

IMPORTANT SAFETY INSTRUCTIONS

INSTALLATION, OPERATING AND SERVICE MANUAL

READ AND FOLLOW ALL INSTRUCTIONS

BADU[®]STREAM II

Counterstream Swimming Unit

U.S. Patent No. 3.977.027

OWNER'S MANUAL



This is the **BADU[®]STREAM II**

All parts are manufactured of corrosion-resistant material and combined in one single housing (or two single housings for two jet systems) which can be installed in pools of any size and shape.

Key to illustration:

A. Flush mounted Jet Housing.

B. Square, Anti-Entrapment Cover (8 1/4" x 8 1/4") undetectable pump suction. (Optional Round)

C. Adjustable Water Flow Jet Nozzle.

D. Air Regulator adjusts amount of air bubbles in water flow.

E. Control Box with GFCI with pneumatic button and tubing.

F. Speck 4 HP or 3.5 HP self-priming, plastic pump, single phase with thermal overload (no motor starter required). Optional three phase motor and control available (Normal priming pump available for installation below water level).

G. Optional Massage Hose with pulsator may be attached to jet nozzle.

TABLE OF CONTENTS

1. Important Safety Instructions	Page 3
2. Introduction and Planning	Page 3
3. Plumbing for Badu®Stream II	Page 4
4. Concrete or Gunitite Installation	Page 5
5. Liner and/or Fiberglass Pool Installation	Page 6
5a. Removal of Liner	Page 7
6. Plumbing Suggestions	Page 8-9
7. Installation of the Pump and the Control Box	Page 9
8. Operation Instructions	Page 10
9. Winterizing	Page 10
10. Frequently Asked Questions	Page 10
11. Parts List for Badu®Stream II	Page 11
12. Limited Warranty	Page 12

IMPORTANT INSTALLATION TIPS IN BOLD PRINT

1. Important Safety Instructions

When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

A. READ AND FOLLOW ALL INSTRUCTIONS.

B. ⚠WARNING : To reduce the risk of injury, do not permit children to use this equipment unless they are closely supervised at all times. Failure to adhere to this and all other warnings could result in serious injury or death.

C. A licensed electrician is required for all wiring connections.



D. TO REDUCE RISK OF ELECTRICAL SHOCK, connect all ground wires to grounding terminal located in the control box. Use no smaller than a No. 12 AWG (3.3 mm²) wire.

E. TO REDUCE RISK OF ELECTRICAL SHOCK, a bonding connector is provided on the motor for bonding of local ground points such as water pipes, metal ladders/handrails, or other metal within 5 feet of the pool. All local ground points should be bonded with a No. 8 AWG (8.4 mm²) wire. Never use gas piping as an electrical ground.

F. All electrical equipment should be installed in accordance with local codes.

G. DO NOT store or use gasoline or other flammable vapors or liquids in the vicinity of this equipment. **DO NOT** store pool chemicals near the equipment.

H. DO NOT remove any safety alert labels such as **DANGER**, **WARNING**, or **CAUTION**. Keep safety alert labels in good condition and replace missing or damaged labels.

I. Keep and read all equipment manuals. Adhere to all of their instructions.

J. ⚠WARNING: Stay alert, watch what you are doing and use common sense. **DO NOT** use unit if you are tired and/or exhausted. **DO NOT** use unit while under the influence of drugs, alcohol, or any medications.

K. ⚠WARNING: Consult your physician before exercising with the **BADUSTREAM II** or using the massage hose.

L. ⚠WARNING: **DO NOT** use or operate the **BADUSTREAM II** if the square, anti-entrapment cover is missing, broken or loose.

M. SAVE THESE INSTRUCTIONS! Refer to them frequently and use them to instruct third party users.

2. Introduction and Planning

The **BADUSTREAM II** is normally incorporated into the original pool design. However, it can be added to any pool at a later date.

The **BADUSTREAM II** has no protruding parts, ensuring the pool user's safety. It is very compact and installs at minimal cost.

The **BADUSTREAM II** can be installed in any size pool. We suggest a minimum pool size of 7 ft. wide, 14 ft. long and 3 1/2 ft. deep in order to swim. Most prefer 16 ft. in length or longer. The extra length allows the swimmer to comfortably drift back and swim up stream. The **BADUSTREAM II** is complete with jet housing, 4 HP or 3.5 HP pump, control box, and optional massage hose. The only additional requirement is the plumbing. (4" pipe for 4 HP and 3" pipe for 3 HP units.)

Consult local codes for minimum distance between pump and pool. Locate pump as close to the **BADUSTREAM II** as practical.

Use at least 4" pipe when distance between jet housing and pump is 30 ft. or less and 6" pipe for runs longer than 30 ft.

The 4HP, self-priming, plastic pump has a single phase motor with thermal overload (no motor starter required). The 4 HP single phase motor draws a maximum of 19.4 amps @ 230V. The unit requires a minimum circuit of 30 amps. Install a 40 amp breaker to avoid nuisance tripping when the pump is turned on and off frequently. The starting current of the 4 HP motor can reach up to 6 times the running currents. (Three phase motor draws a maximum of 12.8 amps @ 230 V and 6.4 amps @ 460 V.) The 3.5 HP single phase motor draws 13.6 amps @ 230 V.

3. Plumbing for **BADU[®]STREAM II**

PLUMBING REQUIREMENTS					
Number of BaduStreams	Number of Pumps	Pump Model	Water Flow per Nozzle	*Total Performance	Power Requirement
2	2	21/80-32SG	1100 LPM	2200 LPM	240v 15 Amp each
2	2	21/80-33SG	1200 LPM	2400 LPM	415v 10 Amp each

* 6" pipe will allow distances of well over 50 ft. However, control box needs to be within 50 ft. for the pneumatic on/off button to function properly.

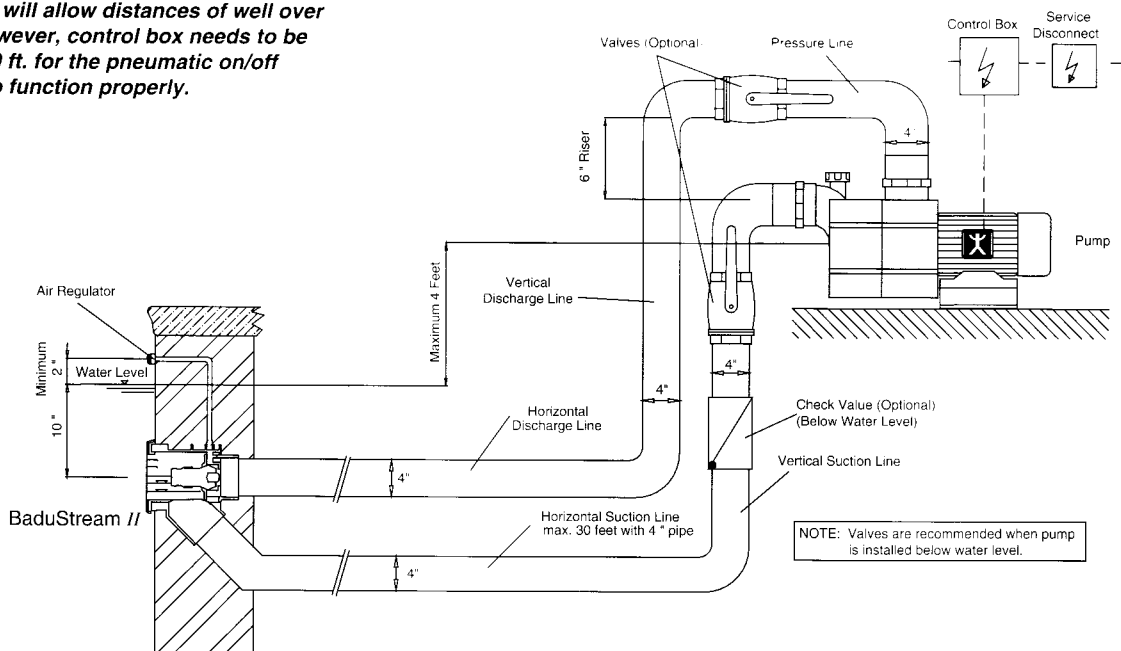


Fig. 1

The **BADUSTREAM II** assembly package contains all necessary parts for the installation of the unit into concrete, gunite, liner or fiberglass pools.

CAUTION: All necessary screws and bolts included with the **BADUSTREAM II** are stainless steel or plastic. **ALL** screw threads and threaded inserts are **METRIC! ONLY METRIC** bolts and nuts may be used! The two exceptions are the connecting thread for the intake and delivery connections on the **BADUSTREAM II** and pump housing and the hardware for the air regulator assembly. The intake and delivery connections on the pump model 21-80 are 3" NPT threads and 4" slip (3" on pump model 98). The air regulator assembly hardware is US standard thread.

CAUTION: The center of the housing (the nozzle) should be 10" **BELOW** water level for maximum efficiency. The air regulator should be approximately 4" **ABOVE** the water level. (See fig. 3.)

CAUTION: When connecting the pressure line to the pressure connection on top of the 4 HP Pump Model 21-80, first install a 15 cm (6") riser (fig. 1) before installing an elbow and leading the pressure line downward to the pressure connection at the jet housing. This will guarantee trouble-free priming of the pump. (Not required for the 3.5 HP Model.)

CAUTION: The suction line should run below water level right up to the pump location.

CAUTION: In areas with soft soil conditions or with frequent earth movement, a flexible section of hose should be attached to the back of the jet housing to prevent housing breakage.

CAUTION: Throughout the entire installation, make sure plumbing connected to the **BADUSTREAM II** housing is well supported. Unsupported plumbing will crack the **BADUSTREAM II** housing.

4. Concrete or Gunite Installation

A. Preplumb **BADUSTREAM II** Housings.

1. Install plumbing manifold or approximately 12" of 4" SCH 40 pipe to both suction and discharge fittings on the jet(s) housing. **NOTE:** If plumbing exceeds 30' between jet housing and pump, increase pipe size to 6". Install a 6x4" reducing bushing as close to jet housing as possible.

2. Install air control PVC hose to hose socket insert fittings (part # 6). Use hose clamps to secure hose to insert fitting.

B. Tape jet housing. Keep concrete out of threaded inserts and out of the inside of the housing.

C. Place jet housing into reinforced steel. Jet housing location is very important.

1. Locate air control hose connector (part #6) at the top and center of jet housing. Air control hose connectors must be vertical or the square cover will be uneven in appearance.

2. The center of the housing (the nozzle) should be 10" BELOW water level for maximum efficiency.

3. Front edge of jet housing should finish even with inside gunite wall. Make sure a V shaped groove is scraped out around the housing approximately 1 1/2" deep to allow marcite to seal against the housing.

4. Recheck location of the jet housing when gunite is being applied. The force of the gunite may move the jet location.

5. To avoid stress on the jet housing, we recommend that the **BADUSTREAM II** housing be encased with gunite and at least 2 to 3 inches of the plumbing stub out is covered with gunite. **NOTE: Stress on the plumbing may crack the **BADUSTREAM II** housing.**

D. Air regulator installation should be approximately 4" ABOVE the water level.

1. Air regulator holder and hose socket insert fitting connect to PVC hose. Make sure air regulator holder face is tapped over to prevent gunite from entering holder.

2. Air regulator can be located in the tile line above water line or in the deck.

E. Keep all parts not being used now in original box. Store in a safe place until needed.

An extension ring is available (upon request) for an application that has special needs.

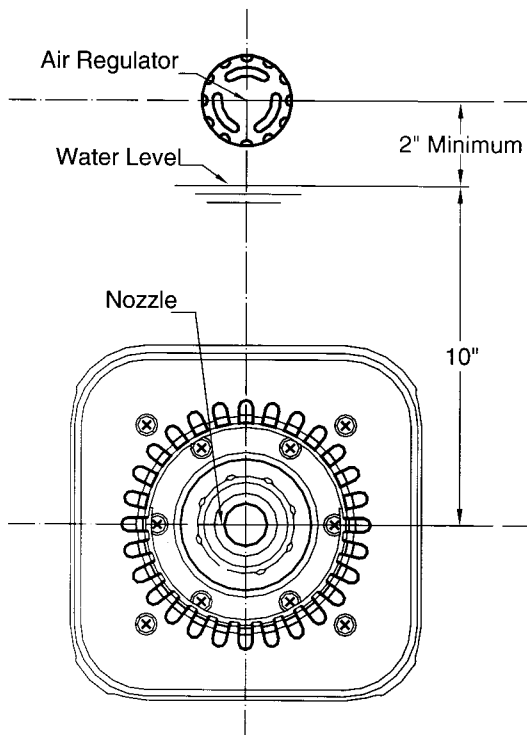


Fig. 2
Template for Installation in Gunite or Concrete Pools.

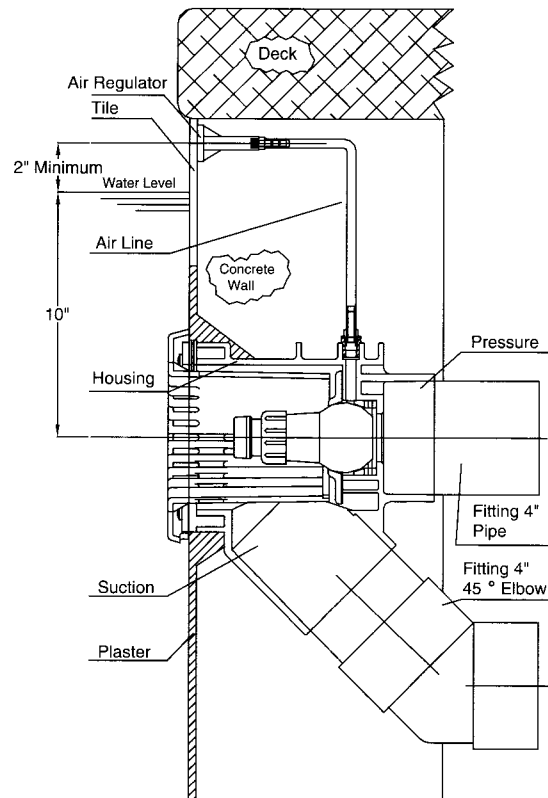


Fig. 3
BADU®STREAM II in Concrete or Gunite Pool.

5. Liner and/or Fiberglass Pool Installation

⚠ CAUTION : Locate the air control hose connector (part #6) at the top and center of the jet housing. Connectors must be exactly vertical or the square cover will be uneven in appearance.

⚠ CAUTION : Center of Housing should be 10" BELOW water level for maximum efficiency.

⚠ CAUTION : Clamping ring gasket (part # 12) goes in **FRONT** of pool wall. A good RTV silicone may be used with gasket when mounting jet housing, but in most cases is not necessary. Installer should decide whether or not silicone is necessary.

For Fiberglass pools only, the clamping ring (part # 3) can be used to mark and drill the holes as shown in Fig. 4. For the air regulator, one 1/2" hole must be provided, preferably along the vertical axis, approximately 4" ABOVE the water line.

For Liner pools only, two holes at the horizontal axis of the jet housing and the two holes on the air regulator will allow both housing and air regulator to be mounted to the pool wall before the liner is installed. Use the two plastic M6 counter sunk bolt (part #18) and two M6 nuts (part #19) (bolt heads on poolside and nuts on backside) to mount the air regulator and two screws (part #27) to mount the housing. This will keep the holder and jet housing attached to the pool wall during installation or replacement of liner.

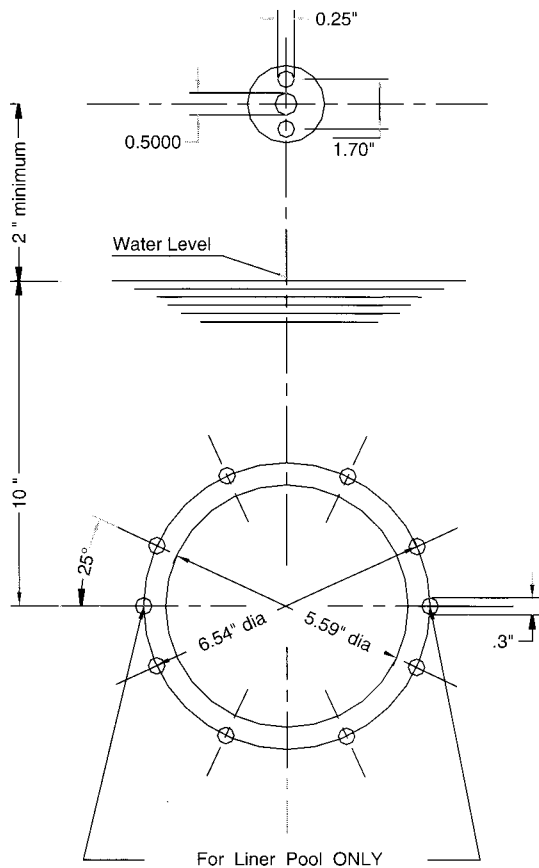


Fig. 4
Cutout Pool Wall for **BADU® STREAM II**
Housing

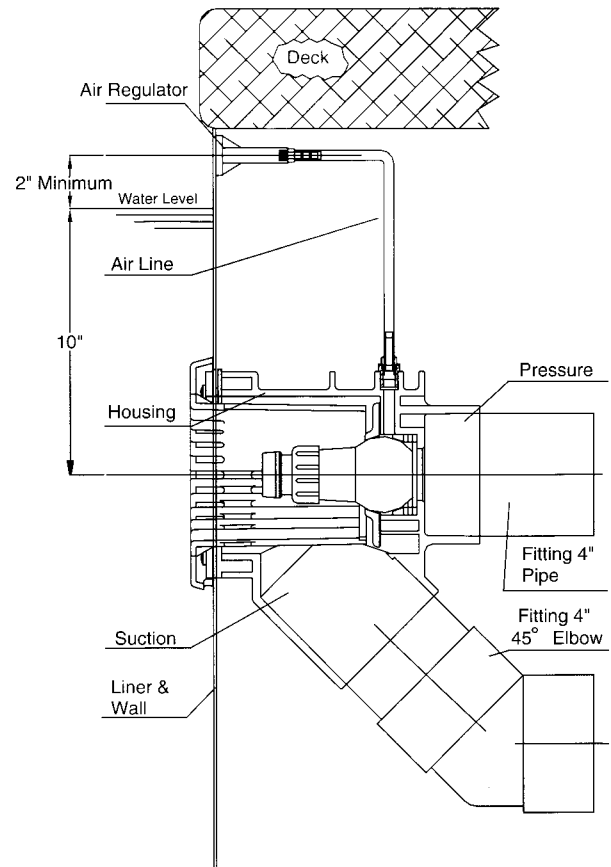


Fig. 5
BADU® STREAM II in Liner or Fiberglass Pool

5a. Removal of Liner

When replacing liner or removing liner for repairs; remove 4 bolts (part #9/1) which hold square cover (part #8) to jet housing. Remove all bolts (part #9/2 & 9/3) except top two, which hold the clamping ring (part# 3 and gasket (part #12) to jet housing. Back out the two remaining bolts approximately halfway and check for any movement of jet housing from the wall. (NOTE: If the two counter sunk bolts (part# 27) which hold the jet housing to the wall were installed, the jet housing should not move, and the two remaining bolts can be removed.)

Remove one of the remaining two bolts and slide clamping ring (part #3) to the side. Replace all the bolts before removing the last bolt. Remove or replace liner. Reverse process to install liner.

NOTE: When replacing clamping ring and bolts: locate bolt heads under liner, make small cut on liner at the bolt heads and push liner over bolt head.

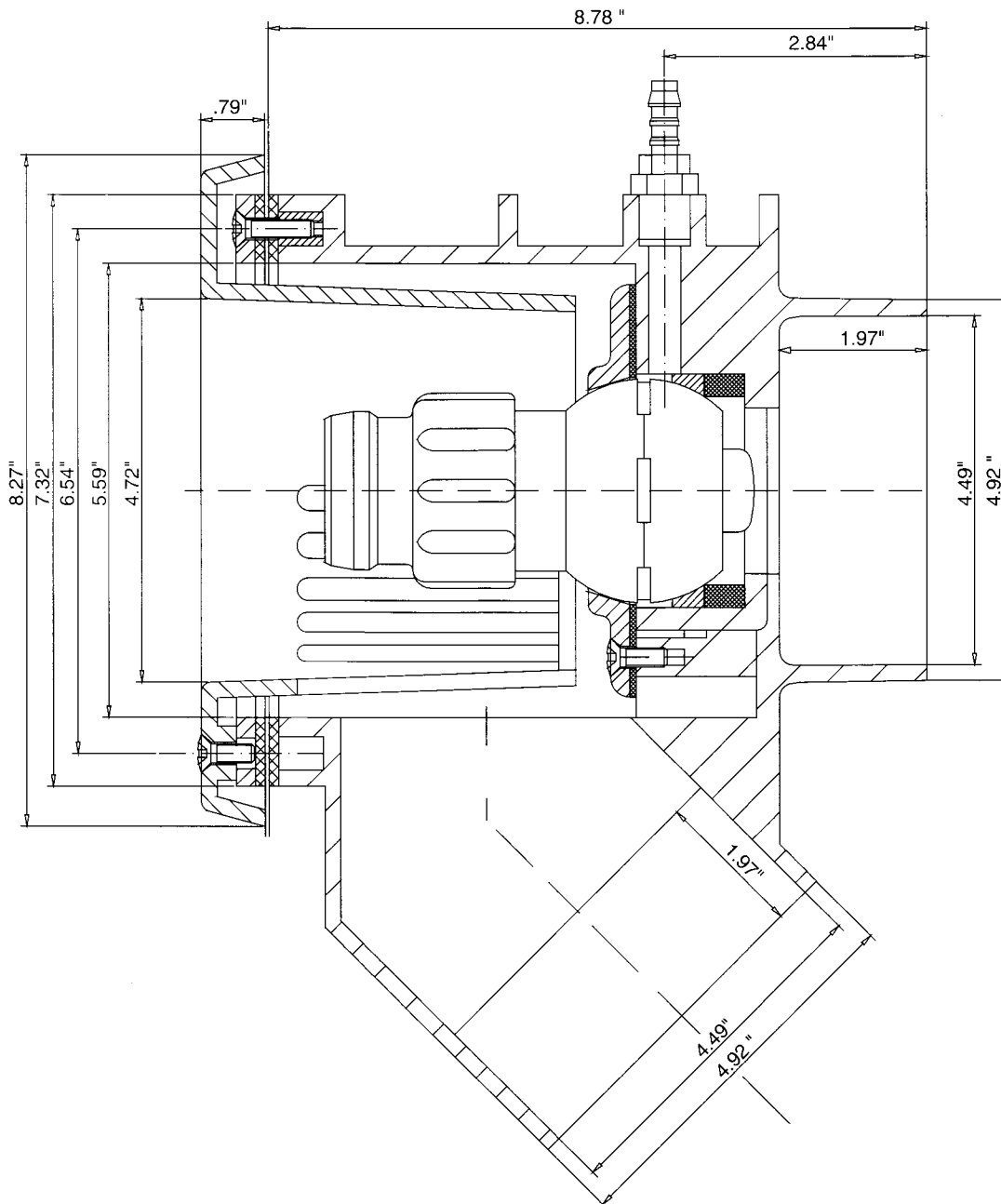


Fig. 6
BADU® STREAM II dimensional drawing

6. Plumbing Suggestions

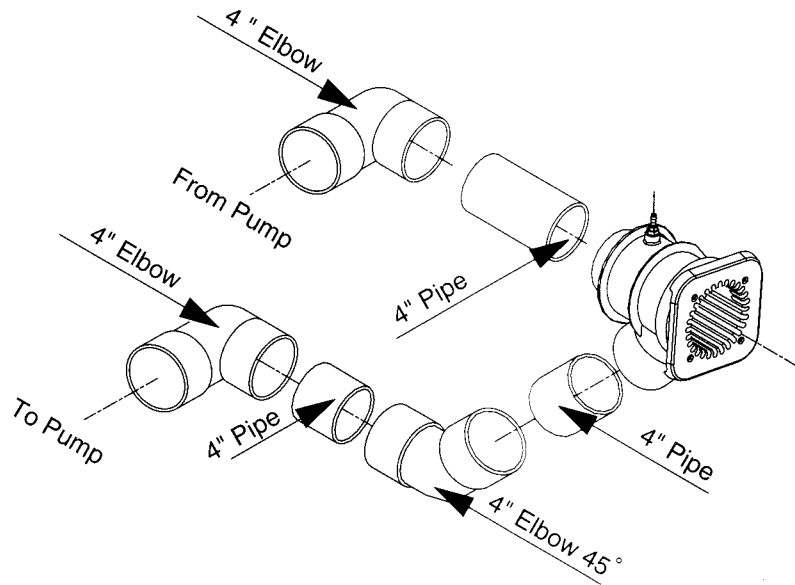


Fig. 7
BADU[®] STREAM II single housing installation

NOTE: Increase pipe size to 6" when jets are more than 30 feet from pump. Use 6" x 4" bushings after 4" manifold tees.

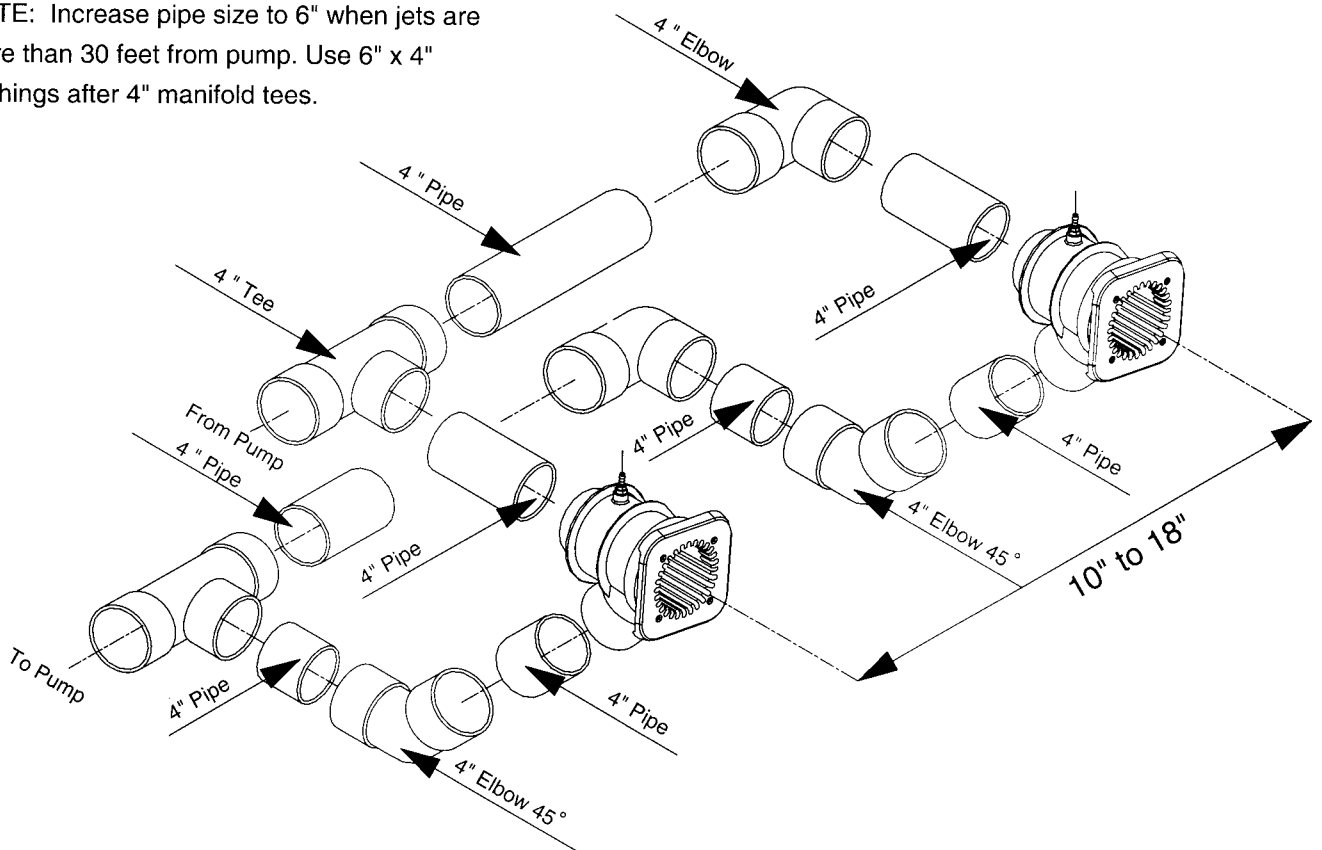
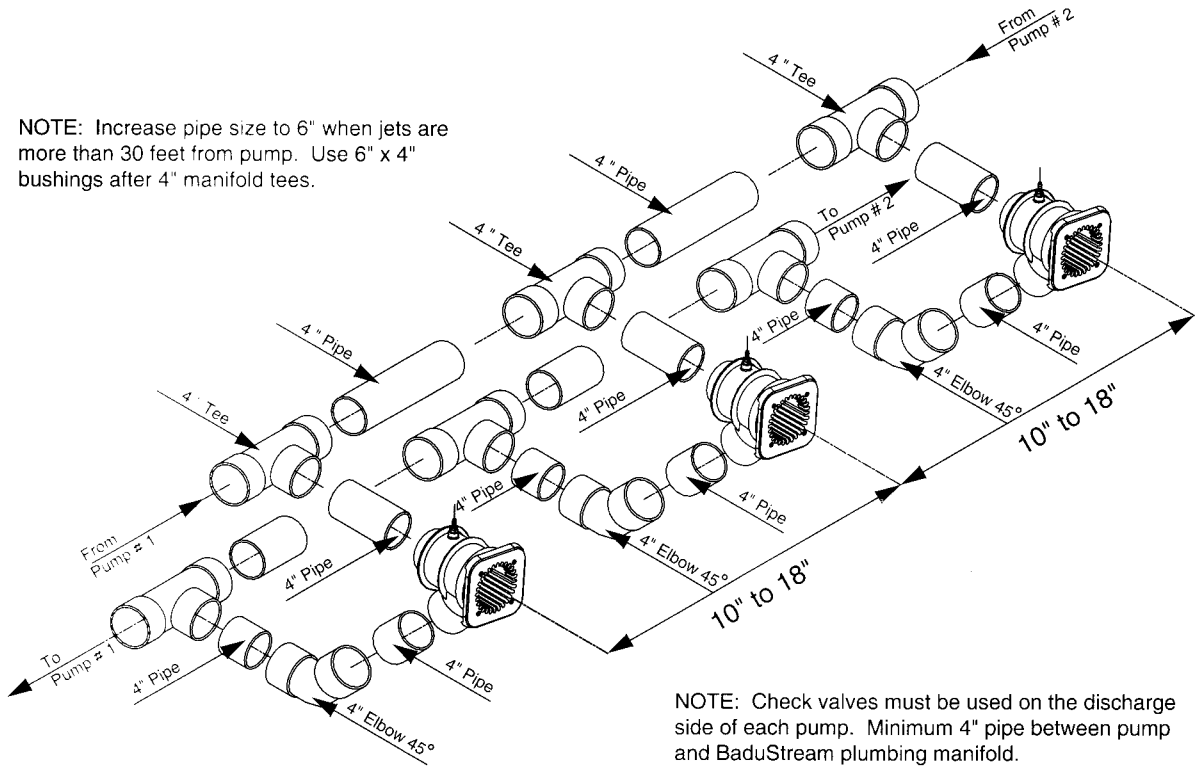


Fig. 8
BADU[®] STREAM II dual housing installation

NOTE: Increase pipe size to 6" when jets are more than 30 feet from pump. Use 6" x 4" bushings after 4" manifold tees.



NOTE: Check valves must be used on the discharge side of each pump. Minimum 4" pipe between pump and BaduStream plumbing manifold.

Fig. 9
BADU[®]STREAM II triple housing installation

7. Installation of the Pump and the Control Box

CAUTION: Before installing the Speck Pump, read the entire pump owner's manual found in the pump box.

Consult local codes for minimum distance between pump and pool. Locate pump as close to the pool as practical.

The air button works up to 50 ft. There is 50 ft. of air tubing in **BADUSTREAM II** box.

WARNING: To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.

The wiring of the pool motor and control box should be done by a licensed electrician in accordance with local codes. Be certain that the motor frame and control box are grounded. Motor name plate has voltage, phase, amp draw, and other motor information as well as wiring connection instructions.

BONDING: As required by National Electrical Code Article 680-22, the pump motor must be electrically bonded to the pool structure (reinforced bars, etc.) by a solid copper conductor not smaller than No. 8 AWG via the external copper bonding lug on the pump motor.

GROUNDING: Permanently ground the pump motor and control box using a conductor of appropriate size. Connect to the No. 10 green headed ground screw provided inside the motor terminal box.

NOTE: Do not connect to electric power supply until unit is permanently grounded.

Section 6 concerns the electric motor and control box only since all other parts, the pump, the jet unit, etc. have complete and absolute separation from the pool water.

8. Operation Instructions

Remove red filler plug or strainer tank lid on pump and fill pump with water. Replace red filler plug or lid. Push pneumatic button on. For the first start-up allow approximately 5 minutes for the pump to prime. If the pump has not started priming after 5 minutes, the amount of water in the pump was not sufficient. Add more water.

To start swimming, jogging or running it is suggested that the two nozzles are pointed slightly inward and slightly upward so that the water "breaks" approximately 3ft. in front of the **BADUSTREAM II**. Start swimming with only minimal force in arms and legs until you feel yourself drifting backwards, then add force and swim upstream until a proper balance is found between force and endurance.

Keep in mind that this unit is designed for a balanced workout. Find a pace that you can keep up for at least 20 minutes. Out pacing is always possible. The idea is to continue exercise for an extended period of time.

Consult your physician before attempting any strenuous exercise. This product may not be challenging or satisfying for all levels of exercise.

The air regulator permits a controlled mixture of air into the water flow and creates a unique, invigorating, bubble bath effect. It will also add additional resistance to swim against.

BADUSTREAM II's adjustable flow nozzle enables swimmer to regulate the volume of water released through the jet(s). Turning the nozzle clockwise reduces the flow.

The swivel nozzle(s) of the **BADUSTREAM II** can be positioned in various directions, allowing swimmers to use various swim styles.

OPTION: A pulsating massage hose can be attached to one of the nozzles for massages. (Ask your dealer for availability.) Use massage hose as advised by your physician.

Directions for use: Consult your physician before using the massage hose. To reduce the risk of injury, do not permit children to use the massage hose with pulsator unless they are closely supervised at all times. Close air regulator. Reduce the volume of water by turning the adjustable flow nozzle(s) clockwise.

Under certain conditions it is possible that the current "drifts off" the left or the right from the middle due to water bouncing off the back wall. In the event that it interferes with your swimming action, turn unit off for a few minutes and restart.

⚠WARNING Do not use or operate the **BADUSTREAM II** if the square, anti-entrapment cover is missing, broken, or loose.

9. Winterizing

In areas subject to freezing water temperatures, protect pump by removing drain plug and red filler plug (or lid).

Drain pool until water level has dropped below the square, anti-entrapment cover. Alternatively purchase a winter cover kit part # 2308752006K.

10. Frequently Asked Questions

What size pool do I need? The **BADUSTREAM II** can be installed in any size pool. However, we recommend a minimum length of 14' and a minimum width of a swimming lane.

What size plumbing is necessary? How far away from the **BADUSTREAM II** can the pump be installed? Use a 4" plumbing up to 30'. For runs longer than 30' use 6" plumbing. The pump can be placed as close to **BADUSTREAM II** as local codes will allow.

How many amps does the pump operate at?

4 HP: Maximum 19.4 amps @ 230 V

3.5 HP: Maximum 13.6 amps @ 230 V

What size breaker do I need? You must use a 40 amp breaker for the 4 HP pump or 30 amp breaker for the 3 HP pump to avoid nuisance tripping.

Does it matter if the housing is installed higher or lower than the manual states? Yes, the center of the jet must be 10" BELOW estimated water level for proper performance of unit.

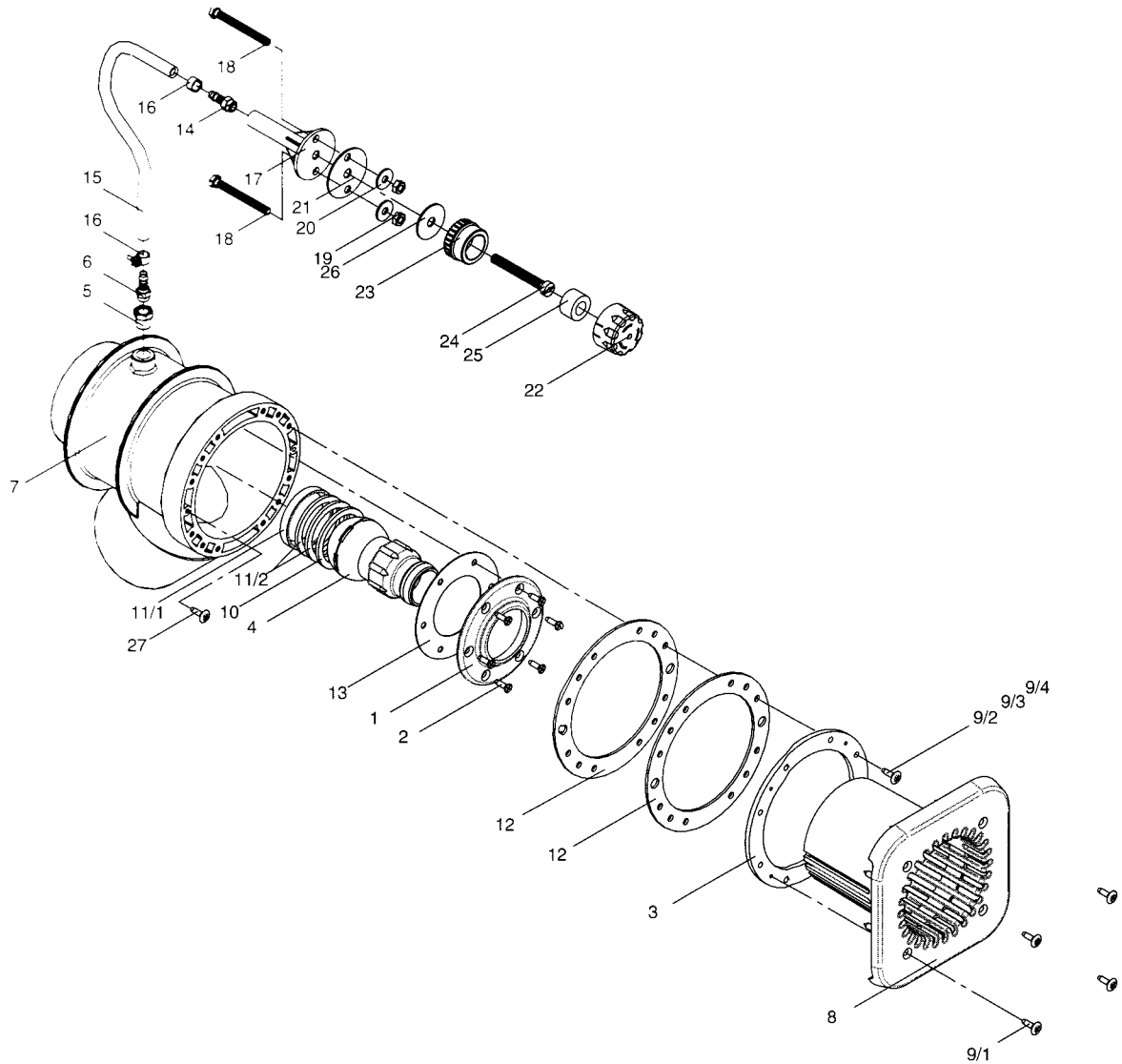
Can the air regulator be placed elsewhere? Yes, as long as it is not continuously flooded with water.

Can the pump be placed below water level? Yes. However, for best performance we recommend ordering pump for flooded suction (Model 21-80/33G) instead of self-priming (Model 21-80/33 GS). We recommend installing valves for ease of maintenance.

How far away can the air button function properly? A maximum of 50'. Consult factory for distances over 50'.

Do I need to install a motor starter? No the pump has a built-in thermal overload.

11. Parts list for BADU® STREAM II



Part #	Qty	Description	Part #	Qty	Description
1	1	Face Ring - Nozzle	17	1	Holder - Air Regulator
2	6	Screw - Tapping 5.5 x 19	18	2	Bolt - 1/4-20 x 1-1/2"
3	1	Clamping Ring	19	2	Nut - 1/4-20
4	1	Nozzle (adjustable flow)	20	2	Washer - 1/4"
5	1	Bushing	21	1	Gasket 60 x 11 x 2
6	1	Hose Connector 1/4"	(22-26)	1	Subassembly Complete
7	1	Housing	22	1	Top Part - Air Regulator
8	1	Square Cover	23	1	Bottom Part - Air Regulator
9/1	4	Bolt - M6 x 25	24	1	Bolt -Air Regulator M10 x 80
9/2	8	Bolt - M6 x 20	25	1	Hose Ring - Air Regulator 16 x 30 x 80
9/3	8	Bolt - M6 x 25	26	1	Gasket - Air Control 42 x 11 x 2
9/4	8	Bolt - M6 x 40	27	2	Screw - Jet Housing 14 x 1"
9/5	4	Bolt - M6 x 45		*1	Extension Ring (pre-glued) (not shown)
10	1	Seat - Nozzle			
11/1	1	Spacer Ring - 6.2			
11/2	2	Spacer Ring - 4			
12	2	Gasket - Clamping Ring			
13	1	Gasket - Face Ring			
(14-21)	1	Holder W/hose Subassembly			
14	1	Hose Fitting - 1/4"			
15	1	Hose - 8 x 3			
16	2	Hose Clamp 14/9			

Optional Winter Cover Kit:

Part #	Qty	Description
	1	Winter Plate (not shown)
12	1	Gasket - Clamping Ring
9/1	4	Bolt - M6 x 25

* Extension ring
An extension ring (not shown) is available (upon request).

12. Limited Warranty

The manufacturer supplies a limited warranty to the original consumer purchaser of the **BADUSTREAM II** on the following terms and conditions:

1. The **BADUSTREAM II** is warranted to be free from defects in material and workmanship for a period of twelve (12) months from the date that the **BADUSTREAM II** is originally installed.

2. Notwithstanding any provision herein to the contrary, the warranties and obligations hereunder shall not in any event extend for more than 2 years beyond the date of shipment of the **BADUSTREAM II** from Speck Pumps-Pool Products, Inc. in Jacksonville, Florida.

3. Warranty is void in the following cases: damages which result in whole or in part from: (a) careless or improper installation of the **BADUSTREAM II**; (b) improper or negligent use and maintenance of the **BADUSTREAM II**; (c) tampering with the **BADUSTREAM II** by unauthorized repair personnel; (d) ground movement; (e) substitution of parts and/or components.

4. The manufacturer's sole obligation hereunder shall be to replace or repair any defective **BADUSTREAM II**. The manufacturer reserves the absolute right to determine whether any defective **BADUSTREAM II** should be replaced or repaired.

5. Any customer who wishes to make a claim under this Limited Warranty shall notify Speck Pumps, of such claim by telephone or by mail. After the customer has been authorized to return a defective **BADUSTREAM II**, the customer must return the **BADUSTREAM II** to Speck Pumps.

Any goods returned to Speck Pumps without prior authorization will be returned to the shipper unopened. Speck Pumps shall not bear any costs or risks incurred in shipping a defective **BADUSTREAM II**, to Speck Pumps or in shipping a repaired or replaced **BADUSTREAM II** to a customer.

6. Speck Pumps will charge customers for all non warranty work which it may perform. Warranty work will not be performed until the customer has accepted the price quoted.

7. Except as specifically set forth above, no other warranties, whether express or implied, including without limitation, the implied warranties of merchantability and fitness for a particular purpose, are made by the manufacturer. In no event will the manufacturer be liable for any loss, including time, money, goodwill, lost profits and consequential damages based on contract, tort or other legal theory, which may arise hereunder or from the use, operation or modification of the pump, motor or associated parts. The maximum liability of the manufacturer hereunder shall not exceed the amount actually paid by the customer for the pump, motor and associated parts.

8. Some states do not permit limitations on the terms of implied warranties or on the recovery of incidental or consequential damages. Accordingly, the limitations contained in paragraph 7, may not apply to certain customers.

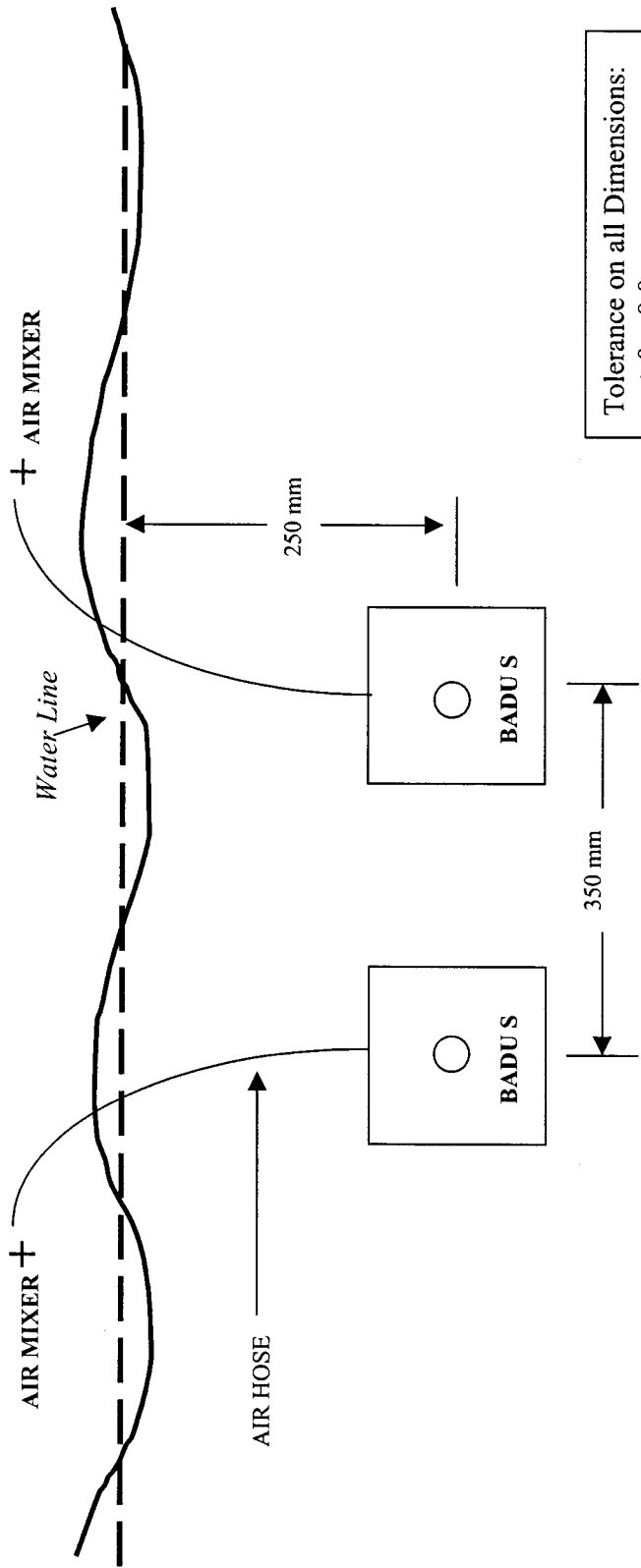
9. This warranty gives customers specific legal rights which may vary from state to state. The **BADUSTREAM II** is manufactured under license from **Speck Pumpen, GERMANY**.

Date of Installation: _____

Installed By: _____

For Service Call: _____

SAVE THESE INSTRUCTIONS!



Tolerance on all Dimensions:
 +0 0.0 mm
 - 25.0 mm equally

Pipe Recommendations

- Lineal Metres 3 – 5 mtrs
- Lineal Metres 5 – 7 mtrs
- Lineal Metres 7 – 9 mtrs
- Over 9 mtrs refer to Manufacturer

Pipe Diameter

Suction	Return
80 mm	80 mm
100 mm	80 mm
100 mm	100 mm

SPECK BADU SWIM SYSTEM – Water Line Graph