.

The Jay R. Smith Mfg. Co. "Special Quote Products" job studies binder holds a wealth of products solutions for a variety of installation needs. To order a copy or to talk about your spec requirements, please contact your local representative or us at www.jrsmith.com

Featured Product: SQ-8-2180, Animal Fur/Hair Interceptor - 10, 20, 25, and 50 g.p.m.

Problem: A major pet store chain provides complete grooming facilities. The washing and trimming of the animals create excessive animal fur resulting in continuous stoppages in the building sewer.

Goal: Provide an interceptor that will retain the majority of the animal fur along with a removable sediment bucket.

Solution: An interceptor is designed to accommodate the flow along with the anticipated quantity of fur. A sediment bucket constructed of stainless steel framing and mesh was supplied to meet the requirement for a durable and non-corrodible material. A secondary screen was also included between the bucket and the outlet.

Result: The stoppage in the building sewer was resolved. This unit may also be suitable for applications including veterinary clinics, kennels, beauty salons, and barber shops, wherever fur/hair may present a problem.

SQ-8-2180, Animal Fur/Hair Interceptor

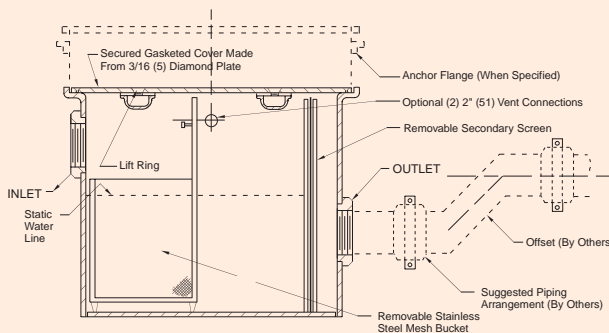


TABLE 2: SIZING AND RATING

PDI Size Symbol	4	7	10	15	20	25	35	50
Flow Rate GPM	4	7	10	15	20	25	35	50
L/s	.25	.44	.63	.95	1.26	1.58	2.20	3.16
Grease Capacity Pounds	8	14	20	30	40	50	70	100
KG	3.6	6.4	9.1	13.6	18.2	22.7	31.8	45.4

TABLE 3: PROCEDURE FOR SIZING GREASE INTERCEPTORS (Metric Equivalents Omitted for simplicity)

Steps	Formula	Example
1	Determine cubic content of fixture by multiplying length X Width X depth.	A sink 48" long by 24" wide by 12" deep. Cubic content 48 X 24 X 12=13,824 cubic inches
2	Determine capacity in gallons. 1 gal. = 231 cubic inches	Contents in gallons 13,824/231 = 59.8 gallons
3	Determine actual drainage load. The fixture is normally filled to about 75 % of capacity with water. The items being washed displace about 25 % of the fixture content, thus actual drainage load = 75% of fixture capacity	Actual drainage load .75 X 59.8 = 44.9 gallons
4	Determine flow rate and drainage period. In general, good practices dictate a one(1) minute drainage period; however, where conditions permit, a two (2) minute drainage period is acceptable. Drainage period is the actual time required to completely drain the fixture. Flow rate = $\frac{\text{Actual Drainage Load}}{\text{Drainage Period}}$	Calculate flow rate for one-minute period 44.9/1 = 44.9 GPM Flow Rate Two-minute period 44.9/2 = 22.5 GPM Flow Rate
5	Select interceptor. From Table 2 select interceptor which corresponds to the flow rate calculated. Note: Select next larger size when flow rate falls between two sizes listed.	For one-minute period - 44.9 GPM requires PDI size "50" For two-minute period - 22.5 GPM requires PDI size "25"

TABLE 4: SELECTION CHART (Metric Equivalents Omitted for Simplicity)

Fixture Compartment Sizes (Inches)	No. of Compartments	Drainage Load (Gallons)	Recommended PDI Size Grease Interceptor	
			One-Minute Drainage Period	Two-Minute Drainage Period
18 X 12 X 6	1	4.2	7	4
16 X 14 X 8	1	5.8	7	4
20 X 18 X 8	1	9.4	10	7
18 X 16 X 8	2	15.0	15	10
20 X 18 X 8	2	18.7	20	10
30 X 20 X 8	1	15.5	20	10
24 X 20 X 12	1	18.7	20	10
22 X 20 X 8	2	23.0	25	15
22 X 20 X 12	2	34.0	36	20
24 X 24 X 12	2	44.9	50	25

TABLE 5

Fixture Outlet or Trap Size (Inches)	Drainage Fixture-Unit Value	GPM Equivalent	PDI Size Grease Interceptor
1-1/4	1	7.5	10
1-1/2	2	15.0	15
2	3	22.0	25
2-1/2	4	30.0	35
3	5	37.5	50
4	6	45.0	50

SIZING INTERCEPTORS ACCORDING TO PDI STANDARD PDI-G101

The recommendations for sizing, installation and maintenance of grease interceptors contained in this section are based on experience of the industry and were taken from PDI-G101.

Sizing Considerations

A grease interceptor conforming to Standard PDI-G101 is designed and certified to operate efficiently at its rated capacity. The larger the interceptor the higher the flow rate it will handle efficiently with a greater quantity of grease retained before cleaning is required. While a small interceptor, undersized, can accommodate a flow of waste water well in excess of its rated capacity, it will not intercept grease efficiently under such overload conditions.

Fixture drainage period, in combination with the service required and the quantity of waste water involved, establishes the rate of flow through the grease interceptor. Flow rate is therefore the primary gauge which establishes interceptor size or capacity.

The link between flow rate and drainage load to produce satisfactory grease interceptor operation is a Flow Control Fitting. Without it, a correctly sized grease interceptor will not regulate the flow of water discharged from the fixture it is serving. Therefore, to ensure that the flow rate does not exceed the grease interceptor's rated capacity, a flow control fitting is essential for protection against overloading the grease interceptor which could occur from sudden surges from the fixture. The flow control fitting will control the flow of waste water at all times, enabling the interceptor to operate at its certified capacity.

Size Symbols

It has been determined through the testing and rating procedure that eight (8) different sized grease interceptors are required for normal domestic, commercial, and institutional installations. These sizes are based on certification standard flow

rates and grease retention capacity ratings for grease interceptors, see Table 1. Table 2 lists the PDI size symbol for each of the standard rated grease interceptors.

Sizing Procedure

Table 3 is provided to show the standard formula in steps for sizing grease interceptors to suit requirements of specific fixtures.

Selection

Table 4 is included as a selection chart for standard PDI Certified grease interceptors applicable to various size fixtures commonly used in domestic, commercial and institutional installations. The selections listed are based on the sizing formula covered in Table 3.

Dishwashers

A separate grease interceptor is recommended for each commercial dishwasher. The size of the interceptor is determined by the GPM discharge rate of the dishwasher. Select proper interceptor of equivalent or next higher rate from Table 2.

Multiple Fixtures

When multiple fixtures are served by a single interceptor, calculate the total capacity of all fixtures, establish the maximum number of fixtures that may be drained simultaneously and apply this factor to the total capacity to determine the maximum simultaneous capacity. Then proceed with sizing and selection of interceptor using sizing formula, Table 3.

Alternate Sizing Method Based on Drainage Fixture-Units

Most plumbing codes list drainage Fixture-Unit values for plumbing fixtures and for fixtures not listed, these values are given for drain outlet or trap size. Fixture-Unit values are converted to discharge rates on the basis of one Fixture-Unit equaling 7.5 GPM. See Table 5 for recommended PDI size grease interceptor based on drainage Fixture-Unit sizing method.

TABLE 1: CERTIFICATION STANDARD FLOW RATES AND GREASE RETENTION CAPACITY RATINGS FOR GREASE INTERCEPTORS

	Flow Rate		Grease Retention Capacity Rating		Recommended Maximum Capacity of Fixtures Connected to Interceptors	
	(GPM)	(L/s)	(Pounds)	(kg)	(Gallons)	(L)
For Small Domestic Use	4	0.25	8	3.6	10.0	37.9
	7	0.44	14	6.4	17.5	66.2
For Large Domestic, Commercial, and Institutional Use	10	0.63	20	9.1	25.0	94.6
	15	0.95	30	13.6	37.5	141.9
	20	1.26	40	18.2	50.0	189.3
	25	1.58	50	22.7	62.5	236.6
	35	2.20	70	31.8	87.5	331.2
	50	3.16	100	45.4	125.0	473.1

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