

Filtration

Solids Removal

- Prevents solids from leaving tank
- Improve quality of effluent
- Extend drainfield life

Tank Treatment With and Without Filter

	Crites/Tchobanoglous*		Orenco Systems	
	BOD ₅ (mg/L)	TSS (mg/L)	BOD ₅ (mg/L)	TSS (mg/L)
Tank <u>with</u> effluent filter	130 - 140	30	134	35
Tank <u>without</u> effluent filter	180 - 190	80 - 85	149	84
% reduction	>25%	>60%	11%	65%

* Small and Decentralized Wastewater Management Systems, *Crites & Tchobanoglous*, p.183, 1998.

Tank Treatment With and Without Filter



Septic tank effluent w/o effluent filter



Septic tank effluent with an Orenco effluent filter

Filter Surface Area vs. Flow Area

- In evaluating effluent filters, it's important to compare both total filter surface area and total flow area
- Orenco flow area = 30% of total area
- Solids are collected mainly on the surface area. However, the open area is where the outflow takes place.

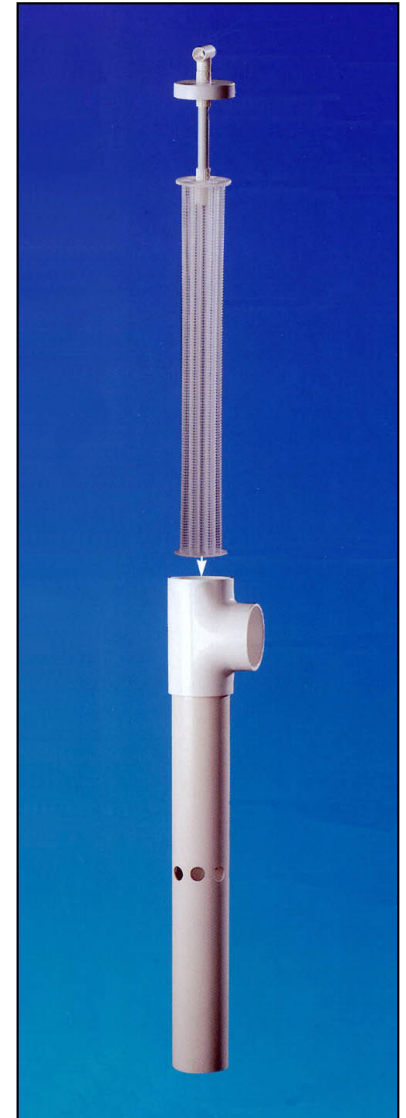


Selection Criteria: Effluent Filter

- Large flow surface area to resist clogging
- Removable cartridge for easy maintenance
- Corrosion-proof to last

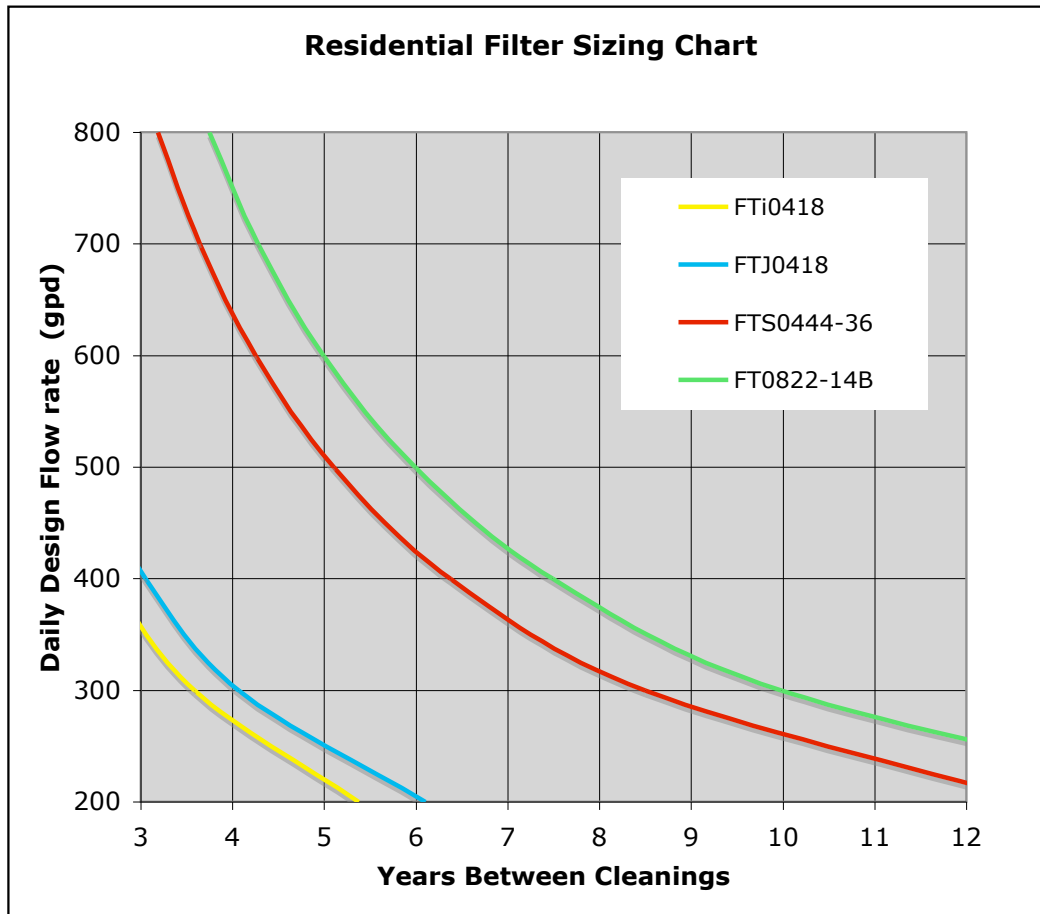
Orenco's Biotube® Effluent Filters

- For gravity applications
 - ~ 2 to 10 times more flow area than other brands
 - ~ Longer cleaning intervals
 - ~ Easy to clean
 - ~ Extendable tee handle
 - ~ Alarm and flow modulation plate available
 - ~ Custom and commercial sizes available
 - ~ Patented design
 - ~ Lifetime warranty on residential filters



Selecting a Residential Effluent Filter

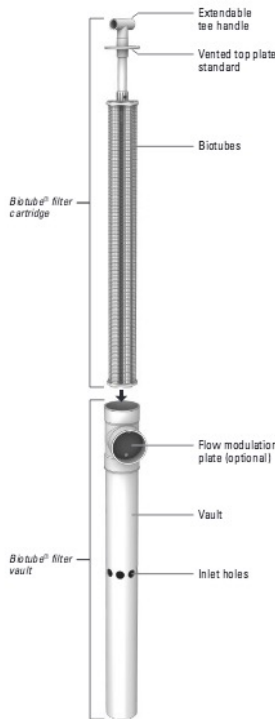
- Flow rates, waste-strength and septic tankage all effect cleaning frequencies



Residential Applications



Residential Effluent Filters



Labels: Extendable tee handle, Vented top plate, standard, Biotubes, Biotube® filter cartridge, Flow modulation plate (optional), Vault, Biotube® filter vault, Inlet holes.

Orenco® Technical Data Sheet

4-inch (100-mm) Biotube® Effluent Filters

Applications
Orenco® 4-inch Biotube® Effluent Filters are designed to remove solids from effluent leaving residential septic tanks. They can be used in new and existing tanks at flows of up to 1200 gpd.

General
Orenco 4-inch Biotube Effluent Filters (U.S. Patents Nos. 4,439,323 and 5,492,895) are used to improve the quality of effluent exiting a septic tank in a residential septic system. Increased effluent quality improves system performance and extends drainfield life. The Biotube cartridge fits tightly in the vault and is removable for maintenance. The tee handle can be extended for easy removal of the cartridge.

Standard Models
FTS0444-36, FTS0444-36M, FTW0436-28, FTW0436-28M, FTW0444-36, FTW0444-36M

Product Code Diagram

FT [] 04 [] - [] - []

Flow modulator and float switch bracket options:
Blank = no options selected
M = flow modulation plate installed
A = float switch bracket installed

Cartridge height, in. (mm):
28 = 28 (711), standard
36 = 36 (914), standard

Filter housing height, in. (mm):
36 = 36 (914), standard
44 = 44 (1118), standard

4-in. (100-mm) filter diameter

Outlet tee:
W = fits Type 3034 outlet tee
S = fits Schedule 40 outlet tee

Filter mesh option:
Blank = 1/8-in. (3-mm) filter mesh
P = 1/4-in. (1.6-mm) filter mesh

Biotube® effluent filter

Materials of Construction

Vault	PVC
Biotube® cartridge	Polypropylene and polyethylene
Handle components	PVC, polyethylene, stainless steel

Product Code Diagram

FT [] [] 04 [] - [] - []

Flow modulator and float switch bracket options:
Blank = no options selected
M = flow modulation plate installed
A = float switch bracket installed

Cartridge height, in. (mm):
28 = 28 (711), standard
36 = 36 (914), standard

Filter housing height, in. (mm):
36 = 36 (914), standard
44 = 44 (1118), standard

4-in. (100-mm) filter diameter

Outlet tee:
W = fits Type 3034 outlet tee
S = fits Schedule 40 outlet tee

Filter mesh option:
Blank = 1/8-in. (3-mm) filter mesh
P = 1/4-in. (1.6-mm) filter mesh

Biotube® effluent filter

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Residential Applications



Orenco Water Technical Data Sheet PSC-Series Biotube® Effluent Filters

Applications

Orenco PSC-Series Biotube Effluent Filters are designed to remove solids from effluent leaving wastewater tanks.

General

Orenco's patent-pending PSC-Series Biotube Effluent Filters are used to improve the quality of effluent from wastewater tanks. Improved effluent quality extends drainfield life in onsite dispersal systems and improves the performance of downstream treatment in effluent sewers.

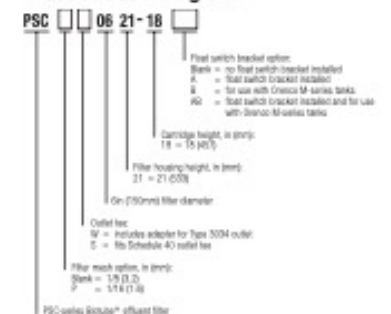
The Biotube filter cartridge fits tightly in the housing while being easy to remove for maintenance. The passively self-cleaning design extends maintenance cycle intervals. Filter mesh is available in 1/8in or 1/16in (3.2mm or 1.6mm) mesh opening sizes.

The handle can be extended with PVC pipe (not included) for better access to the cartridge. A 3/4in (19mm) diameter tee handle is included. Models PSCS0621-18 and PSCW0621-18 are NSF 46 certified.

Standard Models

PSCS0621-18, PSCW0621-18, PSCPS0621-18, PSCPW0621-18

Product Code Diagram



Materials of Construction

Housing	PVC, ABS
Biotube filter cartridge	Polypropylene, DCPD
Handle components	PVC, stainless steel
Deflector plate	ABS

Orenco PSC-Series Biotube Effluent Filter

All product and performance assertions are based on proper design, installation, operation, and maintenance according to Orenco's current published documentation.

Commercial Applications



Commercial Effluent Filters

Orenco® Technical Data Sheet

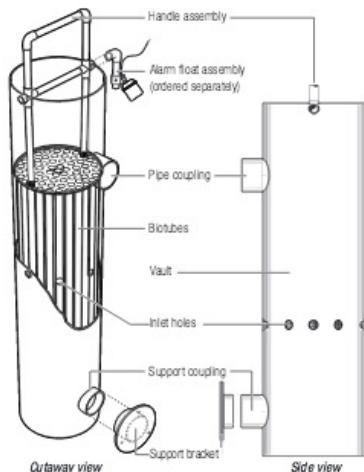
8-in. to 15-in. Dia. Biotube Effluent Filters

Applications

Orenco® 8-inch to 15-inch Biotube® Effluent Filters are designed to remove solids from effluent leaving commercial septic tanks. They can be used in new and existing tanks.

General

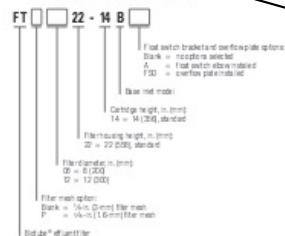
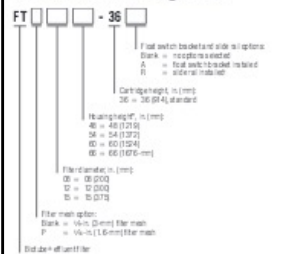
Orenco® 8-inch to 15-inch Biotube® Effluent Filters* are used to improve the quality of effluent exiting a commercial septic tank. The Biotube cartridge fits snugly in the vault and is removable for maintenance; the handle assembly snaps into the vault and is removable for maintenance. A "base inlet" model (see p. 2) is available for low-profile tanks. An optional slide rail system, available on larger models, simplifies installation and provides tank access for servicing.



Standard Models

FT0854-36, FT1254-36, FT1554-36, FT0822-14B, FT1254-36AR

Product Code Diagrams



Materials of Construction

Vault	PVC
Pipe coupling	PVC
Handle components	PVC
Support coupling and bracket	PVC
Biotube® cartridge	Polypropylene and polyethylene

* Orenco® Biotube® Effluent Filters are covered under multiple U.S. and international patents.

Note: Support coupling and support bracket are available on 12-inch and 15-inch filters only.

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Product Code Diagrams

FT - 36

Float switch bracket and slide rail options:
Blank = no options selected
A = float switch bracket installed
R = slide rail installed†

Cartridge height, in. (mm):
36 = 36 (914), standard

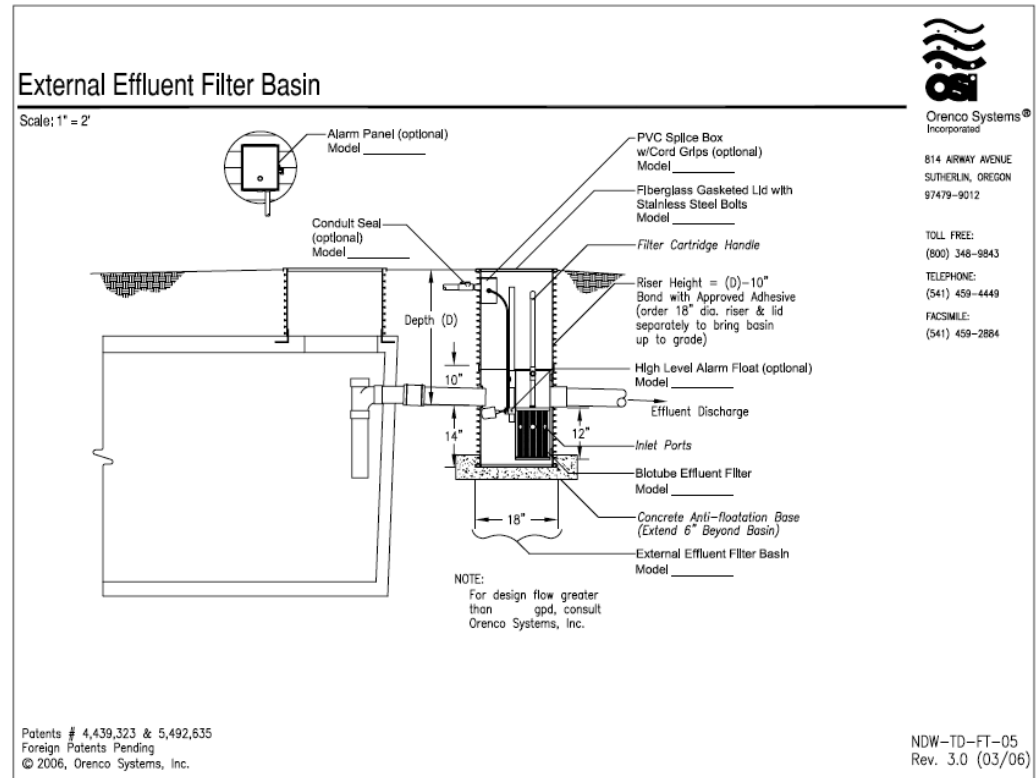
Housing height*, in. (mm):
48 = 48 (1219)
54 = 54 (1372)
60 = 60 (1524)
66 = 66 (1676-mm)

Filter diameter, in. (mm):
08 = 08 (200)
12 = 12 (300)
15 = 15 (375)

Filter mesh option:
Blank = 1/8-in. (3-mm) filter mesh
P = 1/16-in. (1.6-mm) filter mesh

Biotube® effluent filter

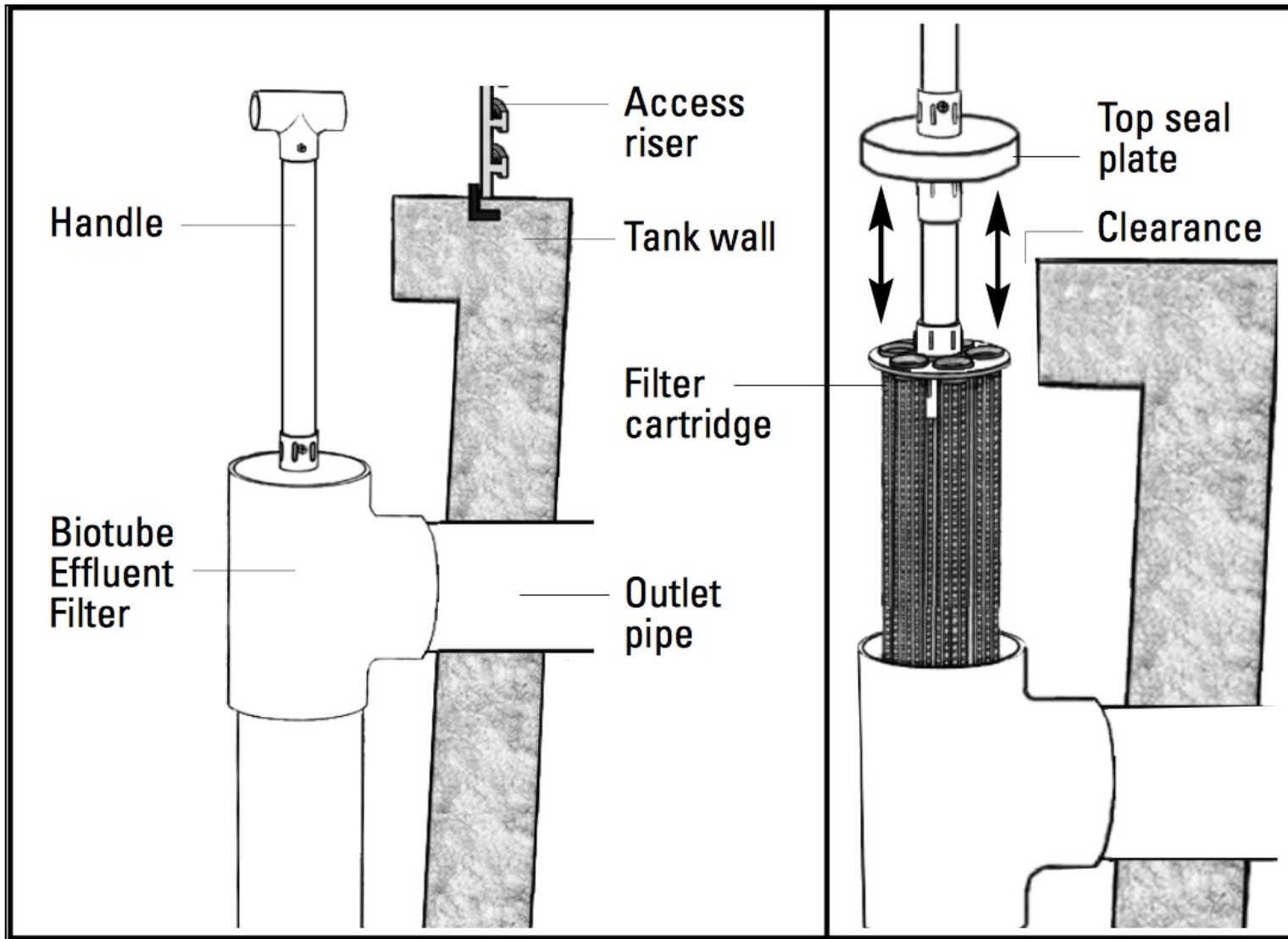
External Effluent Filter Basin



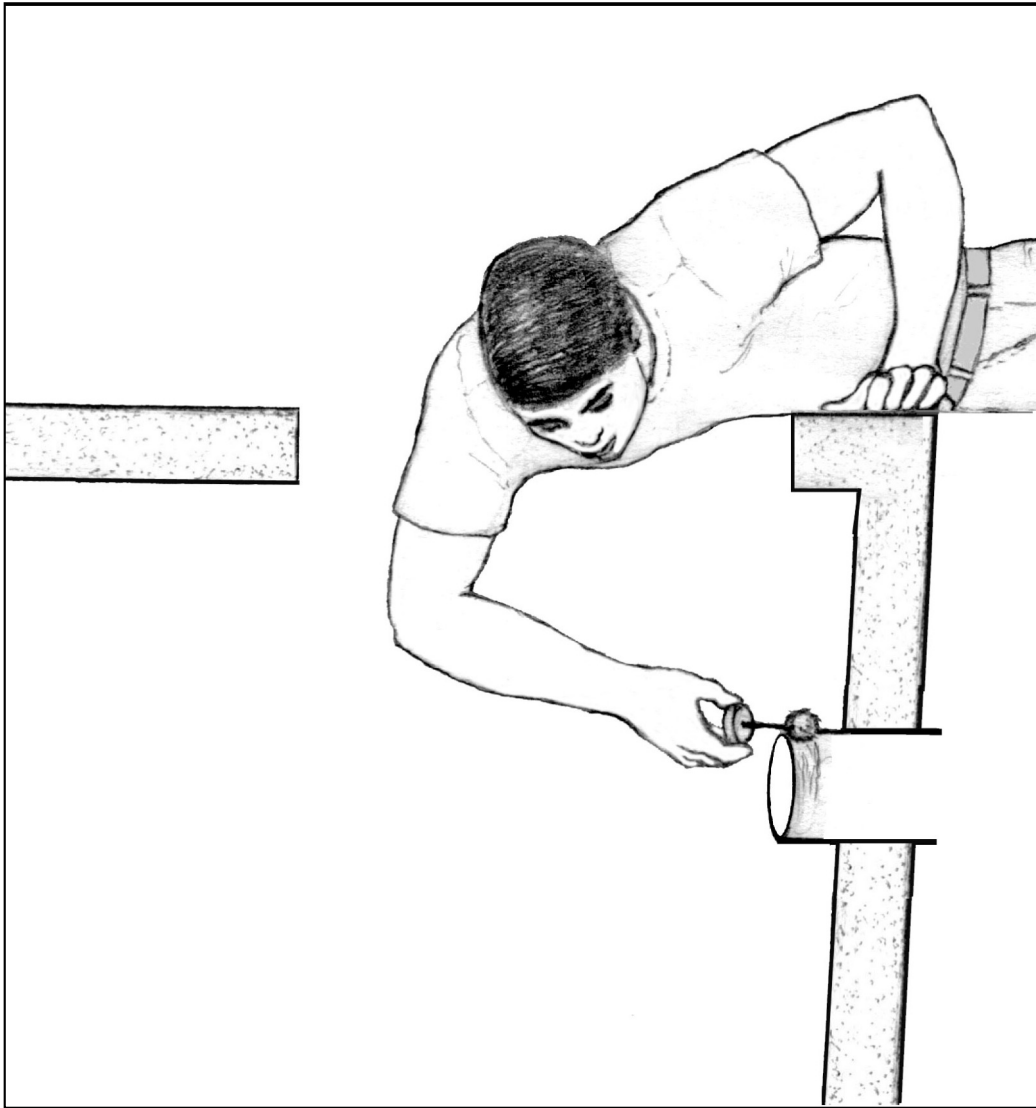
External filter basins, were designed for upgrades/repairs for residential systems.

Effluent Filter Installation

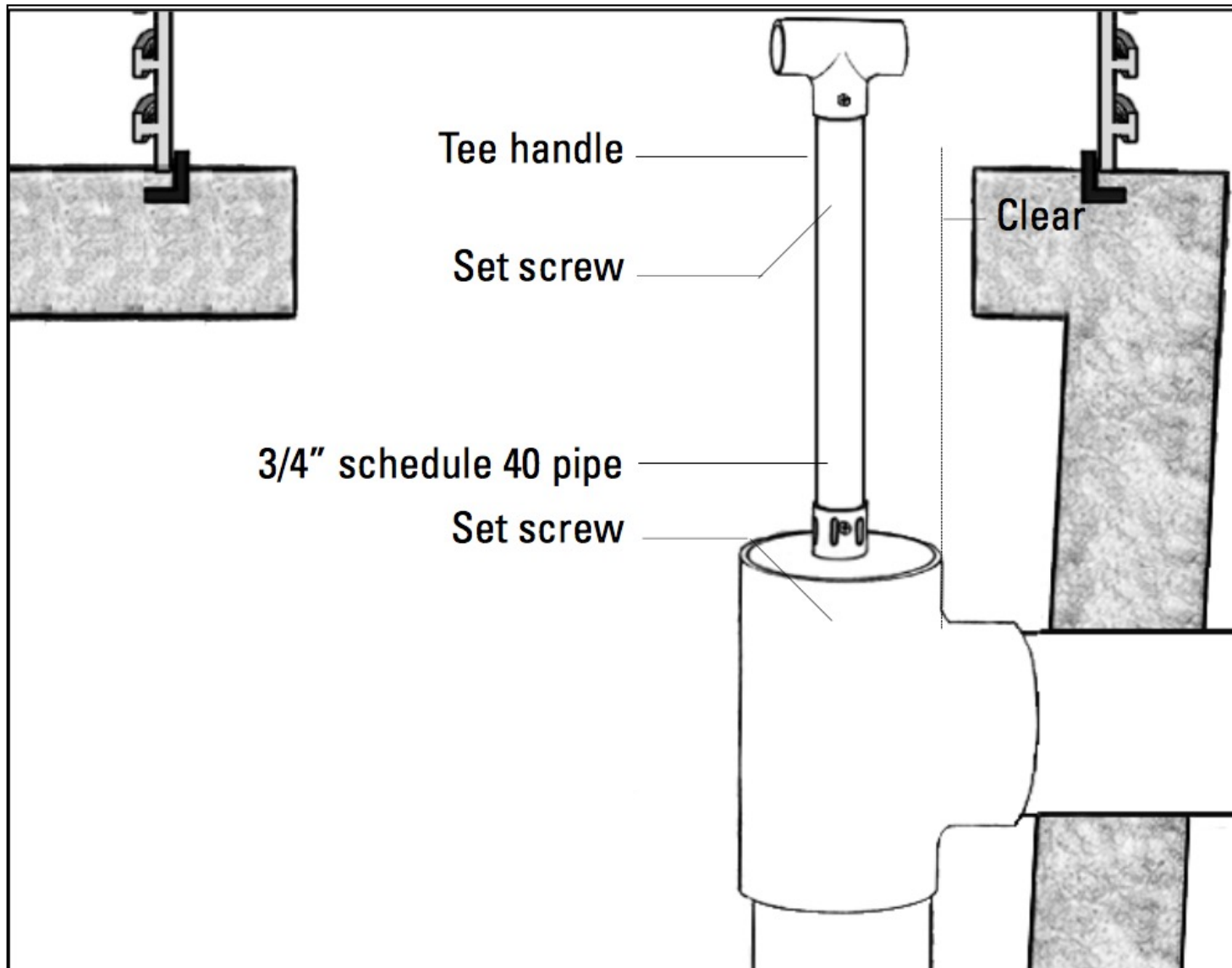
Step 1: Test-Fit Effluent Filter



Step 2: Attaching Filter to Tank

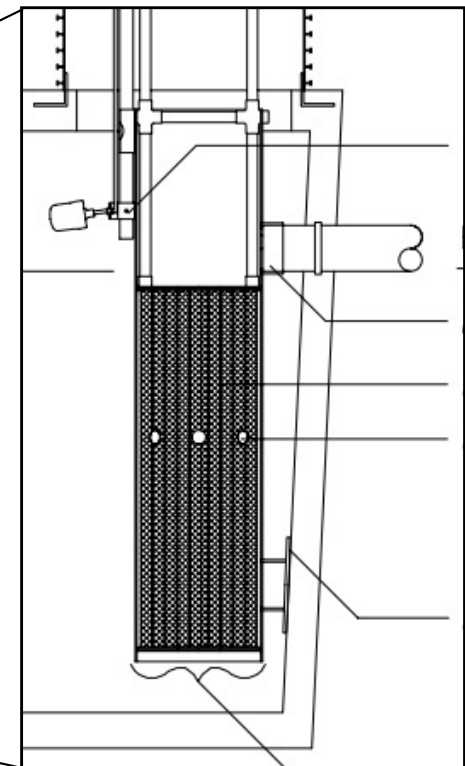
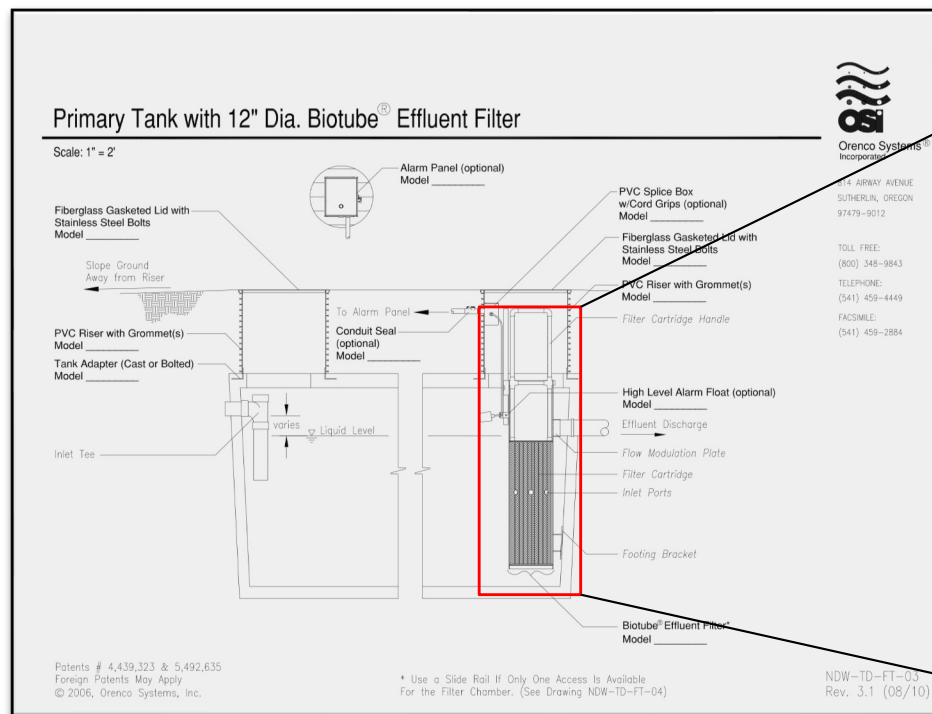


Step 3: Extending Cartridge Handle



Effluent Filter Installation

- Attach filter to the tank's outlet pipe
- For 12" & 15" diameter commercial filters, attach the foot brace to the floor of the tank (fiberglass or concrete tanks), or to the sidewall (concrete tanks only).
- Extend cartridge handle, for easy access.



Effluent Filter Maintenance

- Remove and hold cartridge over inlet of tank
- Carefully spray buildup into tank
- Reinsert cartridge into effluent filter housing



Questions?