



## **Installation & Operator Guide For Models: AS450-1, AS500-1 AS600-1, AS750-1, AS1000-1, AS1500-1**

**(1) Manual to be given to  
homeowner prior to installation**

Installation/Service Contact:

Name: \_\_\_\_\_

Phone: \_\_\_\_\_

E-Mail: \_\_\_\_\_

Record Product Serial Number: \_\_\_\_\_

## Table of Contents

<b>Support</b> .....	3
<b>Permits</b> .....	3
<b>Proper Use</b> .....	3
<b>Read and Keep This Manual</b> .....	3
<b>Overview of AS450-1, AS500-1, AS600-1, AS750-1, AS1000-1, AS1500-1 System and Terminology</b> .....	3
<b>Tanks</b> .....	4
<b>Unpack and Inspect Parts</b> .....	5
<b>Certified Contractor Supplied Equipment as Specified by the Certified Designer on the Approved Plans</b> .....	7
<b>System Operation</b> .....	7
<b>Installation Process – Bio Brushes</b> .....	14
<b>Installation Process – Diffuser(s) and Air Line</b> .....	18
<b>Installation Process – Air Compressor</b> .....	23
<b>Installation Process – Aero-Alert Alarm</b> .....	24
<b>Install High Water Alarm Float</b> .....	25
<b>Securing Bio-Brush Ropes</b> .....	27
<b>Installation of Effluent Filter in Outlet</b> .....	27
<b>Start-up Procedure</b> .....	28
<b>Operation &amp; Maintenance</b> .....	28
<b>Diagnostic Techniques</b> .....	30
<b>Best Septic System Practices</b> .....	31
<b>Manufacturer’s Limited Warranty</b> .....	32
<b>Appendix</b> .....	33

## **Classification**

AS450-1, AS500-1, AS600-1, AS750-1, AS1000-1, AS1500-1 meets all requirements of NSF 40 Class II.

## **Support**

System operation and maintenance must be performed by an authorized service. Property owners must contact the authorized service provider the front cover of this guide, or Aero-Stream at 877-254-7093.

## **Permits**

All system designers, installers and service providers must be Aero-Stream certified. Training is available on a regular basis through Aero-Stream, LLC. Prior to the installation of the product, the certified installer must obtain any and all required state and local permits. The installer must strictly comply with all pertinent state and local requirements. Failure to comply with these requirements is a violation of state and municipal codes.

## **Proper Use**

The AS450-1, AS500-1, AS600-1, AS750-1, AS1000-1, AS1500-1 systems are designed to treat residential strength wastewater. This includes human waste and moderate amounts of typical household cleaning products. See Best Septic System Practices section of this manual for proper wastewater system use.

## **Read and Keep This Manual**

Property owner to be given one manual for their records. Retain this manual for warranty purposes. Completely read these instructions before starting the installation.

## **Overview of AS450-1, AS500-1, AS600-1, AS750-1, AS1000-1, AS1500-1 System and Terminology**

The Aero-Stream AS450-1, AS500-1, AS600-1, AS750-1, AS1000-1, AS1500-1 systems use an aerobic process to treat the wastewater prior to dispersing into an absorption component. Aero-Stream, AS450-1, AS500-1, AS600-1, AS750-1, AS1000-1, and AS1500-1, Bio-Brush, & Aero-Alert are trademarks of Aero-Stream, LLC.

The air compressor delivers a constant flow of air through the air line to the diffuser(s). The diffuser assembly is installed in the center of a Bio-brush cluster. The diffuser breaks the air flow into micro-bubbles that allow oxygen to be dissolved into the water as the air bubble stream rises to the surface.

The Bio-brush clusters provide a media for attached growth bacteria. The attached growth bacteria stabilize the system during shock loading. The Bio-brush clusters also filter particulate matter from the mixed liquid.

Residual dissolved oxygen and suspended growth aerobic bacteria exit the tank through the outlet baffle and pipe and enter the drain field, trenches, or mound. The dissolved oxygen allows aerobic bacteria to live in the drain field, trenches, or mound and further clean the wastewater.

An effluent filter (if required by local or state codes) in the outlet baffle prevents large objects from entering and clogging the outlet pipe.

## Tanks

The Aero-Stream aerobic treatment units have been certified in pre-cast concrete tanks. The Appendix of this manual includes alternate construction poly tanks that have been approved by NSF for use with the Aero-Stream aerobic treatment units.

The certified installer shall provide the model number, drawings and specifications of the poly tank or the pre-cast tank configuration to Aero-Stream engineering for review to ensure compliance to the ANSI/NSF 40 standard.

The details of every aerobic treatment unit installation shall be recorded and be available to NSF during auditing. The record shall be maintained by Aero-Stream or the authorized representative. The installation record shall include the following:

1. The model number of the tank and the manufacturer's contact information.
2. A fully dimensioned drawing of each tank.
3. Documentation demonstrating compliance with all state and local codes for the location where the tank is installed.
4. Documentation demonstrating tank compliance with the structural and water tightness requirement of ANSI/NSF standard 40/245.
5. Engineer's review including stamped letter or stamped drawings, or documentation demonstrating tank certification to either CSA B66, IAPMO/ANSI Z1000 or IGC 262.
6. If an existing tank is used, the following requirements must be met:
  1. The tank must meet the criteria listed in Table 1.
  2. Approved by Aero-Stream, LLC Engineering
  3. Pump tank by a licensed contractor.
  4. Clean and confirm tank condition including water tightness
7. Septic tank must contain a four (4) inch sanitary tee baffle. The outlet filter housing design and installation based on the approved plans.

Model Number	AS450-1	AS500-1	AS600-1	AS750-1	AS1000-1	AS1500-1
Drawing Number	102804	102927	102847	102853	102859	102866
Tank Volume (Total)	900-1250	900-1250	1200-1650	1500-2100	1750-2500	2700-3750
Chamber Volume (Nominal)	1000	1000	1340	1670	2000	3000
Chamber Volume Range	900-1250	900-1250	1200-1650	1500-2100	1750-2500	2700-3750
Compressor	AS1000 (ED:101)	AS1200 (ED:102)	AS1200 (ED:102)	AS1400 (ED:103)	2 - AS1200 (ED:102)	3 - AS1200 (ED:102)
Max Liquid Level	72	72	72	72	72	72
Min Liquid Level	38	38	38	38	38	38
# of 102302 Diffusers @ = or >44 Liquid Level	2	2	2	2	4	6
# of 120845 Diffusers @>38 & <44 Liquid Level	2	2	2	3	4	6
Cluster configuration (W*D)	3 * 3	3 * 3	4 * 3	4 * 4	4 * 5	6 * 5
Aero-Alert Pressure/High Water Alarm	Yes	Yes	Yes	Yes	Yes	Yes
Gas Deflector	Yes	Yes	Yes	Yes	Yes	Yes



**Table 1, System Requirements**

## Unpack and Inspect Parts

Remove and identify the product from the package and check for any missing or damaged parts. The images shown are representative only as this manual covers multiple models.

Handle the parts carefully! The air compressor and sintered stone diffuser(s) are especially fragile and can be easily damaged.

**WARNING!** Use sanitary gloves when working with septic system components, installing equipment into the septic system or handling any equipment that has come into contact with septic effluent. Wear protective eye gear at all times during the installation process. If installation is performed by personnel inside the tank, proper safety gear must be worn to avoid death or injury such as, but not limited to, breathing apparatus, dust mask, coveralls, gloves, safety glasses.

			
Air Compressor	Cable Tie	Bio-Brush Clamps Tool Required: Oetiker 14100396 Alternative Tool: Cutting Pliers	
			
Bio-Brush Clusters	Air Line / Sintered Diffuser Stone	Aero-Alert, Low Pressure & High Water Alarm Kit	
<b>AS450-1 (MPN 102804)</b> (1) Air Compressor (1) Cable Tie (6) Bio-Brush Clamps (9) Bio-Brush Clusters (2) Sintered Stone Diffuser (1) Aero-Alert	<b>AS500-1 (MPN 102927)</b> (1) Air Compressor (1) Cable Tie (6) Bio-Brush Clamps (9) Bio-Brush Clusters (2) Sintered Stone Diffuser (1) Aero-Alert	<b>AS600-1 (MPN 102847)</b> (1) Air Compressor (1) Cable Tie (6) Bio-Brush Clamps (9) Bio-Brush Clusters (2) Sintered Stone Diffuser (1) Aero-Alert	<b>AS750-1 (MPN 102853)</b> (1) Air Compressor (1) Cable Tie (12) Bio-Brush Clamps (16) Bio-Brush Clusters (2) Sintered Stone Diffuser (1) Aero-Alert
<b>Figure 1, Kit Contents (AS450-1, AS500-1, AS600-1, AS750-1)</b>			



(2) Air Compressors



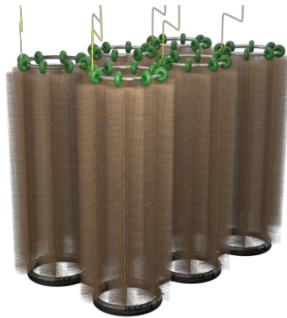
(7) Cable Ties



(15) Bio-Brush Clamps  
Tool Required: Oetiker 14100396  
Alternative Tool: Cutting Pliers



(1) 20' Section of  
3/8" ID Air Line



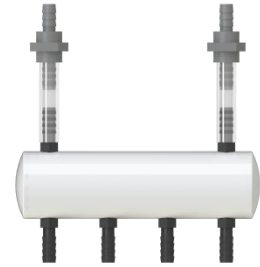
(20) Bio-Brush  
Clusters



(2) Sintered  
Diffuser Stones



(2) Aero-Alert, Low Pressure &  
High Water Alarm Kit



(1) 2 x 4 Manifold  
Assembly

**Figure 2, Kit Contents Overview (AS1000-1)**  
MPN 102859



(3) Air Compressors



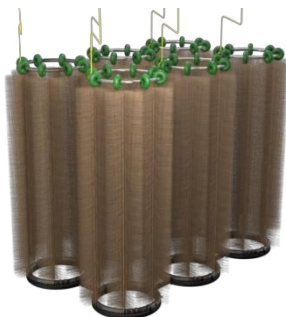
(10) Cable Ties



(25) Bio-Brush Clamps  
Tool Required: Oetiker 14100396  
Alternative Tool: Cutting Pliers



(1) 20' Section of  
3/8" ID Air Line



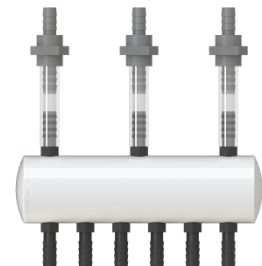
(30) Bio-Brush



(3) Sintered  
Diffuser Stones



(3) Aero-Alert, Low Pressure &  
High Water Alarm Kit



(1) 3 x 6 Manifold  
Assembly

**Figure 3, Kit Contents Overview (AS1500-1)**  
MPN 102866

## **Certified Contractor Supplied Equipment as Specified by the Certified Designer on the Approved Plans**

1. Approved tank. The Aero-Stream aerobic treatment unit works in conjunction with a septic tank and certified soil absorption field design. Site designer and contractor are responsible to provide the tank and soil absorption field as required in the approved plans.
2. Four-(4) inch schedule 40 PVC pipe as required for the tank inlet and outlet.
3. Four-(4) inch schedule 40 PVC pipe connection fittings.
4. 120 VAC-15A grounded outlet.
5. Effluent outlet filter (if required by local or state codes).
6. Silicone sealant (Must meet or exceed ASTM C-920).

## **System Operation**

The treatment capacity of each model is shown in Table 2.

Table 1, System Treatment Capacities

Model	AS450-1	AS500-1	AS600-1	AS750-1	AS1000-1	AS1500-1
Treatment Capacity (GPD)	450	500	600	750	1,000	1,500

**Table 2, System Treatment Capacities**

Exceeding the design flow rate limits will allow high strength wastewater to flow into the absorption component and cause premature failure of the absorption component.

A properly functioning system will be completely odorless. If odors are present, this indicates an equipment or process malfunction. Contact your authorized service provider listed on the label of the product, the front cover of this guide, or Aero-Stream at 877-254-7093.

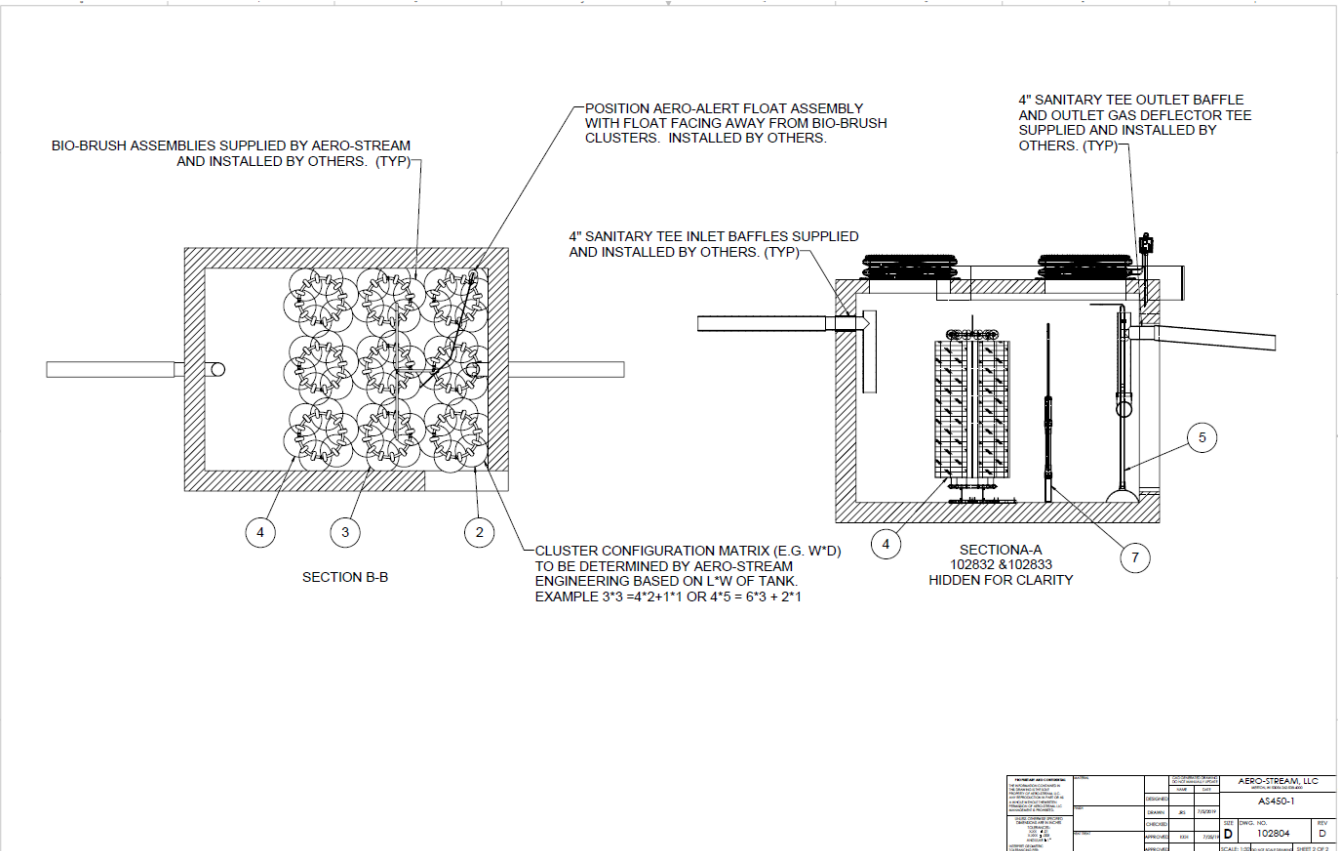
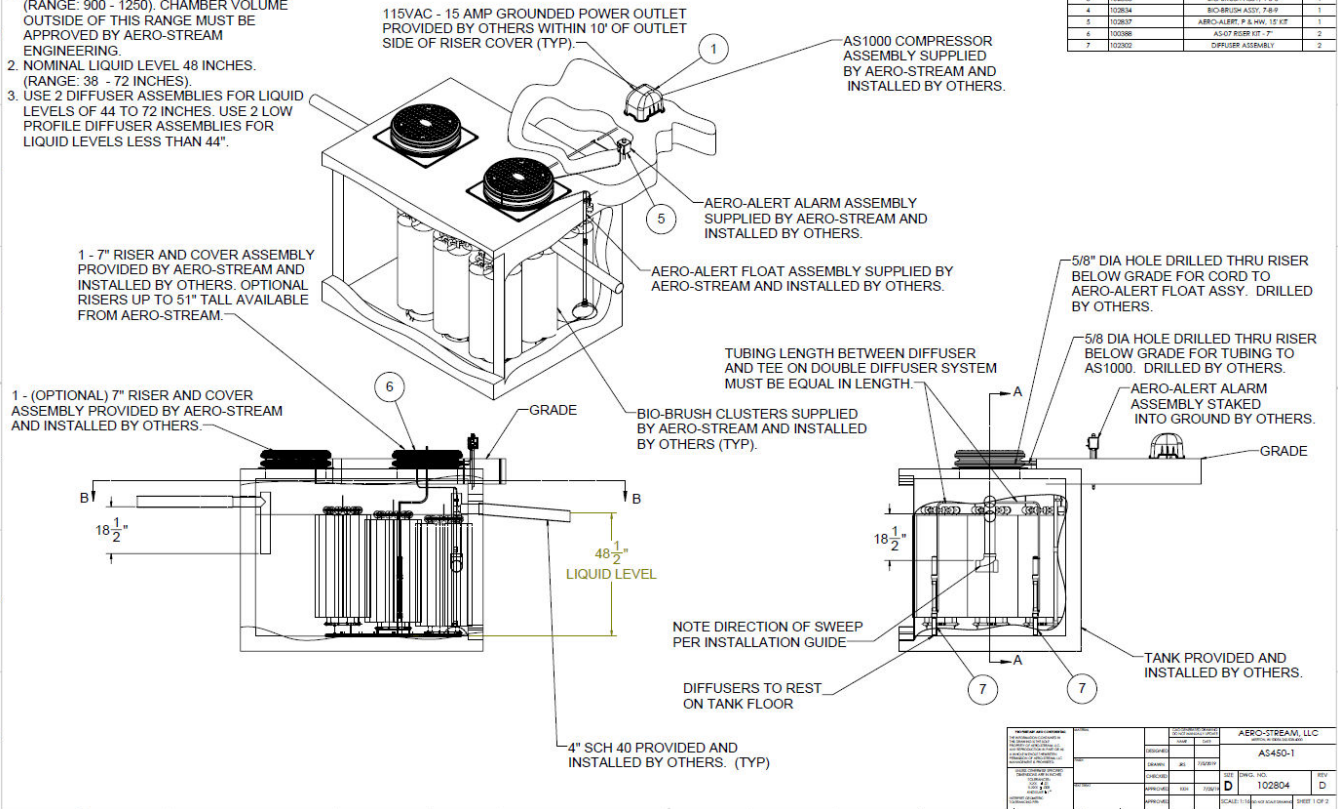
Your system has an audible and visual alarm to alert you of system issues. An alarm event sound indicates a high water event or a lower air event. Contact the authorized service provider to correct the issue. Have the model name and serial number, as found on the bottom plate of the enclosure unit, available when contacting the authorized provider.

# Figure 4, Picture of the AS450-1 System

UNLESS OTHERWISE SPECIFIED

1. NOMINAL CHAMBER VOLUME: 1,000 GAL (RANGE: 900 - 1250). CHAMBER VOLUME OUTSIDE OF THIS RANGE MUST BE APPROVED BY AERO-STREAM ENGINEERING.
2. NOMINAL LIQUID LEVEL 48 INCHES. (RANGE: 38 - 72 INCHES).
3. USE 2 DIFFUSER ASSEMBLIES FOR LIQUID LEVELS OF 44 TO 72 INCHES. USE 2 LOW PROFILE DIFFUSER ASSEMBLIES FOR LIQUID LEVELS LESS THAN 44".

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	102100	AS1000	1
2	102802	BIO-BRUSH ASSY. 1.2-3	1
3	102803	BIO-BRUSH ASSY. 4.5-6	1
4	102804	BIO-BRUSH ASSY. 7.8-9	1
5	102807	AERO-ALERT # 8 HW, 15' LF	1
6	102086	AERO RISER 7"	2
7	102002	DIFFUSER ASSEMBLY	2

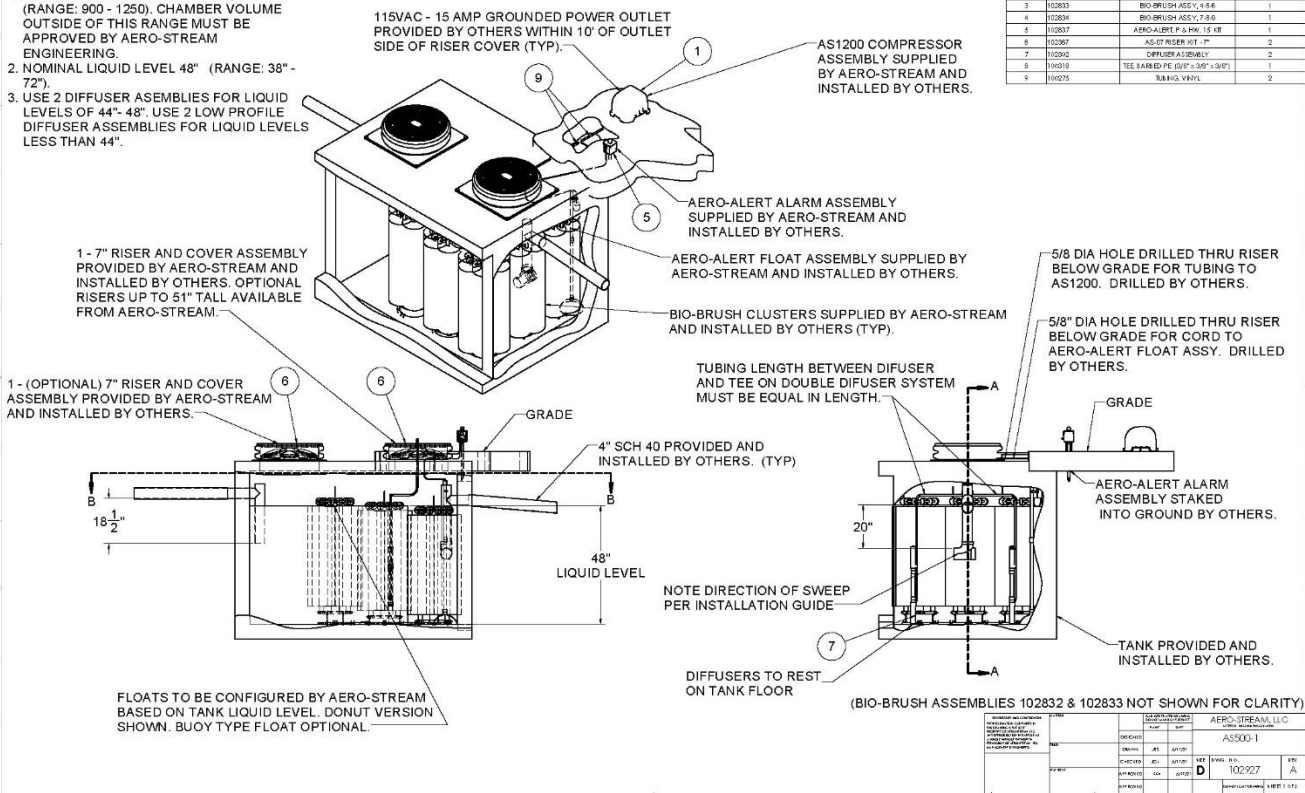




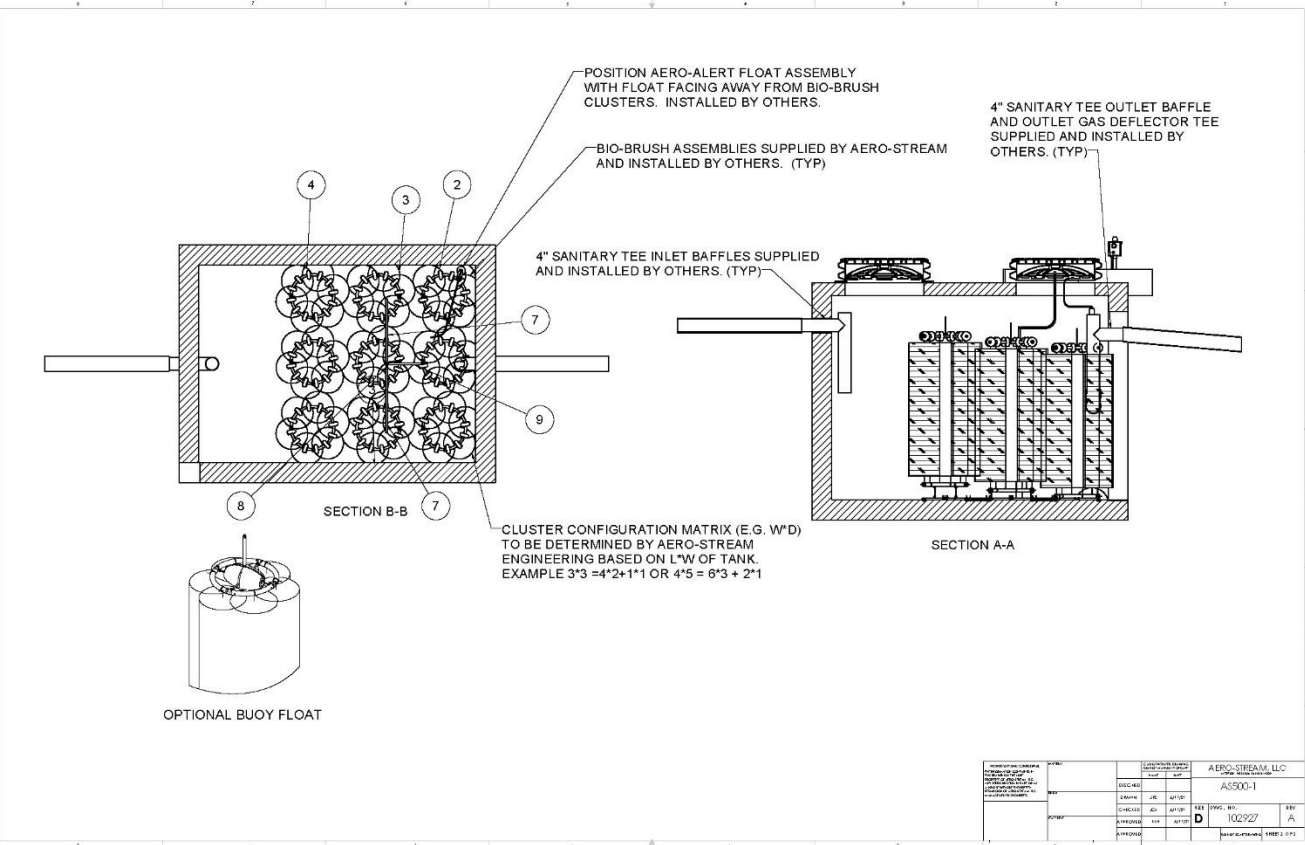
### Figure 5. Picture of the AS500-1 System

UNLESS OTHERWISE SPECIFIED

1. NOMINAL CHAMBER VOLUME: 1,000 GAL (RANGE: 900 - 1250). CHAMBER VOLUME OUTSIDE OF THIS RANGE MUST BE APPROVED BY AERO-STREAM ENGINEERING.
2. NOMINAL LIQUID LEVEL 48" (RANGE: 38" - 72").
3. USE 2 DIFFUSER ASSEMBLIES FOR LIQUID LEVELS OF 44" - 48". USE 2 LOW PROFILE DIFFUSER ASSEMBLIES FOR LIQUID LEVELS LESS THAN 44".



ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	101001	AS1200	1
2	102832	BIO-BRUSH ASS'Y, 1-2-3	1
3	102833	BIO-BRUSH ASS'Y, 4-5-6	1
4	102834	BIO-BRUSH ASS'Y, 7-8-9	1
5	102837	AERO-ALERT P. 2.3W. 15.0B	1
6	102837	AS-07 RISER KIT - 7"	2
7	102836	DIFFUSER ASSEMBLY	2
8	100319	TEE BARRED PE (3/8" x 3/8" x 3/8")	1
9	100212	TANK VENT	2



REVISION	DATE	DESCRIPTION	BY	CHKD	APP'D
1	10/22/22	ISSUE FOR CONSTRUCTION	JR	JK	JK
2	10/22/22	ISSUE FOR CONSTRUCTION	JR	JK	JK

# Figure 6, Picture of the AS600-1 System

UNLESS OTHERWISE SPECIFIED  
(RANGE: 38 - 72 INCHES)

1. NOMINAL CHAMBER VOLUME: 1,340 GAL (RANGE: 1200 - 1650). CHAMBER VOLUME OUTSIDE OF THIS RANGE MUST BE APPROVED BY AERO-STREAM ENGINEERING.

2. NOMINAL LIQUID LEVEL 48 INCHES. (RANGE: 38 - 72 INCHES)

3. USE 2 DIFFUSER ASSEMBLIES FOR LIQUID LEVELS OF 44 - 48 INCHES. USE 3 LOW PROFILE DIFFUSER ASSEMBLIES FOR LIQUID LEVELS LESS THAN 44 INCHES.

1 - 7" RISER AND COVER ASSEMBLY PROVIDED BY AERO-STREAM AND INSTALLED BY OTHERS. OPTIONAL RISERS UP TO 51" TALL AVAILABLE FROM AERO-STREAM.

1 - (OPTIONAL) 7" RISER AND COVER ASSEMBLY PROVIDED BY AERO-STREAM AND INSTALLED BY OTHERS.

4" SCH 40 CONNECTION PIPES SUPPLIED AND INSTALLED BY OTHERS.

115VAC - 15 AMP GROUNDED POWER OUTLET PROVIDED BY OTHERS WITHIN 10' OF OUTLET SIDE OF RISER COVER (TYP).

AS1200 COMPRESSOR ASSEMBLY SUPPLIED BY AERO-STREAM AND INSTALLED BY OTHERS.

AERO-ALERT ALARM ASSEMBLY SUPPLIED BY AERO-STREAM AND INSTALLED BY OTHERS.

AERO-ALERT FLOAT ASSEMBLY SUPPLIED BY AERO-STREAM AND INSTALLED BY OTHERS.

BIO-BRUSH CLUSTERS SUPPLIED BY AERO-STREAM AND INSTALLED BY OTHERS (TYP).

TUBING LENGTH BETWEEN DIFFUSER AND TEE ON DOUBLE DIFFUSER SYSTEM MUST BE EQUAL IN LENGTH.

4" SCH 40 PROVIDED AND INSTALLED BY OTHERS. (TYP)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	101923	AS1200	1
2	102832	BIO-BRUSH ASSY 12-3	1
3	102833	BIO-BRUSH ASSY 44-48	1
4	102834	BIO-BRUSH ASSY 7&8-P	1
5	102318	TEE SANITARY 1/2" x 1/2" x 1/2"	1
6	102837	AERO-ALERT P.A. ALARM KIT	1
7	100388	AS-10 RISER KIT 7"	2
8	102832	DIFFUSER ASSEMBLY	2

5/8" DIA HOLE DRILLED THRU RISER BELOW GRADE FOR TUBING TO AS1200. DRILLED BY OTHERS.

5/8" DIA HOLE DRILLED THRU RISER BELOW GRADE FOR CORD TO AERO-ALERT FLOAT ASSY. DRILLED BY OTHERS.

AERO-ALERT ALARM ASSEMBLY STAKED INTO GROUND BY OTHERS.

GRADE

20" L

TANK PROVIDED AND INSTALLED BY OTHERS.

(BIO-BRUSH ASSEMBLIES 102832 & 102833 NOT SHOWN FOR CLARITY)

NOTE DIRECTION OF SWEEP PER INSTALLATION GUIDE

DIFFUSERS TO REST ON TANK FLOOR

REVISIONS		AERO-STREAM, LLC	
NO.	DATE	BY	APP.
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			
55			
56			
57			
58			
59			
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			
70			
71			
72			
73			
74			
75			
76			
77			
78			
79			
80			
81			
82			
83			
84			
85			
86			
87			
88			
89			
90			
91			
92			
93			
94			
95			
96			
97			
98			
99			
100			

PLACE DIFFUSERS WITHIN THESE CLUSTERS AS DEFINED IN NOTE 3 WHEN 2 DIFFUSERS ARE REQUIRED.

POSITION AERO-ALERT FLOAT ASSEMBLY WITH FLOAT FACING AWAY FROM BIO-BRUSH CLUSTERS. INSTALLED BY OTHERS.

4" SANITARY TEE INLET BAFFLES SUPPLIED AND INSTALLED BY OTHERS. (TYP)

4" SANITARY TEE OUTLET BAFFLE AND OUTLET GAS DEFLECTOR TEE SUPPLIED AND INSTALLED BY OTHERS. (TYP)

SECTION B-B SCALE 1 : 16

BIO-BRUSH ASSEMBLIES SUPPLIED BY AERO-STREAM AND INSTALLED BY OTHERS. (TYP)

PLACE THIRD DIFFUSER WITHIN THIS CLUSTER AS DEFINED IN NOTE 3.

SECTION A-A SCALE 1 : 16

CLUSTER CONFIGURATION MATRIX (E.G. W\*D) TO BE DETERMINED BY AERO-STREAM ENGINEERING BASED ON L\*W OF TANK. EXAMPLE 3\*3 = 4\*2+1\*1 OR 4\*5 = 6\*3 + 2\*1

REVISIONS		AERO-STREAM, LLC	
NO.	DATE	BY	APP.
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			
55			
56			
57			
58			
59			
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			
70			
71			
72			
73			
74			
75			
76			
77			
78			
79			
80			
81			
82			
83			
84			
85			
86			
87			
88			
89			
90			
91			
92			
93			
94			
95			
96			
97			
98			
99			
100			

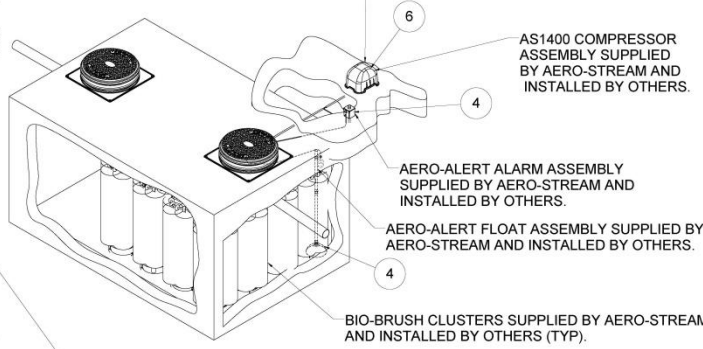
# Figure 7, Picture of the AS750-1 System

**UNLESS OTHERWISE SPECIFIED**

1. NOMINAL CHAMBER VOLUME: 1,670 GAL (RANGE: 1500 - 2100). CHAMBER VOLUME OUTSIDE OF THIS RANGE MUST BE APPROVED BY AERO-STREAM ENGINEERING.
2. NOMINAL LIQUID LEVEL - 48" (RANGE: 38" - 72")
3. USE 2 DIFFUSER ASSEMBLIES FOR LIQUID LEVELS OF 44"- < 48". USE 3 LOW PROFILE DIFFUSER ASSEMBLIES FOR LIQUID LEVELS OF < 44"
4. ORIENTATION OF BIO-BRUSH CLUSTER FLOATS (VERTICAL OR HORIZONTAL) TO BE DETERMINED BY AERO-STREAM ENGINEERING BASED ON EACH TANK CONFIGURATION

115VAC - 15 AMP GROUNDED POWER OUTLET PROVIDED BY OTHERS WITHIN 10' OF OUTLET SIDE OF RISER COVER (TYP).

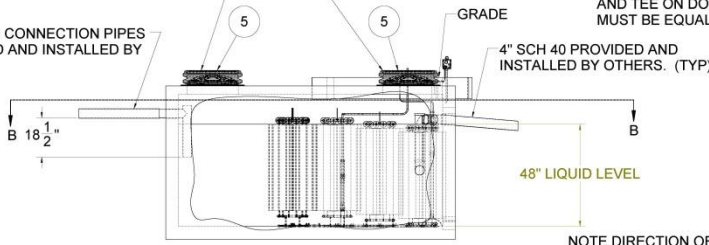
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	102850	BIO-BRUSH ASSY. 1.25-3.4	1
2	102851	BIO-BRUSH ASSY. 5.4-7.6	1
3	102852	BIO-BRUSH ASSY. 9.10-11.12	2
4	102837	AERO-ALERT: P & HW, 15' KIT	1
5	100389	AS-07 RISER KIT - 7"	2
6	101925	AS1400	1
7	100318	TEE, BARBED PE (3/8" x 3/8" x 3/8")	1
8	102902	DIFFUSER ASSEMBLY	2



1 - 7" RISER AND COVER ASSEMBLY PROVIDED BY AERO-STREAM AND INSTALLED BY OTHERS. OPTIONAL RISERS UP TO 51" TALL AVAILABLE FROM AERO-STREAM.

1 - (OPTIONAL) 7" RISER AND COVER ASSEMBLY PROVIDED BY AERO-STREAM AND INSTALLED BY OTHERS.

4" SCH 40 CONNECTION PIPES SUPPLIED AND INSTALLED BY OTHERS.



TUBING LENGTH BETWEEN DIFFUSER AND TEE ON DOUBLE DIFFUSER SYSTEM MUST BE EQUAL IN LENGTH.

5/8" DIA HOLE DRILLED THRU RISER BELOW GRADE FOR TUBING TO AS1400. DRILLED BY OTHERS.

5/8" DIA HOLE DRILLED THRU RISER BELOW GRADE FOR CORD TO AERO-ALERT FLOAT ASSY. DRILLED BY OTHERS.

AERO-ALERT ALARM ASSEMBLY STAKED INTO GROUND BY OTHERS.

TANK PROVIDED AND INSTALLED BY OTHERS.

REVISIONS		DATE		BY		CHECKED		APPROVED	
1	AS750-1								

AERO-STREAM, LLC  
AS750-1  
REV D 102853  
SCALE: 1/8" = 1'-0"

PLACE DIFFUSERS WITHIN THESE CLUSTERS AS DEFINED IN NOTE 3.

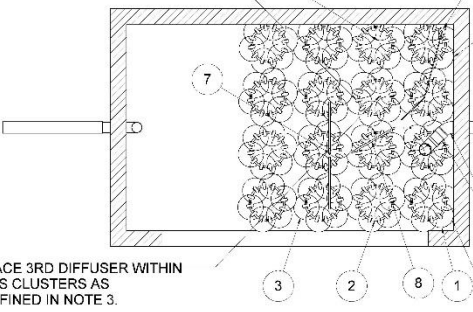
POSITION AERO-ALERT FLOAT ASSEMBLY WITH FLOAT FACING AWAY FROM BIO-BRUSH CLUSTERS. INSTALLED BY OTHERS.

4" SANITARY TEE OUTLET BAFFLE AND OUTLET GAS DEFLECTOR TEE SUPPLIED AND INSTALLED BY OTHERS. (TYP)

BIO-BRUSH ASSEMBLIES SUPPLIED BY AERO-STREAM AND INSTALLED BY OTHERS. (TYP)

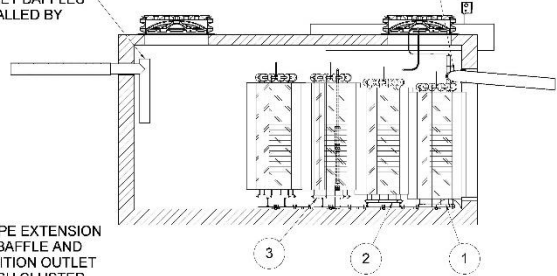
4" SANITARY TEE INLET BAFFLES SUPPLIED AND INSTALLED BY OTHERS. (TYP)

PLACE 3RD DIFFUSER WITHIN THIS CLUSTER AS DEFINED IN NOTE 3.



ADD ELBOW AND PIPE EXTENSION BETWEEN OUTLET BAFFLE AND DRAIN PIPE TO POSITION OUTLET BAFFLE IN BIO-BRUSH CLUSTER AS SHOWN. ELBOW AND PIPE SUPPLIED AND INSTALLED BY OTHERS.

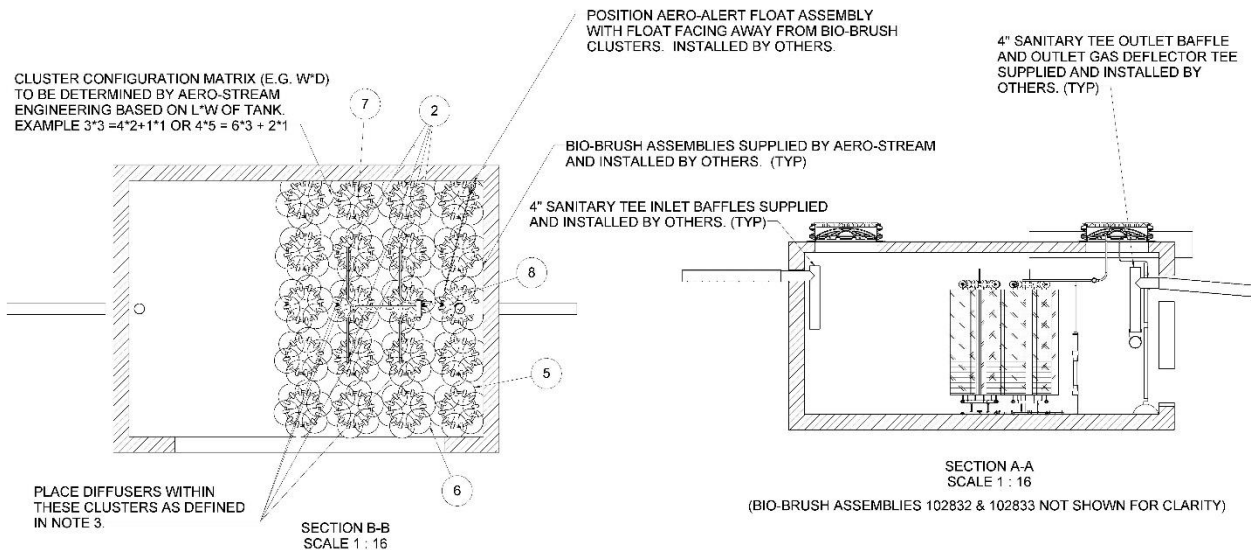
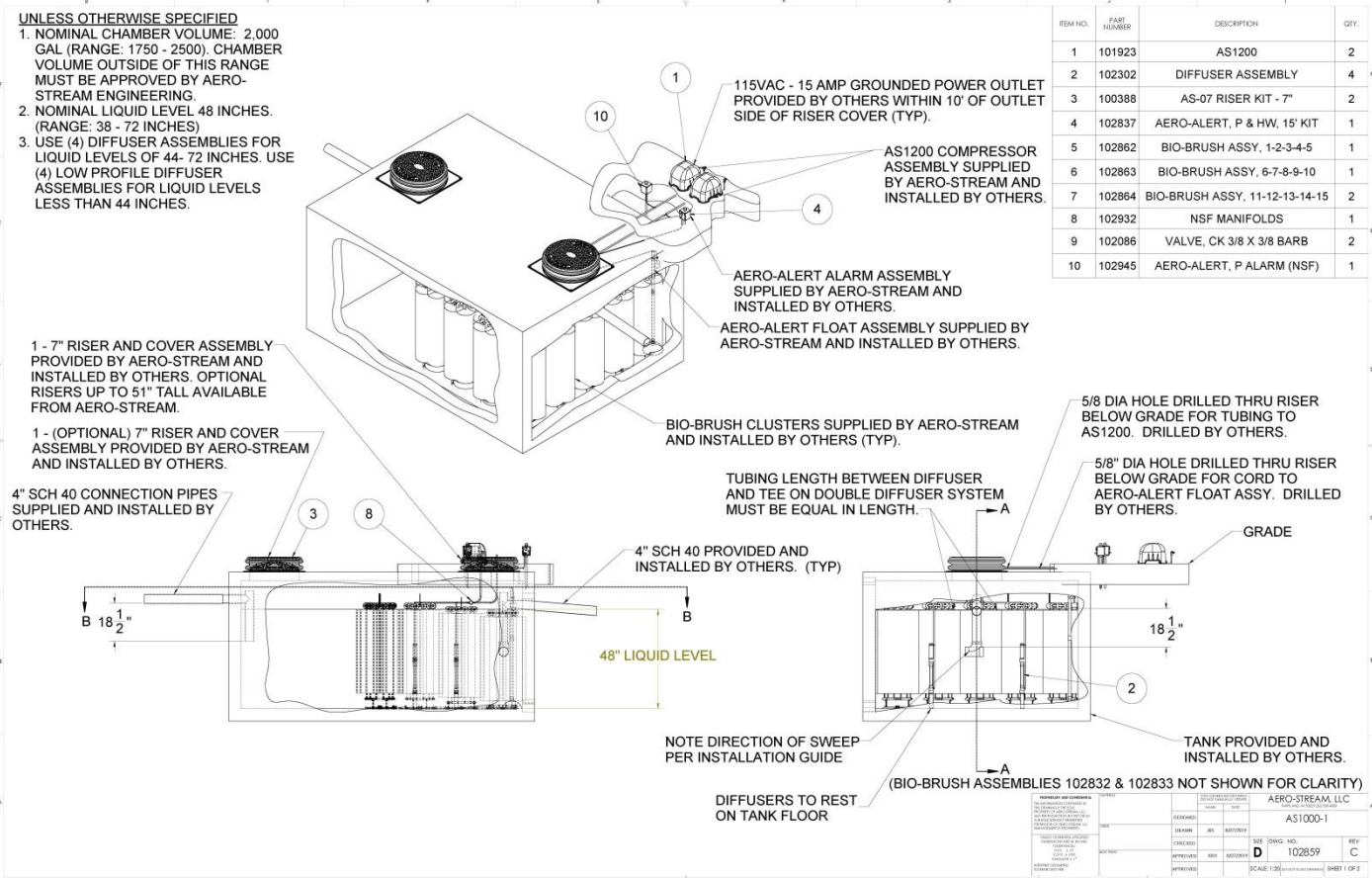
CLUSTER CONFIGURATION MATRIX (E.G. W\*D) TO BE DETERMINED BY AERO-STREAM ENGINEERING BASED ON L\*W OF TANK. EXAMPLE 3\*3 = 4\*2+1\*1 OR 4\*5 = 6\*3 + 2\*1



REVISIONS		DATE		BY		CHECKED		APPROVED	
1	AS750-1								

AERO-STREAM, LLC  
AS750-1  
REV D 102853  
SCALE: 1/8" = 1'-0"

# Figure 8, Picture of the AS1000-1 System

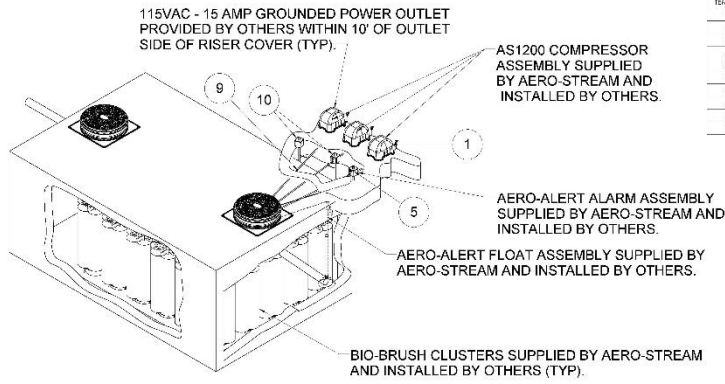


REVISION NO.	DATE	BY	CHKD BY	APPROVED BY	DESCRIPTION
1					ISSUE FOR CONSTRUCTION
2					ISSUE FOR CONSTRUCTION
3					ISSUE FOR CONSTRUCTION
4					ISSUE FOR CONSTRUCTION
5					ISSUE FOR CONSTRUCTION
6					ISSUE FOR CONSTRUCTION
7					ISSUE FOR CONSTRUCTION
8					ISSUE FOR CONSTRUCTION
9					ISSUE FOR CONSTRUCTION
10					ISSUE FOR CONSTRUCTION
11					ISSUE FOR CONSTRUCTION
12					ISSUE FOR CONSTRUCTION
13					ISSUE FOR CONSTRUCTION
14					ISSUE FOR CONSTRUCTION
15					ISSUE FOR CONSTRUCTION
16					ISSUE FOR CONSTRUCTION
17					ISSUE FOR CONSTRUCTION
18					ISSUE FOR CONSTRUCTION
19					ISSUE FOR CONSTRUCTION
20					ISSUE FOR CONSTRUCTION
21					ISSUE FOR CONSTRUCTION
22					ISSUE FOR CONSTRUCTION
23					ISSUE FOR CONSTRUCTION
24					ISSUE FOR CONSTRUCTION
25					ISSUE FOR CONSTRUCTION
26					ISSUE FOR CONSTRUCTION
27					ISSUE FOR CONSTRUCTION
28					ISSUE FOR CONSTRUCTION
29					ISSUE FOR CONSTRUCTION
30					ISSUE FOR CONSTRUCTION
31					ISSUE FOR CONSTRUCTION
32					ISSUE FOR CONSTRUCTION
33					ISSUE FOR CONSTRUCTION
34					ISSUE FOR CONSTRUCTION
35					ISSUE FOR CONSTRUCTION
36					ISSUE FOR CONSTRUCTION
37					ISSUE FOR CONSTRUCTION
38					ISSUE FOR CONSTRUCTION
39					ISSUE FOR CONSTRUCTION
40					ISSUE FOR CONSTRUCTION
41					ISSUE FOR CONSTRUCTION
42					ISSUE FOR CONSTRUCTION
43					ISSUE FOR CONSTRUCTION
44					ISSUE FOR CONSTRUCTION
45					ISSUE FOR CONSTRUCTION
46					ISSUE FOR CONSTRUCTION
47					ISSUE FOR CONSTRUCTION
48					ISSUE FOR CONSTRUCTION
49					ISSUE FOR CONSTRUCTION
50					ISSUE FOR CONSTRUCTION
51					ISSUE FOR CONSTRUCTION
52					ISSUE FOR CONSTRUCTION
53					ISSUE FOR CONSTRUCTION
54					ISSUE FOR CONSTRUCTION
55					ISSUE FOR CONSTRUCTION
56					ISSUE FOR CONSTRUCTION
57					ISSUE FOR CONSTRUCTION
58					ISSUE FOR CONSTRUCTION
59					ISSUE FOR CONSTRUCTION
60					ISSUE FOR CONSTRUCTION
61					ISSUE FOR CONSTRUCTION
62					ISSUE FOR CONSTRUCTION
63					ISSUE FOR CONSTRUCTION
64					ISSUE FOR CONSTRUCTION
65					ISSUE FOR CONSTRUCTION
66					ISSUE FOR CONSTRUCTION
67					ISSUE FOR CONSTRUCTION
68					ISSUE FOR CONSTRUCTION
69					ISSUE FOR CONSTRUCTION
70					ISSUE FOR CONSTRUCTION
71					ISSUE FOR CONSTRUCTION
72					ISSUE FOR CONSTRUCTION
73					ISSUE FOR CONSTRUCTION
74					ISSUE FOR CONSTRUCTION
75					ISSUE FOR CONSTRUCTION
76					ISSUE FOR CONSTRUCTION
77					ISSUE FOR CONSTRUCTION
78					ISSUE FOR CONSTRUCTION
79					ISSUE FOR CONSTRUCTION
80					ISSUE FOR CONSTRUCTION
81					ISSUE FOR CONSTRUCTION
82					ISSUE FOR CONSTRUCTION
83					ISSUE FOR CONSTRUCTION
84					ISSUE FOR CONSTRUCTION
85					ISSUE FOR CONSTRUCTION
86					ISSUE FOR CONSTRUCTION
87					ISSUE FOR CONSTRUCTION
88					ISSUE FOR CONSTRUCTION
89					ISSUE FOR CONSTRUCTION
90					ISSUE FOR CONSTRUCTION
91					ISSUE FOR CONSTRUCTION
92					ISSUE FOR CONSTRUCTION
93					ISSUE FOR CONSTRUCTION
94					ISSUE FOR CONSTRUCTION
95					ISSUE FOR CONSTRUCTION
96					ISSUE FOR CONSTRUCTION
97					ISSUE FOR CONSTRUCTION
98					ISSUE FOR CONSTRUCTION
99					ISSUE FOR CONSTRUCTION
100					ISSUE FOR CONSTRUCTION

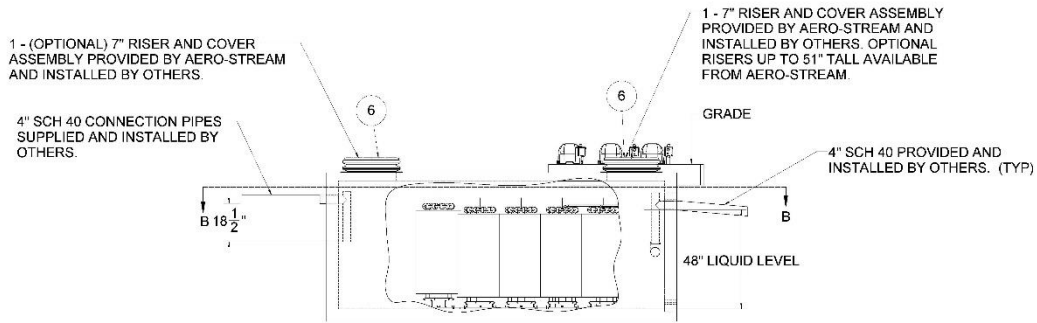
**Figure 9, Picture of the AS1500-1 System**

**UNLESS OTHERWISE SPECIFIED**

1. NOMINAL CHAMBER VOLUME: 3,000 GAL (RANGE: 2700 - 3750). CHAMBER VOLUME OUTSIDE OF THIS RANGE MUST BE APPROVED BY AERO-STREAM ENGINEERING
2. NOMINAL LIQUID LEVEL - 48" (RANGE: 38" - 72")
3. USE 6 DIFFUSER ASSEMBLIES FOR LIQUID LEVELS OF 44" - 48" USE 6 LOW PROFILE DIFFUSER ASSEMBLIES FOR LIQUID LEVELS OF <44"

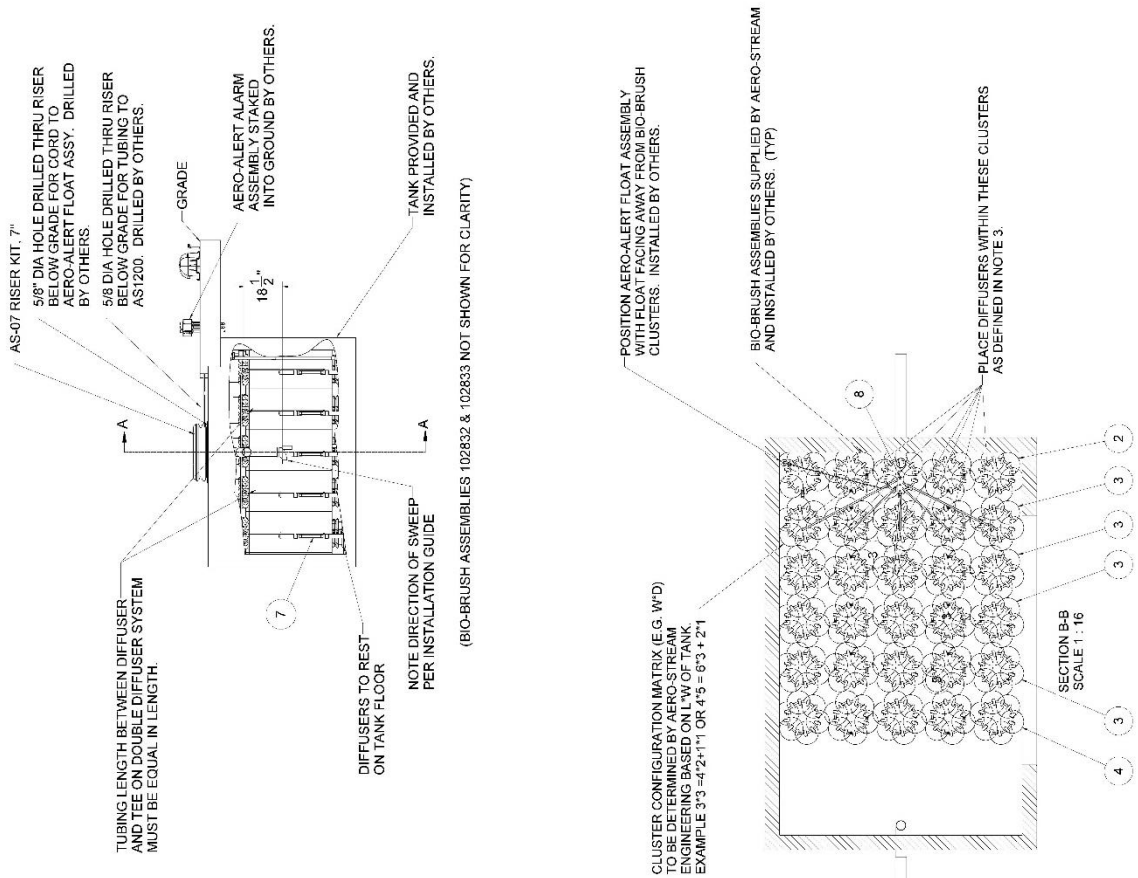


ITEM NO.	PART NUMBER	DESCRIPTION	102866/QT.
1	101973	AS1200	3
2	102862	80-048-04 ASSY 1-020-040	1
3	103563	30-075-1 ASSY 7-8-9-10	4
4	103644	90-030-09 ASSY 11-12-04-15-17	1
5	101057	AERO-ALERT	1
6	101088	AERO-ALERT-FLT	2
7	102362	DIFFUSER ASSEMBLY	6
8	101974	200-010-0-2	1
9	102089	VALVE COUPLER TUBING	3
10	101945	AERO-ALERT-5-ALARM-FIT	2

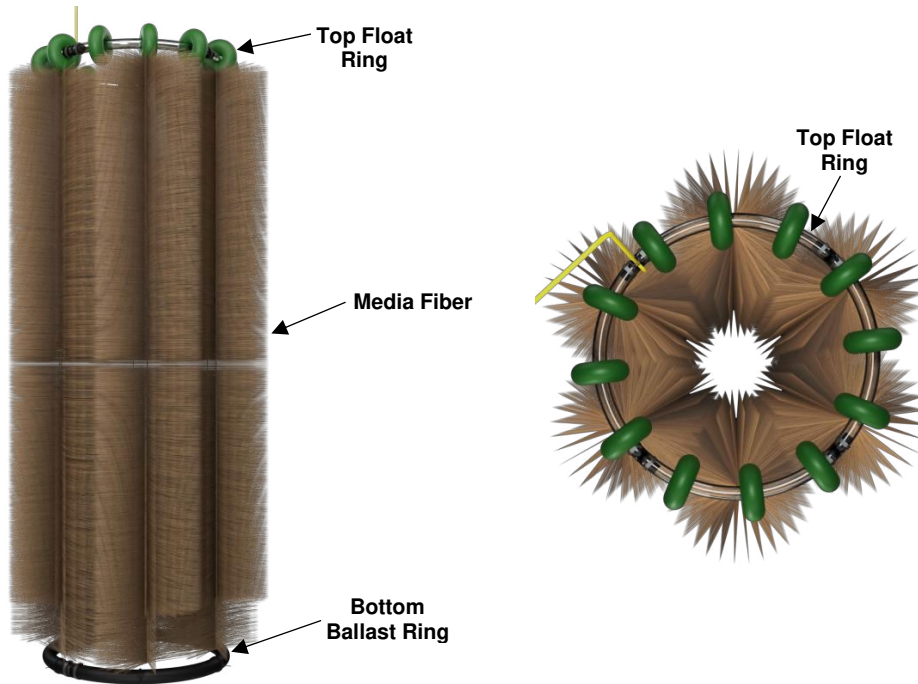


REVISION	DATE	DESCRIPTION	BY	APP'D
1	01/11/2022	ISSUE FOR PRODUCTION	A. STEPHEN	
2	01/11/2022	ISSUE FOR PRODUCTION	A. STEPHEN	
3	01/11/2022	ISSUE FOR PRODUCTION	A. STEPHEN	
4	01/11/2022	ISSUE FOR PRODUCTION	A. STEPHEN	
5	01/11/2022	ISSUE FOR PRODUCTION	A. STEPHEN	
6	01/11/2022	ISSUE FOR PRODUCTION	A. STEPHEN	
7	01/11/2022	ISSUE FOR PRODUCTION	A. STEPHEN	
8	01/11/2022	ISSUE FOR PRODUCTION	A. STEPHEN	
9	01/11/2022	ISSUE FOR PRODUCTION	A. STEPHEN	
10	01/11/2022	ISSUE FOR PRODUCTION	A. STEPHEN	

AERO-STREAM, LLC  
 102866  
 102866  
 102866



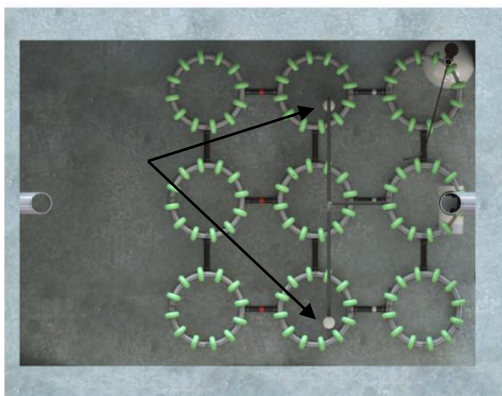
# Installation Process – Bio Brushes



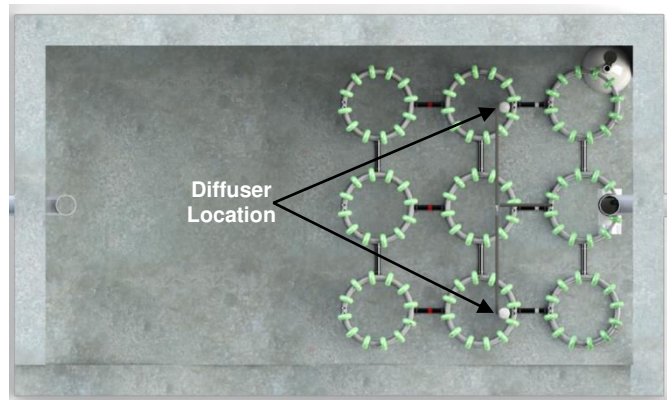
**Figure 10, Single Bio-Brush Cluster**

1. Figure 10 above represents a single Bio-brush cluster. The brush cluster is comprised of a top float ring, center media fibers, & the bottom ballast ring. Bio-brush clusters will need to be connected at the base (bottom ballast ring) as shown in Figure 11 through Figure 15. The process of connecting the brushes and rings is best completed inside the tank. Do not remove any cable ties from this assembly.

## TOP DOWN VIEW (Media fibers hidden for clarity)

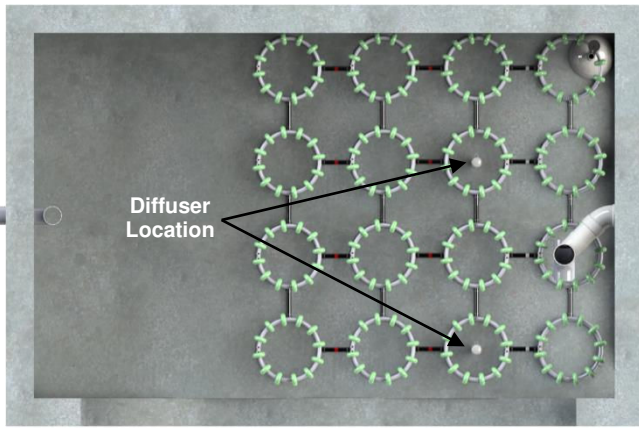


**Figure 11, AS450-1 & AS500-1**

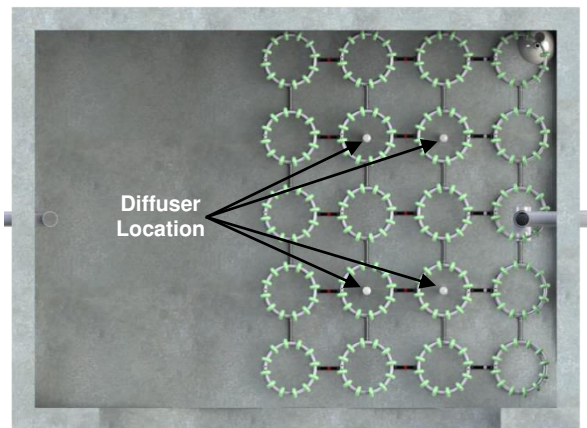


**Figure 12, AS600-1**

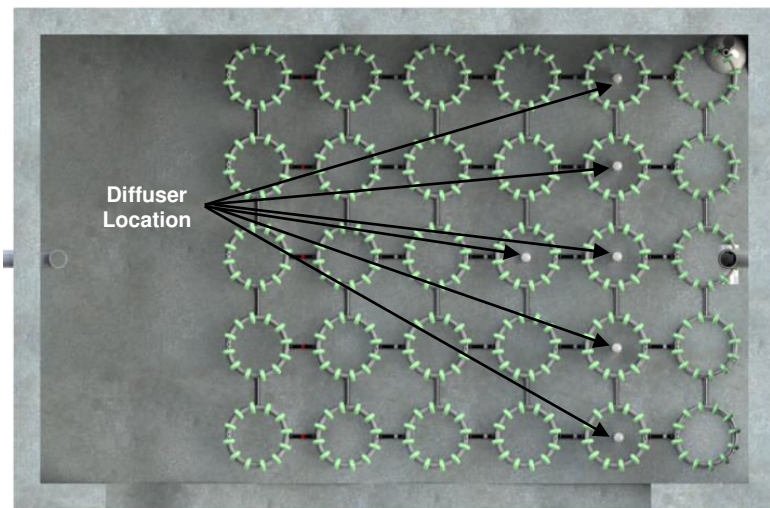




**Figure 13, AS750-1**



**Figure 14, AS1000-1**



**Figure 15, AS1500-1**

2. Connect the black poly tubing together at base of Bio-brushes as shown in Figure 16 by slipping provided Oetiker clamp over tubing & sliding tube onto barb fitting. Secure Oetiker clamps at joint as shown in Figure 17 and 18 by crimping ears of clamp with Oetiker Tool or Side Cutters/Cutting Pliers.

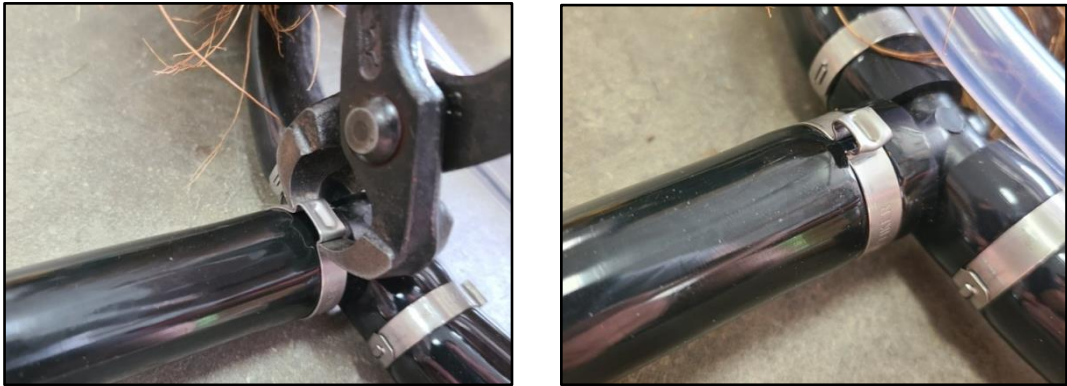


**Figure 16, Bio-Brush Clusters Ballast Connection**

Tool Required: Oetiker 14100396 Pincer | Alternative: Side Cutters/ Cutting Pliers



**Figure 17, Connecting Ballast Sections of Bio-Brush Clusters**



**Figure 18, Bio-Brush Clusters Connections Crimping Process**

**Repeat Cluster Connection for Subsequent Rows as Required**

3. Once fully assembled, carefully cut and remove the packaging stretch wrap and discard. Cut a slit in the poly wraps on the Bio-brushes about (1) inch long along the axis of each Bio-brush. Grasp the poly sleeve opposite of the slit and tear the sleeve downward until it is completely removed from the Bio-brush. Discard the poly sleeve. Repeat this for each Bio-brush.



**Figure 19, Bio-Brush Unwrapped**



4. After all clusters are unpackaged, systematically raise each Bio-brush vertically from the tank floor (Figure 21) and feed each of the yellow float ropes through the lid of the tank.

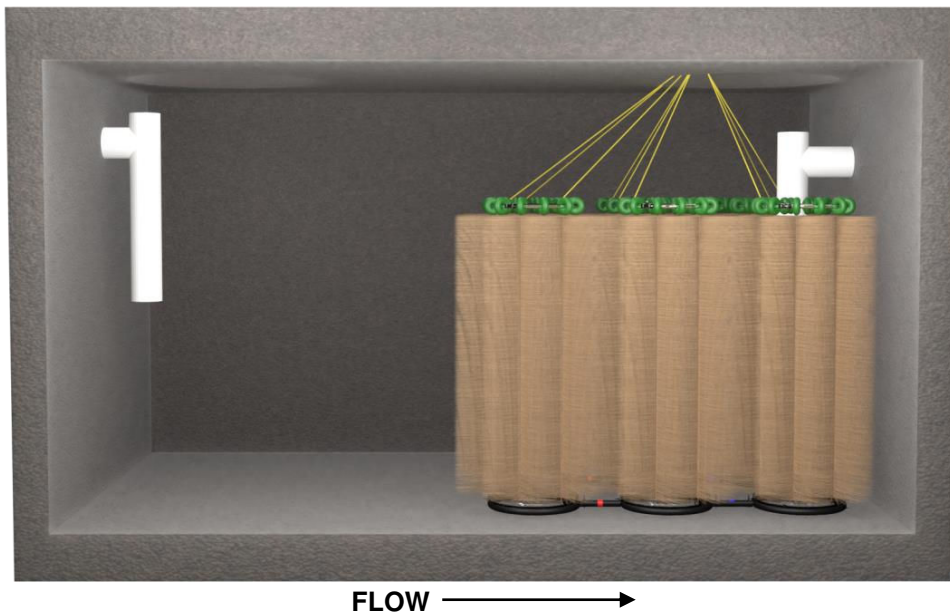
5. For AS450-1, AS500-1 (Figure 11), AS600-1 (Figure 12), AS1000-1 (Figure 14), and AS1500-1 (Figure 15), the center-outlet side Bio-brush cluster should be slid over the center outlet housing as noted in Figure 20.

The AS750-1 model (Figure 13) incorporates an offset outlet housing configuration using the same process for positioning the Bio-brush around the outlet baffle.



**Figure 20, Bio-Brush Cluster installed around Outlet Baffle**

6. Raise the float rings vertically until the Bio-brushes are fully extended. Feed yellow ropes through access port of tank and temporarily anchor ropes.



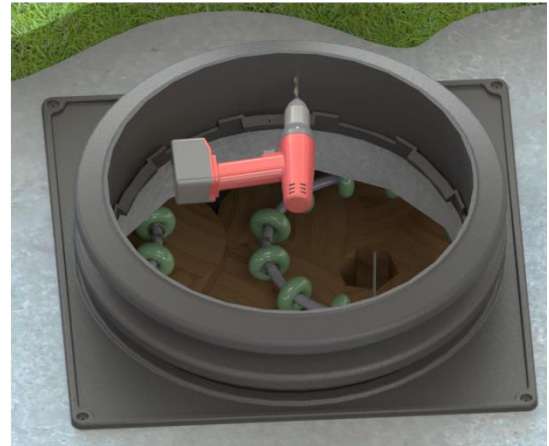
**Figure 21, Finish Stack of Bio-Brushes**

## Installation Process – Diffuser(s) and Air Line

1. Locate on the approved plans where the air line will exit the tank (for example, through the side of a riser, or tank top). As required, drill a 5/8-inch hole. (Figure 22 and Figure 23). Models AS1000-1 and AS1500-1 with multiple air compressors will require multiple holes.



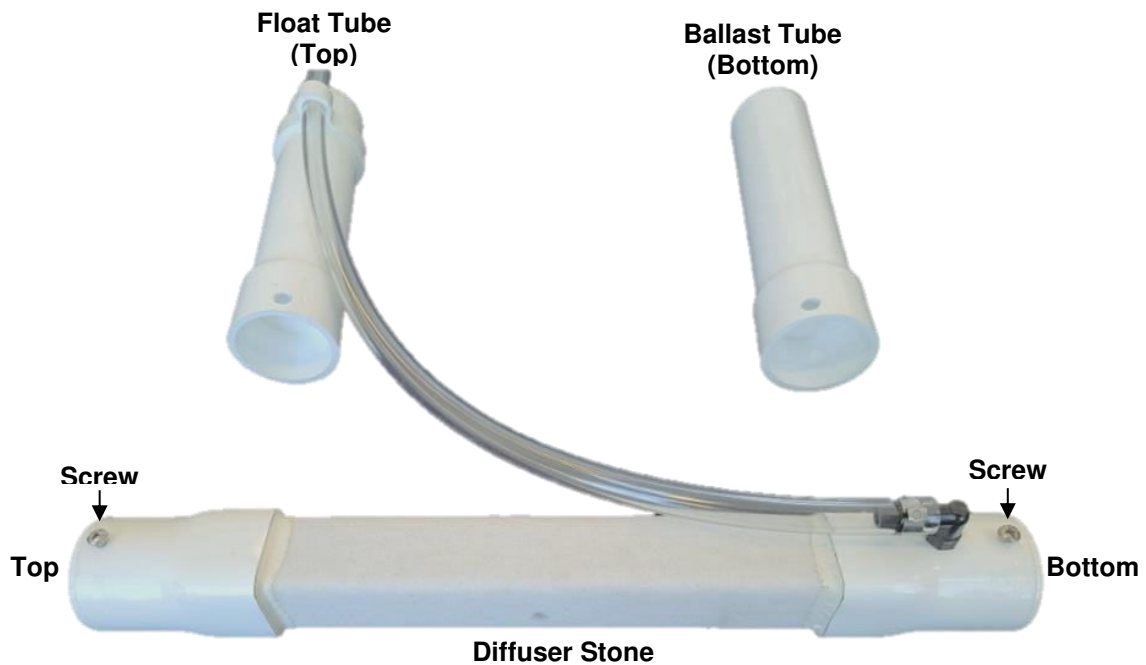
**Figure 22, Air Line Exit**  
(Cover & Safety Barrier hidden for clarity)



**Figure 23, Drill Hole in Riser Side Wall**

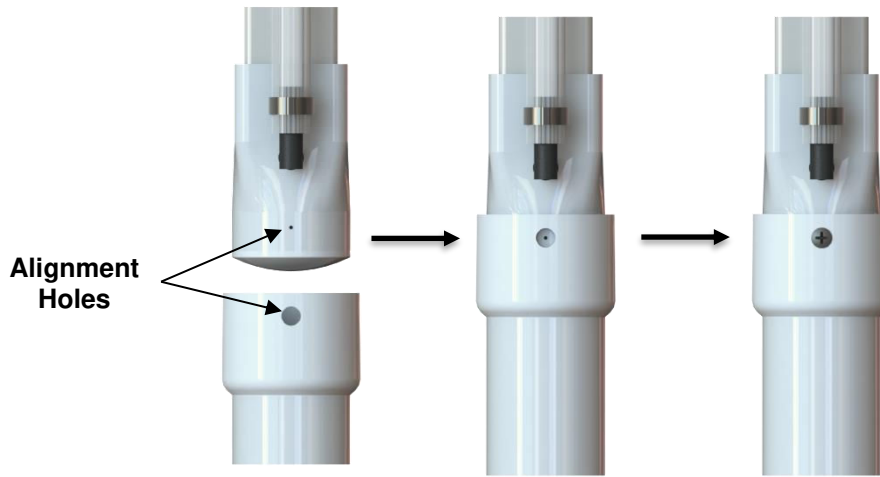
### Assemble Diffuser

2. Remove two-(2) stainless screws from center diffuser section. See Figure 24.



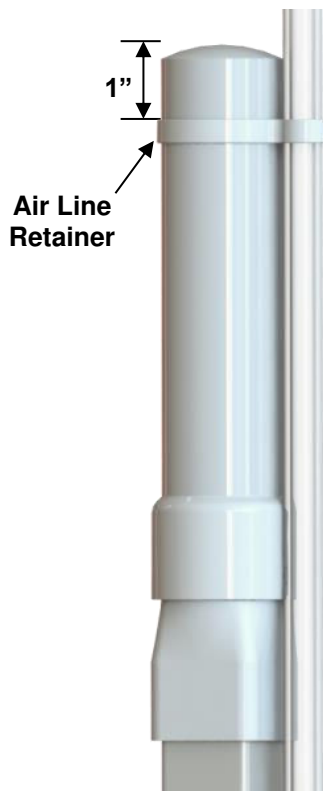
**Figure 24, Diffuser Overview**

3. Slide ballast tube onto bottom of diffuser section (Figure 25) with a slight back and forth twisting motion until the small hole on diffuser section is in the center of the large hole in ballast tube. Insert screw and tighten until screw head is flush. Repeat process for attaching float tube to top of diffuser. (See Figure 27)



**Figure 25, Ballast and Float Tube Install**

4. Slide air line retainer towards top of float tube. Retainer should be approximately 1" below the top of the float tube. See Figure 26.



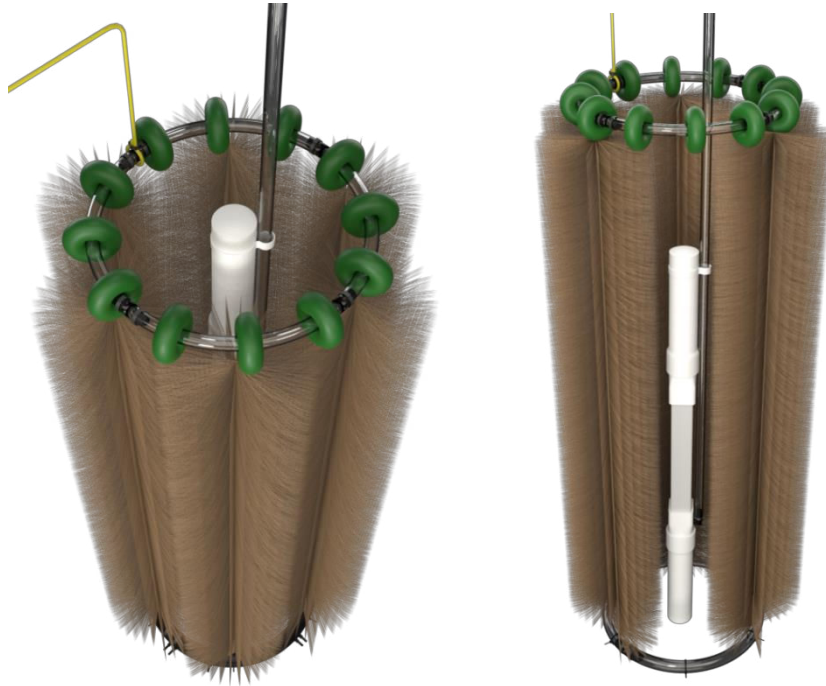
**Figure 26, Float Tube Air Line Detail**



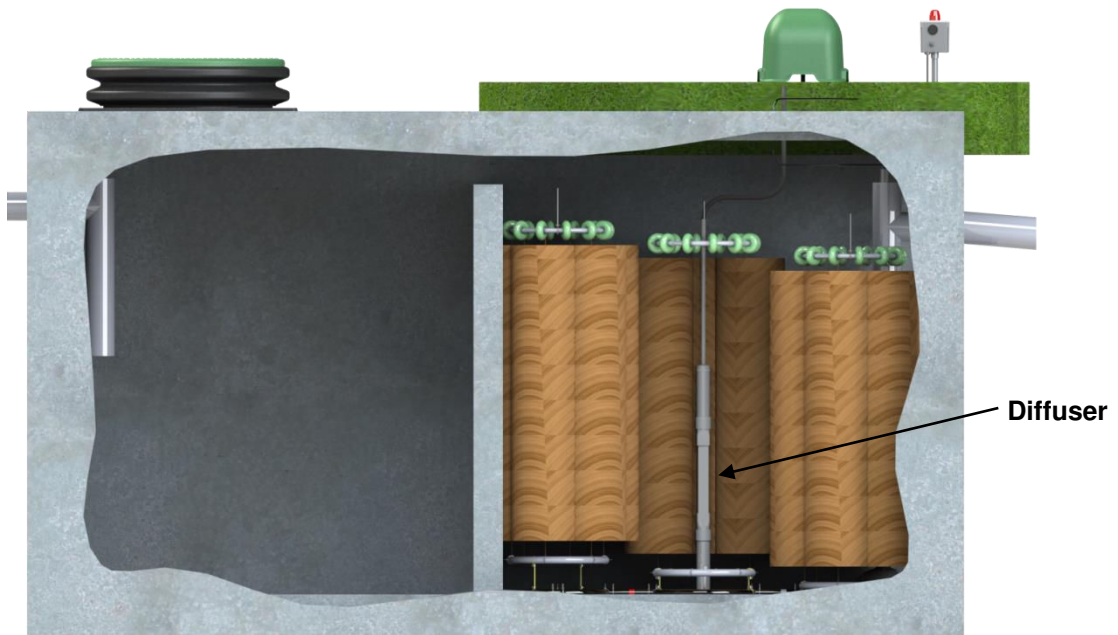
**Figure 27, Diffuser Fully Assembled**

Repeat step 2 through step 4 as needed for models containing multiple diffuser assemblies (AS1000-1 and AS1500-1).

5. Fill the tank with water or wastewater prior to installation of the diffuser assembly. Slowly lower the air line and diffuser assembly into Bio-brush cluster (Figure 28) in the location shown in approved plan. When the diffuser hits the bottom of the tank, you will feel the air line become light. Diffuser should be in vertical position.



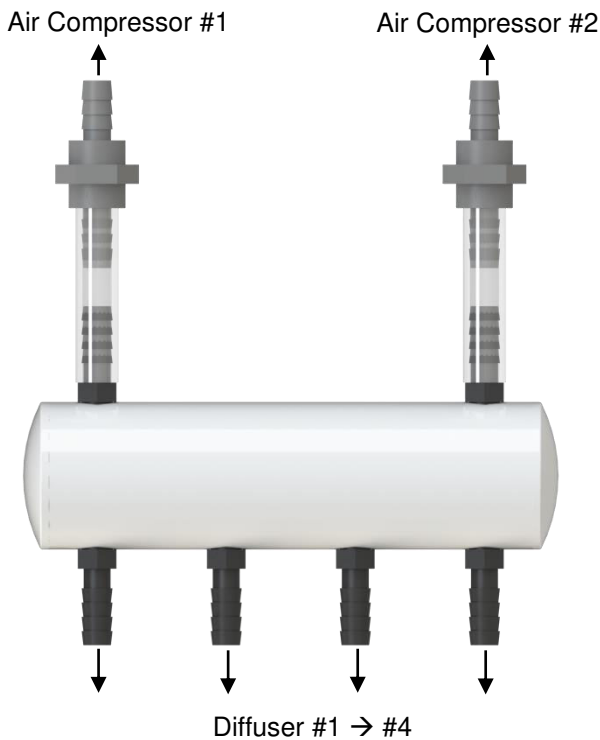
**Figure 28, Diffuser Installation inside Bio-Brush Cluster**



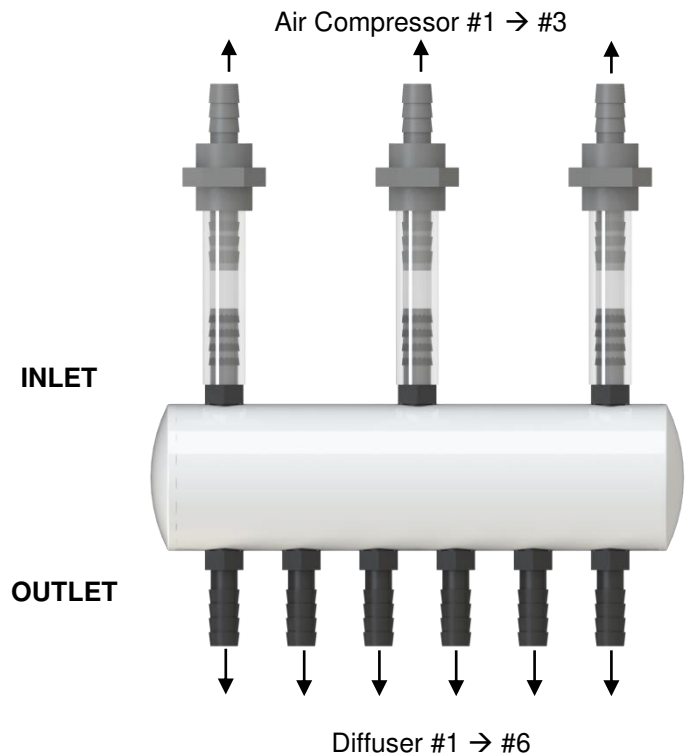
**Figure 29, Diffuser Installation inside Bio-Brush Cluster**  
Note: Some Bio-Brush Fibers Hidden for Clarity

6. **Models AS450-1, AS500-1, AS600-1, and AS750-1.** Insert the free end of the air line through the 5/8-inch hole from step 1 and pull the air line through the hole. Adequate air line of about 12 to 18 inches should be left inside the tank. The slack in the air line ensures that the diffuser assembly rests on the bottom of the tank. Apply a bead of silicone sealant that meets ASTM C-920 around the air line where it exits the tank. Proceed to Step 8.

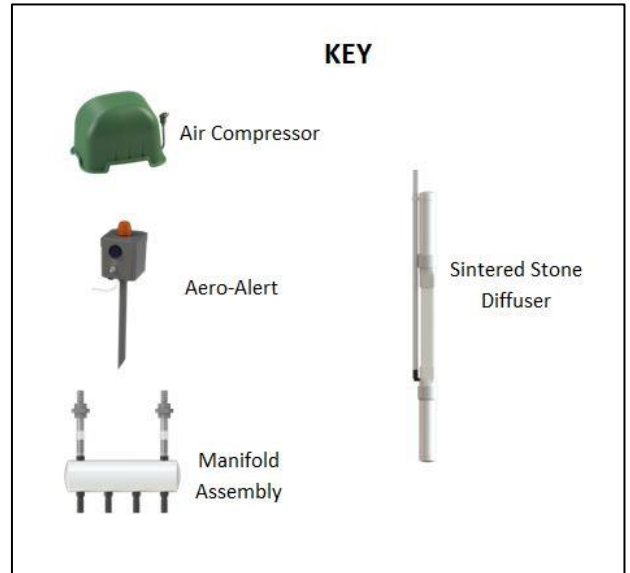
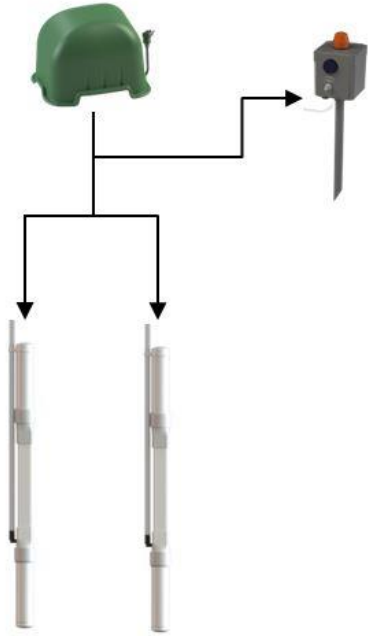
7. **Models AS1000-1 and AS1500-1:** Reference Figure 33 and Figure 34 to see connection overview. Connect the pre-installed air line from sintered stone diffusers to outlet of manifold assembly as shown in Figure 30 and Figure 31. Secure using provided cable ties. Using the provided 20' section of air line, divide up the air line section evenly between compressors (e.g. 10' per compressor for AS1000-1, 6.66' per compressor for AS1500-1). Connect divided sections of air lines to the inlet of the manifold. Secure air line using provided cable ties. Insert the free end of the air line through the 5/8-inch hole from step 1 and pull the air line through the hole. Apply a bead of silicone sealant that meets ASTM C-920 around the air line where it exits the tank. Note: Manifold must be located inside tank.



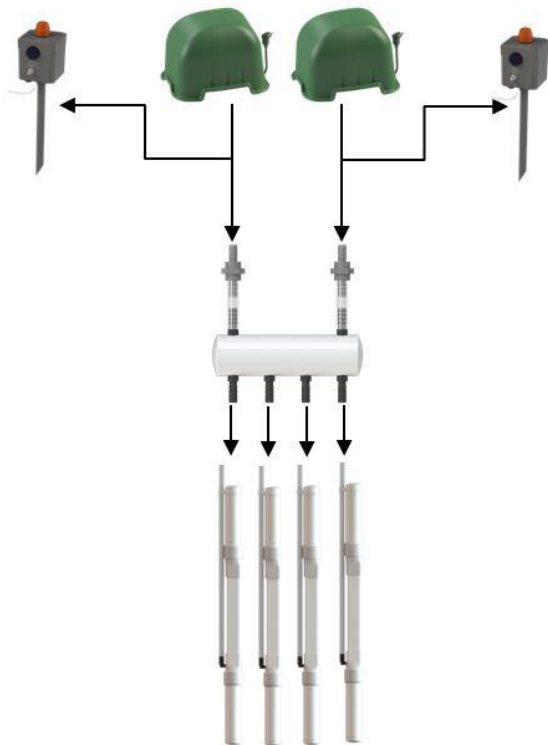
**Figure 30, Manifold Assembly AS1000-1**



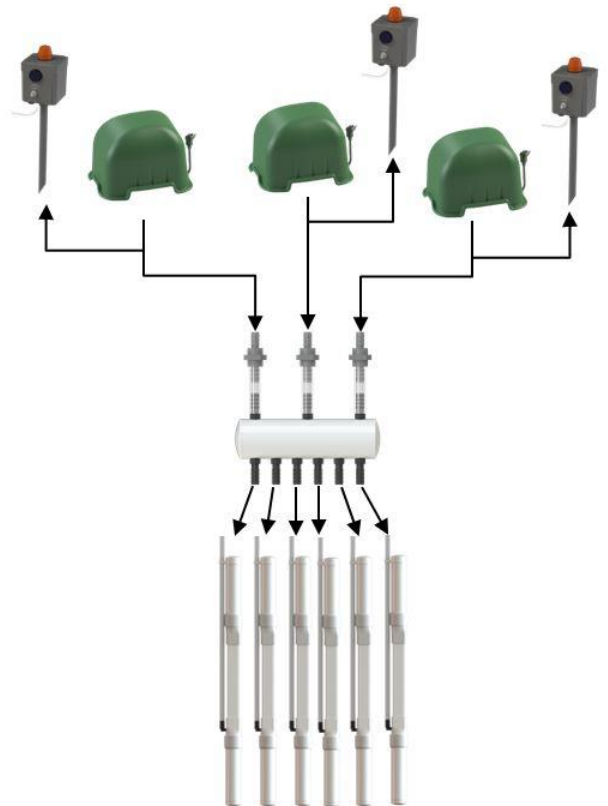
**Figure 31, Manifold Assembly AS1500-1**



**Figure 32, Models AS450-1, AS500-1, AS600-1 & AS750-1**



**Figure 31, Model AS1000-1**

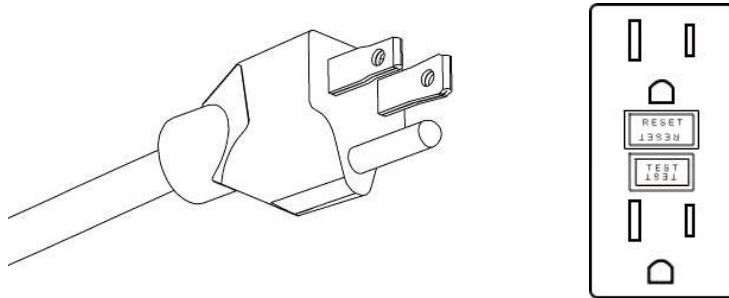


**Figure 34, Model AS1500-1**

## Installation Process – Air Compressor

8. Check with a qualified electrician or serviceman if the grounding instructions are not completely understood or if in doubt as to whether the outlet is properly grounded. Do not modify the plug provided. If the plug provided will not fit the outlet, have the proper outlet installed by a qualified electrician.

This product is for use on a nominal 120-volt AC circuit and has a grounding plug that looks like the plug illustrated in Figure 35. Make sure that the product is connected to a GFCI outlet having the same configuration as the plug. No adapter should be used with this product.



**Figure 35, Air Compressor's 3 prong plug (left) and GFCI Outlet (right)**

9. Locate the air compressor as close to the outlet as possible. This product must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. This product is equipped with a cord having a grounding wire with an appropriate grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.

**DANGER:** Improper installation of the grounding plug can result in a risk of electric shock. If repair or replacement of the cord or plug is necessary, do not connect the grounding wire to either flat blade terminal. The wire with insulation having an outer surface that is green with or without yellow stripes is the grounding wire

Length in feet	25	50	100	150	200	250	300	400	500
Wire size for amperage rating of 0 to 2 amps	18	18	18	16	16	14	14	12	12

**Table 3, 120 Volt AC Extension Cord Recommendations**

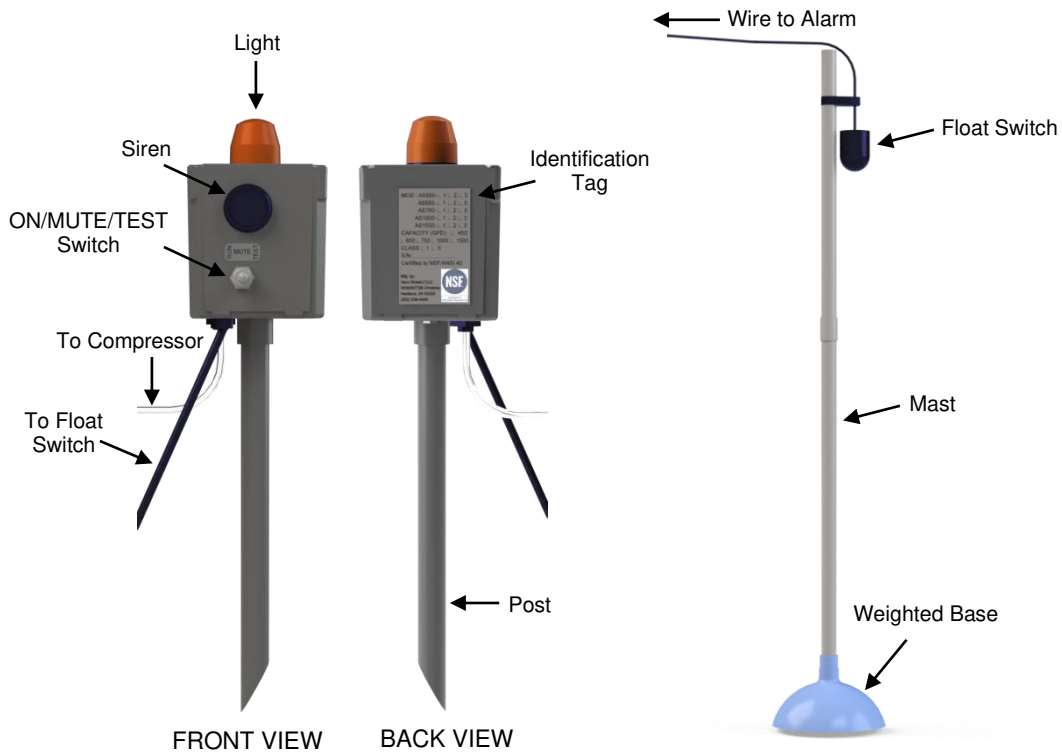
10. The air compressor must always be resting on its base in a horizontal position. Ensure the selected location is not prone to temporary flooding such as a low area or near a gutter downspout. Evidence of flooding will void warranty.

11. Layout the air line from steps 6 & 7 (tank to the air compressor). Do not connect the air line to the air compressor until completing the alarm installation. Peak performance is obtained when the air compressor is connected to the diffuser assembly with the shortest length of air line.

12. If the air line is not of sufficient length, measure the distance in feet from the air compressor to the end of the air line. Contact Aero-Stream to purchase a properly sized air line extension kit to connect to the air line packaged with the product. An improperly sized air line will detrimentally affect the performance and life of this product and may void the warranty.

**WARNING:** Do not cover or encase the air compressor as adequate ventilation is required to keep the motor cool.

## Installation Process – Aero-Alert Alarm



**Figure 36, Alarm and Float Switch Overview**

13. Install the tee fitting in the output air line of the Aero-Stream unit (Figure 36). Secure the air line with provide cable ties.

14. Connect the 1/8-inch air line from the tee to the black barbed fitting on the bottom of the Aero-Alert (Figure 37).

15. Connect air line from sintered diffuser or manifold assembly to output of tee fitting from step 1 (Figure 32, Figure 33, Figure 34, Figure 37)

16. Push the Aero-Alert post into the ground three-(3) to five-(5) inches. If the ground is hard use a 3/4-inch diameter wood or metal stake and a hammer to make three-(3) to five-(5) inch deep holes and push the Aero-Alert post into the formed hole. **DO NOT HAMMER ON THE Aero-Alert enclosure to drive the unit into the ground.**





**Figure 37, Fitting Installation**



**Figure 38, Underside of Alarm**



**Figure 39, Aero-Alert Installed**

### **Install High Water Alarm Float**

1. Per the approved plans, remove the tank lid on the predetermined install tank and determine the depth of the water in the tank and record depth.
2. Determine the best location for the float mast so the movement of the float is not interfering with the Bio-brush clusters. Position the mast in the tank corner with the float towards the corner typically works best.
3. Back out the screws in the PVC receiver sections. See Figure 40
4. Insert the mast sections into the receivers with the section containing the float clamp at the upper most position. Tighten the screws until the head of the screws bottom out on the receiver.
5. Using the measurement of the water depth in step 1, mark a line on the side of the PVC pipe measuring from the bottom of the base towards the top end of the pipe. Slide the float clamp up or down so the bottom of the clamp is 2 inches below the water mark and tighten clamp. See Figure 41.



**Figure 40, Screw Detail**



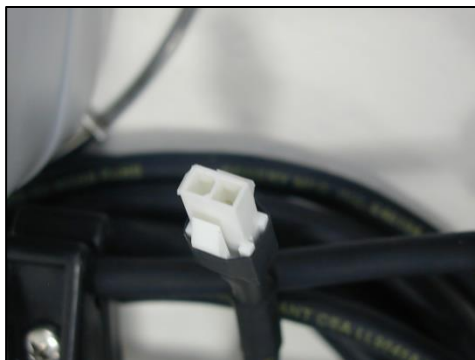
**Figure 41, Float Clamp**

6. Drill a 5/8-inch hole through the side of the riser to allow the float switch cord to be pushed through. Reference process in Figure 23 for detail.
7. Feed the free end of the float switch through the hole.
8. Pull the excess float switch cord through the hole and mark the cord at the point it exits the tank.
9. Install the strain relief around the cord at the mark. Grasping & compressing the strain relief with pliers, push the strain relief into the 5/8-inch hole. Apply a bead of silicone sealant that meets ASTM C-920 around the strain relief. See Figure 42.



**Figure 42, Strain Relief**

10. Plug the free end of the float switch wire into the wire connector on the Aero-Alert. See Figure 43.



**Figure 43, Float Switch Connector (Left) and Aero-Alert Connector (Right)**

11. Bury the float switch cord three-(3) to four-(4) inches below the ground surface.

## Securing Bio-Brush Ropes

1. Install the safety barrier as instructed in the Riser Installation Guide.
2. Remove the ropes from the temporary tie off and attach all end loops on the ropes through the carabiner clip. Feed the ropes and carabiner clip through the bottom of the safety barrier. See Figure 434.



**Figure 44, Carabiner Clip Connection**

3. Install tank lid and secondary plug following processes instructed in the riser installation guide.

## Installation of Effluent Filter in Outlet

(If required by local or state code)

1. A filter will require periodic maintenance as outlined by the manufacturer, therefore, plan accordingly to provide service access.
2. Locate the opening near or above the outlet end of the tank.
3. Install the effluent filter in the outlet tee baffle by sliding the filter into the cavity as shown in Figure 45. The filter must be in a vertical position as shown. Never install the filter horizontally in the outlet pipe leading to the dispersion component



**Figure 45, Filter Installation into Tee Baffle**

## Start-up Procedure

After completion of the installation, plug the power cord into the designated 115 volt outlet. Allow the system to fill with wastewater or fill the tank with clear water. Allow the equipment to operate continuously. During the first few days you may smell a strong septic odor. This odor will disappear after the system converts to an aerobic process.

**IMPORTANT!** Contact Aero-Stream, LLC immediately if the odor is not completely gone within five-(5) days.

## Operation & Maintenance

**WARNING:** Content in the following section pertains to certified Aero-Stream providers only! Property owners must contact the service provider listed on the front of this manual if product assistance is required. A property owner is not permitted to perform any diagnostics or product servicing. Failure to comply with these requirements is a violation of state and municipal codes.

See Initial Service on page 29 for maintenance inspection.

- See Tank Pumping Requirements for pertinent instructions.
- When operating properly, a sample of the mixed liquor should be tea color and free of large suspended solids.
- Samples are to be collected from the inside of the outlet baffle. Care must be taken not to dislodge the bio-mass growing on the Bio-brush when collecting a sample. Including bio-mass in the sample will skew the test results.
- Effluent strength: Not more than 10% of the effluent CBOD<sup>5</sup> values shall exceed 60 mg/L. Not more than 10% of the effluent TSS values shall exceed 100 mg/L.

## Tank Pumping Requirements

Your tank(s) need to be pumped at regular intervals to ensure proper treatment of the wastewater. At a minimum, all chambers of the tank(s) shall be pumped within three-(3) year intervals or before the combination of sludge and scum layer exceeds 30% of the tank volume. Local ordinances may require more frequent maintenance.

The Bio-brush clusters do not need to be removed when pumping solids from the tank. Care shall be taken when pumping the tank to avoid sucking the Bio-brushes into the suction hose.

It is normal to have a heavy bio-mass attached to the Bio-brushes. It is not required to remove the bio mass for proper system operation. If removal of the bio-mass is required for another type of service, simply wash the bio-mass off of the Bio-brushes with a high pressure garden hose nozzle.

As the tank refills with wastewater, the floats on the Bio-brushes will raise the brushes vertically. After the tank is refilled, the service provider shall visually inspect the Bio-brushes to ensure they returned to the vertical position. If the Bio-brushes are not vertical, use a stick, rake or hoe to position them vertically. An option to waiting for the tank to fill with wastewater is to fill the tank with clear water and inspect the Bio-brush positions.

## Initial Service

The initial service policy is to inspect/service the installation once every (six)-6 months over the first two-(2) years of operation. Electrical, mechanical, and other applicable components should be inspected, adjusted, and serviced as detailed in the following check list:

- Verify air flow visually  Vigorous Boil  Calm
- Absence of sewage odor in aeration chamber
- Inspect area around Aero-Stream unit for signs of water puddling.
- Inspect/clean cooling grills
- Inspect cord for damage
- Inspect exposed air line for damage
- Inspect effluent filter/clean and clean as needed
- Tank Level: \_\_\_\_\_  Photo of field  Evidence of back-ups
- Test alarm
- Replace alarm batteries (8 - AA Alkaline)

The owner will be notified in writing about improper system operations that cannot be remedied at the time of inspection. The owner notification shall include an estimated date of correction.

The diffuser stone can be cleaned with a 3% hydrogen peroxide solution or muriatic acid.

Keep the area around the air compressor free of leaves and other debris. If debris enters the product through the air intake holes, unplug the product and carefully remove the debris. Restart the system by plugging power cord into wall outlet.

The effluent filter (if required by local or state code) must be checked six-(6) months after installation and annually thereafter. Clean the filter by flushing with a hose or replace the filter as required. When disposing a used filter, place it inside a plastic bag for proper disposal.

**WARNING:** The air compressor has no user serviceable parts. The Aero-Alert has no user serviceable parts other than the batteries. If service is required, call the authorized service provider listed on the label of the product or Aero-Stream. Attempts to service this product will void warranty and expose the user to electrical shock which may cause severe injury or death. **Tampering will void warranty.**

## Extended Service

The extended service policy commences two-(2) years after installation. The required items for inspection are the same as required for the initial service period. In the event that a mechanical or electrical component must undergo off-site repairs, the local authorized representative should maintain a stock of mechanical and electrical components that may be temporarily installed until repairs are completed.

Emergency service should be available within 48 hours of a service request.

## **Intermittent Use or Vacating Property**

The AS450-1, AS500-1, AS600-1, AS750-1, AS1000-1, and AS1500-1 systems are designed to operate continuously. In the event the property is vacated for a period of 90 days or more, it is advised to turn off the power to the compressor. The compressor should be restarted upon occupancy of the premises.

In extreme climates (extreme cold and/or light snow cover i.e. deep frost conditions), precautions should be taken to prevent damage and ensure proper system operation. During winter months, if the property is vacated for more than a two-(2) week period, it is advised to turn off the power to the compressor.

## **Diagnostic Techniques**

The alarm light illuminates for two conditions, either a signal from the air switch or a signal from the float switch. Follow the steps below to determine the cause of the alarm. Verify that the liquid level in the tank is at the proper level; approximately at the bottom of the outlet pipe. If the tank level is elevated correct this issue before proceeding with the troubleshooting steps.

1. Unplug the float from the alarm box. If the light goes out go to step 4. If the light does not go out go to step 2. See Figure 43
2. Make sure the large air line connections are not leaking. If not leaking, go to step 3. See Figure 37.
3. Make sure the small air line is tightly connected to the black tee- fitting and the fitting on the bottom of the alarm box. If the connections are tight, pinch the large air line after the black tee- fitting (on the tank side of the tee) to deadhead the pump. The sound output of the pump will change. If the light goes out, the air switch is o.k. and go to step 4. If the light does not go out, contact the authorized service provider listed on the label of the product or Aero-Stream.
4. Plug the float into the alarm box. Open the septic tank cover and make sure the float switch is hanging vertically in the tank. If not, push the float downward with a stick until the cord and float are vertical. If the light goes out, go to step 5.
5. While allowing the float to hang from its bracket, adjust the float switch clamp on the mast upward until the light goes out.
6. If the light does not go out, contact the authorized service provider listed on the label of the product or Aero-Stream, LLC.

## **High Water Event**

A high water event can be caused by hydraulic overloading from the dwelling, surface or ground water entering the tank through a crack or opening or by runback from the absorption component if it is failed. Systematically eliminate each of the potential causes to find the source.

## **Low Air Event**

A low air event can be caused by the compressor not operating caused by a tripped circuit or GFCI breaker or a severed power cord on the compressor. Systematically eliminate each of the potential causes.

A compressor that is operating but has low air flow to the tank can be caused by a compressor that needs servicing by the Aero-Stream factory, a severed airline, a disconnected airline at either the compressor or at the diffusers or a broken diffuser.

To investigate a low air flow condition, disconnect the airline at the tee fitting after the alarm and measure the air pressure. The pressure should measure three-(3) to five-(5) psi. If the air pressure is below this range, contact Aero-Stream to obtain a RMA number to return the product for servicing.

If the pressure is within the specified range, plug the air discharge tube with a finger and determine if the alarm signal stops. If the alarm signal stops, reconnect the airline and repeat the pressure test and finger plug sequence at each joint in the airline until the issue is identified. Repair or replace any failed component.

## **Odor Event**

An odor event can be caused by hydraulic overloading from the dwelling, surface or ground water entering the tank through a crack or opening or by runback from the absorption component if it is failed.

Systematically eliminate each of the potential causes to find the source.

An odor event can also be caused by organic overloading, chemical or cleaning product abuse (see Best Septic System Practices), bacterial additives (directly or indirectly added to the system) or lack of system pumping. Systematically eliminate each of the potential causes to find the source. If the issue cannot be resolved, contact Aero-Stream.

## **Best Septic System Practices**

- Do not add bacterial additives to your system.
- You should have no septic odor from the system after 5 days of installation. Call the authorized service provider listed on the label of the product or Aero-Stream immediately if odor is persistent.
- “Bubbles” or “foaming” may be present above the cleanout cover during early stages of start-up.
- Repair leaking fixtures: A leaking faucet or flapper valve in the toilet can flood your septic system with hundreds or even thousands of gallons of water per day.
- Do not use flush activated toilet bowl tablets or cleaners as these products contain high amounts of chlorine bleach that kills the bacteria in the septic tank.
- Install an approved effluent filter in the outlet pipe of the septic tank if required by local or state code.
- Install water conserving fixtures e.g. shower heads, faucets, and toilets.
- Install lint traps or filters on clothes washing equipment.
- Implement a water conservation plan to be used during and after the remediation process.
- Some chemicals can upset the delicate biological bacteria action of the septic system. Other chemical can act to clog the system. Familiarize yourself with preferred household chemicals that are compatible with septic systems. Contact Aero Stream technical support at (Toll Free) 877-254-7093 or [info@aero-stream.com](mailto:info@aero-stream.com) for additional assistance.
- Minimize the amount of wastes that are washed down the kitchen drain, including scraps that are run through a garbage disposal.

- Use the garbage can for items such as caustic soda, acids, copper sulfate, chemical cleaners, paint thinner, latex or oil based paint, solvents, waxes, polishes, pesticides, poisons, fuels, motor oil, hazardous wastes, filter tip cigarettes, sanitary napkins, all feminine products, paper towels, rags, plastic objects or disposable diapers. All of these items cannot be broken down or are very difficult for the bacteria to break down.
- Discharge your water softener and iron filter to another suitable location, i.e. not into the septic system, in accordance with your local codes and ordinances.
- Route your rain downspouts away from the drain field, seepage pit or drywell.
- Do not plant trees or shrubs above the drain field, seepage pit or drywell. The roots of the plantings will grow into and plug the drain field, seepage pit and drywell.
- Keep heavy vehicles off of the drain field, seepage pit or drywell. The heavy vehicles not only compact the soils but also can crush the perforated laterals of the absorption component. The compacted soil is less permeable than loose soil.
- Do not dump recreational vehicle (RV) holding tank waste into your septic tank. This produces a large surge of sewage to the system and will most likely force untreated effluent out of the septic tank into the distribution component. Also, most RV owners use some type of odor control chemicals that are harmful to the system. These are usually blue liquids or tablets. These odor control chemicals are disinfectants to kill the odor causing anaerobic bacteria in the waste. When the disinfected waste from an RV system is dumped into the septic tank, it kills the bacteria in the system.

## **Manufacturer's Limited Warranty**

### **DISCLAIMER, DURATION, AND SCOPE OF THIS WARRANTY**

Aero-Stream, LLC ("Aero") warrants its NSF/ANSI 40 Aerobic Treatment Units against defective materials or workmanship at the time of shipment for a period of 24 months. To make a valid claim under this warranty, Aero must be notified through writing, email or otherwise of any warranty claim within the applicable warranty period and in the manner described below.

All implied warranties including the **IMPLIED WARRANTY OF MERCHANTABILITY** and the **IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE** are also **LIMITED IN DURATION** to the applicable warranty period. **SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MIGHT NOT APPLY TO YOU.** This warranty only covers the original Buyer of Aero's product. Aero will not be responsible under this warranty for any defect, failure, or malfunction of this product caused by abuse, misuse, unauthorized adjustments or dissembling of this product during the duration of this warranty. **AERO MAKES NO OTHER WARRANTY BEYOND THAT CONTAINED IN THIS WRITING.**

### **EXCLUSIVE REMEDY AVAILABLE UNDER THIS WARRANTY**

If after the expiration of the Customer Service Policy, the Aero product fails to operate properly under normal conditions within the remaining warranty period because of a defect in materials or workmanship, Aero will repair or replace this product without cost to you for parts or labor. If repair or replacement of the product is impossible or impracticable, as an alternative, Aero retains the option to reimburse you with the original purchase price of the product within a reasonable amount of time. **THE REMEDY DESCRIBED ABOVE SHALL BE YOUR EXCLUSIVE REMEDY FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY. NO OTHER REMEDY FOR BREACH OF THIS WARRANTY, EXPRESS OR IMPLIED (INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE), SHALL BE AVAILABLE TO YOU.** Under no circumstances will Aero be responsible for **INCIDENTAL AND/OR CONSEQUENTIAL DAMAGES**, lost profits, lost sales, injury to property, or any other loss. These limitations do not apply, however, to damages related to personal injury. **SOME STATES DO NOT ALLOW LIMITATIONS ON INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.** For service, questions or to make a warranty claim, contact Aero at W300 N7706 Christine Lane, Hartland, Wisconsin, 53029, visit our website at [www.aero-stream.com](http://www.aero-stream.com) or email us at [info@aero-stream.com](mailto:info@aero-stream.com). If Buyer is making a warranty claim, please provide a description of the nature of the problem. Alternatively, call the following toll-free number to obtain further warranty instructions: **1-877-254-7093**.

### **STATE LAWS AND THIS WARRANTY**

**THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.** To the extent that state law renders any provision in this warranty inoperative, state law shall apply and that clause shall be severed from the warranty; this severance, however, does not render the entire warranty inoperative.



# Appendix

## Local Tank Policy



NSF International

---

June 9, 2021

Mr. Karl Holt  
Aero-Stream, LLC  
W300N7706 Christine Lane  
Hartland, WI, USA- 53029

Re: NSF International – Local Tank Policy for Certified Residential Wastewater Treatment systems

Dear Karl,

Below you will find the NSF International policy on local tanks, for use with NSF Certified Residential Wastewater Treatment systems.

When using tanks acquired locally, the listed company must maintain a record of all tanks used. The record can be maintained by the listed company or their authorized representative and shall be available to NSF during auditing. The record of any locally obtained tank used in an NSF certified treatment system shall include the following:

1. A fully dimensioned drawing of each tank.
2. Documentation demonstrating compliance with all State and local codes for the location where the tank is installed, documentation demonstrating compliance with the structural and water tightness requirement of Standard 40/245 (engineer's review including stamped letter or stamped drawings), or documentation demonstrating certification to either CSA B66 or IAPMO/ANSI Z1000. Note that IGC 262 includes all of the requirements of IAPMO/ANSI Z1000 so it is also acceptable. The standard used depends on the type of plastic molding. Some types of plastic molding are not within the scope of Z1000.
3. A record of the tank manufacturer and model number for each tank installed. Locally obtained tanks must also meet any design criteria agreed on by NSF and the listed company as critical to the treatment process, such as tank geometry, including chamber volume and liquid levels.

If you have any questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink that reads "Sharon Steiner".

Sharon Steiner  
Business Unit Manager  
Wastewater Treatment Unit Program

734-827-6846 (phone)  
734-827-7790 (fax)  
[steiner@nsf.org](mailto:steiner@nsf.org) (email)

cc: product specs (C0439427)

P.O. Box 130140 Ann Arbor, MI 48113-0140 USA  
734-769-8010 1-800-NSF-MARK Fax 734-769-0109  
E-Mail: [info@nsf.org](mailto:info@nsf.org) Web: <http://www.nsf.org>

## Alternate Construction Poly Tanks



NSF International

---

August 3, 2021 (*Revised on 8/24/2021*)

Karl Holt  
Aero-Stream, LLC W300N7706  
Christine LaneHartland, WI, USA-  
53029

Re: Aero-Stream, LLC – Modification Review - Alternate Poly Tanks - Ace Roto & Snyder, NSFWorkorder, W0688533

Dear Karl,

Thank you for providing the information regarding the request of utilizing the Ace Roto/Den Hartog Industries and Snyder alternate tanks in the NSF Certified Aero-Stream AS500-1, AS500-2 and AS500-3 wastewater treatment system ranging between 450 through 1500 gallons per day (GPD). Key items that were taken into consideration against this review are as follows:

- Determining whether the requirements of NSF/ANSI Standard 40 (2020) will continue to be met.
- Determining whether the requirements of the NSF Certification Policies for Wastewater Treatment Devices will continue to be met.

Based on this review, NSF International can authorize the use of these alternate tanks with the AS500-1, AS500-2 and AS500-3 wastewater treatment system ranging between 450 through 1500 GPD. The performance anticipated will be adequate and is appropriate for the volumes specified along with the additional justifications provided in the revised drawings. For the volume requirements and the performance of the larger systems it is at least proportionally equivalent to the NSF Certified Aero-Stream AS500-1 that is NSF Listed against NSF/ANSI Standard 40, Class II and the NSF Certified Aero-Stream AS500-2 and -3 that is NSF Listed to NSF/ANSI Standard 40, Class I. The manufacturer must ensure that the appropriate tankage is specified for the system. If you have any questions, please contact me directly.

Sincerely,

A handwritten signature in black ink that reads "Kaitlin Rinke".

Kaitlin Rinke  
NSF, International  
Account Manager II, Commercial Water

Phone: 734-827-5652  
Email: [krinke@nsf.org](mailto:krinke@nsf.org)

cc: product specs (C0439427) (*Revised on 8/24/2021*)

P.O. Box 130140 Ann Arbor, MI 48113-0140 USA  
734-769-8010 1-800-NSF-MARK Fax 734-769-0109  
E-Mail: [info@nsf.org](mailto:info@nsf.org) Web:<http://www.nsf.org>



August 3, 2021 (*Revised on 8/24/2021*)

Karl Holt  
Aero-Stream, LLC W300N7706  
Christine LaneHartland, WI, USA-  
53029

Re: Aero-Stream, LLC – Modification Review - Alternate Poly Tanks - Roth, and Norwesco, NSF Work order W0687654

Dear Karl,

Thank you for providing the information regarding the request of utilizing the Roth and Norwesco tanks with the NSF Certified Aero-Stream AS500-1, AS500-2 and AS500-3 wastewater treatment system ranging between 450 through 1500 gallons per day (GPD). Key items that were taken into consideration against this review are as follows:

- Determining whether the requirements of NSF/ANSI Standard 40 (2020) will continue to be met.
- Determining whether the requirements of the NSF Certification Policies for Wastewater Treatment Devices will continue to be met.

Based on this review, NSF International can authorize the use of these additional tanks with the Aero-Stream AS500-1, AS500-2 and AS500-3 wastewater treatment systems ranging between 450 through 1500 (GPD). The performance anticipated will be adequate with this approval and is appropriate based off the volumes specified in the request and the additional justifications provided in the revised drawings. The volume requirements are important to ensure that the performance of the larger system is at least proportionally equivalent to the NSF Certified Aero-Stream AS500-1 that is NSF Listed against NSF/ANSI Standard 40, Class II and the NSF Certified Aero-Stream AS500-2 and AS500-3 that is NSF Listed against NSF/ANSI Standard 40, Class I. The manufacturer must ensure that the appropriate tankage is specified for the system. If you have any questions, please contact me directly.

Sincerely,

Kaitlin Rinke  
NSF, International  
Account Manager II, Commercial Water

Phone: 734-827-5652  
Email: [krinke@nsf.org](mailto:krinke@nsf.org)

cc: product specs (C0439427) (*Revised on 8/24/2021*)

P.O. Box 130140 Ann Arbor, MI 48113-0140 USA  
734-769-8010 1-800-NSF-MARK Fax 734-769-0109  
E-Mail: [info@nsf.org](mailto:info@nsf.org) Web: <http://www.nsf.org>



August 3, 2021 (*Revised on 8/24/2021*)

Karl Holt  
Aero-Stream, LLC W300N7706  
Christine LaneHartland, WI, USA-  
53029

Re: Aero-Stream, LLC – Modification Review - Alternate Poly Tanks – Infiltrator & Chemtainer, NSF Work order, W0688316

Dear Karl,

Thank you for providing the information regarding the request of utilizing the Infiltrator & Chemtainer tanks with the NSF Certified Aero-Stream AS500-1, AS500-2 and AS500-3 wastewater treatment system ranging between 450 through 1500 gallons per day (GPD). Key items that were taken into consideration against this review are as follows:

- Determining whether the requirements of NSF/ANSI Standard 40 (2020) will continue to be met.
- Determining whether the requirements of the NSF Certification Policies for Wastewater Treatment Devices will continue to be met.

Based on this review, NSF International can authorize the use of these alternate tanks with the Aero-Stream AS500-1, AS500-2 and AS500-3 wastewater treatment systems ranging between 450 through 1500 GPD. The performance anticipated will be adequate and is appropriate for the volumes specified and the additional justifications provided in the revised drawings. The volume requirements are necessary to ensure that the performance of the larger systems is at least proportionally equivalent to the NSF Certified Aero-Stream AS500-1 that is NSF Listed against NSF/ANSI Standard 40, Class II and the NSF Certified Aero-Stream AS500-2 and -3 that is NSF Listed to NSF/ANSI Standard 40, Class I. The manufacturer must ensure that the appropriate tankage is specified for the system. If you have any questions, please contact me directly.

Sincerely,

Kaitlin Rinke  
NSF, International  
Account Manager II, Commercial Water

Phone: 734-827-5652  
Email: [krinke@nsf.org](mailto:krinke@nsf.org)

cc:product specs (C0439427) (*Revised on 8/24/2021*)

P.O. Box 130140 Ann Arbor, MI 48113-0140 USA  
734-769-8010 1-800-NSF-MARK Fax 734-769-0109  
E-Mail: [info@nsf.org](mailto:info@nsf.org) Web:<http://www.nsf.org>

### Alternate Construction Poly Tanks Matrix

DAILY FLOW	TANK MANUFACTURER	ONE-(1) CHAMBER MODELS	QTY. TANK(S) EACH
450 GALLONS PER DAY	ROTH	AS450-1 - RMT-900-1	1
		AS450-1 - RMT1000E-1	1
		AS450-1 - RMT -1060-1	1
	NORWESCO	AS450-1 - 44463 or 42405	1
		AS450-1 - 44473	1
		AS450-1 - 43496	1
	ACE ROTO MOLD	AS450-1 - AST - 1000-1	1
	SNYDER INDUSTRIES	AS450-1 - 43522	1
		AS450-1 - 42405	1
	INFILTRATOR	AS450-1 - IM-1060-1	1
	CHEMTAINER	AS450-1 - TC1000ST-1	1

500 GALLONS PER DAY	ROTH	AS500-1 - RMT-900-1	1
		AS500-1 - RMT-1000E-1	1
		AS500-1 - RMT -1060-1	1
	NORWESCO	AS500-1 - 44463 or 44473	1
		AS500-1 - 43496	1
		AS500-1 - 42405	1
	ACE ROTO MOLD	AS500-1 - AST-1000-1	1
	SNYDER INDUSTRIES	AS500-1 - 43522	1
		AS500-1 - 42405	1
	INFILTRATOR	AS500-1 - IM-1060-1	1
	CHEMTAINER	AS500-1 - TC1000ST-1	1

600 GALLONS PER DAY	ROTH	AS600-1 - RMT-1250	1
		AS600-1 - RMT1500-1	1
	NORWESCO	AS600-1 - 44466 or 44476	1
		AS600-1 - 43497	1
	ACE ROTO MOLD	AS600-1 - AST-1250-1	1
	SNYDER INDUSTRIES	AS600-1 - 43519	1
	INFILTRATOR	AS600-1 - IM-1530-1	1
	CHEMTAINER	AS600-1 - TC1250WT-1	1

DAILY FLOW	TANK MANUFACTURER	ONE-(1) CHAMBER MODELS	Qty. Tanks each
750 GALLONS PER DAY	ROTH	AS750-1 - RMT-1500 (Cluster Config 3x5+1x1)	1
	NORWESCO	AS750-1 - 44469 (Cluster Config 3x5+1x1)	1
		AS750-1 - 44479 (Cluster Config 3x5+1x1)	1
		AS750-1 - 43498 (Cluster Config 3x5+1x1)	1
	ACE ROTO MOLD	AS750-1 - AST-1500-1 (Cluster Config 3x5+1x1)	1
SNYDER INDUSTRIES	AS750-1 - 43518 (Cluster Config 3x5+1x1)	1	
INFILTRATOR	AS750-1 - IM-1530-1 (Cluster Config 3x5+1x1)	1	
CHEMTAINER			
1,000 GALLONS PER DAY	ROTH		
	NORWESCO	AS1000-1 - 42599	1
		AS1000-1 - 44079	1
	ACE ROTO MOLD		
	SNYDER INDUSTRIES		
INFILTRATOR			
CHEMTAINER			
1,500 GALLONS PER DAY	ROTH		
	NORWESCO	AS1500-1 - 44390	1
	ACE ROTO MOLD		
	SNYDER INDUSTRIES		
	INFILTRATOR		
	CHEMTAINER		