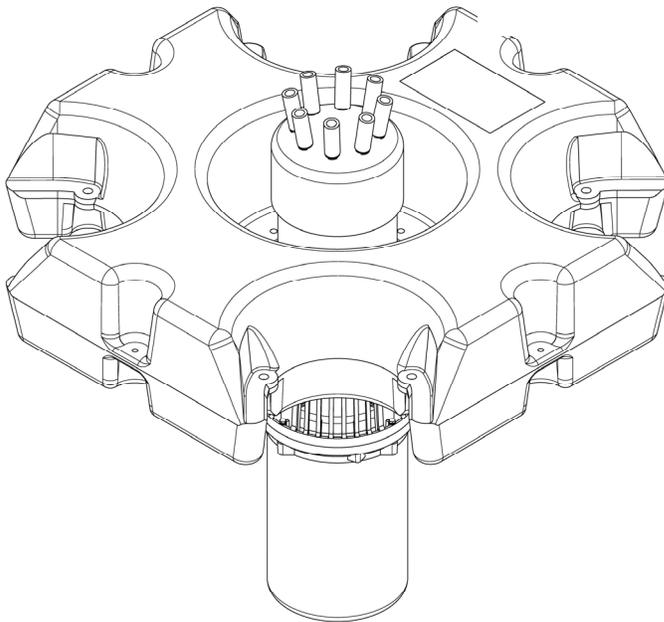
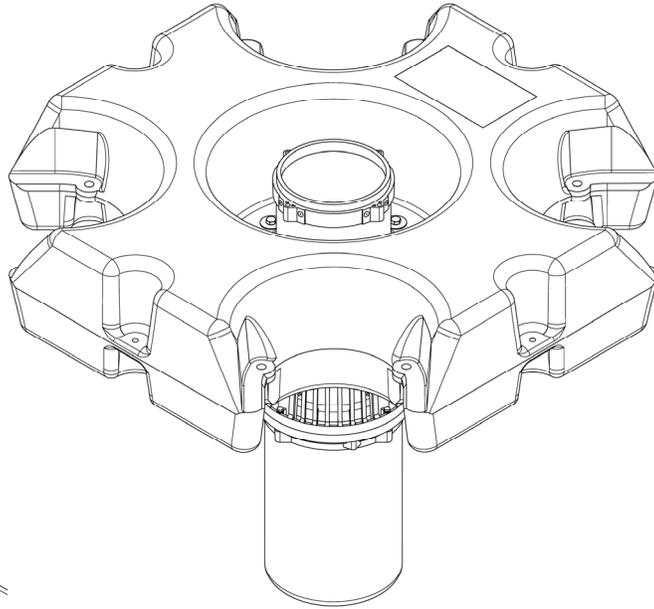




Otterbine Barebo Inc.

Concept 3

50Hz Manual



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Safety Instructions



WARNING: Read this manual before installing and using this equipment, save it for future reference

All Electrical Work Must Be Performed By a Qualified Licensed Electrician and Conform With All Applicable Electrical Safety Codes

CAUTION: Power to the unit **must** be supplied through a residual current device (RCD) having a rated residual operating current not exceeding **30mA** , all equipment must be properly grounded

CAUTION: Do not operate the equipment when people are in the water, **always turn off** all equipment before servicing or performing any maintenance

CAUTION: KEEP HANDS CLEAR OF THE IMPELLER WHEN OPERATING!



WARNINGS

- The operating temperature range for this equipment is -12° to 40° C; 10° to 104° F.
- Physically disconnect equipment from the power source before entering, wading in or swimming in the water.
- If the power cord becomes damaged, it must be replaced by an authorized Otterbine distributor.

INSPECT UNIT

Inspect the equipment and verify the following: **Unit** - Check the nameplate located on the housing to verify you have received the correct horsepower and voltage, **Power Control Center (PCC) Motor Controls** – Verify the controls are compatible with the unit. If supplied with an Otterbine panel refer to the technical information on the inside door of the PCC, **Power Cable Assembly** - Verify the correct cable gauge and length. *For proper warranty consideration return your Otterbine warranty registration card.* Report any shipping damage to the carrier that delivered your aerator.

ELECTRICAL INSTALLATION

Caution: Ground Fault Circuit Interrupter (GFCI) or Residual Current Device (RCD) Protection is required. If GFCI or RCD protection is not used, serious or FATAL electrical shock may occur.

A. Incoming Power

1. The unit requires proper feeder circuit protection in accordance with all applicable codes.
2. Verify the proper size and type of cable is supplying power to the Power Control Center (PCC) or motor controls. Verify the proper size of conductors to allow for no more than 5% voltage drop for the entire circuit from the feeder source to the unit. Failure to do so may damage the aerator and void the warranty.

B. Power Control Center/Motor Control Location

1. The controls should be mounted where easily visible from the shoreline where the aerator is located. The controls must **not** be accessible from the water.

C. Power Control Center (PCC) Cables & Connections

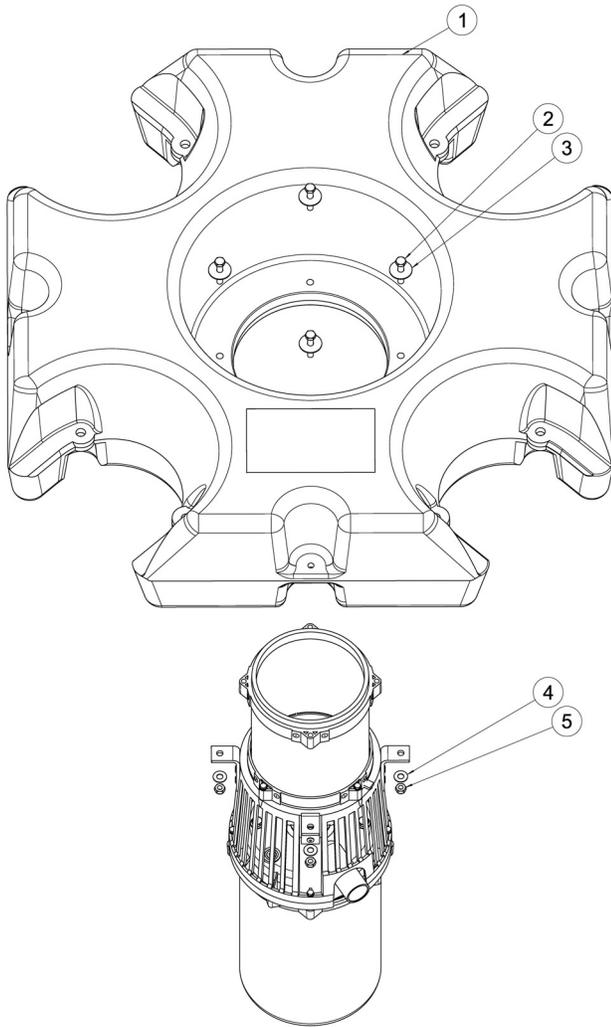
1. Only use cable that is approved by Otterbine. Do not use any junction boxes or splices. **Only** use power cord gauges and lengths as specified by Otterbine.
2. Exposed cable between the PCC and the shoreline should be installed in non-metallic conduit. It is **important** that the unit and lighting cables be installed in separate conduits to avoid induced interference between cables which causes random GFCI / RCD tripping. **Always** use strain relief cord connectors to attach the cable to the PCC or motor controls.

IMPORTANT! The conductor with the green/yellow insulation shall only be connected to the ground

terminal marked  or .

UNIT ASSEMBLY

READ THE INSTRUCTIONS: Improper assembly may result in damage to the unit.



NOTE: *Genesis Pump Chamber; The Float **MUST** be mounted before the Genesis Throat Assembly (See page 17). The unit will be received with the pumping chamber already mounted.

***5HP "Open Throat" Units (Sunburst, Gemini, Saturn);** If applicable, the Supplemental Float must be mounted to the Main Float before installing on Unit (See Below).

A. Supplemental Float Assembly

***If the Supplemental Float is already mounted to the Main Float, continue with main float assembly below.**

1. Place Main Float top face down.
2. Place the Supplemental Float on the Main Float as shown in the photo below.
3. Ty-Rap the floats together in four places (1 in each pocket).
4. Continue mounting Main Float.

B. Main Float Assembly

1. Stand the unit upright and place the float onto it so the holes in the float line up with the holes in the mounting brackets.
2. Place a fender washer onto a hex bolt and insert into one of the four holes in the float making sure it also goes through the hole in the steel mounting bracket on the unit. Repeat this for the three remaining holes.
3. Place a flat washer and a nylon locknut onto each of the four hex bolts. Tighten each nylon locknut.

CAUTION: Do not over tighten lock nuts, damage may occur to the float and/or pump chamber.

Supplemental Float Assembly

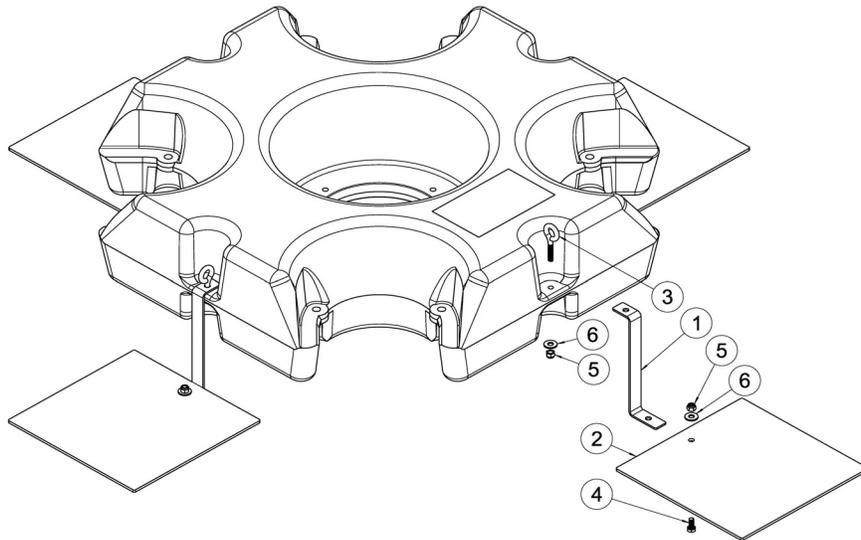


Fasten supplemental Float with Ty-Raps

Parts List			
ITEM	DESCRIPTION	PART NUMBER	QTY
1	Concept 3 Floats		
	Black	42-0018	1
	Granite	42-0027	1
	Float Mounting Hardware Kit	12-0071	
2	M8x45 S/S Hex Bolt	22-0022	5
3	M8 Fender Washer	28-0008	5
4	M8 Flat Washer	28-0018	5
5	M8 Nylon Lock Nut	26-0007	5
6	Ty-rap	GP5008	3

C. Mounting the Stabilizers (Comet Spray Pattern Only):

Mount each of the four stabilizer plates to the top side of a bracket using a hex bolt, a fender washer, and a nylon locknut as shown below. Mount each of the four stabilizer plate assemblies to the top side of an outer hole in the float using an eyebolt, a fender washer, and a nylon locknut as shown. **Do not** over tighten. Damage may occur to the float.



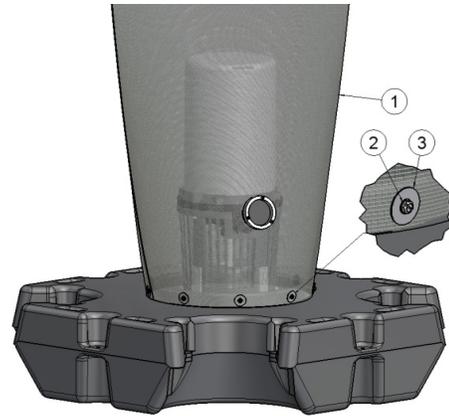
Parts List			
ITEM	DESCRIPTION	PART NUMBER	QTY
	Comet Stabilizer Plates Kit	12-0097	
1	Stabilizer Bracket	40-0115	4
2	Stabilizer Plate	41-0127	4
3	5/16-18x1-3/8" S/S Eyebolt	22-0027	4
4	5/16-18x3/4" S/S Hex Bolt	106-302	4
5	5/16-18 S/S Nylon Lock Nut	GP1208	8
6	5/16" Fender Washer	28-0008	8

D. Screen Installation

Debris Screens help to prevent clogging of the unit and are available for all Otterbine aerators.

1. Place the unit upside down on blocks so the pump chamber does not get damaged.
2. Pull screen over motor unit until it reaches the lip on the float.
3. Make sure the cable is running through the bushing in the screen.
4. Fasten the screen to the lip on the float with the washers and screws provided, spaced evenly as shown.

Parts List			
ITEM	DESCRIPTION	PART NUMBER	QTY
	1/4" Screen Kit	12-0075	1
	1/2" Screen Kit	12-0076	1
1	C3 Screen		1
	1/4"	15-0022	
	1/2"	15-0023	
2	S/S Sheet Metal Screw	BP2803B	9
3	1" Fender Washer	800-011	9



PHYSICAL INSTALLATION

Concept 3 units require a **minimum** operating depth of **30"/75cm (40"/100cm w/ lights)**.

A. Attach your Otterbine power cable to the unit.

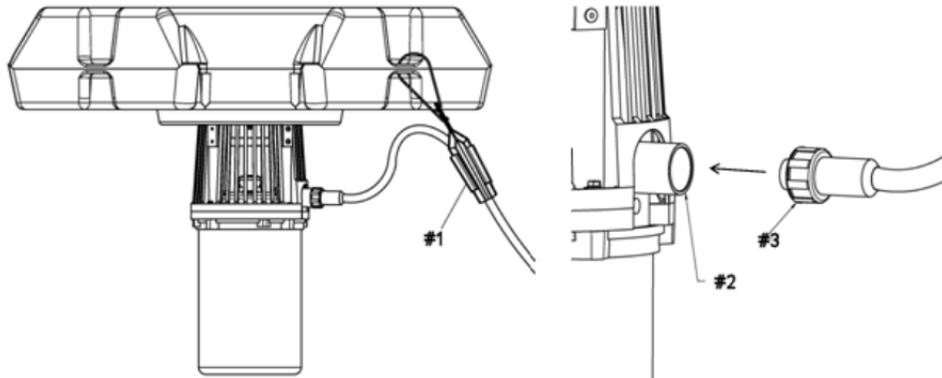
1. Align the pigtail connector (see below figure #3) on the cable to the pin configuration on the bulkhead (see below figure #2) on the unit. Thread the nut onto the bulkhead, hand tighten only, do not use tools on the pigtail connector nut. Do not over tighten. **Over tightening may cause the connector to fracture and possibly cause an electrical short circuit.**

2. 5HP, 230V, 1 Phase units have a 3 pin bulkhead connector and a 3 pin pigtail connector on the power cable. All other ratings use 4 pin connectors.

3. A small amount of silicon compound has been factory applied to the female end of the unit connector. The compound is necessary to make a waterproof seal between the two connectors. **DO NOT REMOVE COMPOUND!** When servicing the aerator re-apply compound. (Otterbine P/N: 48-0001).

4. **Install the cable strain relief device** (see below figure #1). Pass the wire hoop from the strain relief through one of the holes in the float or around the float bracket. Reattach wire hoop to strain relief.

5. For additional protection fasten the power cable, after the strain relief, to a float hole using the cable ties provided.



B. Pre-Startup Checks (To be performed by a qualified technician)

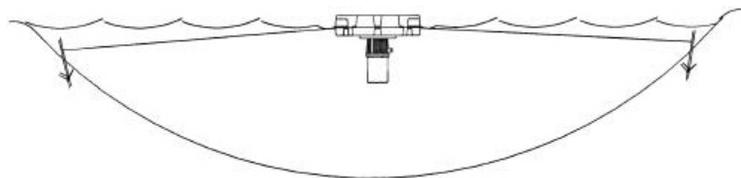
1. Apply power to the PCC. Verify the voltage to the PCC at the input terminals is correct and matches the nameplate rating of the aerator.
2. With the unit on the shore check for correct motor rotation. With 3 Phase units, briefly “bump” start the unit (turn on only long enough to establish operation and direction of rotation) while observing the motor shaft rotation. Single Phase units come from the factory set to run in a counter clockwise rotation.

IMPORTANT! Shaft rotation MUST BE Counter Clock-wise when looking at the top end of the unit.

C. Launching the Aerator

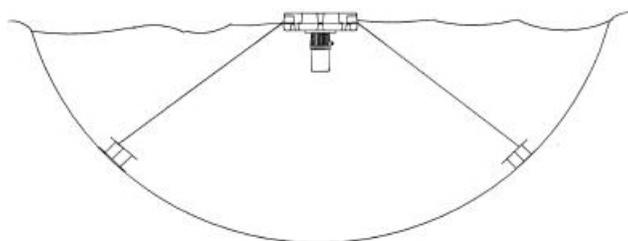
It is important to choose the correct location for your unit. Placement affects how well you're your unit will aid in keeping your pond clean. Select the method of securing your aerator, mooring (see step C1) or anchoring (see step C2). Mooring provides for easier installation and servicing of the aerator.

1. **Mooring:** The following items are required to moor your Otterbine aerator. Use only brass and stainless steel hardware. Otterbine recommends using 1/4"(0.63cm) or 1/2"(1.25cm) polypropylene rope or stainless steel cable for mooring lines. At the mooring points you will need a wooden stake, 1/2"(1.25cm) steel bar or a "duck bill" type earth anchor. The earth anchor allows the mooring lines to be hidden beneath the surface of the water. Install all anchoring points. Install the first mooring point securely into the ground at the outer edge of the pond. If you are mooring with an earth anchor position the earth anchor two feet into the pond. Fasten all of the mooring lines securely to the outer holes in the float. Launch the aerator into the water. Walk one mooring line around to the other side of the pond and pull the unit into the chosen location. Secure the aerator leaving enough slack in the lines to allow the aerator to turn 90 degrees or 1/4 turn. The slack in the lines will allow for proper start up, wave action and fluctuations in the water level.



Mooring the Aerator

2. **Anchoring:** Use only stainless steel and brass hardware as previously referenced in the “mooring” section. Otterbine recommends using two 60 - 80 lb. (27 - 36 kilo) weights for anchors and a small boat. Fasten all of the mooring lines securely to opposite outer holes in the float. Launch your unit into the water upside down with the motor housing facing up. Place the anchors in boat and tow unit into location. Anchor location will vary depending on the depth of your pond (See chart). Drop the anchors with lines attached into the water at opposite locations. Secure the aerator leaving enough slack in the lines to allow the aerator to turn 90 degrees or 1/4 turn. The slack in the lines will allow for proper start up, wave action and fluctuations in the water level. Flip the unit over and proceed to System Startup.



Anchoring the Aerator

MAXIMUM DEPTH	DISTANCE BETWEEN ANCHORS
Meters	Meters
1.5	3.4
1.8	4.6
2.1	6.1
2.4	9.1
2.7	12.0
3.0	16.7
3.3	21.2
3.6	26.8
3.9	30.3
4.2	36.4
4.6	42.4

SYSTEM STARTUP

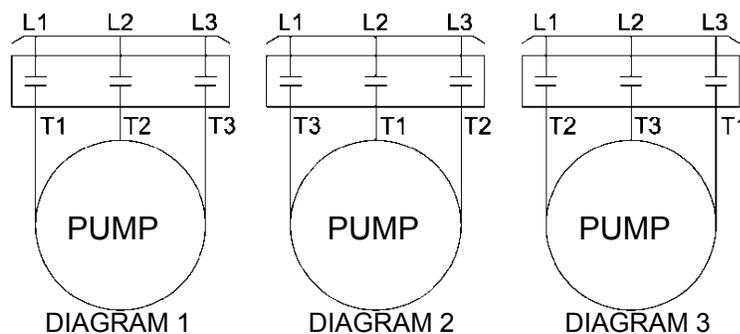
WARNING: DO NOT ALLOW THE AERATOR TO OPERATE "DRY" OUT OF THE WATER

B. Energizing the Unit (To be performed by a qualified technician)

1. Single Phase Units: Correct motor rotation is factory determined and not field adjustable. Three Phase Units: Verify correct motor rotation (Counter Clockwise looking at the top/impeller end of the unit). Check current readings on each phase. Verify three phase operating currents are balanced within 5%. When correct, record the operating voltage & amperage on the inside door of the PCC or motor controls.

To calculate the percent of current unbalance determine the Average Current: (a) Measure each of the three phase currents. (b) Add the three phase amperage values together. (c) Divide the sum by three. (d) This is the average current value. Determine Current Unbalance: (a) Select the phase current with the greatest difference from the average (calculated above). (b) Determine the difference between this phase current and the average current value. (c) Divide the difference by the average. (d) Multiply the result by 100 to determine percent of unbalance.

3. Use connection diagram 1, 2 or 3 (below) which results in the lowest current unbalance. Roll the motor cable leads on the aerator output terminal block in the same direction to avoid motor reversal. If the current unbalance is not corrected by rolling leads, locate the source of the unbalance and correct it. When the phase farthest from the average stays on the same power lead after being moved the primary cause of unbalance is the power source. When the phase farthest from the average moves on each of the hookups with a particular motor lead, the primary cause of unbalance is the "motor side" of the circuit. Consider: damaged cable, leaking splice, poor connection, or a faulty motor as possible causes.



MAINTENANCE

This unit requires periodic maintenance: **Once a year**, disconnect the unit from the power source and physically inspect the unit and cable for any cuts, cracks or breaks. These may cause oil leaks and/or electrical shorts. Inspect and clean the pumping chamber and screen. **After every three running seasons**, a simple oil change is needed to keep your unit running smoothly. Otterbine oil must be used, contact your Otterbine distributor to order a maintenance kit, P/N: 12-0077.

WINTERIZATION

If you are located in a region that experiences long periods of cold weather you need to remove your unit from the water and store it in a dry, secure location where the temperature does not get below freezing. If a unit becomes frozen-in, it could damage the unit. **Damage caused by freezing conditions is not covered under warranty.**

Maximum Cable Lengths from Panel to Unit

HP	Electrical Rating	#12 AWG	#10 AWG	#8AWG	#6 AWG
		6,530 Circular Mils	10,383 Circular Mils	16,509 Circular Mils	26,251 Circular Mils
		Meters	Meters	Meters	Meters
1	220/240V 1Ph 50Hz	92	152	183	*
2	220/240V 1Ph 50Hz	61	99	160	183
3	220/240V 1Ph 50Hz	61	92	152	183
3	380/415V 3Ph 50Hz	183	*	*	*
5	380/415V 3Ph 50Hz	183	*	*	*

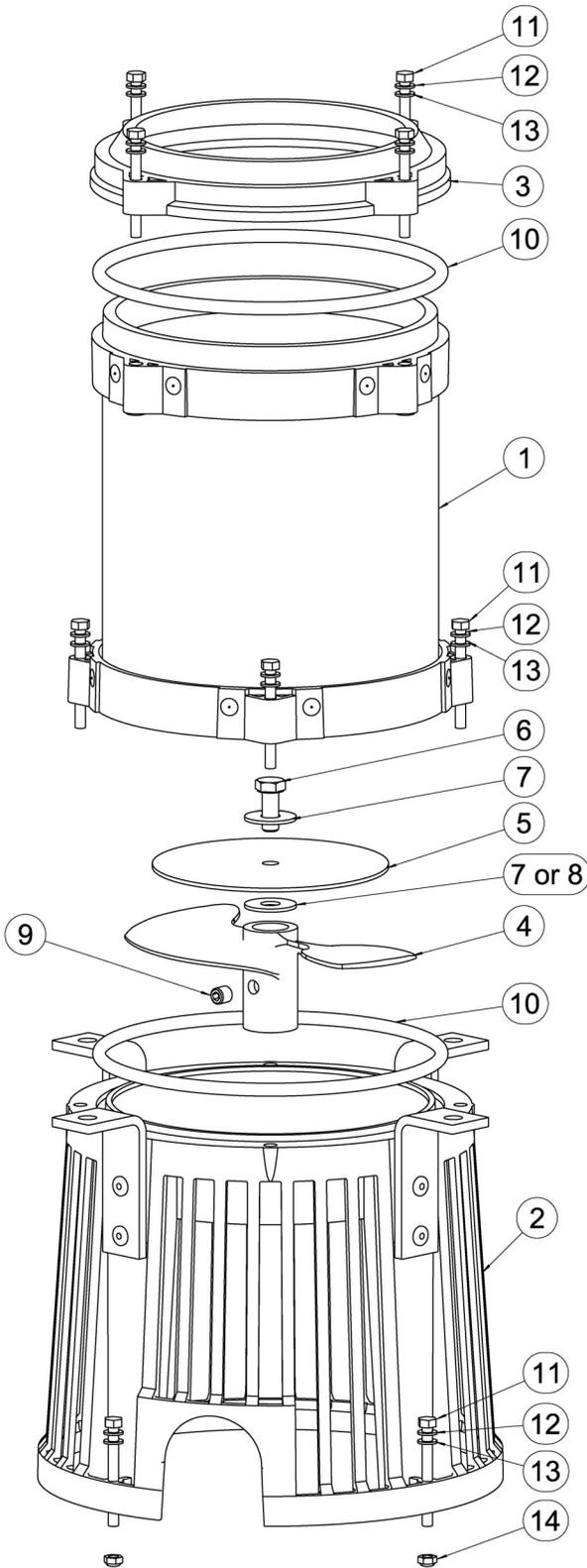
* Longer cable lengths may be available, please contact OTTERBINE to inquire.

TROUBLESHOOTING GUIDE

Small spray pattern (Spray drops gradually , i.e. minutes or hours).	Clogged intake	Remove debris
	Clogged screen	Remove debris
	Loose impeller	Tighten impeller bolt
Cavitation or low spray pattern. (Spray drops suddenly , less than one second.)	Low line voltage	Check voltage at the PCC & at the aerator. Make sure the unit is within the specified voltage range.
	Check for air bubbles surfacing around float	Make sure mooring and anchoring lines are securely tightened
	Debris between slinger and Impeller	Remove debris
Motor will not start	Breaker/fuse has tripped	Check circuit breaker or fuse, reset and/or replace, if necessary. Check voltage.
	Loose or broken terminals	Look for loose or broken terminals.
	Low voltage	Measure power to starter. Check acceptable maximum cable length (see below)
	Defective power cable	Check cable. If defective, call distributor.
	GFCI has Tripped	Reset and test GFCI device. If device trips again call electrician or distributor

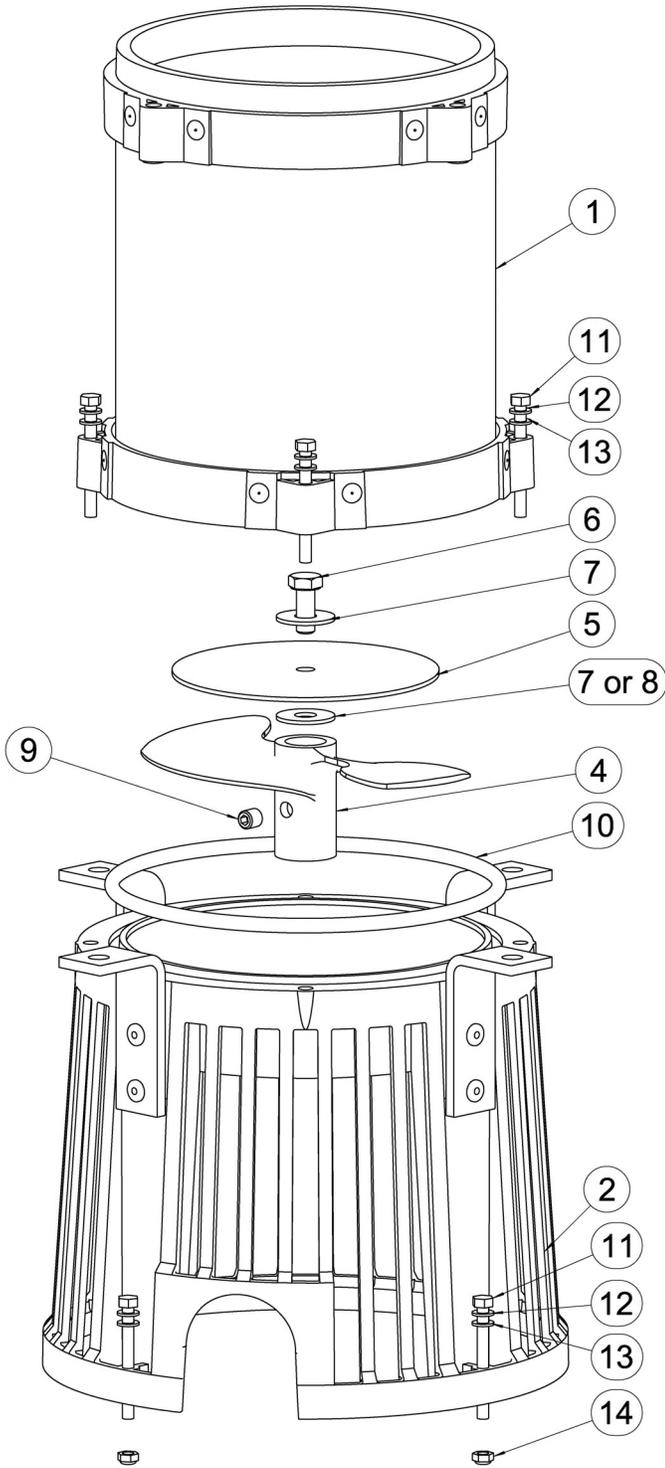
Additional technical and service information can be found on our web-site at: www.otterbine.com

SUNBURST PUMP CHAMBER



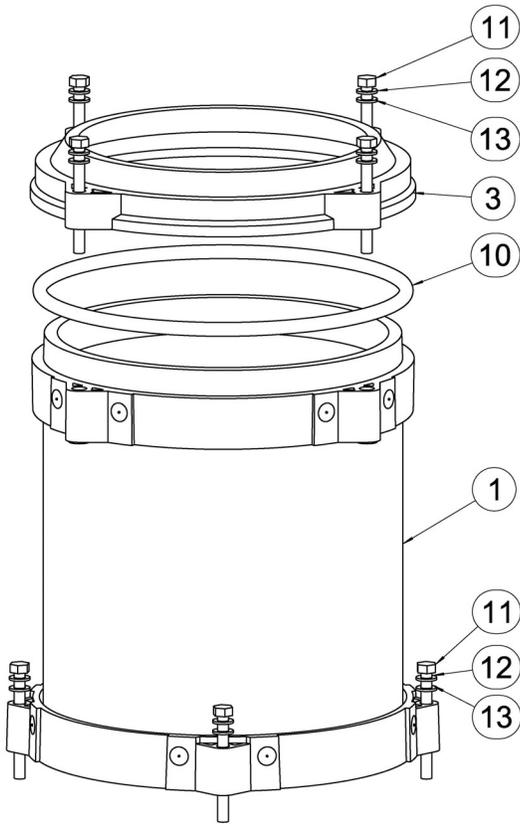
Parts List			
ITEM	DESCRIPTION	PART NUMBER	QTY
1	Throat Assembly	10-0060	1
2	Standoff Strainer Assembly	10-0061	1
3	Sunburst Ring	42-0019	1
4	Sunburst Impeller		1
	1HP, 60Hz	50-0012-001	
	2HP, 60Hz	50-0012-002	
	3HP, 60Hz	50-0012-003	
	5HP, 60Hz	50-0012-005	
5	Slinger Disc	47-0003	1
6	M8x20 S/S Hex Bolt	22-0019	1
7	M8 (5/16") S/S Fender Washer (3HP Spacer)	28-0008	1
8	M8 (5/16") S/S Fender Washer (5HP Spacer)	40-0107	1
9	M8x8 S/S Set Screw	24-0015	1
10	O-ring #260	49-0015	2
11	M5x50 S/S Hex Bolt	24-0013	12
12	M5 S/S Split Lock Washer	28-0017	12
13	M5 S/S Flat Washer	28-0016	12
14	M5 S/S Nylon Locknut	26-0006	4

GEMINI PUMP CHAMBER

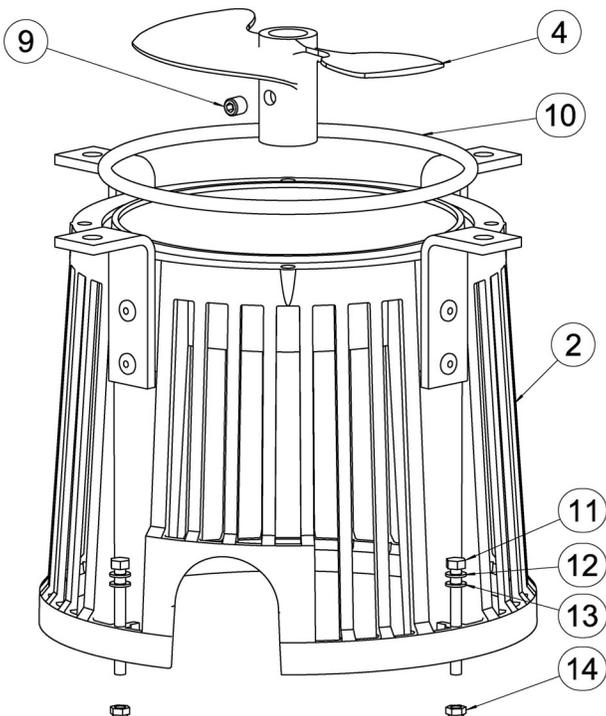


Parts List			
ITEM	DESCRIPTION	PART NUMBER	QTY
1	Throat Assembly	10-0060	1
2	Standoff Strainer Assembly	10-0061	1
4	Sunburst Impeller		1
	1HP, 60Hz	50-0012-001	
	2HP, 60Hz	50-0012-002	
	3HP, 60Hz	50-0012-003	
	5HP, 60Hz	50-0012-005	
5	Slinger Disc	47-0003	1
6	M8x20 S/S Hex Bolt	22-0019	1
7	M8 (5/16") S/S Fender Washer (3HP Spacer)	28-0008	1
8	M8 (5/16") S/S Fender Washer (5HP Spacer)	40-0107	1
9	M8x8 S/S Set Screw	24-0015	1
10	O-ring #260	49-0015	1
11	M5x50 S/S Hex Bolt	24-0013	8
12	M5 S/S Split Lock Washer	28-0017	8
13	M5 S/S Flat Washer	28-0016	8
14	M5 S/S Nylon Locknut	26-0006	4

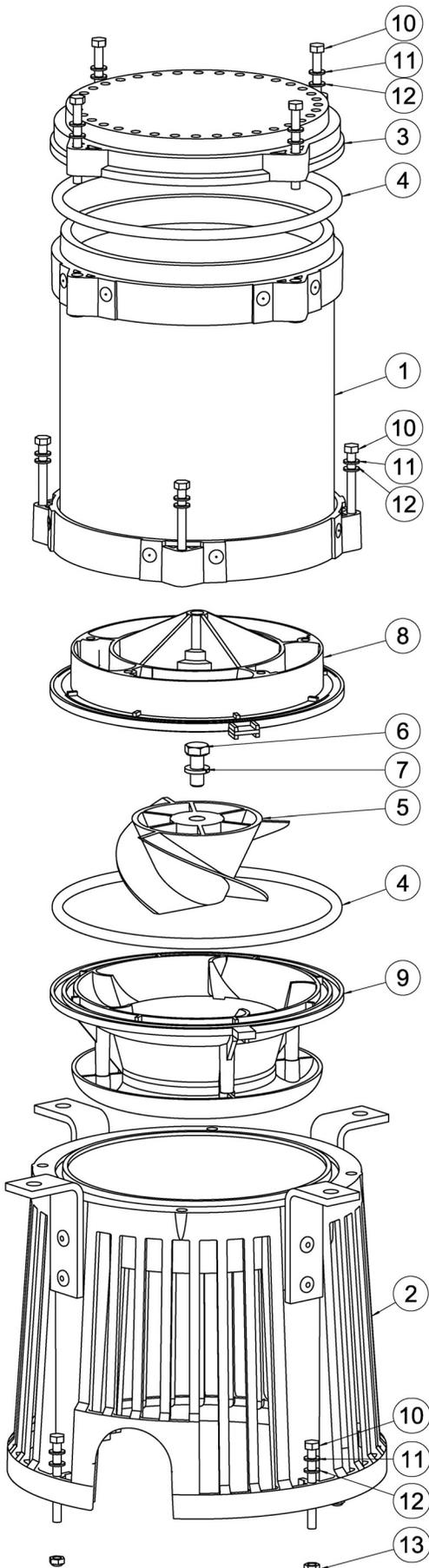
SATURN PUMP CHAMBER



Parts List			
ITEM	DESCRIPTION	PART NUMBER	QTY
1	Throat Assembly	10-0060	1
2	Standoff Strainer Assembly	10-0061	1
3	Sunburst Ring	42-0019	1
4	Sunburst Impeller		1
	1HP, 60Hz	50-0012-001	
	2HP, 60Hz	50-0012-002	
	3HP, 60Hz	50-0012-003	
	5HP, 60Hz	50-0012-005	
5	Slinger Disc	47-0003	1
9	M8x8 S/S Set Screw	24-0015	1
10	O-ring #260	49-0015	2
11	M5x50 S/S Hex Bolt	24-0013	12
12	M5 S/S Split Lock Washer	28-0017	12
13	M5 S/S Flat Washer	28-0016	12
14	M5 S/S Nylon Locknut	26-0006	4

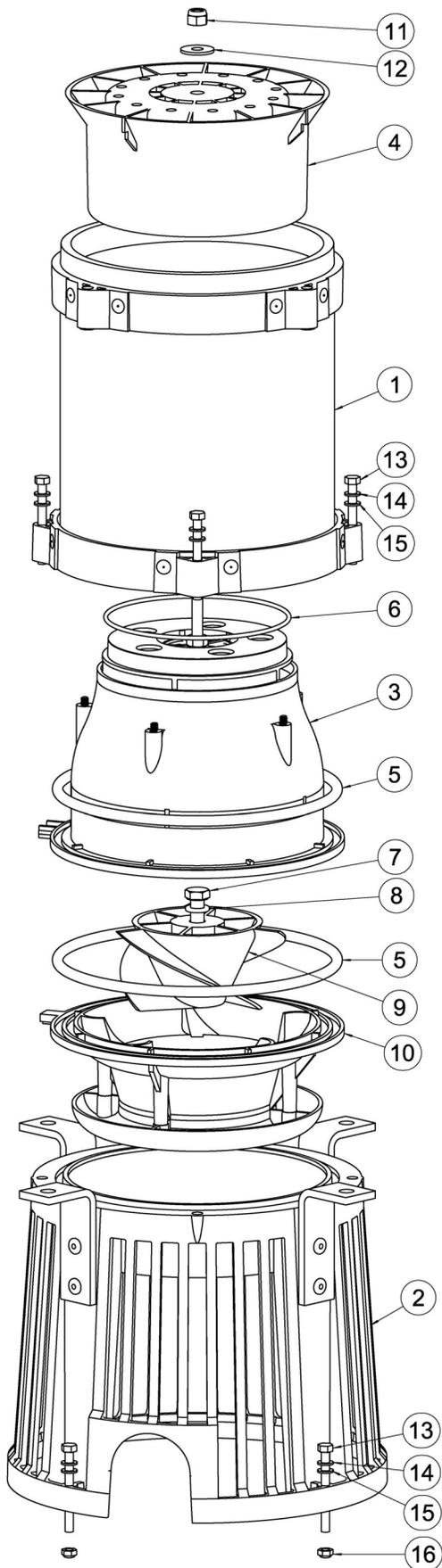


ROCKET PUMP CHAMBER



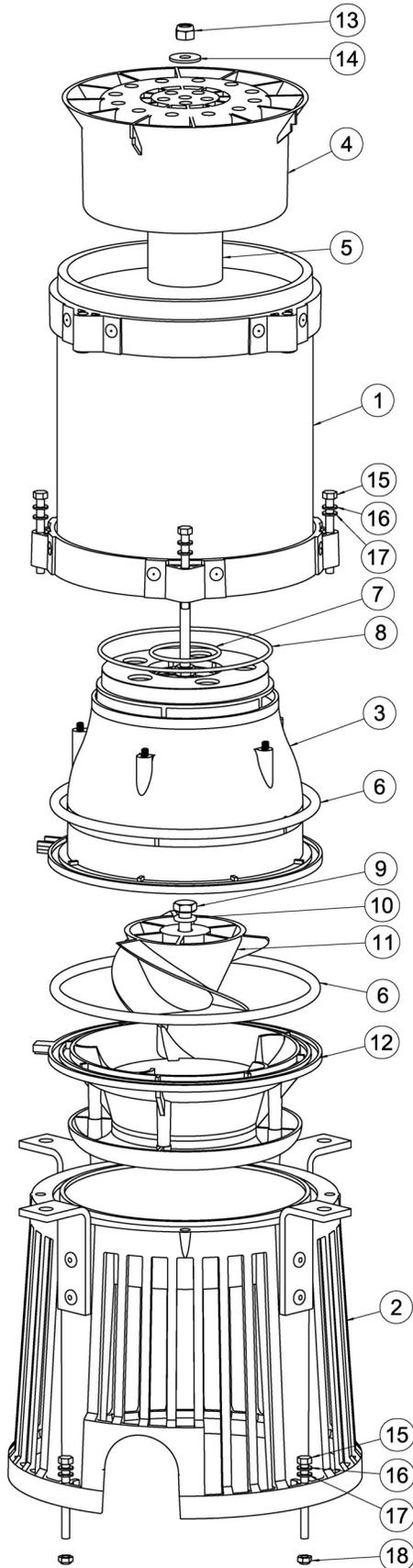
Parts List			
ITEM	DESCRIPTION	PART NUMBER	QTY
1	Throat Assembly	10-0060	1
2	Standoff Strainer Assembly	10-0061	1
3	Rocket Diffuser	41-0104	1
4	O-ring #260	49-0015	3
5	Decorative Impeller		1
	1HP, 60Hz	50-0010-001	
	2HP, 60Hz	50-0010-002	
	3HP, 60Hz	50-0010-003	
	5HP, 60Hz	50-0010-005	
6	M8x20 S/S Hex Bolt	22-0019	1
7	M8 (5/16") S/S Split Lock Washer	28-0019	1
8	Upper Pump Chamber	42-0023	1
9	Lower Pump Chamber Assembly	10-0065	1
10	M5x50 S/S Hex Bolt	24-0013	12
11	M5 S/S Split Lock Washer	28-0017	12
12	M5 S/S Flat Washer	28-0016	12
13	M5 S/S Nylon Locknut	26-0006	4
14	Decorative Impeller Shim (not shown)	40-0099	1,2,or3

PHOENIX PUMP CHAMBER



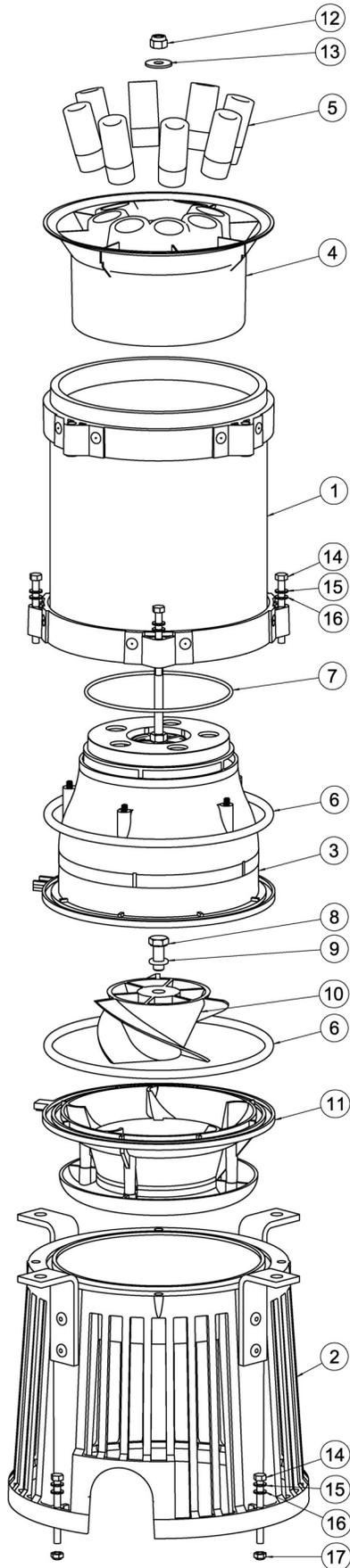
Parts List			
ITEM	DESCRIPTION	PART NUMBER	QTY
1	Throat Assembly	10-0060	1
2	Standoff Strainer Assembly	10-0061	1
3	Phoenix/Tri-Star Flow Diverter	10-0062	1
4	Phoenix Diffuser	41-0105	1
5	O-ring #260	49-0015	2
6	O-ring #156	49-0018	1
7	M8x20 S/S Hex Bolt	22-0019	1
8	M8 (5/16") S/S Split Washer	28-0019	1
9	Decorative Impeller 1HP, 60Hz 2HP, 60Hz 3HP, 60Hz 5HP, 60Hz	50-0010-001 50-0010-002 50-0010-003 50-0010-005	1
10	Lower Pump Chamber	10-0065	1
11	M8 S/S Nylon Locknut	26-0007	1
12	M8 (5/16") S/S Flat Washer	28-0018	1
13	M5x50 S/S Hex Bolt	24-0013	8
14	M5 S/S Split Lock Washer	28-0017	8
15	M5 S/S Flat Washer	28-0016	8
16	M5 S/S Nylon Locknut	26-0006	4
17	Decorative Impeller Shim (not shown)	40-0099	1,2or3

TRI-STAR PUMP CHAMBER



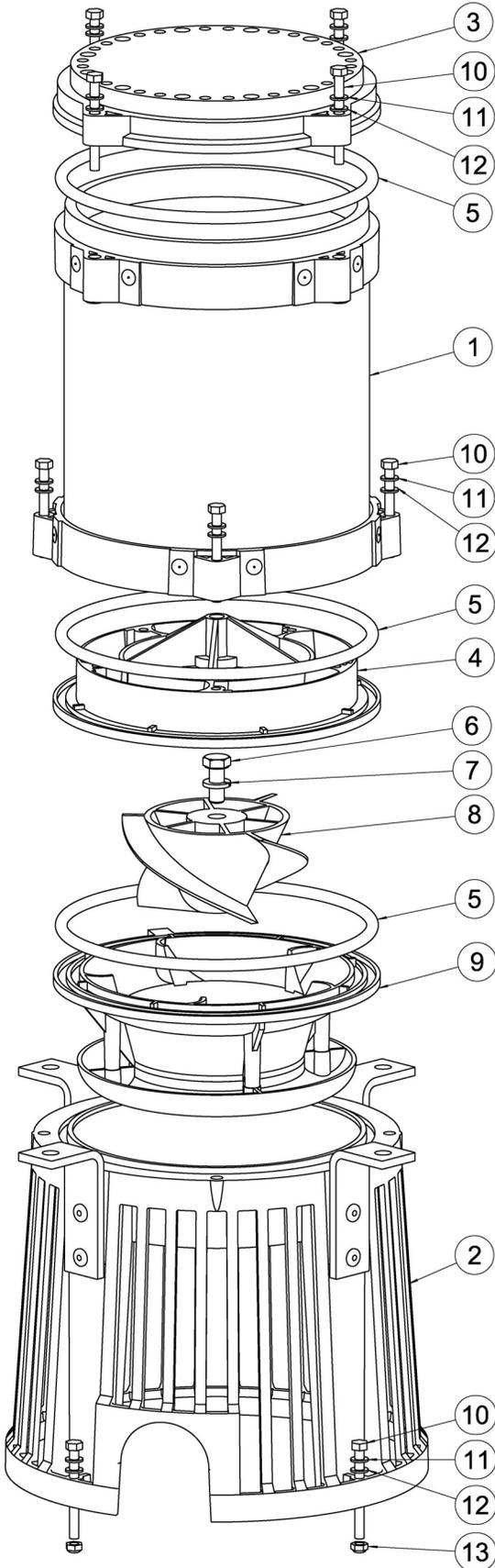
Parts List			
ITEM	DESCRIPTION	PART NUMBER	QTY
1	Throat assembly	10-0060	1
2	Standoff Strainer Assembly	10-0061	1
3	Phoenix/Tri-Star Flow diverter	10-0062	1
4	Tri-Star Diffuser	41-0106	1
5	Tri-Star Diffuser Pipe	41-0108	1
6	O-ring #260	49-0015	2
7	O-ring #131	49-0017	1
8	O-ring #156	49-0018	1
9	M8x20 S/S Hex Bolt	22-0019	1
10	M8 (5/16") S/S Split Washer	28-0019	1
11	Decorative Impeller 1HP, 60Hz 2HP, 60Hz 3HP, 60Hz 5HP, 60Hz	50-0010-001 50-0010-002 50-0010-003 50-0010-005	1
12	Lower Pump Chamber	10-0065	1
13	M8 S/S Nylon Locknut	26-0007	1
14	M8 (5/16") S/S Flat Washer	28-0018	1
15	M5x50 S/S Hex Bolt	24-0013	8
16	M5 S/S Split Lock Washer	28-0017	8
17	M5 S/S Flat Washer	28-0016	8
18	M5 S/S Nylon Locknut	26-0006	4
19	Decorative Impeller Shim (not shown)	40-0099	1,2or3

CONSTELLATION PUMP CHAMBER



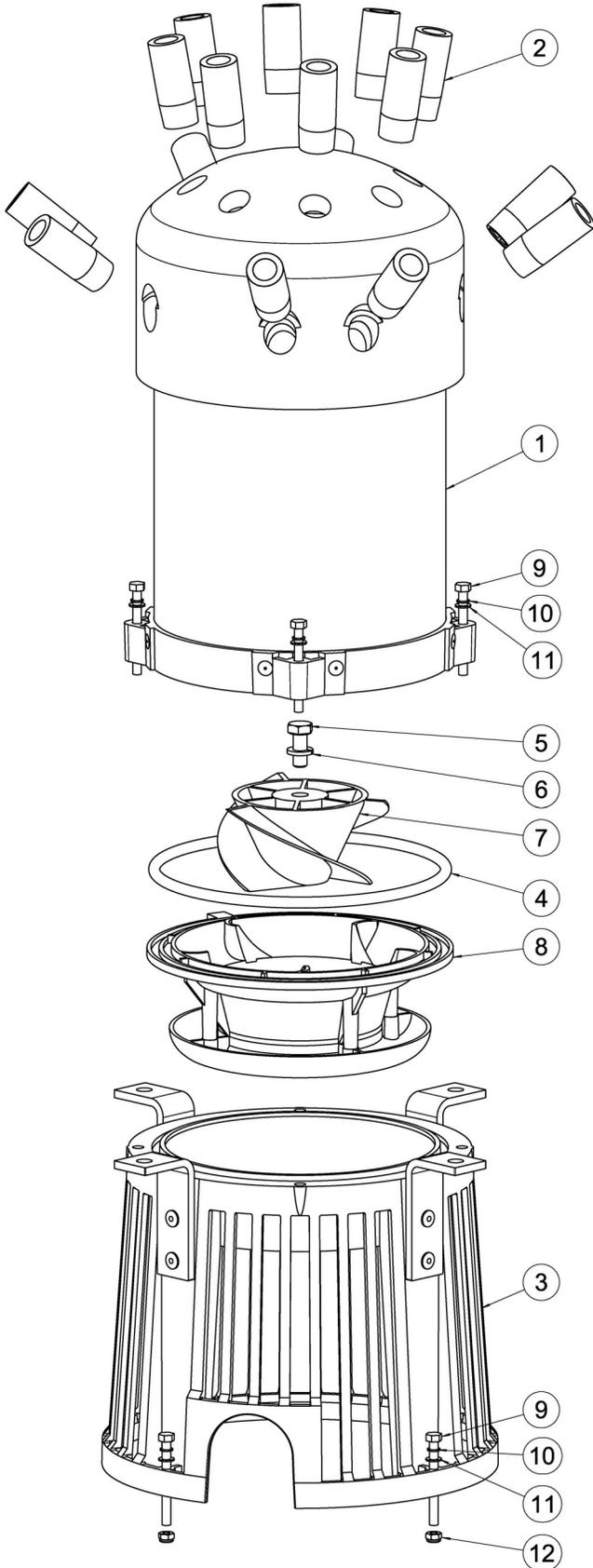
Parts List			
ITEM	DESCRIPTION	PART NUMBER	QTY
1	Throat Assembly	10-0060	1
2	Standoff Strainer Assembly	10-0061	1
3	Constellation Flow Diverter	10-0069	1
4	Constellation Diffuser	42-0032	1
5	Constellation Nozzle	10-0068	1
6	O-ring #260	49-0015	2
7	O-ring #156	49-0018	1
8	M8x20 S/S Hex Bolt	22-0019	1
9	M8 (5/16") S/S Split Washer	28-0019	1
10	Decorative Impeller 1HP, 60Hz 2HP, 60Hz 3HP, 60Hz 5HP, 60Hz	50-0010-001 50-0010-002 50-0010-003 50-0010-005	1
11	Lower Pump Chamber	10-0065	1
12	M8 S/S Nylon Locknut	26-0007	1
13	M8 (5/16") S/S Flat Washer	28-0018	1
14	M5x50 S/S Hex Bolt	24-0013	8
15	M5 S/S Split Lock Washer	28-0017	8
16	M5 S/S Flat Washer	28-0016	8
17	M5 S/S Nylon Locknut	26-0006	4
18	Decorative Impeller Shim (not shown)	40-0099	1,2or3

COMET PUMP CHAMBER



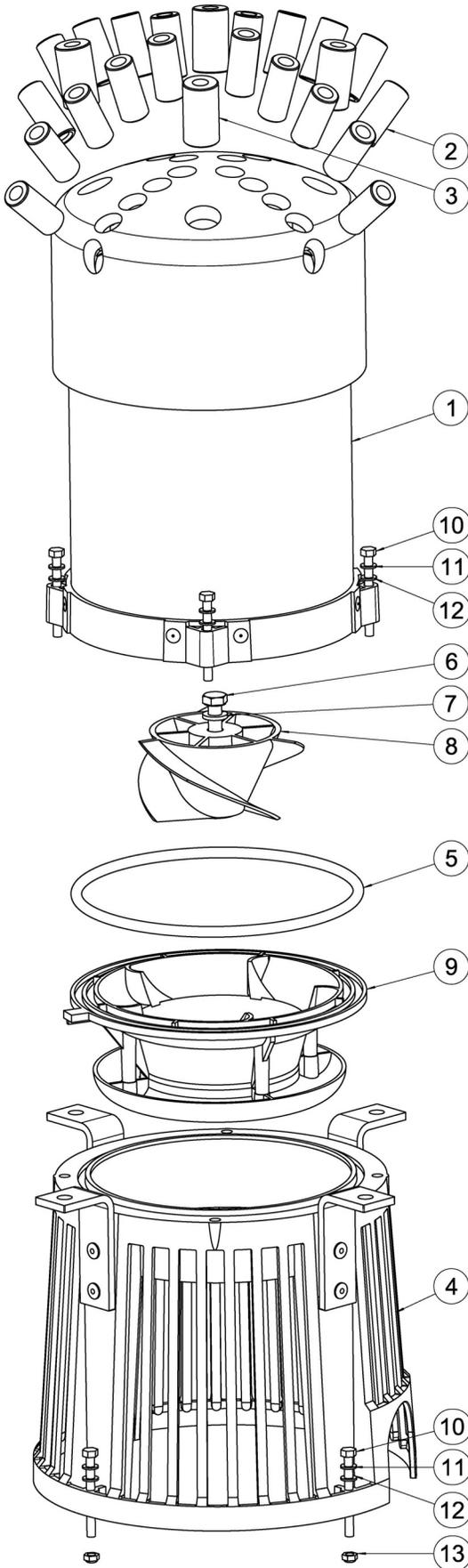
Parts List			
ITEM	DESCRIPTION	PART NUMBER	QTY
1	Throat Assembly	10-0060	1
2	Standoff Strainer Assembly	10-0061	1
3	Comet Diffuser	41-0123	1
4	Upper Pump Chamber	42-0023	1
5	O-ring #260	49-0015	3
6	M8x20 S/S Hex Bolt	22-0019	1
7	M8 (5/16") S/S Split Washer	28-0019	1
8	Decorative Impeller		1
	1HP, 60Hz	50-0010-001	
	2HP, 60Hz	50-0010-002	
	3HP, 60Hz	50-0010-003	
	5HP, 60Hz	50-0010-005	
9	Lower Pump Chamber	10-0065	1
10	M5x50 S/S Hex Bolt	24-0013	12
11	M5 S/S Split Lock Washer	28-0017	12
12	M5 S/S Flat Washer	28-0016	12
13	M5 S/S Nylon Locknut	26-0006	4
14	Decorative Impeller Shim (not shown)	40-0099	1,2,or3

GENESIS PUMP CHAMBER



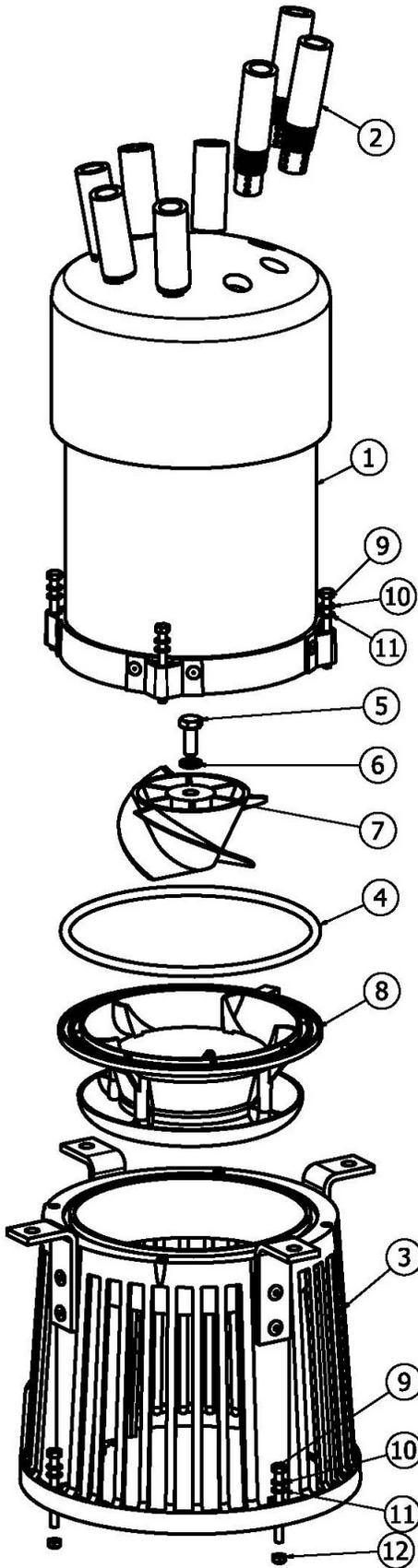
Parts List			
ITEM	DESCRIPTION	PART NUMBER	QTY
1	Genesis Throat Assembly	10-0073	1
2	Genesis Nozzle	10-0068	16
3	Standoff Strainer Assembly	10-0061	1
4	O-ring #260	49-0015	1
5	M8x20 S/S Hex Bolt	22-0019	1
6	M8 (5/16") S/S Split Washer	28-0019	1
7	Decorative Impeller 1HP, 60Hz 2HP, 60Hz 3HP, 60Hz 5HP, 60Hz	50-0010-001 50-0010-002 50-0010-003 50-0010-005	1
8	Lower Pump Chamber	10-0065	1
9	M5x50 S/S Hex Bolt	24-0013	8
10	M5 S/S Split Lock Washer	28-0017	8
11	M5 S/S Flat Washer	28-0016	8
12	M5 S/S Nylon Lock Nut	26-0006	4
13	Decorative Impeller Shim (not shown)	40-0099	1,2,or3

EQUINOX PUMP CHAMBER



Parts List			
ITEM	DESCRIPTION	PART NUMBER	QTY
1	Equinox Throat Assembly	10-0008	1
2	1/2"NPT x 1-1/2" Nozzle	41-0023	20
3	3/8"NPT x 1-1/2" Nozzle	41-0022	4
4	Standoff Strainer Assembly	10-0061	1
5	O-ring #260	49-0015	1
6	M8x20 S/S Hex Bolt	22-0019	1
7	M8 (5/16") S/S Split Washer	28-0019	1
8	Decorative Impeller 1HP, 60Hz 2HP, 60Hz 3HP, 60Hz 5HP, 60Hz	50-0010-001 50-0010-002 50-0010-003 50-0010-005	1
9	Lower Pump Chamber	10-0065	1
10	M5x50 S/S Hex Bolt	24-0013	8
11	M5 S/S Split Lock Washer	28-0017	8
12	M5 S/S Flat Washer	28-0016	8
13	M5 S/S Nylon Lock Nut	26-0006	4
14	Decorative Impeller Shim (not shown)	40-0099	1,2,or3

OMEGA PUMP CHAMBER



Parts List			
ITEM	DESCRIPTION	PART NUMBER	QTY
1	Omega Throat Assembly	10-0053	1
2	Omega Nozzle	41-0115	8
3	Standoff Strainer Assembly	10-0061	1
4	O-ring #260	49-0015	1
5	M8x20 S/S Hex Bolt	22-0019	1
6	M8 (5/16") S/S Split Washer	28-0019	1
7	Decorative Impeller 1HP, 60Hz 2HP, 60Hz 3HP, 60Hz 5HP, 60Hz	50-0010-001 50-0010-002 50-0010-003 50-0010-005	1
8	Lower Pump Chamber	10-0065	1
9	M5x50 S/S Hex Bolt	24-0013	8
10	M5 S/S Split Lock Washer	28-0017	8
11	M5 S/S Flat Washer	28-0016	8
12	M5 S/S Nylon Lock Nut	26-0006	4
13	Decorative Impeller Shim (not shown)	40-0099	1,2,or3

Concept 3 50Hz Technical Data

Abbreviations: HP – Horsepower, V – Voltage, Ph. – Phase, Hz. – Hertz, RPM - Revolutions per Minute, GPM - Gallons per Minute.

Model	H.P.	Rating	RPM	Amps	Spray Height (meters)			Spray Diameter (meters)			Pumping Rate (m ³ /hr)	Induced Circulation Rate (m ³ /hr)	Minimum Operating Depth (cm)
					Lower	Middle	Upper	Lower	Middle	Upper			
Comet	1	220/240V 1Ph 50Hz	2875	8.3	2.8-3.4			1.5			28	280	75
	2	220/240V 1Ph 50Hz	2875	12.6	4.4-5.0			1.5			39.9	399	75
	3	220/240V 1Ph 50Hz	2875	13.5	5.2-6.8			2.4			51.8	518	75
	3	380/415V 3Ph 50Hz	2875	4.0	5.2-6.8			2.4			51.8	518	75
	3	380V 3Ph 60Hz	3350	4.6	5.8-6.4			2.4			51.8	518	75
	5	380/415V 3Ph 50Hz	2875	4.0	5.2-6.8			2.4			51.8	518	75
	5	380V 3Ph 60Hz	3350	7.6	5.8-6.4			2.4			51.8	518	75
Tri-Star	1	220/240V 1Ph 50Hz	2875	8.3	0.9	1.8	3.0	4.0	2.7	0.6	32.4	324	75
	2	220/240V 1Ph 50Hz	2875	12.6	1.2	2.4	4.0	5.2	3.0	0.6	45.3	453	75
	3	220/240V 1Ph 50Hz	2875	13.5	2.0	3.2	4.6	6.1	3.8	0.9	59.3	593	75
	3	380/415V 3Ph 50Hz	2875	4.0	2.0	3.2	4.6	6.1	3.8	0.9	59.3	593	75
	3	380V 3Ph 60Hz	3350	4.6	2.0	3.2	4.7	6.7	3.8	0.9	59.3	593	75
	5	380/415V 3Ph 50Hz	2875	4.0	2.0	3.2	4.6	6.1	3.8	0.9	59.3	593	75
	5	380V 3Ph 60Hz	3350	7.6	2.0	3.2	4.7	6.7	3.8	0.9	59.3	593	75
Phoenix	1	220/240V 1Ph 50Hz	2875	8.3	1.2		3.0	5.5		0.6	32.4	324	75
	2	220/240V 1Ph 50Hz	2875	12.6	1.8		4.0	6.4		0.6	45.3	453	75
	3	220/240V 1Ph 50Hz	2875	13.5	2.0		4.2	7.2		0.9	59.3	593	75
	3	380/415V 3Ph 50Hz	2875	4.0	2.0		4.2	7.2		0.9	59.3	593	75
	3	380V 3Ph 60Hz	3350	4.6	2.6		4.4	8.1		0.9	59.3	593	75
	5	380/415V 3Ph 50Hz	2875	4.0	2.0		4.2	7.2		0.9	59.3	593	75
	5	380V 3Ph 60Hz	3350	7.6	2.6		4.4	8.1		0.9	59.3	593	75
Genesis	1	220/240V 1Ph 50Hz	2875	8.3	1.2		2.1	7.6		3.0	32.4	324	75
	2	220/240V 1Ph 50Hz	2875	12.6	1.5		3.4	10.7		4.0	45.3	453	75
	3	220/240V 1Ph 50Hz	2875	13.5	1.7		4.2	13.7		5.0	59.3	593	75
	3	380/415V 3Ph 50Hz	2875	4.0	1.7		4.2	13.7		5.0	59.3	593	75
	3	380V 3Ph 60Hz	3350	4.6	1.7		4.4	14.4		5.8	59.3	593	75
	5	380/415V 3Ph 50Hz	2875	4.0	1.7		4.2	13.7		5.0	59.3	593	75
	5	380V 3Ph 60Hz	3350	7.6	1.7		4.4	14.4		5.8	59.3	593	75
Equinox	1	220/240V 1Ph 50Hz	2875	8.3	3.0			10.5			32.4	324	75
	2	220/240V 1Ph 50Hz	2875	12.6	4.0			12.0			45.3	453	75
	3	220/240V 1Ph 50Hz	2875	13.5	4.5			17.0			59.3	593	75
	3	380/415V 3Ph 50Hz	2875	4.0	4.5			17.0			59.3	593	75
	3	380V 3Ph 60Hz	3350	4.6	4.5			17.0			59.3	593	75
	5	380/415V 3Ph 50Hz	2875	3.8	5.3			18.3			59.3	593	75
	5	380V 3Ph 60Hz	3350	7.6	5.3			18.3			59.3	593	75
Omega	1	220/240V 1Ph 50Hz	2875	8.3	2.70			3.0			32.4	324	75
	2	220/240V 1Ph 50Hz	2875	12.6	3.10			4.1			45.3	453	75
	3	220/240V 1Ph 50Hz	2875	13.5	3.50			5.0			59.3	593	75
	3	380/415V 3Ph 50Hz	2875	4.0	3.50			5.0			59.3	593	75
	3	380V 3Ph 60Hz	3350	4.6	4.50			6.4			59.3	593	75
	5	380/415V 3Ph 50Hz	2875	3.8	3.50			5.0			59.3	593	75
	5	380V 3Ph 60Hz	3350	7.6	5.50			6.5			59.3	593	75

*Actual pumping rates, all other pumping rates based on empirical data and may vary due to voltage, elevation, and relative humidity.

m³/hr. - Cubic Meters per Hour
cm – Centimeters

Limited Warranty
Otterbine® Product

Otterbine warrants that should the OTTERBINE product prove defective by reason of improper workmanship or materials at any time during the warranty period the Purchaser at retail will be guaranteed that OTTERBINE will repair or replace the said OTTERBINE product as may be necessary to restore it to satisfactory operating condition, without any charge for materials or labor necessarily incident to such repair or replacement, provided that the Warranty Registration card was mailed to OTTERBINE within fifteen days of the original receipt by the Purchaser, the product must be delivered or shipped, prepaid, in its original container or a container offering an equal degree of protection, to OTTERBINE or a facility authorized by OTTERBINE to render the said repair or replacement services or, if purchased from an authorized OTTERBINE dealer, to such dealer; the product must not have been altered, repaired or serviced by anyone other than OTTERBINE, a service facility or by an authorized OTTERBINE dealer or authorized Service Center, and the serial number of the product must not have been removed or altered: and product must not have been subjected to lightning strikes and other Acts of God, vandalism, freezing-in, accident, misuse or abuse, and must have been installed in conformance with applicable electrical codes (including proper electrical protection), and also installed, operated and maintained in accordance with guidelines in the Manual shipped with the Otterbine product. The OTTERBINE product must be physically inspected on an annual basis to insure the unit, the connector and the power cable are not damaged and are in proper working condition.

No implied warranties of any kind are made by OTTERBINE in connection with this product, and no other warranties, whether expressed or implied, including implied warranties of merchantability and fitness for a particular purpose, shall apply to this OTTERBINE product. Should this OTTERBINE product prove defective in workmanship or material, the retail Purchaser's sole remedy shall be repair or replacement as is hereinabove expressly provided and, under no circumstances, shall OTTERBINE be liable for any loss, damage or injury, direct or consequential, arising out of the use of, or inability to use, the OTTERBINE product, including but not limited to retail Purchaser's cost, loss of profits, goodwill, damages due to loss of product or interruption of service, or personal injuries to Purchaser or any person.