



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
& ENVIRONMENTAL CONTROL
DIVISION OF WATER RESOURCES
20653 DUPONT BLVD
UNIT 5
GEORGETOWN, DE 19947

October 7, 2016

Kim Yanaitis.
Septic Solutions, LLC
13 Charles Point
Newark, DE 19702-2227

RE: Approval of the SSLLC-INFILTRATOR540 Pre-Engineered Lift Station

Dear MS. Yanaitis,

The Division of Water Resources has received and reviewed your request to approve your SSLLC- INFILTRATOR540 pre-engineered lift station; to be used in conjunction with Class B designed or other gravity fed on-site wastewater treatment and disposal systems in Delaware. We are pleased to inform you that we are able to **approve** the lift station referenced above, provided that they are installed in accordance with the designers proposed components and specific permit conditions. The tank manufacturer's anti-buoyancy protocol must be adhered to.

Additionally, specific components (brands, model numbers, etc...) should be listed on permit insert sheet. As a condition of this approval, no substitution of components is allowed without written approval from the design engineer and pre-approval from the Department.

If you have any other questions please contact me at 856-4561.

Sincerely,

A handwritten signature in blue ink that reads "James Cassidy".

James Cassidy
Program Manager I
Ground Water Discharges Section

Cc: file

Delaware's good nature depends on you!

SEPTIC SOLUTIONS, LLC

13 Charles Pointe
Newark, DE 19702-2227
(302) 438-7498
kyanaitis@comcast.net

September 16, 2016

James Cassidy
DNREC
20653 DuPont Boulevard
Unit 5
Georgetown, DE 19947

RE: PRE-ENGINEERED LIFT STATION
SSLLC-INFILTRATOR540

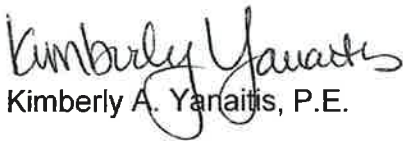
Dear Jim,

Enclosed please find the design package for a pre-engineered lift station.

The station has been designed for a 5 Bedroom house with a maximum static head of 20'.

Please review the design at your earliest convenience. If you should have any questions or require additional information, please do not hesitate to contact me.

Sincerely,



Kimberly A. Yanaitis, P.E.

PROJECT NAME: SLLC -Infiltrator540
LIFT PUMP PACKAGE

Date: 9/15/2016
Design: KAY
Page: 1 of 2

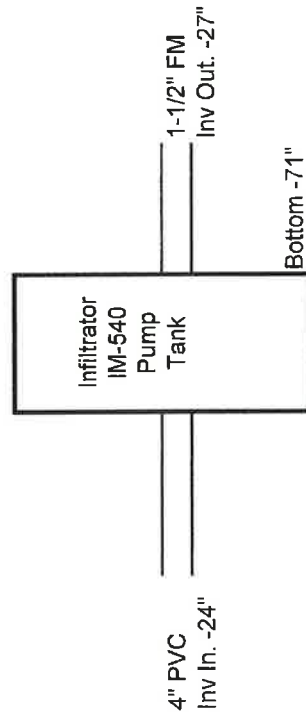
10 LF TRANSMISSION LINE, 20' STATIC HEAD

AVERAGE FLOW: 600 GPD (0.42 GPM)

FORCE MAIN SIZE:
 $D_{max} = 0.404 * \text{SQRT}(Q \text{ peak})$
 $D_{max} = 0.404 * \text{SQRT}(0.42 \text{ GPM})$
 $D_{max} = 0.26"$

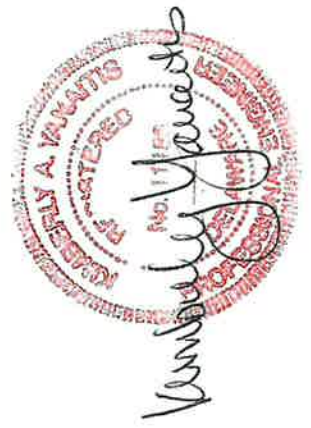
Use 1-1/2" SCHD 40 PVC

GRADE 0"



H.W.L. -51"
PUMP ON -57"
PUMP OFF -61"
BOTTOM -71"

STATIC HEAD: SH = HIGH POINT - PUMP OFF
SH = 20 FT



Date: 9/15/2016
Design: KAY
Page: 2 of 2

**Note: K-values per Supplement to NCC Std. Spec
Construction Section 35.16, Part 5
Sample Designs for Sewage Pumping Stations**

		* =	0.04 =	*	0.154 =	0.00616
1-1/2" CHECK VALVE (STEEL)	1	*	0.154	*	0.154	0.02772
1-1/2" GATE VALVE (STEEL)	1	*	0.154	*	0.18	0.19250
1-1/2" 90 BEND (STEEL)	1	*	0.154	*	1.25	0.40300
1-1/2" 45 BEND (PVC)	5	*	0.124	*	0.65	0.1176
1-1/2" STEEL FM	4	*	2.94	(/100)	1.89	0.18900
1-1/2" PVC FM	10	*	1.89	(/100)	=	20.00
STATIC HEAD					=	
TOTAL						20.94

PUMP ON TO PUMP OFF = 4"
VOLUME = 21 GAL (Per Infiltrator Specifications)

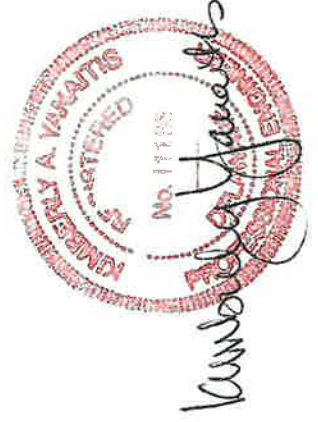


Table 2: Nominal Volume Chart

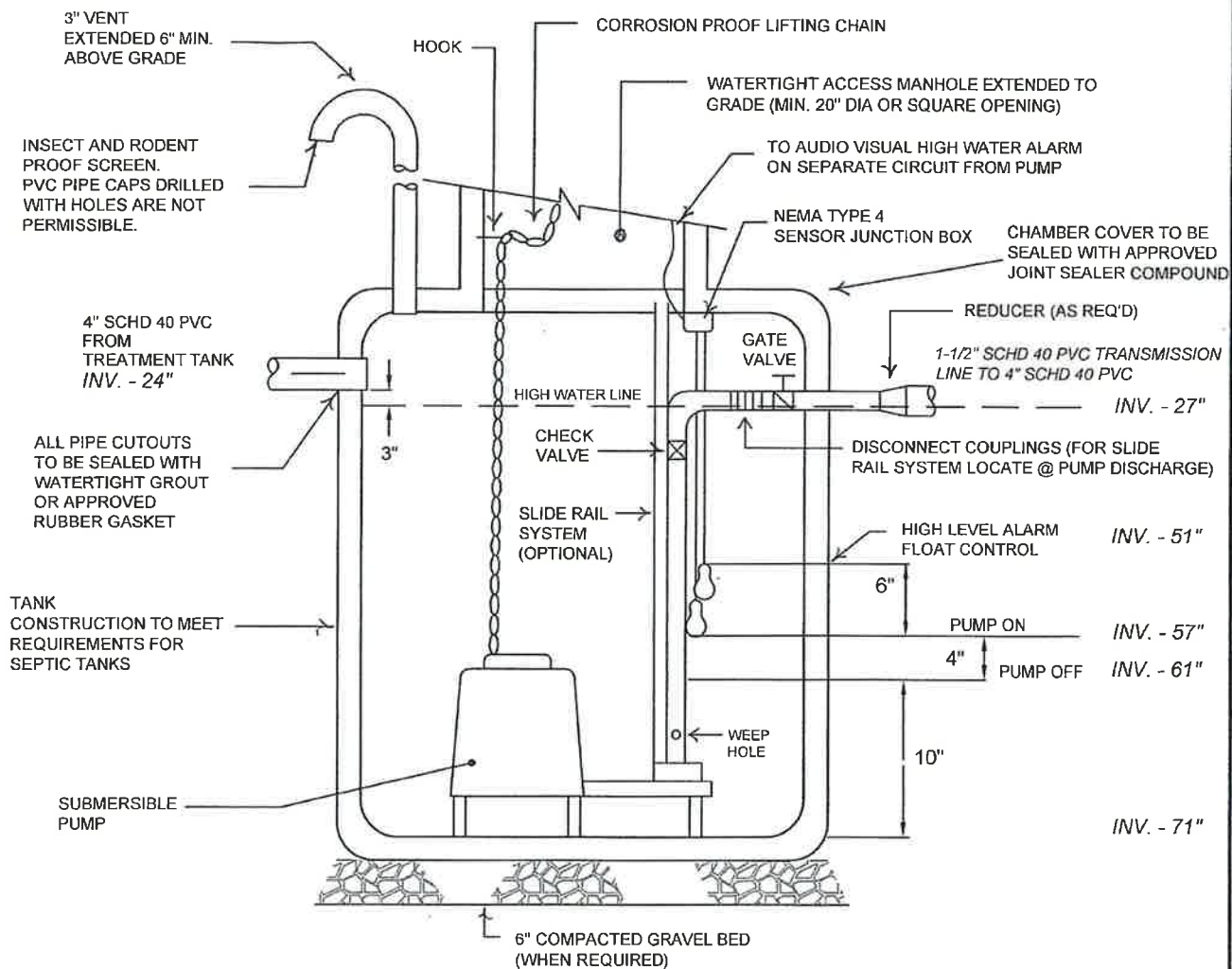
Height ¹		Total liquid volume in tank at indicated height					
in	cm	IM-540		IM-1060		IM-1530	
		U.S. Gal	Liters	U.S. Gal	Liters	U.S. Gal	Liters
1	3	3	11	3	11	17	64
2	5	8	30	13	49	34	128
3	8	14	53	28	106	51	192
4	10	21	80	46	174	68	256
5	13	29	109	65	246	94	357
6	15	37	141	86	326	122	463
7	18	46	173	107	405	152	573
8	20	55	207	129	488	180	681
9	23	64	243	152	575	212	802
10	25	74	279	176	666	245	928
11	28	84	317	200	757	280	1,061
12	30	94	356	225	852	312	1,182
13	33	105	396	251	950	351	1,328
14	36	116	437	277	1,049	387	1,463
15	38	127	480	303	1,147	422	1,597
16	40	138	523	330	1,249	464	1,756
17	43	150	566	357	1,351	500	1,892
18	46	161	611	384	1,454	537	2,034
19	48	173	656	411	1,556	575	2,177
20	50	186	702	438	1,658	614	2,322
21	53	198	749	465	1,760	652	2,468
22	56	210	796	493	1,866	690	2,612
23	58	223	843	521	1,972	729	2,758
24	61	235	891	549	2,078	770	2,914
25	64	248	940	577	2,184	808	3,058
26	66	261	988	605	2,290	847	3,208
27	69	274	1,038	633	2,396	887	3,356
28	71	287	1,088	662	2,506	928	3,513
29	74	300	1,137	691	2,616	968	3,665
30	76	313	1,185	719	2,722	1,007	3,814
31	79	326	1,233	747	2,828	1,048	3,966
32	81	338	1,281	775	2,934	1,087	4,113
33	84	351	1,328	802	3,036	1,126	4,262
34	86	363	1,375	830	3,142	1,165	4,410
35	89	375	1,421	857	3,244	1,204	4,557
36	91	387	1,466	884	3,346	1,242	4,701
37	94	399	1,511	911	3,449	1,280	4,846
38	97	411	1,555	938	3,551	1,318	4,988
39	99	422	1,598	965	3,653	1,355	5,131
40	102	433	1,640	992	3,755	1,393	5,272
41	104	444	1,681	1,018	3,854	1,430	5,412
42	107	455	1,722	1,044	3,952	1,466	5,550
43	109	465	1,761	1,069	4,047	1,502	5,685
44	112	475	1,799	1,094	4,141	1,537	5,817
45	114	485	1,836	1,118	4,232	1,572	5,950
46	117	494	1,871	1,142	4,323	1,604	6,070
47	119	503	1,905	1,165	4,410	1,638	6,201
48	122	512	1,938	1,187	4,493	1,667	6,310
49	124	520	1,970	1,208	4,573	1,697	6,422
50	127	528	1,999	1,228	4,648	1,724	6,527
51	130	535	2,027	1,247	4,720	1,749	6,621
52	132	542	2,050	1,265	4,789	1,766	6,684
53	135	547	2,071	1,278	4,838	1,777	6,726
54	137	551 ²	2,087	1,287	4,872	1,785 ²	6,758

1. Height measured from lowermost inside surface at bottom of corrugation in tank.

2. The total capacity of the IM-540 tank is 552 gallons; the total capacity of the IM-1530 tank is 1,787 gallons.

Failure to comply with these installation instructions will invalidate the warranty. Contact Infiltrator Water Technologies' Technical Services Department for assistance at 1-800-221-4436.

GRADE 0" (WITHOUT ADDITIONAL RISERS)



NOTES:

- EXCAVATION LIMITS SHALL EXTEND AT LEAST 2 FEET BEYOND TANK PERIMETER.
- ALL PIPE TO BE SCHEDULE 40 PVC.
- CHAMBER TO BE SIZED ACCORDING TO REQUIREMENTS OF DOSING VOLUME AND STORAGE. SEE EXHIBIT I.
- ALL DOSING CHAMBER COMPONENTS SHALL BE FIELD TESTED TO INSURE ACCURACY, WATER TIGHTNESS AND PROPER OPERATION OF ALL PUMPS AND ALARM CONTROLS.
- ALL ELECTRICAL CONNECTIONS SHALL BE WATERPROOF, CORROSION RESISTANT AND EXPLOSION PROOF.

TYPICAL DIMENSIONS (ID):

LENGTH:	64"
WIDTH:	61"
HEIGHT:	54"
HEIGHT TO INLET:	47"

USING GATE VALVE, ADJUST
FLOW FOR APPROX. 20 GPM
(1 GAL / 3 SEC)

PARTS LIST

PUMP: GOULDS MODEL 3885, WE0311M, 1/3 HP,
1 PHASE, 115 V, 1750 RPM

CONTROL PANEL: TANK ALERT XT

FLOAT: SJE SIGNALMASTER CONTROL SWITCH

INFILTRATOR IM-540
PRE-ENGINEERED LIFT STATION
(N.T.S.)

SSLLC-INFILTRATOR540

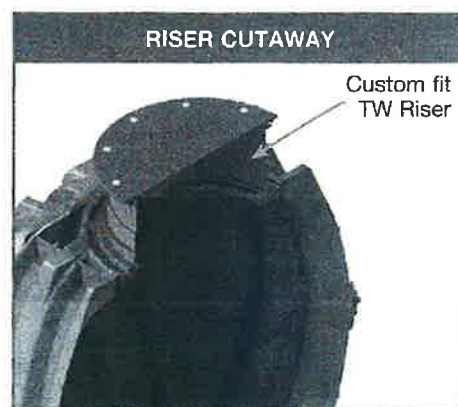
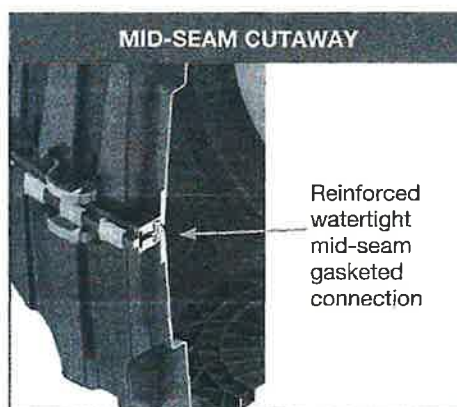




The Infiltrator IM-540 is a lightweight strong and durable septic/pump tank. This watertight tank design is offered with Infiltrator's line of custom-fit risers and heavy-duty lids. Infiltrator injection molded tanks provide a revolutionary improvement in plastic tank design, offering long-term exceptional strength and watertightness.

Features & Benefits

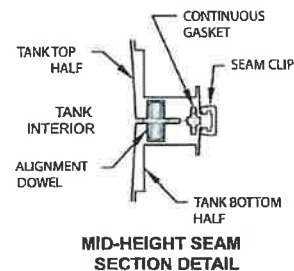
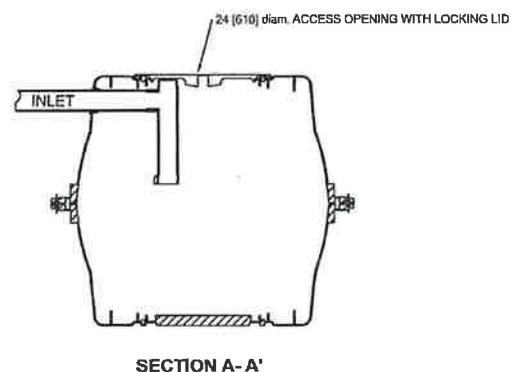
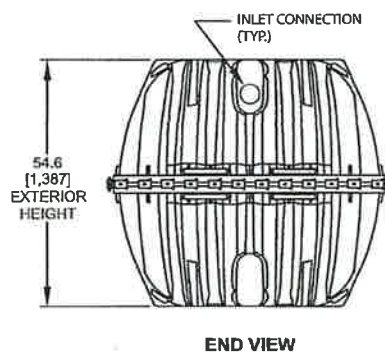
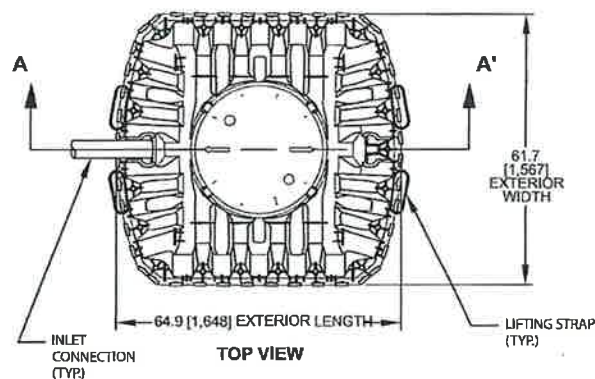
- Strong injection molded polypropylene construction
- Lightweight plastic construction and inboard lifting lugs allow for easy delivery and handling
- Integral heavy-duty green lids that interconnect with TW™ risers and pipe riser solutions
- Structurally reinforced access ports eliminate distortion during installation and pump-outs
- Reinforced structural ribbing offers additional strength
- Can be installed with 6" to 48" of cover
- Can be pumped dry during pump-outs
- Suitable for use as a pump tank or rainwater (non-potable) tank
- No special installation, backfill or water filling procedures are required



IM-540 General Specifications and Illustrations

The IM-540 is an injection molded two piece mid-seam plastic tank. The IM-540 injection molded plastic design allows for a mid-seam joint that has precise dimensions for accepting an engineered EPDM gasket. Infiltrator's gasket design utilizes technology from the water industry to deliver proven means of maintaining a watertight seal. The two-piece design is permanently fastened using a series of non-corrosive plastic alignment dowels and locking seam clips. The IM-540 is assembled and sold through a network of certified Infiltrator distributors.

IM-540	
Total Capacity	552 gal (2090 L)
Length	64.9" (1648 mm)
Width	61.7" (1567 mm)
Height	54.6" (1387 mm)
Maximum Burial Depth	48" (1219 mm)
Minimum Burial Depth	6" (152 mm)
Maximum Pipe Diameter	4" (100 mm)
Weight	169 lbs (77 kg)



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P.O. Box 768
Old Saybrook, CT 06475
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1-800-221-4436
www.infiltratorwater.com

U.S. Patents: 4,759,661; 5,017,041; 5,156,488; 5,336,017; 5,401,116; 5,401,459; 5,511,903; 5,716,163; 5,588,778; 5,839,844 Canadian Patents: 1,329,959; 2,004,564 Other patents pending. Infiltrator, Equalizer, Quick4, and SideWinder are registered trademarks of Infiltrator Water Technologies. Infiltrator is a registered trademark in France. Infiltrator Water Technologies is a registered trademark in Mexico. Contour, MicroLeaching, PolyTuff, ChamberSpacer, MultiPort, PosiLock, QuickCut, QuickPlay, SnapLock and StraightLock are trademarks of Infiltrator Water Technologies. PolyLok is a trademark of PolyLok, Inc. TUF-TITE is a registered trademark of TUF-TITE, INC. Ultra-Rib is a trademark of IPEX Inc.

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IM11 0813

Contact Infiltrator Water Technologies' Technical Services Department for assistance at 1-800-221-4436

Infiltrator IM-Series Septic Tank General Installation Instructions

AUGUST 2015



BEFORE YOU BEGIN

Infiltrator Water Technologies' tanks must be installed according to state and/or local regulations, which supersede the manufacturer's installation instructions. If unsure of the installation requirements for a specific site, contact the health department or permitting authority. The IM-Series referred to in this document includes the IM-540, IM-1060, and IM-1530 models.

WARNING: IMPLOSIONS MAY CAUSE SERIOUS INJURY
Follow Infiltrator Water Technologies vacuum test instructions

MATERIALS AND EQUIPMENT NEEDED

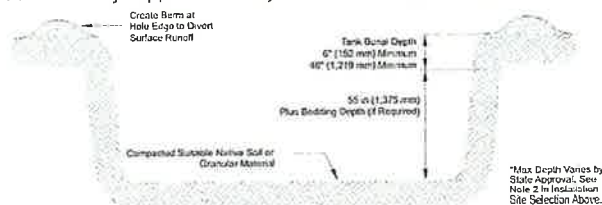
- | | |
|--|--|
| <input type="checkbox"/> IM-Series tank | <input type="checkbox"/> Excavator |
| <input type="checkbox"/> Access port lid(s)* | <input type="checkbox"/> Shovel |
| <input type="checkbox"/> 10 screws per lid* | <input type="checkbox"/> Level |
| <input type="checkbox"/> 2 inlet/outlet gaskets (included) | <input type="checkbox"/> 5-inch-diameter (125 mm) hole saw |
| <input type="checkbox"/> Inlet/outlet tees* | <input type="checkbox"/> Utility knife |
| <input type="checkbox"/> Tape measure | <input type="checkbox"/> PVC pipe glue with primer |
| <input type="checkbox"/> Pipe, risers, etc. | |
| <input type="checkbox"/> Socket wrench | |
- *tee and lid inclusion varies by state/province

INSTALLATION SITE SELECTION

- Do not install the tank in vehicular traffic areas. The tank is designed for non-traffic applications.
- The allowable soil cover depth is 6 to 48 inches (150 to 1,200 mm).
*18-inch (450 mm) max. in Florida for Cat. 3 IM-Series tanks;
48-inch (1,200 mm) max. in Florida for Cat. 4 IM-Series tanks; 36-inch (900 mm) max. in Massachusetts, New Hampshire, North Carolina, and Oregon.
- The tank shall not be installed where the subsurface water level outside the tank exceeds the height of the outlet pipe saddle. Follow Table 4 guidelines.

EXCAVATING AND PREPARING THE SITE

- Unless buoyancy control measures are required, the excavation width and length should be 18 to 36 inches (450 to 900 mm) larger than the tank on each side or sized as necessary to ensure proper backfill compaction, as outlined in Steps 5-10 of "Backfilling the Tank" in this document. See Infiltrator IM-Series Tank Buoyancy Control Guidance document, available online at www.infiltratorwater.com, for specific excavation requirements when installing buoyancy control measures.
- Excavation depth shall account for the 55-inch (1,375 mm) tank height. Also account for 4 inches (100 mm) of bedding (if required) and cover depth (permissible cover depth is 0.5 to 4 feet (150 to 1,200 mm) of soil).
Note: If the water level outside the tank exceeds the height of the outlet pipe saddle, tank structural integrity may be compromised. See page 4 for maximum allowable subsurface water elevation guidelines.
- Inspect bottom of excavation to verify suitability of native soil for tank installation. Soils with large, protruding, or sharp stones or other similar objects that may damage the tank are not suitable.
- The tank may be installed either in suitable native soil (see Backfilling the Tank section) or a minimum 4-inch (100 mm) layer of well-graded granular soil having particles less than 3 inches (75 mm) in diameter, or maximum 0.5-inch (13 mm) diameter crushed stone.
- Create a uniform, compacted, level surface to ensure that the bottom of the tank is evenly supported. Verify that the installation surface is flat.



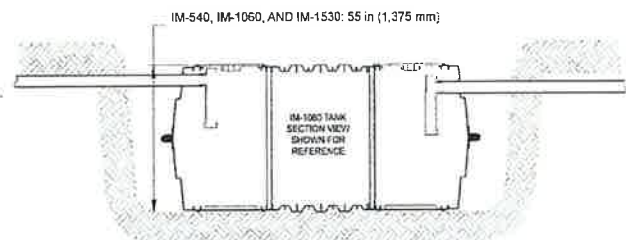
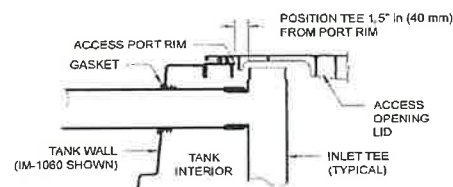
INSTALLING THE TANK

- Inspect the tank for damage before installation.
- If the tank inlet and outlet penetrations are not drilled, drill holes using the drill

points provided at each of the inlet and outlet ports according to the applicable Inlet and Outlet Hole Locations section of this document. The inlet and outlet may be drilled on either the sides or ends of the tank, as required based on applicable codes and site conditions.*

* Indiana, Kentucky, Oregon, West Virginia, and certain Florida and Texas tanks are factory-drilled.

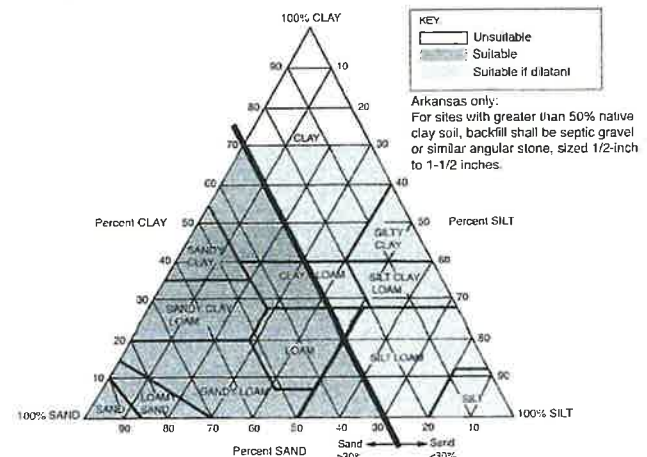
- The gaskets supplied with the tank are compatible with Schedule 40 and SDR 35 pipe using a 5-inch-diameter (125 mm) hole saw.
- Install the rubber gaskets at the inlet and outlet.
- Using all four of the tank's integral lifting lugs, lower tank into excavation.
- Slide the inlet and outlet pipes* through the gaskets. Soapy lubricant may be used to slide the pipe in.
*For North Carolina, the inlet pipe shall be a straight pipe with no tee.
- Horizontally position the tee 1½ inches (40 mm) from the access port rim, allowing the tee to fit into the recess in the access port lid (see detail).
- Install lids and risers (see Installing Risers section) as necessary. Rotate lid over access opening until it indexes to tank and drops into position.



BACKFILLING THE TANK

Note: Infiltrator tanks do not require filling with water prior to backfill placement. Water filling and backfilling to the tank mid-height is required if the tank is left in either an open or backfilled excavation that may fill with water from rain or other sources.

- Backfill with suitable native soil (max. 3-inch (75-mm) stone diameter). If native soil is unsuitable, replace unsuitable fraction with suitable soil. If suitable soil is not locally available, contact Infiltrator for assistance.
- Suitable soil shall include soil textural classes defined in the United States Department of Agriculture soil triangle. Suitable soil textural classes are based on the tank installation depth, as measured from finished grade to the top of tank.
a) For a tank soil cover depth of 0.5 to 2.0 feet (150 to 600 mm), suitable soil textures include:



Failure to comply with these installation instructions will invalidate the warranty. Contact Infiltrator Water Technologies' Technical Services Department for assistance at 1-800-221-4436.

INLET AND OUTLET HOLE LOCATIONS

Drill height marks are provided on all Infiltrator tank models to guide inlet and outlet hole drilling. A single drill height mark is provided at each end and side port on IM-Series tanks (example illustrated below). Holes may be drilled at the end or side inlet and outlet locations, as allowed by

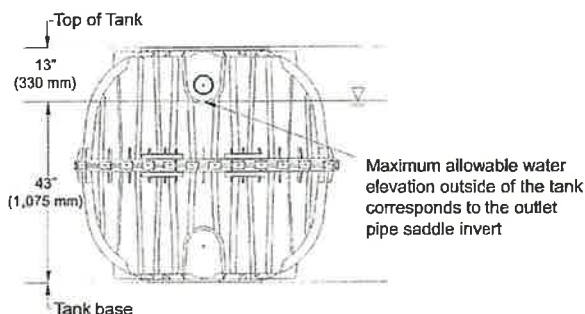
state and/or local regulations. The drill height mark indicates the center point location for the hole saw. The pilot drill bit on the hole saw should be positioned at the center of the drill height mark to align the hole saw properly. Table 3 provides drilling and invert information by regulatory jurisdiction for the installation of 4-inch- (100-mm-) diameter pipe.

Table 3: Inlet and Outlet Hole Locations¹

Jurisdiction¹	Inlet Drill Location	Outlet Drill Location	Invert Drop (in) [mm]	Inlet Invert Height (in) [mm]		Outlet Invert Height² and Liquid Level (in) [mm]
				Above Inside Bottom of Tank²	Above Excavation Base³	
IM-540 and IM-1530						
All	All	All	3.00 [76]	47.00 [1,994]	47.20 [1,199]	44.00 [1,118]
IM-1060						
All	End	End	3.00 [76]	47.00 [1,994]	47.20 [1,199]	44.00 [1,118]
	Side	Side	3.00 [76]	47.50 [1,207]	47.70 [1,212]	44.50 [1,130]
	Side	End	3.50 [89]	47.50 [1,207]	47.70 [1,212]	44.00 [1,118]
	End	Side	2.50 [64]	47.00 [1,994]	47.20 [1,199]	44.50 [1,130]

1. Indiana, Kentucky, Oregon, West Virginia, and certain Florida and Texas tanks are factory drilled.
2. Invert heights are measured from the lowest interior surface at the bottom of the tank to the invert.
3. Invert heights are measured from the base of the excavation to the invert.
4. State, provincial, and local regulatory requirements supersede Table 3 information.

IM-Series Tanks: Maximum Allowable Subsurface Water Elevation



Infiltrator Water Technologies, LLC ("Infiltrator")

INFILTRATOR® SEPTIC TANK LIMITED WARRANTY FIVE (5) YEAR MATERIALS AND WORKMANSHIP LIMITED WARRANTY

- This limited warranty is extended to the end user of an Infiltrator Tank. A Tank manufactured by Infiltrator, when installed and operated in accordance with Infiltrator's installation instructions and local regulation by a licensed installer, is warranted to you: (i) against defective materials and workmanship for five (5) years after installation. Infiltrator will, at its option, (i) repair the defective product or (ii) replace the defective materials. Infiltrator's liability specifically excludes the cost of removal and/or installation of the Tank.
- In order to exercise its warranty rights, you must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect.
- YOUR EXCLUSIVE REMEDY WITH RESPECT TO ANY AND ALL LOSSES OR DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER SHALL BE SPECIFIED IN SUBPARAGRAPH (a) ABOVE. INFILTRATOR SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND, HOWEVER OCCASIONED, WHETHER BY NEGLIGENCE OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.**
- THIS LIMITED WARRANTY IS THE EXCLUSIVE WARRANTY GIVEN BY INFILTRATOR AND SUPERSEDES ANY PRIOR, CONTRARY, ADDITIONAL, OR SUBSEQUENT REPRESENTATIONS, WHETHER ORAL OR WRITTEN. INFILTRATOR DISCLAIMS AND EXCLUDES TO THE GREATEST EXTENT ALLOWED BY LAW ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. NO PERSON (INCLUDING ANY EMPLOYEE, AGENT, DEALER, OR REPRESENTATIVE) IS AUTHORIZED TO MAKE ANY REPRESENTATION OR WARRANTY CONCERNING THIS PRODUCT, EXCEPT TO REFER YOU TO THIS LIMITED WARRANTY. EXCEPT AS EXPRESSLY SET FORTH HEREIN, THIS WARRANTY IS NOT A WARRANTY OF FUTURE PERFORMANCE, BUT ONLY A WARRANTY TO REPAIR OR REPLACE.**
- YOU MAY ASSIGN THIS LIMITED WARRANTY TO A SUBSEQUENT PURCHASER OF YOUR HOME.**
- NO REPRESENTATIVE OF INFILTRATOR HAS THE AUTHORITY TO CHANGE THIS LIMITED WARRANTY IN ANY MANNER WHATSOEVER, OR TO EXTEND THIS LIMITED WARRANTY.**
- NO WARRANTY OF ANY KIND IS MADE WITH REGARD TO ANY PRODUCT, COMPONENTS, DEVICES, MEDIA OR TREATMENT UNITS WHICH ARE MANUFACTURED BY OTHERS AND ARE INSTALLED IN AN INFILTRATOR TANK. USE OF THESE PRODUCTS ARE AT YOUR OWN RISK.**
- THE INFILTRATOR TANK IS DESIGNED TO BE BURIED UNDERGROUND. NO WARRANTY OF ANY KIND IS MADE IF YOUR TANK IS NOT BURIED UNDERGROUND AS SPECIFIED IN THE PRODUCT'S INSTALLATION INSTRUCTIONS.**

CONDITIONS AND EXCLUSIONS

There are certain conditions or applications over which Infiltrator has no control. Defects or problems as a result of such conditions or applications are not the responsibility of Infiltrator and are NOT covered under this warranty. They include failure to install the Tank in accordance with instructions or applicable regulatory requirements or guidance, altering the Tank contrary to the installation instructions and disposing of chemicals or other materials contrary to normal tank usage.

The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of a Tank should contact Infiltrator's corporate headquarters in Old Saybrook, Connecticut, prior to such purchase to obtain a copy of the applicable warranty, and should carefully read that warranty prior to the purchase of a Tank.



4 Business Park Road
P.O. Box 768
Old Saybrook, CT 06475
860-577-7000 • Fax 860-577-7001
1-800-221-4436
www.infiltratorwater.com

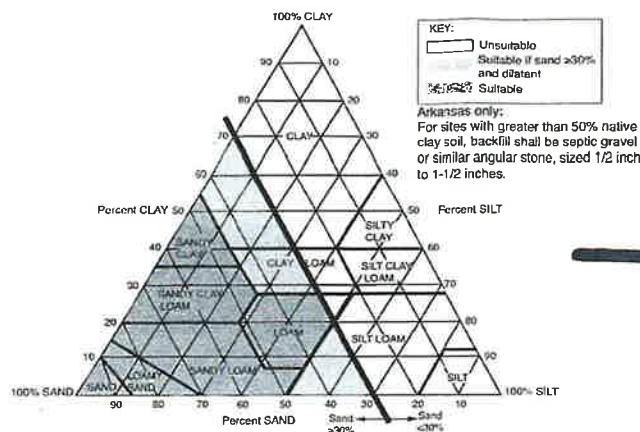
Distributed By:

U.S. Patents: 4,759,661; 5,017,041; 5,156,488; 5,336,017; 5,401,116; 5,401,459; 5,511,903; 5,716,163; 5,588,778; 5,839,844 Canadian Patents: 1,329,959; 2,004,564 Other patents pending. Infiltrator, Equalizer, Quick4, and SideWinder are registered trademarks of Infiltrator Water Technologies. Infiltrator is a registered trademark in France. Infiltrator Water Technologies is a registered trademark in Mexico. Contour, MicroLeaching, PolyTuff, ChamberSpacer, MultiPort, PosiLock, QuickCut, QuickPlay, SnapLock and StraightLock are trademarks of Infiltrator Water Technologies. PolyLok is a trademark of PolyLok, Inc. TUF-TITE is a registered trademark of TUF-TITE, INC. Ultra-Rib is a trademark of IPEX Inc.

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TANK01 0815-04

- b) For a tank soil cover depth that is greater than 2.0 feet and up to 4.0 feet (600 to 1,200 mm), suitable soil textures include:



3. Backfill should not have stones greater than 3 inches (75 mm) in diameter or excessive clods that do not break apart during placement and compaction. Backfill must be capable of occupying the spaces between the tank ribs and beneath the haunches.

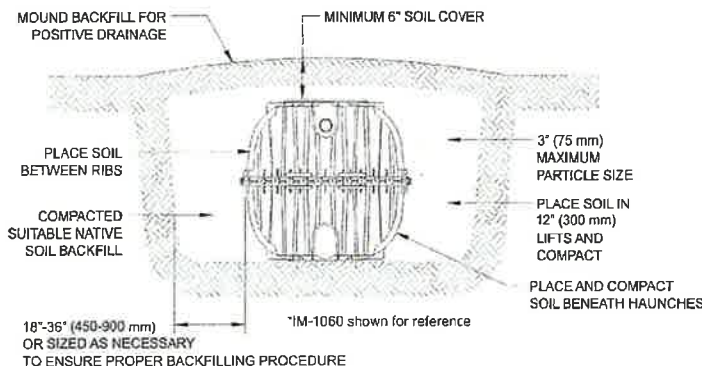
Note: Rounded screened aggregate (e.g., pea gravel) is not a suitable backfill.

4. Standard field soil classification methods shall be used to determine the soil textural class.

Note: Under most circumstances, the determination of soil dilatancy will not be required. Dilatancy shall be determined in the field using a test that does not require specialized equipment, per ASTM D2488, Section 14.3. Complete instructions can be found at www.infiltratorwater.com

5. Place and compact soil by walking-in beneath the haunches of the tank.
6. Place backfill around the four sidewalls in an alternating manner, so that the backfill height along the four sidewalls is maintained within a 12-inch (300-mm) tolerance.
7. Do not backfill top of tank before sidewalls are completely backfilled.
8. Continue to place backfill along the sidewalls in 12-inch (300-mm) lifts. Place backfill between the ribs on the sidewalls such that the space between the ribs is completely filled with soil.
9. Compact backfill material either by walking-in, hand tamping or mechanical compaction (includes backhoe bucket). If mechanical compaction is used, such as a walk-behind tamper or backhoe bucket, a single pass is recommended. Compact each lift prior to placement of next lift. Compact backfill from tank walls to excavation sidewalls.
10. Complete backfilling and grade the area.
11. A minimum 6-inch (150-mm) depth of suitable soil must be placed over the top of the tank. The balance of backfill placed to finish grade above the tank may be either suitable or unsuitable soil.
12. Establish a strong stand of erosion-resistant vegetation.

Note: Grade to prevent the backfilled excavation from filling with surface runoff. If the water level in the backfilled excavation exceeds the height of the outlet pipe saddle, tank structural integrity may be compromised.



SHORT AND LONG-TERM GROUNDWATER CONTROL

It may be necessary to implement groundwater control measures during tank installation. Maintain dry conditions by expanding the excavation to create a short-term groundwater collection sump for temporary placement of a dewatering pump

if needed. Long-term groundwater control measures such as underdrains and interceptor trenches may be sensible if the site is amenable to construction of a control system and such systems are not prohibited by regulation or law, and the tank location is not subject to flooding. Properly installed underdrains and groundwater interceptor trenches may prevent the need for tank buoyancy control measures.

INSTALLING UNDER SHALLOW GROUNDWATER CONDITIONS

Buoyancy control measures may be required if the Infiltrator tank is to be installed with less than 12 inches (300 mm) of soil backfill cover, and where the water level outside the tank has the potential to rise 30 inches (750 mm) or more above the elevation of the tank bottom. Otherwise, no control measures are required (see Table 1). The need for buoyancy control measures must be determined based on backfill cover depth and height of water outside of tank above the tank bottom according to Table 1. Refer to Infiltrator IM-Series Tank Buoyancy Control Guidance document for more information.

Table 1: Tank models¹ and conditions requiring buoyancy control²

Water height above tank bottom	Soil cover depth above tank ³	
	6 in (150 mm) to 12 in (300 mm)	Above 12 in (300 mm)
Above outlet pipe saddle	Do not install	Do not install
36 in (900 mm) to outlet pipe saddle ⁴	All models	None
30 in (750 mm) to 36 in (900 mm)	IM-1530	None
Less than 30 in (750 mm)	None	None

1. IM-540, IM-1060 and IM-1530.

2. See Infiltrator IM-Series Tank Buoyancy Control Guidance for detailed information on the use of controls.

3. No controls are required for soil cover depths exceeding 12 in (300 mm).

4. The tank shall not be installed where the water level outside the tank exceeds the height of the outlet pipe saddle. Follow Table 4 guidelines.

INSTALLING RISERS

- Compatible risers include 24-inch (600 mm) diameter products such as the Infiltrator TW-Riser, EZset by Infiltrator, PolyLok®, Inc., and Tuf-Tite® Corporation, in addition to 24-inch (600 mm) diameter corrugated HDPE and IPEX Ultra Rib® PVC pipe. Follow Infiltrator's IM-Series Tank Riser Connection Guidance.
- In Oregon only, watertightness testing shall include filling with water at least 2 inches above riser connection, with no more than 1 gallon leakage per 24 hours, per OAR 340-073-0025(3).

INSTALLING PUMPS AND RELATED EQUIPMENT

Pumps may be supported on a stable, level 16x16-inch (400x400-mm) platform positioned on the bottom of the tank. One 16x16-inch block or two 8x16-inch (200-mm x 400-mm) side-by-side blocks may be used. Limit block height to account for pump height and liquid levels during pump cycles. Block(s) should be placed below an access opening and level upon the tank bottom. For two blocks, orient them perpendicular to ribs on the tank bottom, if present, for stability.

Installation of products such as electrical conduit and wiring, pumps, water level control equipment, valves, siphon equipment, etc. shall be in accordance with the product manufacturer's instructions and compliant with applicable state or local rules and regulations. Appurtenances shall be fastened to the tank riser system and not the tank body or access opening rim. Where possible, appurtenances shall be installed to facilitate maintenance and repair access via the tank access openings.

Note: Prefabricated pump vaults may be installed.

GENERAL SPECIFICATIONS

- Failure to comply with installation instructions will void warranty.
- Prior to ground disturbance, check for subsurface obstructions and utilities in conformance with applicable requirements.
- Operating water temperature shall be less than 100° F (40° C).
- In cold conditions, handle and backfill tank with care to prevent impact damage.
- Tanks are not fire resistant. Store away from ignition sources.
- Removal of structural bulkheads is prohibited; removal of locking clips on the IM-Series tank mid-seam connection is also prohibited.
- Only suitable for potable applications if the tank bears the NSF/ANSI 61 certification mark. Otherwise, tank is recommended for use in septic, rainwater/stormwater storage, holding, and pump applications, or other non-potable uses.
- Infiltrator tanks shall not be installed above ground. Contact Infiltrator if the 6-inch (150-mm) minimum soil cover depth cannot be met.

TECHNICAL BROCHURE

B3885 R1



FEATURES

Impeller: Cast iron, semi-open, non-clog with pump-out vanes for mechanical seal protection. Balanced for smooth operation. Silicon bronze impeller available as an option.

Casing: Cast iron volute type for maximum efficiency. 2" NPT discharge.

Mechanical Seal: Silicon Carbide vs. Silicon Carbide sealing faces. Stainless steel metal parts, BUNA-N elastomers.

Shaft: Corrosion-resistant, stainless steel. Threaded design. Locknut on all models to guard against component damage on accidental reverse rotation.

Fasteners: 300 series stainless steel.

Capable of running dry without damage to components.

Designed for continuous operation when fully submerged.

EXTENDED WARRANTY AVAILABLE FOR RESIDENTIAL APPLICATIONS.

WE Series Model 3885

SUBMERSIBLE EFFLUENT PUMPS

 **GOULDS**
WATER TECHNOLOGY
a xylem brand

Wastewater

APPLICATIONS

Specifically designed for the following uses:

- Homes, Farms, Trailer Courts, Motels, Schools, Hospitals, Industry, Effluent Systems

SPECIFICATIONS

Pump

- Solids handling capabilities: $\frac{3}{4}$ " maximum
- Discharge size: 2" NPT
- Capacities: up to 140 GPM
- Total heads: up to 128 feet TDH
- Temperature: 104°F (40°C) continuous, 140°F (60°C) intermittent.
- See order numbers on reverse side for specific HP, voltage, phase and RPM's available.

MOTORS

- Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.
- Class B insulation on $\frac{1}{8}$ - 1½ HP models.
- Class F insulation on 2 HP models.

Single phase (60 Hz):

- Capacitor start motors for maximum starting torque.
- Built-in overload with automatic reset.

- SJTOW or STOW severe duty oil and water resistant power cords.
- $\frac{1}{8}$ - 1 HP models have NEMA three prong grounding plugs.
- 1½ HP and larger units have bare lead cord ends.

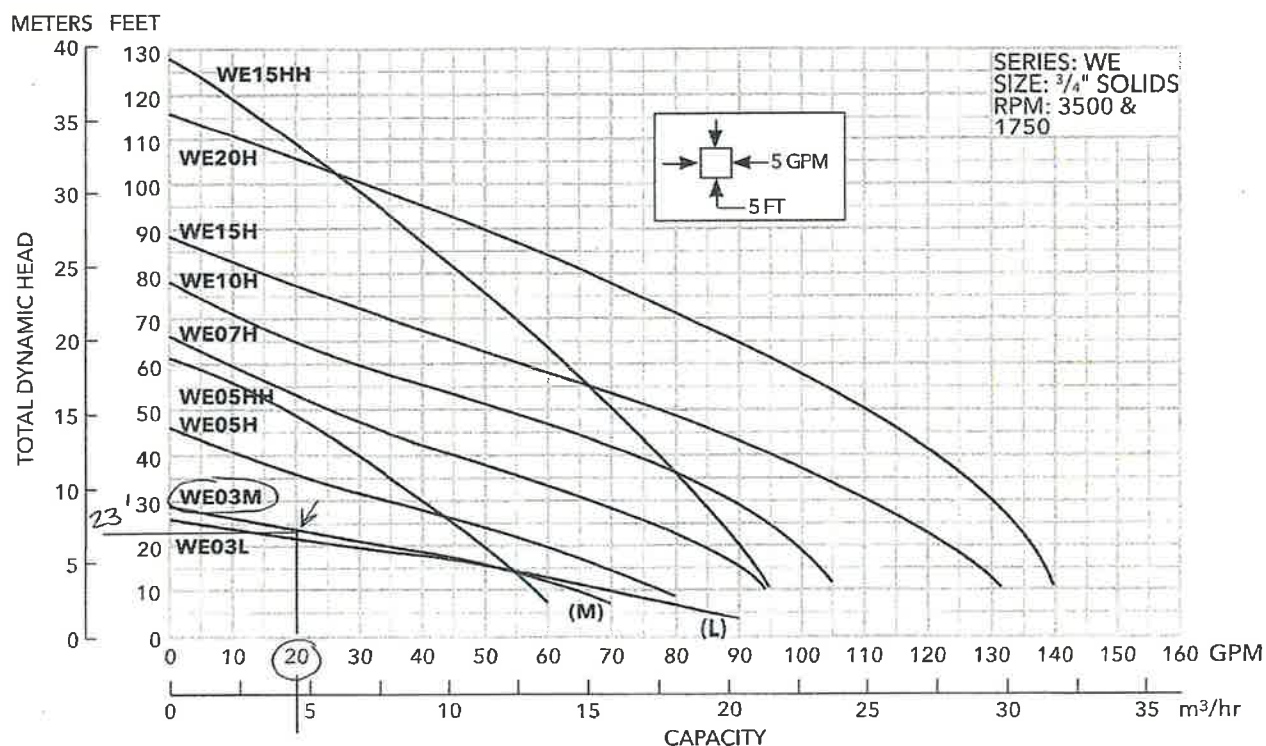
Three phase (60 Hz):

- Class 10 overload protection must be provided in separately ordered starter unit.
- STOW power cords all have bare lead cord ends.
- Designed for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.
- Bearings: Upper and lower heavy duty ball bearing construction.
- Power Cable: Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. Standard cord is 20'. Optional lengths are available.
- O-ring: Assures positive sealing against contaminants and oil leakage.

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association File #LR38549



Wastewater

MODELS

Order Number	HP	Phase	Volts	RPM	Impeller Diameter (in.)	Maximum Amps	Locked Rotor Amps	KVA Code	Full Load Efficiency %	Resistance		Power Cable Size	Weight (lbs.)	
										Start	Line-Line			
WE0311L	0.33	1	115	1750	5.38	10.7	30.0	M	54	11.9	1.7	16/3	56	
WE0318L			208			6.8	19.5	K	51	9.1	4.2			
WE0312L			230			4.9	14.1	L	53	14.5	8.0			
WE0311M			115			10.7	30.0	M	54	11.9	1.7			
WE0318M			208			6.8	19.5	K	51	9.1	4.2			
WE0312M			230			4.9	14.1	L	53	14.5	8.0			
WE0511H	0.5	1	115	3450	3.56	14.5	46.0	M	54	7.5	1.0	14/3	60	
WE0518H			208			8.1	31.0	K	68	9.7	2.4	16/3		
WE0512H			230			7.3	34.5	M	53	9.6	4.0			
WE0538H		3	200			4.9	22.6	R	68	NA	3.8	14/4		
WE0532H			230			3.3	18.8	R	70	NA	5.8			
WE0534H			460			1.7	9.4	R	70	NA	23.2			
WE0537H			575		1.4	7.5	R	62	NA	35.3				
WE0511HH		1	115		3.88	14.5	46.0	M	54	7.5	1.0	14/3		14/4
WE0518HH			208			8.1	31.0	K	68	9.7	2.4	16/3		
WE0512HH			230			7.3	34.5	M	53	9.6	4.0			
WE0538HH		3	200			4.9	22.6	R	68	NA	3.8	14/4		
WE0532HH			230			3.6	18.8	R	70	NA	5.8			
WE0534HH			460			1.8	9.4	R	70	NA	23.2			
WE0537HH			575		1.5	7.5	R	62	NA	35.3				
WE0718H	0.75	1	208	4.06	11.0	31.0	K	68	9.7	2.4	14/3	70		
WE0712H			230		10.0	27.5	J	65	12.2	2.7				
WE0738H		3	200		6.2	20.6	L	64	NA	5.7	14/4			
WE0732H			230		5.4	15.7	K	68	NA	8.6				
WE0734H			460		2.7	7.9	K	68	NA	34.2				
WE0737H			575		2.2	9.9	L	78	NA	26.5				
WE1018H	1	1	208	4.44	14.0	59.0	K	68	9.3	1.1	14/3	80		
WE1012H			230		12.5	36.2	J	69	10.3	2.1				
WE1038H		3	200		8.1	37.6	M	77	NA	2.7	14/4			
WE1032H			230		7.0	24.1	L	79	NA	4.1				
WE1034H			460		3.5	12.1	L	79	NA	16.2				
WE1037H			575		2.8	9.9	L	78	NA	26.5				
WE1518H	1.5	1	208	4.56	17.5	59.0	K	68	9.3	1.1	14/3	80		
WE1512H			230		15.7	50.0	H	68	11.3	1.6				
WE1538H		3	200		10.6	40.6	K	79	NA	1.9	14/4			
WE1532H			230		9.2	31.7	K	78	NA	2.9				
WE1534H			460		4.6	15.9	K	78	NA	11.4				
WE1537H			575		3.7	13.1	K	75	NA	16.9				
WE1518HH		1	208	5.50	17.5	59.0	K	68	9.3	1.1	14/3		14/4	
WE1512HH			230		15.7	50.0	H	68	11.3	1.6				
WE1538HH		3	200		10.6	40.6	K	79	NA	1.9	14/4			
WE1532HH			230		9.2	31.7	K	78	NA	2.9				
WE1534HH			460		4.6	15.9	K	78	NA	11.4				
WE1537HH			575		3.7	13.1	K	75	NA	16.9				
WE2012H	2	3	230	5.38	18.0	49.6	F	78	3.2	1.2	14/3	83		
WE2038H			200		12.0	42.4	K	78	NA	1.7				
WE2032H			230		11.6	42.4	K	78	NA	1.7				
WE2034H			460		5.8	21.2	K	78	NA	6.6				
WE2037H			575		4.7	16.3	L	78	NA	10.5				

TANK ALERT® XT Alarm System

Versatile, indoor or outdoor liquid level alarm system.

This alarm system monitors liquid levels in lift pump chambers, sump pump basins, holding tanks, sewage, agricultural, and other water applications.

The **Tank Alert® XT** indoor/outdoor alarm can serve as a high or low level alarm depending on the float switch model used.

The alarm horn sounds and the red beacon illuminates when a potentially threatening liquid level condition occurs. The horn can be silenced, but the alarm light remains on until the condition is remedied. Once the condition is cleared, the alarm will automatically reset.

A "power on" light on the switch indicates power to the alarm panel.



FEATURES

- Enclosure meets Type 3R water-tight standard.
- Automatic alarm reset, horn silence switch, and alarm test switch.
- Alarm horn sounds at 85 decibels at 10 feet (3 meters).
- Alarm system (when installed on separate circuit) operates even if pump circuit fails.
- Complete package includes standard SJE SignalMaster® control switch with 15 feet (4.57 meters) of cable (other lengths available) and mounting clamp.
- UL Listed for indoor or outdoor use.
- CSA Certified.
- Five-year limited warranty.



Hydraulic

OPTIONS

When ordered with the alarm, the system is available with:

- alternate float switch models for high or low liquid level warning.
- auxiliary dry normally open contacts for easy attachment of remote devices.
- premounted terminal block so enclosure can also be used as a junction box for splicing pump, pump switch, and pump power. Meets NEC standard for junction boxes.
- 6 foot (1.8 meter) power cord and liquid-tight connectors.

SPECIFICATIONS

VOLTAGE: 120 VAC, 50/60 Hz

ALARM ENCLOSURE: 6.5 x 4.5 x 3.0 inch (16.51 x 11.43 x 7.62 cm), indoor-outdoor, weatherproof, thermoplastic meets Type 3R water-tight standard

ALARM HORN: 85 decibels at 10 feet (3 meters), meets Type 3R water-tight standard as installed by factory

ALARM BEACON: UL Listed, Type 4x beacon assembly

TEST/SILENCE SWITCH: certified to IP66 and IP68 standards

AUXILIARY ALARM CONTACTS (OPTIONAL): 120 VAC, 5 amps max., 50/60 Hz

PRE-MOUNTED TERMINAL BLOCK (OPTIONAL): 20 amps, 120/230 VAC

POWER CORD (OPTIONAL): 6 foot (1.8 meter) cord with 120 VAC plug

FLOAT SWITCH: SJE SignalMaster® control switch with mounting clamp

Cable: 15 feet (4.57 meters), flexible 18 gauge, 2 conductor (UL) SJOW, water-resistant (CPE)

Float: 2.74 inch diameter x 4.83 inch long (7 cm x 12.3 cm), high impact, corrosion resistant polypropylene housing for use in sewage and non-potable water up to 140°F (60°C)

SJE Rhombus

PO Box 1708, Detroit Lakes, MN 56502

1-888-DIAL-SJE • 1-218-847-1317

1-218-847-4617 Fax

email: customer.service@sjerhombus.com

www.sjerhombus.com

SEE BACKSIDE FOR ORDERING INFORMATION.

SJE SIGNALMASTER® Control Switch

Mechanically-activated, narrow-angle float switch designed to activate pump control panels and alarms.

This narrow-angle sensing device is used to accurately monitor liquid levels in:

- water
- sewage applications

The SJE SignalMaster® control switch is not sensitive to rotation.

Normally Open Model (high level).

The control switch turns on (closes) when the switch tips slightly **above** horizontal signaling a high level, and turns off (opens) when the switch drops slightly below horizontal.

Normally Closed Model (low level)

The control switch turns on (closes) when the switch tips slightly **below** horizontal signaling a low level, and turns off (opens) when the switch tips slightly above horizontal.



FEATURES

- Mechanically-activated, snap action contacts.
- High impact, corrosion resistant, polypropylene float housing.
- Not sensitive to rotation.
- Control differential of 1.5 inches (4 cm) above or below horizontal.
- Yellow colored cap for easy identification of normally open control switch.
- White colored cap for easy identification of normally closed control switch.
- UL Listed for use in water and sewage.
- CSA Certified.
- Five-year limited warranty.



Hydraulic

OPTIONS

This switch is available:

- CE certified unit available upon request.
- for normally open (high level) applications or normally closed (low level) applications.
- in standard cable lengths of 10, 15, 20, or 30 feet and 3, 5, 6, or 10 meters (longer lengths available)
- with two mounting options that allow for flexibility in installation:

Mounting Clamp: for applications where the switch can be attached to a discharge pipe or similar mounting device.

Externally Weighted: for applications where the switch can be suspended from above.

SPECIFICATIONS

CABLE: flexible 18 gauge, 2 conductor (UL, CSA) SJOW, water-resistant (CPE)

FLOAT: 2.74 inch diameter x 4.83 inch long (7.0 x 12.3 cm) high impact, corrosion resistant, polypropylene housing for use in sewage and water up to 140°F (60°C)

MAXIMUM WATER DEPTH: 30 feet (9 meters), 13 PSI (90 kPa)

ELECTRICAL: 5 amp, 125/250 VAC, 50/60 Hz

NOTE: This switch is not recommended for controlling:

- electric loads less than 100 milliamps, 12 VAC
- non-arcing electric loads

SJE Rhombus

PO Box 1708, Detroit Lakes, MN 56502
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