



October 28, 2016

ZURN
ZURN GREEN TURTLE
SILVANO FERRAZZO
2709 WATER RIDGE PARKWAY, STE 410
CHARLOTTE NC 28217

Re: Description: EXTERIOR GREASE INTERCEPTOR
Manufacturer: ZURN
Product Name: (tarns id 2788720) GREEN TURTLE PROCEPTOR
Model Number(s): GMC 500 UPC, GMC 750 UPC, GMC 1000 UPC, GMC 1300 UPC, GMC 1500 UPC, GMC 2000 UPC AND GMC 2600 UPC
Product File No: 20160269

The specifications and/or plans for this plumbing product have been reviewed and determined to be in compliance with chapters SPS 382 through 384, Wisconsin Administrative Code, and Chapters 145 and 160, Wisconsin Statutes.

The Department hereby issues an alternate approval to s. SPS 382.34 (5) (c) based on the Wisconsin Statutes and the Wisconsin Administrative Code. This approval is valid until the end of October 2021.

This alternate approval is contingent upon compliance with the following stipulation(s):

- These interceptors shall be clearly and legibly marked with the following minimum information:
 1. Maximum liquid capacity
 2. Name and address and/or registered trademark of the manufacturer.

The markings shall be impressed into or embossed onto the outside wall immediately above the outlet opening.

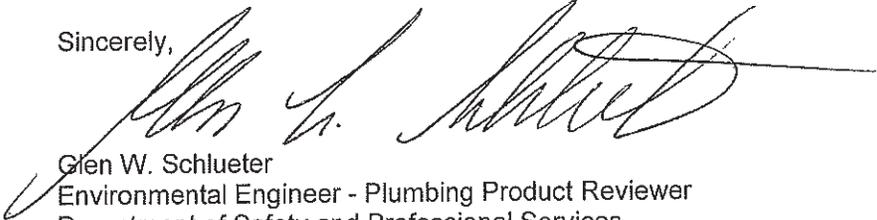
- The mfg. shall maintain conformance to ANSI Z1001 for these interceptors.
- A sampling manhole or open top outlet diffuser shall be installed in the discharge piping of the interceptor.
- No flow control device shall be installed in the inlet piping serving the interceptor.
- The interceptor shall be protected from freezing.
- Sizing shall be done by capacity and in accordance with the manufacturer's method as displayed in attachment A.
- These interceptors shall be preceded by a solids separator.
- Shall discharge to Municipal Sewers only. Shall not discharge to a Private Onsite Wastewater Treatment Systems.
- Maximum depth of bury from top of interceptor to grade, 72 inches.
- If multiple interceptors are installed an inlet manifold method will be used with the ability to clean ALL horizontal piping.

Zurn
October 28, 2016
Page 2 of 2
Product File No.: 20160269

- These interceptors shall be fitted with secure, locking, tamper-resistant covers.
- This alternate may be rescinded by the Department at any time if performance of the interceptors is deemed to be unacceptable

The department is in no way endorsing this product or any advertising, and is not responsible for any situation which may result from its use.

Sincerely,



Glen W. Schlueter
Environmental Engineer - Plumbing Product Reviewer
Department of Safety and Professional Services
Division of Industry Services
Bureau of Technical Services
(608) 267-1401 Phone
(608) 267-9723 Fax
glen.schlueter@wi.gov E-mail



- 1 Introduction +
- 2 Design & Operation +
- 3 Sizing Guidelines +
- 4 Accessories & Options +
- 5 Installation & Maintenance +
- 6 Specification Sheets +
- 7 Installation +
- 8 Detail Drawings +

[Request Hard Copy Binder](#)

baffles. For larger Proceptor systems consisting of two or more tanks in series, each tank represents a chamber and is baffle-less. Upon entering the tank, oil, grease and other liquids with a specific gravity less than water rise to the surface in the first chamber, while suspended solids settle to the bottom by gravity. The wastewater then flows into the second chamber by a means of a flow distributor on the baffle wall, ensuring a smooth flow path, where further separation occurs. Cleaner water from the middle elevation of the tank is displaced through the riser pipe into the downstream sewer system.

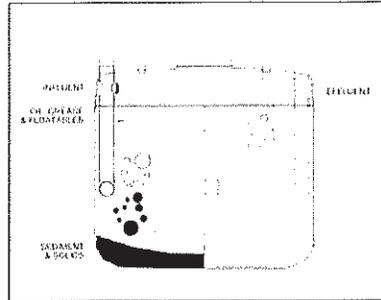


Figure 2.2 : Proceptor in Operation

Proceptor separators are engineered to ensure a smooth flow path. This is accomplished by the use of elliptical chambers, which is critical in minimizing the formation of turbulent eddy currents. A non-turbulent state within the separator promotes the separation of oil, grease, and solids from process wastewater. The separator design also minimizes the potential for short-circuiting, ensuring the required wastewater retention time within the separator. Furthermore, the configuration of Proceptor separators reduces the potential for influent wastewater from passing through the oil/grease or sludge layers at the top. This feature prevents scouring and/or re-suspension of contaminants if actual flow rates exceed the design flow rate.

A standard Proceptor contains two 3" diameter PVC vent connections (one per chamber) for venting gases to the outside (see Figure 2.3). The contractor installing a Proceptor is required to provide piping from the vent connections to the venting system. A 24" diameter extension collar located at the center or at both ends of the separator provides access for maintenance. Maintenance is performed by a liquid disposal company using a vacuum or pump truck. The curved bottom design on the Proceptor promotes easy maintenance including removal of contaminants.

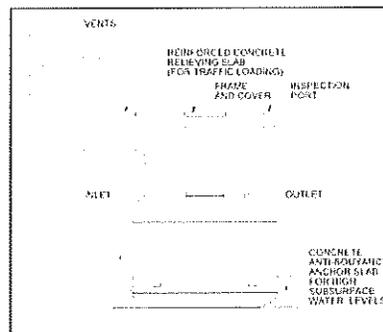


Figure 2.3 : Typical Proceptor Profile

Proceptor separators are available with an extension collar, a frame and cover (cast iron for traffic loading, fiberglass composite for pedestrian conditions or above ground applications). All other external piping, including pipes required for inlet and outlet connections, venting, suction piping (optional), etc., must be supplied by the contractor unless otherwise stated.

3 Sizing Guidelines

Proceptor sizing information is based on best available data including laboratory testing (in-house), field testing, theoretical modeling, and monitoring studies. Proceptor sizing information is continually being updated with the most accurate available information to assist in sizing a proper unit for a specific application.

Incorrect sizing, improper installation and/or inefficient maintenance will affect the performance of Proceptor separators.

A

- 1 Introduction +
- 2 Design & Operation +
- 3 Sizing Guidelines +
- 4 Accessories & Options +
- 5 Installation & Maintenance +
- 6 Specification Sheets +
- 7 Installation +
- 8 Detail Drawings +

[Request Hard Copy Binder](#)

3.1 Standard Sizing Considerations

[Download This Section \(PDF\)](#)

The following are standard sizing considerations for typical sites. If the site conditions are different from the below, please contact a Green Turtle Representative for assistance.

1. **Flow Type.** The separator must be gravity fed.
2. **Pollutant.** Proceptor separators remove free oil, grease and settleable solids. The standard sized separator cannot remove chemically emulsified or dissolved oils. Consult a Green Turtle Representative for sizing assistance if emulsified oil/grease are present.
3. **Temperature.** The inlet water temperature must be between 4°C (39°F) and 60°C (140°F). For industrial applications, please contact a Green Turtle Representative for assistance.
4. **Specific Gravity.** The oil and grease specific gravity must be less than 0.95. Specific gravity of the wastewater must be equal to or greater than 1.0.
5. **Detergent Use.** For equipment wash-down, car wash, or any other applications where soaps and detergents will be used, oil and grease emulsification may be a problem and can reduce the effectiveness of the separator. It is recommended that "Quick Break Soaps" be used since the chemical emulsification will break quickly thus allowing the oil and grease separator to operate as designed.
6. **Wastewater Strength.** Notify a Green Turtle Representative if chemicals of any kind are expected to be present in the process water or if the effluent is high temperature. A special resin may be required in tank manufacturing.
7. **Discharge Limits.** Many local authorities have minimum size requirements or very conservative factors. Please verify with your local municipal sewer authority and plumbing code regulations.
8. **Installation Depth.** Separators up to 3000 gallons buried more than 6' from the top of the tank to grade, and separators 4000 gallons or more buried more than 4' from the top of the tank to grade will require reinforcement at an additional charge.

3.2 Other Design Considerations

[Download This Section \(PDF\)](#)

Gravity separators rely on retention time (the amount of time wastewater is retained in the separator) to allow oil and grease to float to the top and solids to settle to the bottom.

The retention time required to meet regulated discharge limits is a function of the type of contaminants present in the wastewater, initial loading rates, particulate size, specific gravity, and the interactive potential of certain pollutants and the separator design. Although flow rates are important design criteria for the selection of a separator, they are not the only criteria.

Other factors need to be considered as well, a few of which are listed below:

1. **Monitoring Oil/Grease Level.** Manual monitoring must be performed before a regular cleaning schedule can be established. If and when increased activity occurs, the cleaning schedule must be adjusted accordingly. Green Turtle takes the guesswork out of servicing the separator when an electronic alarm is used to indicate when the system needs maintenance.
2. **Remote Suction Maintenance.** Remote suction pipe are available for indoor application where the maintenance cover is not easily accessible by pump trucks, or where opening the maintenance cover is undesirable due to odor issues. The Proceptor can be equipped with a factory installed suction pipe which extends from the bottom of the tank. The suction pipe is connected to a camlock fitting on an exterior wall for pump truck access.
3. **High Contaminant Loading.** High contaminant loading in processed wastewater requires a larger separator to allow for a longer retention time and more storage capacity.
4. **Reduce Frequency of Maintenance.** Increasing the size of the separator may reduce the frequency of maintenance, a cost-effective solution for many applications.



- 1 Introduction +
- 2 Design & Operation +
- 3 Sizing Guidelines +
- 4 Accessories & Options +
- 5 Installation & Maintenance +
- 6 Specification Sheets +
- 7 Installation +
- 8 Detail Drawings +

[Request Hard Copy Binder](#)

- 5. **Light Emulsification.** Larger capacity separators should be used in wash-down or car wash applications where oil globule sizes are quite small as a result of the interaction with high pressure water. Also, the soaps or detergents used will chemically emulsify oil and a longer retention time is required for the oil emulsion to break down.
- 6. **Space Restriction.** Coalescers can be used to reduce the size of the separator for the same treatment flow rate (oil applications only). Solids must be separated prior to entry into the coalescer since solids tend to plug coalescing filters quickly. Coalescers are not recommended for high solids/sediment wastewater applications due to the frequency of maintenance.
- 7. **Above Ground Installation in Cold Climate.** Separators intended to be installed above the frost line may be required to be insulated and/or equipped with explosion proof heaters.

3.3 Grease Separators

[Download This Section \(PDF\)](#)

Proceptor gravity grease interceptors are available in several design configurations to meet applicable Plumbing Code standards throughout North America.

Sizing for Proceptor grease interceptors should always comply with applicable local, Provincial, State and Federal Codes. The sizing guidelines provided below are Minimum Provincial Code Calculated 1 minute residence time sizing - Section 3.3, or Manufacturer Sizing - Section 3.3.1 and 3.3.2, or CSA / PDI (Plumbing and Drainage Institute) Sizing - Section 3.3.3, and are included as guidelines only.

Minimum 1 Minute Residence Time Proceptor Grease Separator Sizing Chart		
Model Number	Flow Rating	Minimum Grease Capacity
	1 Minute Residence Time (US gpm)	Pounds
GMC 50	50	100
GMC 100	100	200
GMC 150	150	300
GMC 200	200	400
GMC 250	250	500
GMC 300	300	600
GMC 500	500	1000

3.3.1 Manufacturer Sizing Guidelines - For All Proceptor GMC Models EXCEPT PDI & CSA Certified Models

[Download This Section \(PDF\)](#)

STEP 1: Determine Flow Rate

Determine the peak flow rates (Q): add up all the fixture loads discharging to the grease separator (these include: rinse, prep, 3-compartment sinks, floor drain, mop sink, etc.) and establish peak flow rate by dividing fixture capacity by the drain down time (one or two minutes depending on local code).

If fixture quantity and/or volume are unknown, assume worse case scenario by establishing peak flow rate based on drain size connecting to grease separator.

For example: 4 in drain at 1/4 in/foot or 2mm/100mm = 110 US gpm

STEP 2: Determine Hydraulic Retention Time Required

In order to meet a 100 mg/l effluent discharge regulation, Proceptor separators require the following hydraulic retention time (HRT):

- 5 minutes retention for non-emulsified grease
- 30 minutes retention for emulsified grease from sinks only
- For heavily emulsified wastewater, call a Green Turtle Representative for assistance

STEP 3: Calculate Size of the Proceptor



- 1 Introduction +
- 2 Design & Operation +
- 3 Sizing Guidelines +
- 4 Accessories & Options +
- 5 Installation & Maintenance +
- 6 Specification Sheets +
- 7 Installation +
- 8 Detail Drawings +

[Request Hard Copy Binder](#)

Multiply the peak flow rate (Q) by the hydraulic retention time (HRT) to determine the volume of the separator (V)

$$V = Q \times \text{HRT}$$

STEP 4: Choose a Proceptor Size

Choose the Proceptor size equal or closest to the value of V. Please refer to Grease Separator Sizing Chart in Section 3.3.2.

For example:

1. Restaurant with wash sink (30 US Gal) at one minute drain down time = 30 US gpm
 Recommendation: 30 US gpm x 5 minutes = Proceptor GMC 150 US Gal
2. Restaurant with 3-pot sink (30 US Gal) with soaps at one minute drain down time = 30 US gpm
 Recommendation: 30 US gpm x 30 minutes = 900 US Gal = Proceptor GMC 1000 US Gal

For high flow rates or high grease content in wastewater such as from large commercial and industrial applications, please call for a Green Turtle representative for support.

3.3.2 Manufacturer Grease Separator Sizing Chart

Proceptor Grease Separator Sizing Chart		
Model Number	Flow Rating	
	Non-Emulsified Grease (US gpm)	Emulsified Grease from Sinks Only ⁽¹⁾ (US gpm)
GMC 50	10	2
GMC 100	20	3
GMC 150	30	5
GMC 200	40	7
GMC 300	60	10
GMC 500	100	17
GMC 750	150	25
GMC 1000 & GMC 1000(2)	200	33
GMC 1300	260	43
GMC 1500 & GMC 1500(2)	300	50
GMC 2000(2)	400	67
GMC 2600(2)	520	87
GMC 3000(2)	600	100
GMC 4000(2)	800	133
GMC 5000(2)	1,000	167
GMC 6000(2)	1,200	200
GMC 7000(2)	1,400	233
GMC 8000(3)	1,600	267
GMC 9000(3)	1,800	300
GMC 10000(3)	2,000	333

Pipe sizes shown in standard drawings reflect the lowest flow scenario in all cases. Larger pipe sizes are available. It is the responsibility of the designer to inform Green Turtle of the design flow rate and pipe size for each project.

Caution: For larger units, or applications involving degreasers, surfactants, emulsifiers, corrosive wastewater, pumped effluent (not gravity fed), contact a Green Turtle Representative.

Notes:

(1) Based on 30 minute retention time (ref: Metcalf & Eddy, Inc., Revised by George Tchobanoglous and Franklin L. Burton, Wastewater Engineering: Treatment, Disposal and Reuse, 3rd Ed., 1991).

A

3.3.3 Proceptor PDI and CSA Sizing – for Proceptor GMC-100, GMC-150, GMC-200, GMC-250, GMC-300 as published in PDI- G101 standard – revised March 2010

- 1 Introduction +
- 2 Design & Operation +
- 3 Sizing Guidelines +
- 4 Accessories & Options +
- 5 Installation & Maintenance +
- 6 Specification Sheets +
- 7 Installation +
- 8 Detail Drawings +

Request Hard Copy Binder

Sizing Method Based on Pipe Diameter Size and Slope

When the final configuration of fixtures in a facility is not known or to allow for additional fixtures in the future, this method shall be used or to size the interceptor for the maximum flow that the drain line from the facility can carry.

Pipe Size (inches)	Full Pipe Flow @ 1% slope	Interceptor size 1 minute drain	Interceptor size 2 minute drain
2"	19.44 gpm	20 gpm	10 gpm
3"	58.67 gpm	75 gpm	35 gpm
4"	125.77 gpm	-	75 gpm

Procedure for Sizing Grease Interceptors

Table 8.3.2 is provided to show the standard formula in steps for sizing grease interceptors to suit requirements of specific fixtures. An example of this sizing formula application is included to illustrate the steps.

**Table 8.3.2
Procedure for Sizing Grease Interceptors**

Steps	Formula	Example
1	Determine cubic content of fixture. Multiply length x width x depth.	A sink 48" long by 24" wide by 12" deep. Cubic content $48 \times 24 \times 12 = 13,824$ cubic inches.
2	Determine capacity in gallons. 1 gal. = 231 cubic inches.	Content in gallons. $\frac{13,824}{231} = 59.8$ 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 $.75 \times 59.8 = 44.9$ gallons.
4	Determine flow rate and drainage period. In general, good practice dictates a 1 minute drainage period; however, where conditions permit, a 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 1-minute period: $\frac{44.9}{1} = 44.9$ GPM Flow Rate for 2-minute period: $\frac{44.9}{2} = 22.5$ GPM Flow Rate
5	Select Interceptor. From Table I select Interceptor which corresponds to the flow rate calculated. Note: Select next larger size when flow rate falls between two sizes listed.	Select Interceptor. For 1-minute period – 44.9 GPM requires PDI size 50. For 2-minute period 22.5 GPM requires PDI size 25.

Sizing by Known Compartment Sizing

A

- 1 Introduction +
- 2 Design & Operation +
- 3 Sizing Guidelines +
- 4 Accessories & Options +
- 5 Installation & Maintenance +
- 6 Specification Sheets +
- 7 Installation +
- 8 Detail Drawings +

Request Hard Copy Binder

Table 8.3.3 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 8.3.2 by GPM.

Table 8.3.3
Selection Chart (Metric Equivalents Omitted for Simplicity)

Fixture Compartment Size (inches)	Number of Compartments	Drainage Load (Gallons)	Recommended PDI Size Grease Interceptor	
			1-minute Drainage period	2-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	9.1	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	15.6	20	10
24 x 20 x 12	1	18.7	20	10
22 x 20 x 8	2	22.9	25	15
22 x 20 x 12	2	34.3	35	20
24 x 24 x 12	2	44.9	50	25
22 x 20 x 12	4	68.6	75	35
24 x 24 x 12	4	89.8	100	50

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 as specified by the manufacturer. Select proper interceptor of equivalent or next higher rate from Table 8.3.2.

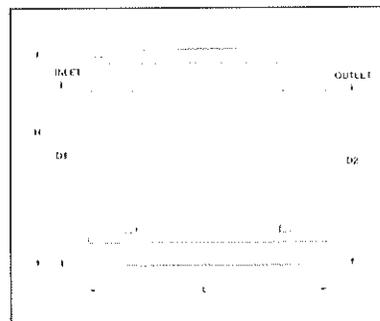
Multiple Fixtures

Where multiple fixtures are served by a single Interceptor calculate the interceptor size per section 8.3.1 or, calculate the capacity of each fixture and total the fixture capacities up, or establish the total capacity of the maximum number of fixtures that may be drained simultaneously. Then using the GPM capacity calculated proceed with sizing of the interceptor to the nearest PDI size, larger than the calculated capacity based on a one minute or two minute drain down time.

PDI & CSA ⁽¹⁾ Certified Grease Interceptors						
PDI Certified Proceptor Model	CSA Certified Proceptor Model	Rated Capacity (GPM)	Grease Capacity (pounds)	Height Top of Tank (inches)	Inlet Invert, D1 (inches)	Outlet Invert, D2 (inches)
--	GMC 50	50	100	62 x 32 x 24	12	11
GMC 100	GMC 100	100	200	62 x 32 x 28	20	19
GMC 150	GMC 150	100	200	62 x 32 x 32	28	27
GMC 200	GMC 200	100	200	62 x 32 x 44	36	35
GMC 250	GMC 250	100	200	62 x 32 x 52	44	43
GMC 300	GMC 300	100	200	62 x 32 x 60	52	51
GMC 500 IAP	--	100	200	96 x 62 x 47	32	30

(1) Certified to PDI-G101 and CSA B481.1, respectively.

3.3.4 Standard Grease Separator Capacity and Dimensions



System 1: Single Tank

A

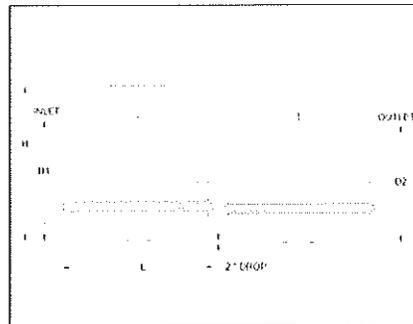
- 1 Introduction +
- 2 Design & Operation +
- 3 Sizing Guidelines +
- 4 Accessories & Options +
- 5 Installation & Maintenance +
- 6 Specification Sheets +
- 7 Installation +
- 8 Detail Drawings +

Request Hard Copy Binder

Standard Grease Separator with Single Accessway							
System Type	Model Number	Total Liquid Capacity (US Gal)	Storage Capacity		Tank Dimension L x W x H (Inches)	Inlet to Tank Bottom, D1 (Inches)	Outlet to Tank Bottom, D2 (Inches)
			Grease (US Gal)	Solids (US Gal)			
System 1: Single Tank	GMC 50	50	12	11	62 x 32 x 24	12	11
	GMC 100	100	42	23	62 x 32 x 32	20	19
	GMC 150	150	66	48	62 x 32 x 40	28	27
	GMC 200	200	90	72	62 x 32 x 48	36	35
	GMC 300	300	156	103	62 x 32 x 64	52	51
	GMC 500	500	279	87	96 x 62 x 47	32	30
	GMC 750	750	410	200	96 x 62 x 60	45	43
	GMC 1000	1,000	577	295	96 x 62 x 74	59	57
	GMC 1300	1,300	707	446	96 x 62 x 89	74	72
GMC 1500	1,500	819	540	96 x 62 x 100	85	83	

PDI & CSA ⁽¹⁾ Grease Interceptor						
PDI Certified Proceptor Model.	CSA Certified Proceptor Model	Rated Capacity (GPM)	Grease Capacity (pounds)	Height Top of Tank (Inches)	Inlet Invert, D1 (Inches)	Outlet Invert, D2 (Inches)
--	GMC 50	50	100	62 x 32 x 24	12	11
GMC 100	GMC 100	100	200	62 x 32 x 28	20	19
GMC 150	GMC 150	100	200	62 x 32 x 32	28	27
GMC 200	GMC 200	100	200	62 x 32 x 44	36	35
GMC 250	GMC 250	100	200	62 x 32 x 52	44	43
GMC 300	GMC 300	100	200	62 x 32 x 60	52	51
GMC 500 IAP	--	100	200	96 x 62 x 47	32	30

(1) Certified to PDI-G101 and CSA B481.1, respectively.



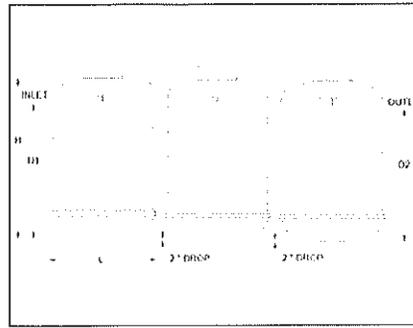
System 2: Two Tanks in Series

Standard Grease Separator with Single Accessway							
System Type	Model Number	Total Liquid Capacity (US Gal)	Storage Capacity		Tank Dimension L x W x H (Inches)	Inlet to Tank Bottom, D1 (Inches)	Outlet to Tank Bottom, D2 (Inches)
			Grease (US Gal)	Solids (US Gal)			
System 2: Two Tanks in Series	GMC 1000(2)	1,000	559	174	2 (96 x 62 x 47)	32	30
	GMC 1500(2)	1,500	819	401	2 (96 x 62 x 60)	45	43
	GMC 2000(2)	2,000	1,154	589	2 (96 x 62 x 74)	59	57
	GMC 2600(2)	2,600	1,415	891	2 (96 x 62 x 89)	74	72
	GMC 3000(2)	3,000	1,638	1,080	2 (96 x 62 x 100)	85	83
	GMC 4000(2)	4,000	1,712	1,315	2 (94 x 94 x 109)	79	77
	GMC 5000(2)	5,000	2,226	1,776	2 (94 x 94 x 126)	96	94
	GMC 6000(2)	6,000	2,883	2,092	2 (94 x 94 x 143)	113	111
GMC 7000(2)	7,000	3,396	2,611	2 (94 x 94 x 161)	131	129	

A

- 1 Introduction +
- 2 Design & Operation +
- 3 Sizing Guidelines +
- 4 Accessories & Options +
- 5 Installation & Maintenance +
- 6 Specification Sheets +
- 7 Installation +
- 8 Detail Drawings +

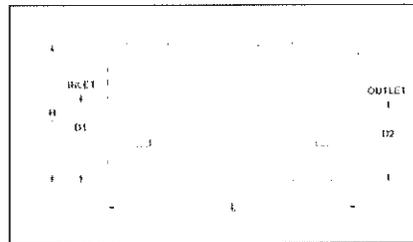
[Request Hard Copy Binder](#)



System 3: Three Tanks in Series

Standard Grease Separator with Single Accessway							
System Type	Model Number	Total Liquid Capacity (US Gal)	Storage Capacity		Tank Dimension L x W x H (Inches)	Inlet to Tank Bottom, D1 (inches)	Outlet to Tank Bottom, D2 (inches)
			Grease (US Gal)	Solids (US Gal)			
System 3: Three Tanks in Series	GMC 8000(3)	8,000	3,810	2,707	3 (94 x 94 x 132)	102	100
	GMC 9000(3)	9,000	4,324	3,139	3 (94 x 94 x 143)	113	111
	GMC 10000(3)	10,000	4,795	3,700	3 (94 x 94 x 155)	125	123

3.3.5 UPC | IAPMO | Florida Grease Separator Capacity and Dimensions



System 4: UPC | IAPMO Approved
(Dual Accessway, Single Tank or Two Tanks in Series Design)

UPC / IAPMO / Florida Grease Separator (US only)							
System Type	Model Number	Total Liquid Capacity (US Gal)	Storage Capacity		Tank Dimension L x W x H (Inches)	Inlet to Tank Bottom, D1 (inches)	Outlet to Tank Bottom, D2 (inches)
			Grease (US Gal)	Sediment (US Gal)			
System 4: UPC / IAPMO Approved	GMC 100	100	42	23	62 X 32 X 32	20	19
	GMC 150	150	66	48	62 X 32 X 40	28	27
	GMC 200	200	90	72	62 X 32 X 48	36	35
	GMC 250	250	119	91	62 X 32 X 56	44	43
	GMC 300	300	156	103	62 X 32 X 64	52	51
	GMC 500 UPC	500	279	125	96 x 62 x 55	33	30
	GMC 750 UPC	750	521	125	96 x 62 x 68	46	43
	GMC 1000 UPC	1,000	782	125	96 x 62 x 82	60	57
	GMC 1300 UPC	1,300	1,061	125	96 x 62 x 97	75	72
	GMC 2000(2) UPC	2,000	1,564	250	2 (96 x 62 x 82)	60	57
System 4: Florida Approved	GMC 2600(2) UPC	2,600	2,122	250	2 (96 x 62 x 97)	75	72
	GMC 750 FL	750	596	53	96 x 62 x 68	46	43
	GMC 1000 FL	1,000	856	53	96 x 62 x 82	60	57
	GMC 1250 FL	1,300	1,136	53	96 x 62 x 97	75	72

A

- 1 Introduction +
- 2 Design & Operation +
- 3 Sizing Guidelines +
- 4 Accessories & Options +
- 5 Installation & Maintenance +
- 6 Specification Sheets +
- 7 Installation +
- 8 Detail Drawings +

[Request Hard Copy Binder](#)

3.4 Oil Separators

3.4.1 Sizing Guidelines

[Download This Section \(PDF\)](#)

STEP 1: Determine the Flow rate

Determine peak flow rates (Q): add up all fixtures (e.g., hose bibs) and other sources of liquid discharge to oil separator and establish peak flow rate.

If fixture quantity and/or volume are unknown, assume worst case scenario by establishing peak flow rate based on drain size connecting to oil separator. (For example: 4 in drain at 1/4 in/foot or 2mm/100mm = 110 gpm (US))

STEP 2: Determine the Retention Time Required

In order to meet the 10 mg/l effluent discharge regulation enforced by most pre-treatment authorities, Proceptor requires the following retention times (HRT):

- 10 minutes retention for non-emulsified oil with the use of a coalescer
- 30 minutes retention for non-emulsified oil without the use of a coalescer
- 60 minutes retention for light emulsified oil (mechanical mixing)

STEP 3: Calculate the Size of the Proceptor

Multiply the peak flow rate (Q) by the hydraulic retention time (HRT) to determine the volume of the separator (V)

$$V = Q \times \text{HRT}$$

STEP 4: Choose a Proceptor Size

Choose the Proceptor size equal or closest to the value of V. Please refer to Oil Separator Sizing Chart in Section 0.

For example:

1. Spills containment 10 US gpm of potential flow from spills

Scenario 1: 10 US gpm x 10 min. = Proceptor OMC 100 US gallon with a coalescer

Scenario 2: 10 US gpm x 30 min = Proceptor OMC 300 without coalescer

2. Mechanics shop rinsing floor lightly with soap and using two (2) 1/2" hose bibs = 2 X 5 US gpm = 10 US gpm (30 psi)

Scenario 1 (if continuous flow exist for more than 60 minutes): 10 US gpm x 60 min. = Proceptor OMC 750 US gallon

Scenario 2 (if it is a batch flow where wash time is less than 60 minutes): Wash time = 30 minutes, 10 US gpm x 30 min. wash time = Proceptor OMC 300 without coalescer

If flow rate is unknown, assume worst case scenario by establishing peak flow rate based on size of drain size connecting to the oil separator. For example: 4in drain at 1/4 in/foot = 110 gpm).

3.4.2 Oil Separator Sizing Chart

A

- 1 Introduction +
- 2 Design & Operation +
- 3 Sizing Guidelines +
- 4 Accessories & Options +
- 5 Installation & Maintenance +
- 6 Specification Sheets +
- 7 Installation +
- 8 Detail Drawings +

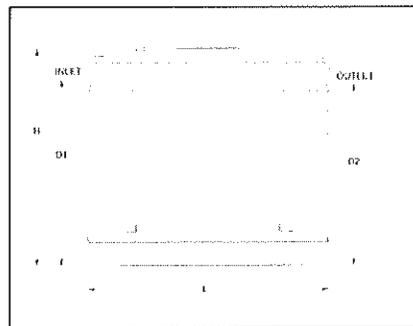
Request Hard Copy Binder

Proceptor Oil Separator Sizing Chart		
Model Number	Flow Rating	
	Non-Emulsified Oil without Coalescer (US gpm)	Non-Emulsified Oil with Coalescer (US gpm)
OMC 50	2	5
OMC 100	3	10
OMC 150	5	15
OMC 200	7	20
OMC 300	10	30
OMC 500	17	50
OMC 750	25	75
OMC 1000 & OMC 1000(2)	33	100
OMC 1300	43	130
OMC 1500 & OMC 1500(2)	50	150
OMC 2000(2)	67	200
OMC 2600(2)	87	260
OMC 3000(2)	100	300
OMC 4000(2)	133	400
OMC 5000(2)	167	500
OMC 6000(2)	200	600
OMC 7000(2)	233	700
OMC 8000(3)	267	800
OMC 9000(3)	300	900
OMC 10000(3)	333	1000

Pipe sizes shown in standard drawings reflect the lowest flow scenario in all cases. Larger pipe sizes are available. It is the responsibility of the designer to inform Green Turtle of the design flow rate and pipe size for each project.

Caution: For larger units, or applications involving degreasers, surfactants, emulsifiers, corrosive wastewater, pumped effluent (not gravity fed), contact a Green Turtle Representative

3.4.3 Standard Oil Separator Capacity and Dimensions



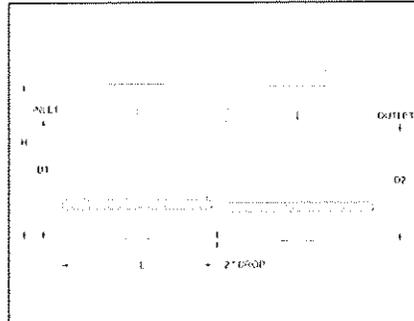
System 1: Single Tank

A

- 1 Introduction +
- 2 Design & Operation +
- 3 Sizing Guidelines +
- 4 Accessories & Options +
- 5 Installation & Maintenance +
- 6 Specification Sheets +
- 7 Installation +
- 8 Detail Drawings +

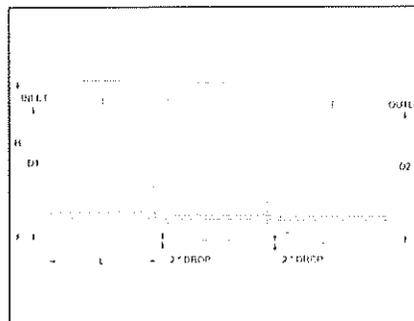
Request Hard Copy Binder

Standard Oil Separator with Single Accessway							
System Type	Model Number	Total Liquid Capacity (US Gal)	Storage Capacity		Tank Dimension L x W x H (inches)	Inlet to Tank Bottom, D1 (inches)	Outlet to Tank Bottom, D2 (inches)
			Oil (US Gal)	Sediment (US Gal)			
System 1: Single Tank	OMC 50	50	12	11	62 x 32 x 24	12	11
	OMC 100	100	42	23	62 x 32 x 32	20	19
	OMC 150	150	66	48	62 x 32 x 40	28	27
	OMC 200	200	90	72	62 x 32 x 48	36	35
	OMC 300	300	156	103	62 x 32 x 64	52	51
	OMC 500	500	279	87	96 x 62 x 47	32	30
	OMC 750	750	410	200	96 x 62 x 60	45	43
	OMC 1000	1,000	577	295	96 x 62 x 74	59	57
	OMC 1300	1,300	707	446	96 x 62 x 89	74	72
OMC 1500	1,500	819	540	96 x 62 x 100	85	83	



System 2: Two Tanks in Series

Standard Oil Separator with Single Accessway							
System Type	Model Number	Total Liquid Capacity (US Gal)	Storage Capacity		Tank Dimension L x W x H (inches)	Inlet to Tank Bottom, D1 (inches)	Outlet to Tank Bottom, D2 (inches)
			Oil (US Gal)	Sediment (US Gal)			
System 2: Two Tanks in Series	OMC 1000(2)	1,000	559	174	2 (96 x 62 x 47)	32	30
	OMC 1500(2)	1,500	819	401	2 (96 x 62 x 60)	45	43
	OMC 2000(2)	2,000	1,154	589	2 (96 x 62 x 74)	59	57
	OMC 2600(2)	2,600	1,415	891	2 (96 x 62 x 89)	74	72
	OMC 3000(2)	3,000	1,638	1,080	2 (96 x 62 x 100)	85	83
	OMC 4000(2)	4,000	1,712	1,315	2 (94 x 94 x 109)	79	77
	OMC 5000(2)	5,000	2,226	1,776	2 (94 x 94 x 126)	96	94
	OMC 6000(2)	6,000	2,883	2,092	2 (94 x 94 x 143)	113	111
	OMC 7000(2)	7,000	3,396	2,611	2 (94 x 94 x 161)	131	129



System 3: Three Tanks in Series

A

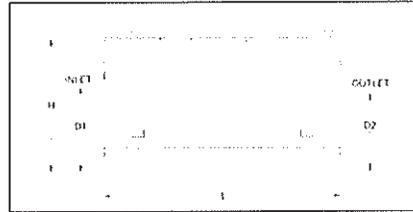
- 1 Introduction +
- 2 Design & Operation +
- 3 Sizing Guidelines +
- 4 Accessories & Options +
- 5 Installation & Maintenance +
- 6 Specification Sheets +
- 7 Installation +
- 8 Detail Drawings +

[Request Hard Copy Binder](#)

Standard Oil Separator with Single Accessway							
System Type	Model Number	Total Liquid Capacity (US Gal)	Storage Capacity		Tank Dimension L x W x H (Inches)	Inlet to Tank Bottom, D1 (Inches)	Outlet to Tank Bottom, D2 (Inches)
			Oil (US Gal)	Sediment (US Gal)			
System 3: Three Tanks in Series	OMC 8000(3)	8,000	3,810	2,707	3 (94 x 94 x 132)	102	100
	OMC 9000(3)	9,000	4,324	3,139	3 (94 x 94 x 143)	113	111
	OMC 10000(3)	10,000	4,795	3,700	3 (94 x 94 x 166)	125	123

3.4.4 UPC | IAPMO Oil Separator Capacity and Dimensions

[Download This Section \(PDF\)](#)



System 5: UPC | IAPMO Approved
(Triple Accessway, Single Tank or Two Tanks in Series Design)

UPC / IAPMO Oil Separator with Triple Accessway (US only)							
System Type	Model Number	Total Liquid Capacity (US Gal)	Storage Capacity		Tank Dimension L x W x H (Inches)	Inlet to Tank Bottom, D1 (Inches)	Outlet to Tank Bottom, D2 (Inches)
			Oil (US Gal)	Sediment (US Gal)			
System 5: UPC / IAPMO Approved	OMC 500 UPC	500	279	125	96 x 62 x 55	33	30
	OMC 750 UPC	750	521	125	96 x 62 x 68	46	43
	OMC 1000 UPC	1,000	782	125	96 x 62 x 82	60	57
	OMC 1300 UPC	1,300	1,061	125	96 x 62 x 97	75	72
	OMC 2000 UPC	2,000	1,564	250	2 (96 x 62 x 82)	60	57
	OMC 2600 UPC	2,600	2,122	250	2 (96 x 62 x 97)	75	72

4 Accessories and Options

[Download Accessories & Options Section \(PDF\)](#)

4.1 Alarm

The alarm is an electronic monitoring system designed to trigger a visual and audible alarm when a pre-set level of oil or grease is reached within the treatment chamber. The feature acts as a safeguard against spills caused by exceeding the oil/grease storage capacity of the separator and eliminates the need for manual inspection.

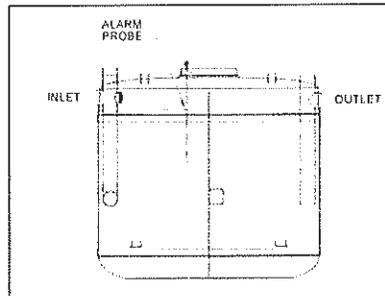


Figure 4.1: Alarm Mounted in Proceptor

4.2 Coalescing Filter for Small Diameter Oil Globules (>20 µm)