

# **IMPORTANT SAFETY INSTRUCTIONS**

## **INSTALLATION, OPERATING AND SERVICE MANUAL**

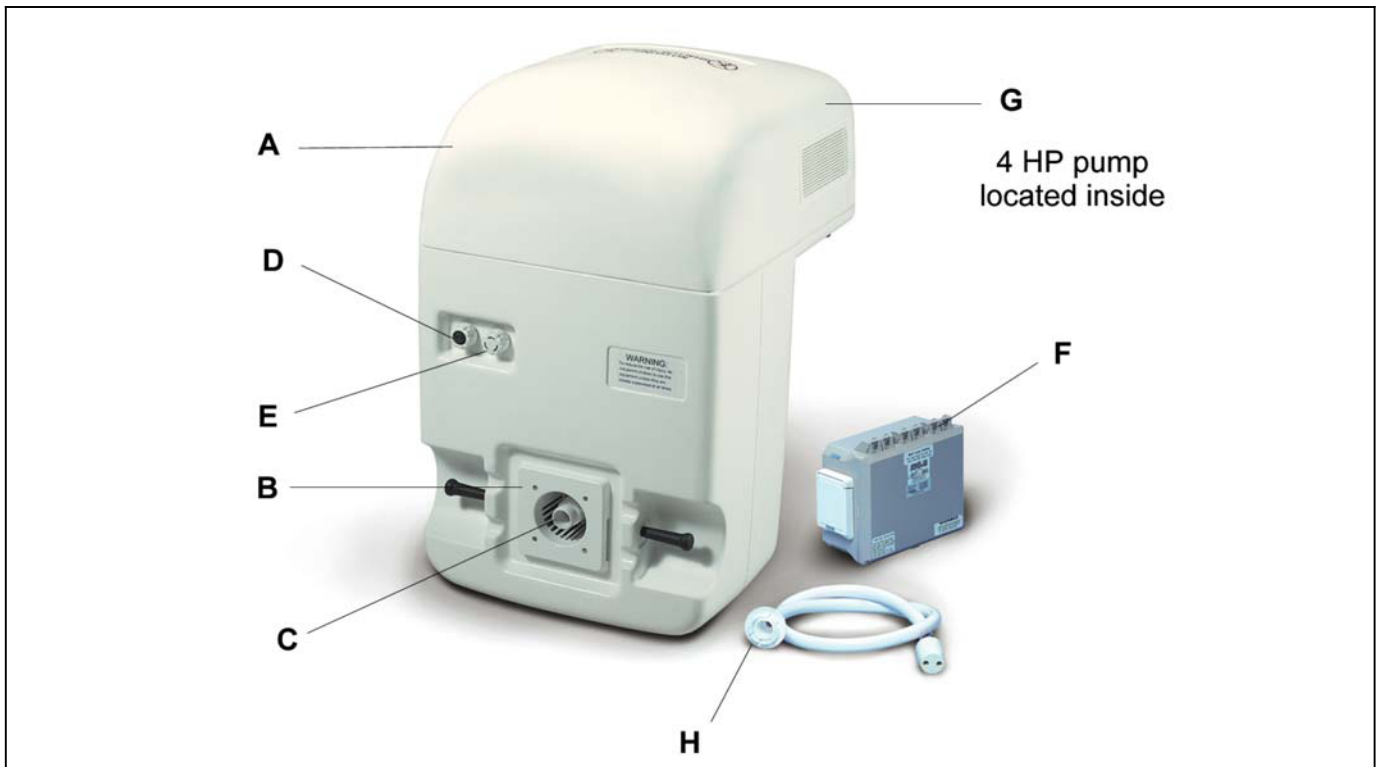
# **READ AND FOLLOW ALL INSTRUCTIONS**

# **BADUSTREAM Over-the-Wall (OTW)**

## **Counter Swim Unit**

U.S. Patent No. 3.977.027

# **OWNER'S MANUAL**



### **This is the BADUSTREAM Over-the-Wall (OTW) Counter Swim Unit**

This self-contained unit comes complete with pump, control box, unit-to-control box cable and mounting hardware. It requires no additional equipment for installation. Just supply pool, water and electricity.

#### **Key to illustration:**

**A.** One-piece body is molded of a heavy-duty polyethylene plastic immune to chemicals and environmental abuse, to provide a rugged and attractively styled water treadmill.

**B.** Square anti-entrapment cover provides undetectable pump suction.

**C.** Adjustable water flow jet nozzle.

**D.** Pneumatic on/off button guarantees complete separation between pool water and pump motor control.

**E.** Air regulator controls amount of air bubbles in water flow.

**F.** Control box with 24 volt door interlock switch.

**G.** Speck 4 HP self-priming, plastic pump, three phase with thermal overload (no motor starter required)

**H.** Pulsating massage hose can be attached to jet nozzle.

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**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:

## READ AND FOLLOW ALL INSTRUCTIONS.

- A. **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.
- B. **WARNING:** Consult your physician before exercising with the **OTW** unit or using the massage hose.
- C. **WARNING:** Stay alert, watch what you are doing and use common sense. **DO NOT** use **OTW** unit if you are tired and/or exhausted. **DO NOT** use **OTW** unit while under the influence of drugs, alcohol, or any medication.
- D. **WARNING:** **DO NOT** use or operate the **OTW** unit if the square, anti-entrapment cover is missing, broken or loose.
- E. **WARNING:** **DO NOT** step on or dive from the **OTW** unit.
- F. **WARNING:** **DO NOT** step on the handles.
- G. **WARNING:** **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. **All electrical equipment should be installed in accordance with local codes.**
- I. **WARNING:** Use **ONLY** copper conductors with a minimum 75 degrees **C** wire insulation.
- J. **WARNING:** Use **ONLY** non-conductive tubing to connect between air switch and air transmitter (button).
- K. **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 mm<sup>2</sup>) wire.
- L. **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 mm<sup>2</sup>) wire. Never use gas piping as an electrical ground.
- M. **TO REDUCE RISK OF ELECTRICAL SHOCK** ,turn all power off at breaker or service disconnect, before installing or servicing equipment.
- N. **TO REDUCE RISK OF ELECTRICAL SHOCK,** never attempt to jump, bypass or crossover any wiring connections. One wiring error will cause permanent internal damage.
- O. **A licensed electrician is required for all wiring connections.**
- P. **WARNING:** The control box is not provided with a ground-fault circuit-interrupter (GFCI).
- Q. **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.
- R. **KEEP AND READ ALL EQUIPMENT MANUALS. Adhere to all of their instructions.**
- S. **SAVE THESE INSTRUCTIONS!** Refer to them frequently and use them to instruct third party users.

# SAVE THESE INSTRUCTIONS

## 2. Introduction and Planning

The **Over-the-Wall Unit (OTW)** contains all necessary hardware for installation of the unit, except the electrical conduit and conduit fittings.

The distance between the **OTW** and the control box must be at least 5'. 25' of wire is provided. This length of wire allows for a distance of up to 20' depending on the location variables.

**Please check your local electrical codes.**

The 4 HP, self-priming, plastic pump has a three phase motor with thermal overload (no motor starter required). The 4 HP three phase motor draws a maximum of 10.0 amps at 380/460 V. The **OTW** unit requires a minimum circuit of 15 amps.

Use only the approved wire provided with the **OTW**.

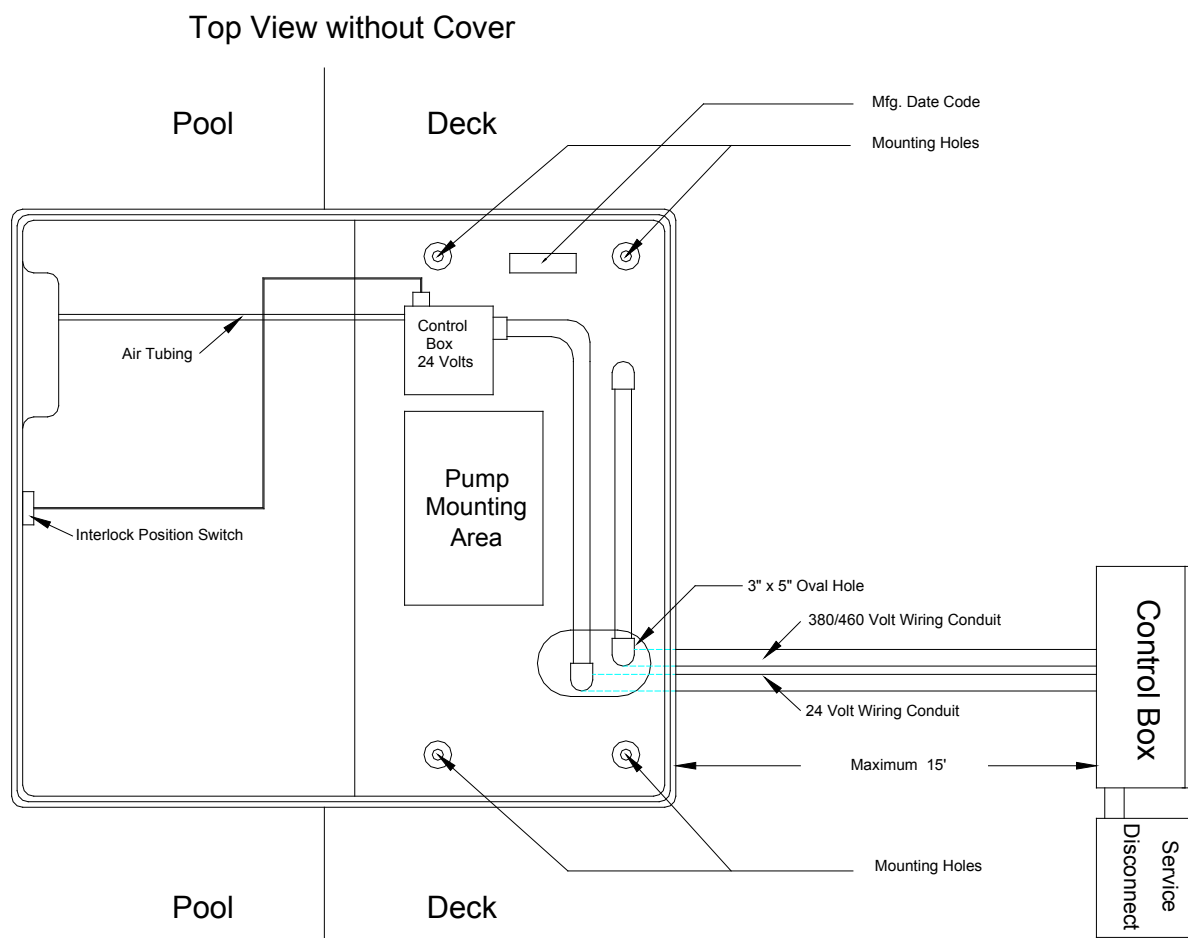
**A licensed electrician is required for all wiring connections.**

**What to look for when locating the unit:**

1. Main wiring and service panel.
2. Distance between the unit and it's control box.
3. Plenty of deck space to walk around the unit.
4. The unit can be installed in any size pool. We suggest a minimum pool size of 7 ft. wide, 14 ft. long and 3 ½ ft. deep in order to swim. The extra length allows the swimmer to comfortably drift back and swim upstream.

## 3. Installation and Mounting

Figure 1 - Top View



## Read Manual Completely Before Installing

- # The **OTW** contains all necessary hardware for mounting the unit to the deck.
- # Mounting the **OTW** may vary with each installation.
- # Review location for installing the **OTW**. Refer to **Section 2 . Introduction and Planning**

**Warning:** The **OTW** is heavy and awkward. The Unit weights 150 lbs and will require a two person crew to position. **DO NOT** lift unit by the handles. **DO NOT** drop the unit into the pool!

**A.** Remove the cover from the **OTW**, place the unit on the deck where it is going to be mounted. Use the unit as a template to locate the anchor holes and oval electrical 3" x 5" hole.

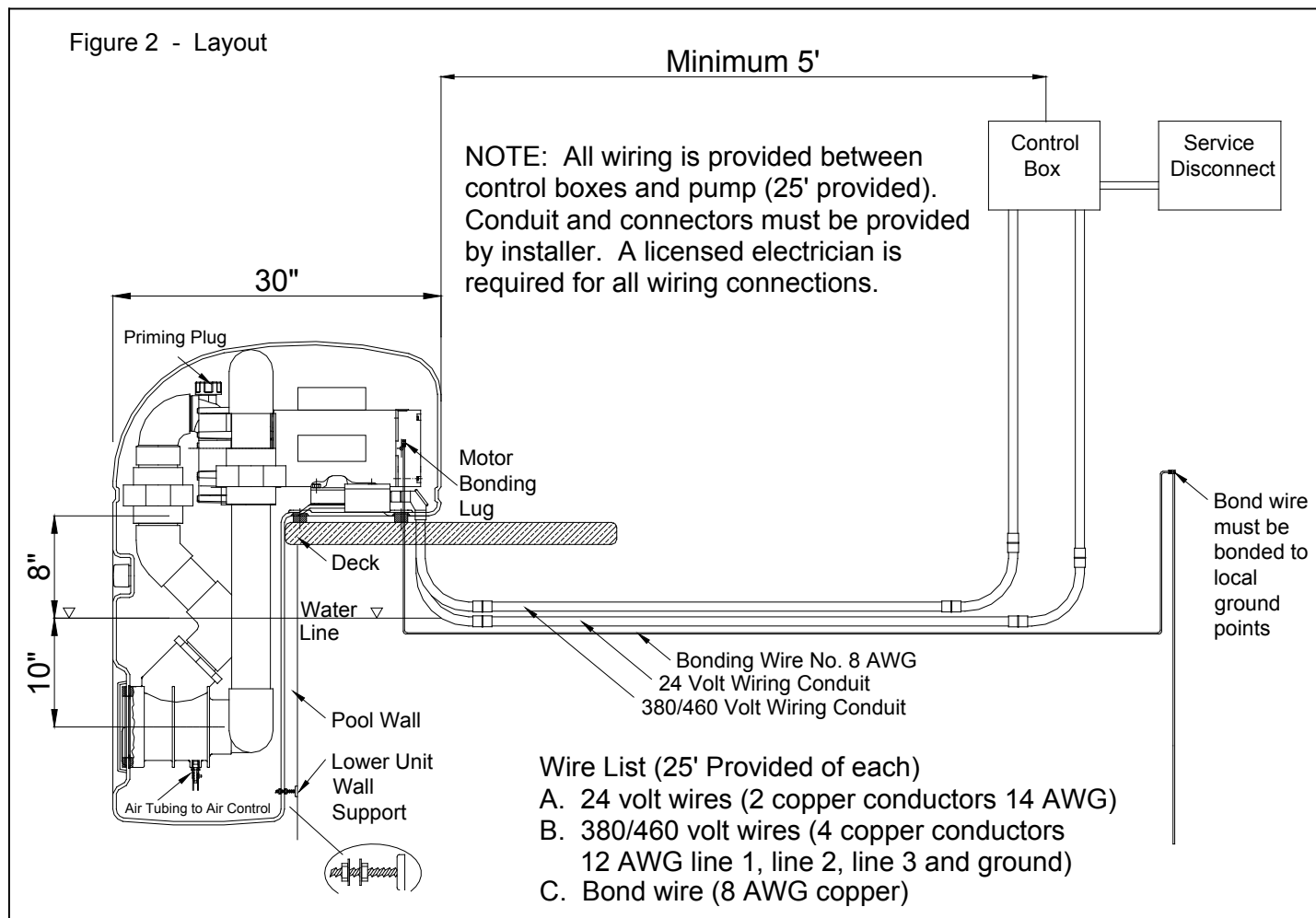
**B.** Using the masonry bit that is provided with the **OTW**, drill one of the back mounting holds first, then install brass insert into hole. (Note: Drill hole in concrete 1 1/4" deep.) Temporarily install M-8 bolt in insert to secure the **OTW** while the remaining holes are being drilled.

**C. NOTE:** The front two holes are not drilled in the **OTW** unit's base. To insure that the **OTW** is secured to the deck. The front two holes may be adjusted and drilled for brick or coping deck edged pools. Brick and coping maybe removed and replaced with concrete. Attempt to keep the **OTW** level.

**D.** Once the mounting holes are drilled and the electrical 3" x 5" oval hole has been marked, remove the **OTW**.

There are two conduit lines and a bonding wire that have to be placed under the deck for electrical service to the **OTW**. Two options are listed below.

- # Cut and install a piece of Deck-o-drain in the deck to allow the electrician to run conduit lines and bonding wire through it.
- # Cut the marked electrical 3" x 5" oval hole out. Jet one larger piece of pipe ( 2" minimum) under the deck, for the electrician to use as a casing pipe for two conduit lines and the bonding wire.



**Mounting the OTW to the deck may vary with each installation.**

- # **Decks with coping:** The coping has to be removed where the **OTW** is being installed.
- # **Brick decks:** The brick has to be removed and replaced with concrete.
- # **Wood decks:** The **OTW** has to be bolted all the way through the wood. (Hardware not provided for this installation)

**The center of the housing (the nozzle) should be 10" to 13" below the water level for maximum efficiency.**

#### **Top Deck to Water Line 7"**

Pools that have approximately 7" between the top of the deck and water level.

#### **Anchor Parts:**

	Qty
# Brass insert	4
# Rubber mount w/threaded stud	2
# Lock washer	4
# Bolt M8 x 20mm	2
# Bolt M8 x 40 mm	4
# Fender washer	4

#### **Instructions:**

1. Press the brass insert into the pre-drilled hole.
2. Install the rubber mount with threaded stud into the two brass inserts at rear of unit. Tighten down completely.
3. Place the **OTW** on the rubber mounts. Install flat washers, lock washers and bolts. Use M8 x 20mm bolts for the rear and M8 x 40mm for the front of the installation. Tighten all bolts completely.
4. Adjust lower wall supports to level **OTW**.

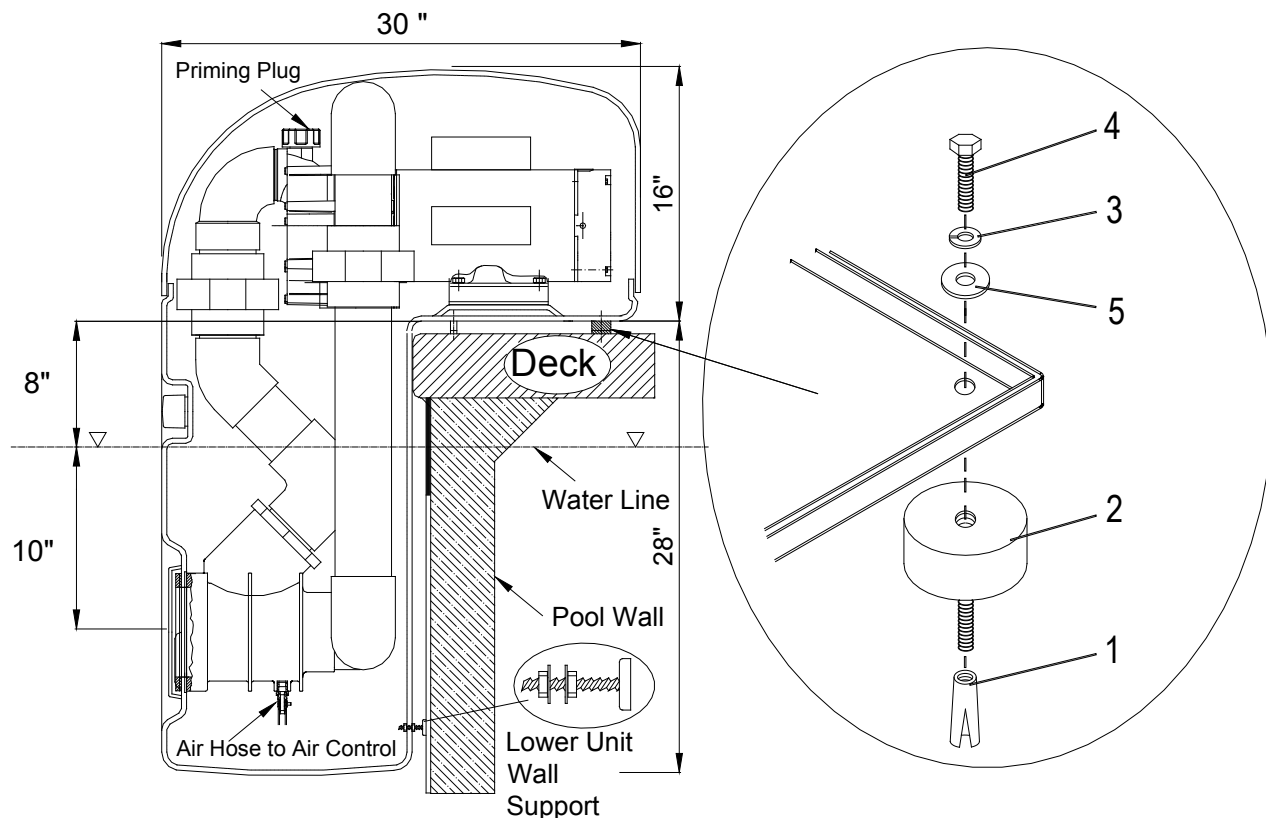
**NOTE:** If the slope of the deck is greater than 1" in 12" use the rubber mount on the rear mounting holes only, i.e. mount the front of unit directly to the deck. If the slope is less, do not use rubber mounts. Use the four M8 X 40 bolts to secure **OTW** to deck.

#### **Top Deck to Water Line 3" to 5"**

Pools that have approximately 3" - 5" between the top of the deck and water level require a customizing kit with spacers to raise the **OTW**.

Please call for optional lift kit. Phone number is available on back cover of this manual.

Figure 3 - Side View Cutaway



# A licensed electrician is required for all wiring connections.

**Note:** All wiring is provided between control boxes and pump.  
Use only the approved wire provided with the unit. The three wire sets are labeled A, B, C.

**Wire Set A** consists of 2 copper conductors 14 AWG, and is used for the 24 volt connections.

1. Each wire is labeled for each terminal connection.
2. Connect each wire in the 24 volt control box to terminals No.1 and No.2.
3. Connect each wire in the **OTW-98HV** control box to terminals No.8 and No.9. Refer to wiring diagram.

**Wire set B** consists of 4 copper conductors 12 AWG, and is used for the 380/460 volt connections. Each wire is labeled for each terminal connection.

1. Connect load 1 black wire to line 1 connection at the pump motor and the other end of wire to terminal No.4 (load 1) in the **OTW-98HV** control box.

2. Connect load 2 red wire to line 2 connection at pump motor and the other end of wire to terminal No.5 (Load 2) in the **OTW-98HV** control box.

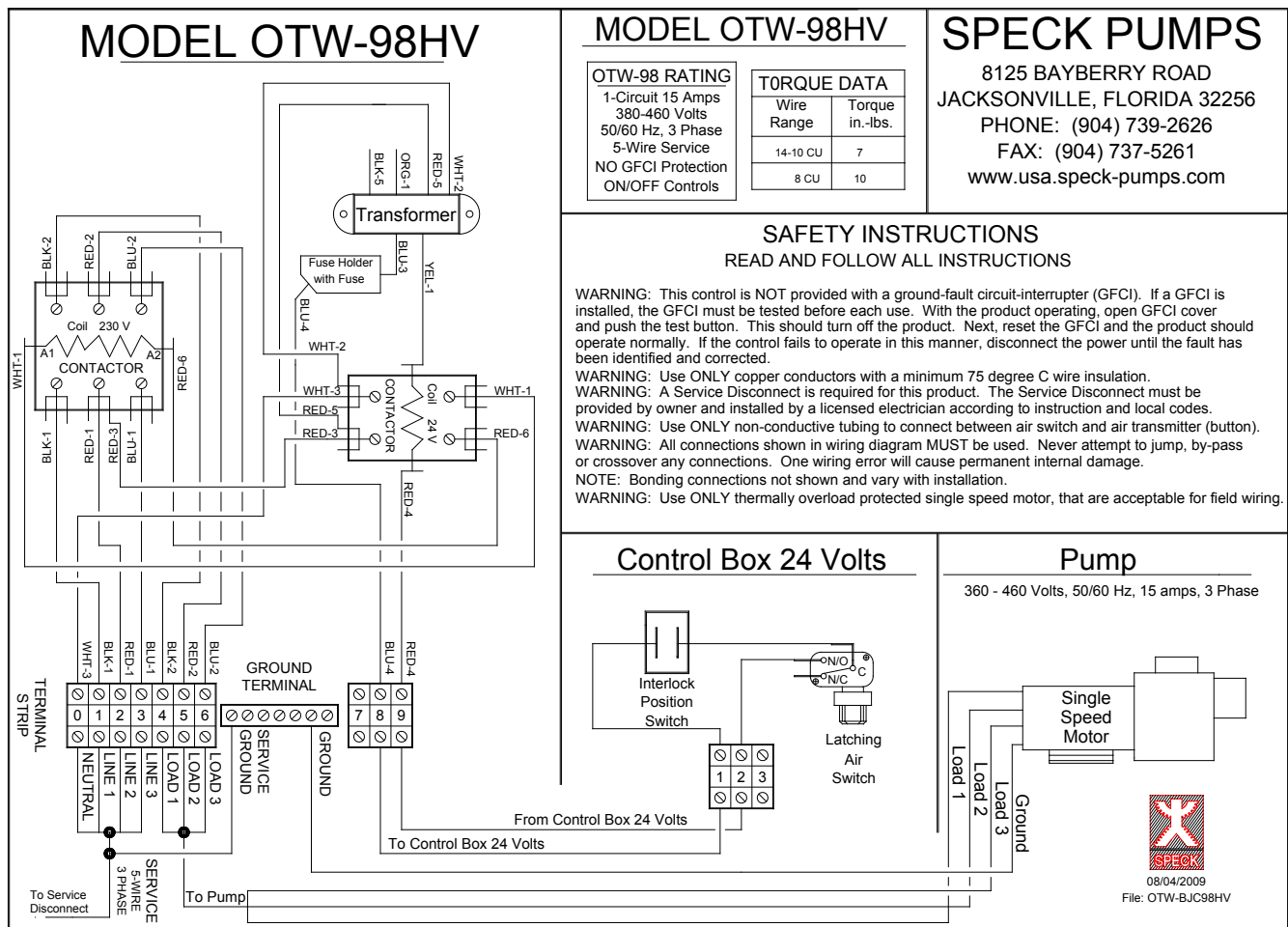
3. Connect load 3 blue wire to line 3 connection at pump motor and the other end of the wire to terminal No 6. (Load 3) in the **OTW-98HV** control box

4. The green ground wire is connected to ground screw in pump motor and ground terminal in the **OTW-98HV** control box. Refer to wiring diagram.

**Wire Set C** consists of bonding wire 8 AWG.

1. Connect bonding wire to bonding lug on pump motor and the other end to an approved local ground point.

Refer to Figure 2, Page 5.



## 5. OPERATING INSTRUCTIONS

1. Remove cover from the **OTW** unit.
2. Remove red filler plug on pump and fill pump with water.
3. Replace red filler plug.
4. Replace **OTW** cover.

**NOTE:** The **OTW** cover must be installed before pump will start.

Push pneumatic button on **OTW** housing.

For the first start-up allow approximately 2 minutes for the pump to prime.

If the pump does not prime repeat above instructions and allow the pump to run for an additional five minutes.

**OTW's** adjustable flow nozzle enables swimmer to regulate the volume of water released through the jet.

Turning off the nozzle reduces the flow.

The swivel nozzle of the **OTW** can be positioned in various directions, allowing swimmers to use various swim styles.

The air regulator permits a controlled mixture of air into water flow and creates a unique, invigorating bubble bath effect.

The pulsating massage hose can be attached to the nozzle for an invigorating massage.

**Consult your physician before using the massage hose.**

### Directions for use:

**TO REDUCE THE RISK OF INJURY**, do not permit children to use the massage hose with pulsation unless they are closely supervised at all times.

Slip the massage hose connection on the nozzle.

- Slide the ring to secure the nozzle.
- Close air regulator.
- Reduce the volume of water by turning the adjustable flow nozzle clockwise.

**Consult your physician before attempting any strenuous exercise.**

To start swimming, jogging or running, it is suggested that the nozzle should be pointed slightly upward so that the water "breaks" approximately 3 ft in front of the **OTW** unit.

Start swimming with only minimal force in arms and legs until you feel yourself drifting backward, then add force and swim upstream until a proper balance is found between force and endurance.

Find a pace that you can keep up for at least 20 minutes.  
**OUT PACING THE CURRENT IS ALWAYS POSSIBLE.**

Keep in mind that this unit is designed for a balanced work-out. The idea is to continue exercise for an extended period of time.

Under certain conditions it is possible that the current "drifts off" to 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 OTW unit if the square, anti-vortex cover is missing, broken or loose.**

## 6. Winterizing

In areas subject to freezing water temperatures, remove the unit, and store in a dry and frost free place. Do not store with pool chemicals.

# SAVE THESE INSTRUCTIONS



# Model 21-80GS



PART NUMBER	DRAWING NUMBER	QTY	DESCRIPTION
2923592200	922	1	NUT - IMPELLER - PLASTIC W/BRASS INSERT M12
5879340600	920.5	8	NUT - CASING BOLT M6 SS
2991400024	920.4	2	WASHER - CASING BOLT (1/4") TOP 2 BOLTS ONLY
2922091600	916	1	FILLER PLUG (3/4")
2923241231	412.3	1	O-RING - FILLER PLUG 24 x 3.5mm
2923541220	412.2	1	O-RING - CASING DRAIN PLUG 12 x 2.5mm
2923591200	912	1	CASING DRAIN PLUG (1/4") HEX HEAD
2923291000	914.1	8	BOLT - CASING, PHILLIPS M6 x170mm SS
2923190120	901.2	4	BOLT - MOTOR, HEX M8 x 16mm
2923151601	516	1	V-RING 18mm
2920343310	475	1	MECHANICAL SEAL (20mm) COMPLETE
2923541229	412.6	1	O-RING - SHAFT 16.9 x 2.75mm VITON
2923241200	412	1	O-RING - CASING 210 x 4mm
2923141240	411	1	SHAFT WASHER 14/22 IT 400
2923141000	410	1	GASKET - SEAL HOUSING
2923223013	230.6	1	IMPELLER 3.0 HP SF1.15 106-122 / 20mm
2923223014	230.7	1	IMPELLER 4.0 HP SF1.25 113-122 / 20mm
2923223035	230.8	1	IMPELLER 6.0 HP SF1.0 120-122 / 20mm
2923116100	161	1	SEAL HOUSING
2923116010	160.1	1	ALUMINUM FLANGE
2923210722	107	1	DISCHARGE HOUSING
2923210620	106	1	SUCTION HOUSING
2500223433	721.3	2	ADAPTOR - CASING (2-3/4" x 3" NPT / 4")
2500200900	721	2	UNION PACKAGE COMPLETE 4"
2902099800	NOT SHOWN	1	SPANNER UNIONS
2902041252	NOT SHOWN	2	O-RING 123 x 6mm (UNION)
2902072104	NOT SHOWN	2	UNION END 114mm /4"
2902072112	NOT SHOWN	2	NUT (UNION)
2923141210	NOT SHOWN	2	O-RING 70 x 4.5 mm (ADAPTOR)
2923172101	NOT SHOWN	2	ADAPTOR/UNION

# Model 21-80GS



4" UNION

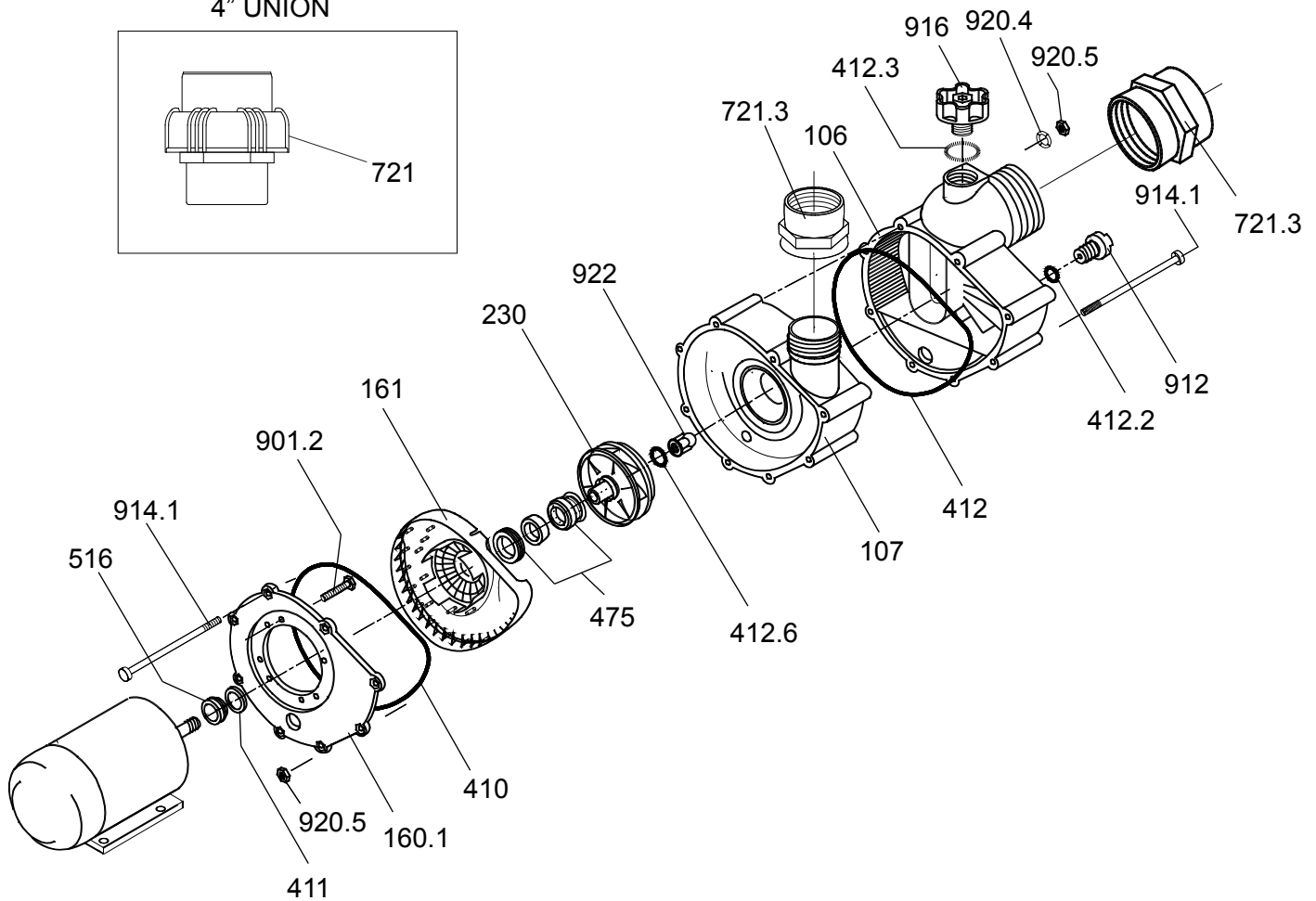
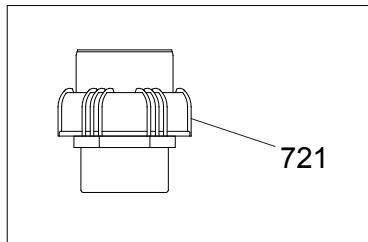
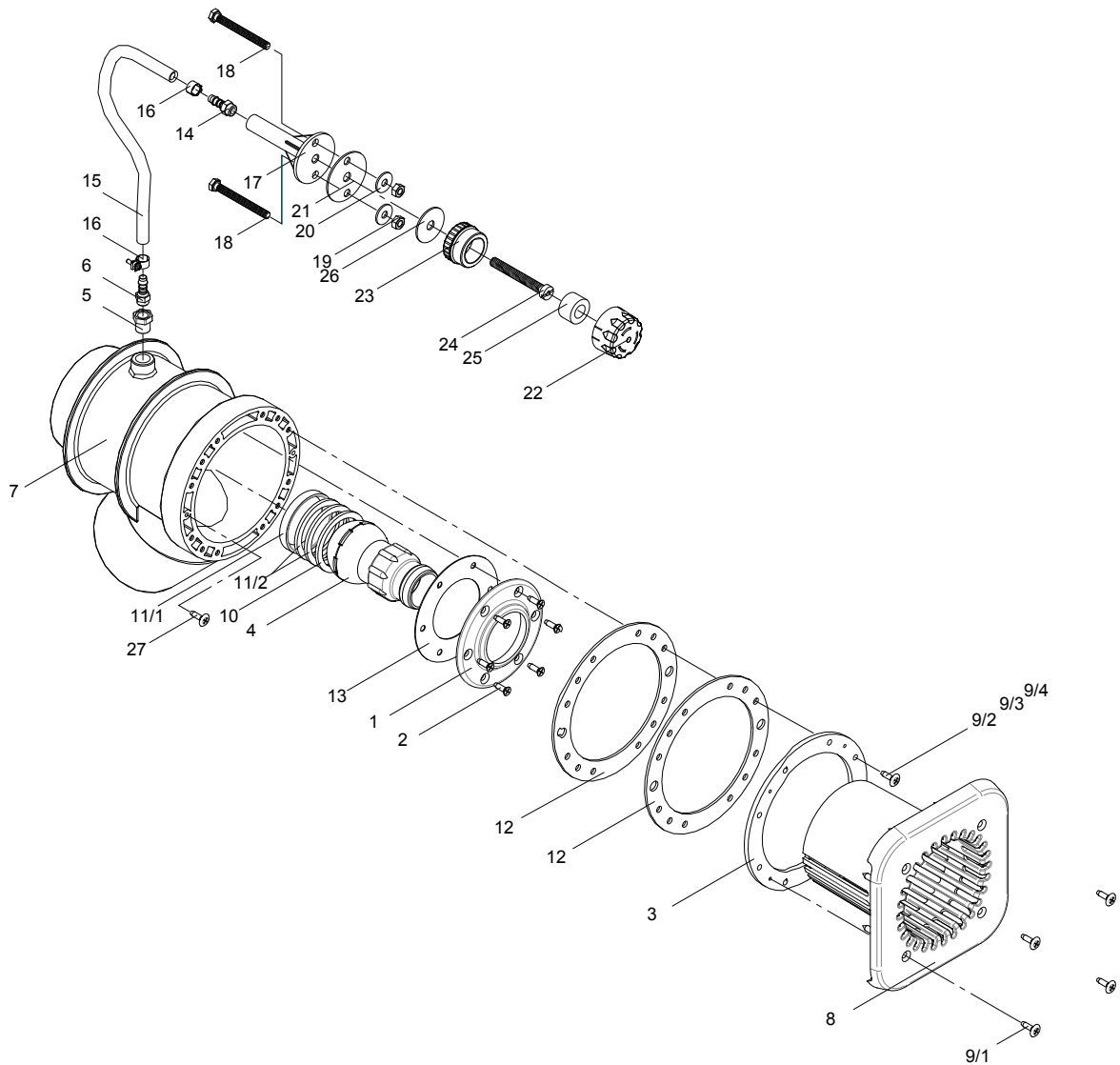


Figure 6 - OTW Parts View



Part #	Qty	Description
1	1	Face Ring - Nozzle
2	6	Screw - Tapping 5.5 x 19
3	1	Clamping Ring
4	1	Nozzle (adjustable flow)
5	1	Bushing
6	1	Hose Connector 1/4"
7	1	Housing
8	1	Square Cover
9/1	4	Bolt - M6 x 25
9/2	8	Bolt - M6 x 20
9/3	8	Bolt - M6 x 25
9/4	8	Bolt - M6 x 40
9/5	4	Bolt - M6 x 45
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"

Part #	Qty	Description
15	1	Hose - 8 x 3
16	2	Hose Clamp 14/9
17	1	Holder - Air Regulator
18	2	Bolt - 1/4-20 x 1-1/2"
19	2	Nut - 1/4-20
20	2	Washer - 1/4"
21	1	Gasket 60 x 11 x 2
(22-26)	1	Subassembly Complete
22	1	Top Part - Air Regulator
23	1	Bottom Part - Air Regulator
24	1	Bolt -Air Regulator M10 x 80
25	1	Hose Ring - Air Regulator 16 x 30 x 80
26	1	Gasket - Air Control 42 x 11 x 2
27	2	Screw - Jet Housing 14 x 1"
	*1	Extension Ring (pre-glued) (not shown)

# READ THIS MANUAL CAREFULLY

## BEFORE USING THE SPECK PUMP



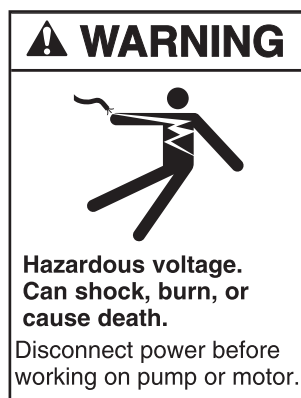
### **DANGER: DO NOT BLOCK SUCTION**



1. Pump suction is hazardous and can trap and drown or disembowel bathers.
2. Blocking suction with body may cause severe or fatal injury.
3. Do not use or operate swimming pools, spas or hot tubs if a suction outlet cover is missing, broken or loose.
4. All suction outlets covers must be maintained. They must be replaced if cracked, broken or missing.
5. All suction outlets must have correctly installed screw-fastened covers in place.
6. The pump suction system must provide protection against the hazard of suction entrapment or hair entrapment /entanglement.
7. Provide at least two hydraulically balanced (3' apart) main drains, with covers as suction outlets for each circulating pump suction line.



### **WARNING: RISK OF ELECTRICAL SHOCK**



1. To avoid dangerous or fatal electrical shock, turn OFF power to motor before working on electrical connections.
2. To reduce the risk of electrical shock, unplug motor before working on pump or motor.



## **SAVE THESE INSTRUCTIONS!**

## FREQUENTLY ASKED QUESTIONS

**What size pool do I need?** The BaduStream Over-The-Wall (OTW) can be installed in any size pool. However, we recommend a minimum length of 14' and a minimum width of 7'. The depth should be at least 3 ½' in order to swim.

**How many amps does the pump need to run at?** Maximum 10.0 amps @ 380/460V.

**What size breaker do I need?** You must use a 15 amp

breaker.

**Does it matter if center of the nozzle is installed higher or lower than the manual states?** Yes, the center of the housing should be 10" to 13" below the water level for maximum efficiency.

If your installation differs, refer to Page 6 - Top deck to Water Line 3" to 5".

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## Limited Warranty

The manufacturer supplies a limited warranty to the original consumer purchaser of the **BADUSTREAM Over-The-Wall (OTW)** on the following terms and conditions.

1. The **OTW** is warranted to be free from defects in material and workmanship for a period twelve months from the date that the **OTW** 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 **OTW** 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 **OTW**; (b) improper or negligent use and maintenance of the **OTW**; (c) tampering with the **OTW** by unauthorized 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 **OTW**. The manufacturer reserves the absolute right to determine whether any defective **OTW** 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 **OTW**, the customer must return the **OTW** 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 **OTW** to Speck Pumps or in shipping a repaired or replaced **OTW** to a customer.

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

**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. Customers may have other rights, which vary from state to state.

Date of Installation:

Installed by:

For Service Call:

8125 Bayberry Road  
Jacksonville Florida 32256  
Phone: (904) 739-2626  
Fax: (904) 737-5261  
Website: [www.usa.speck-pumps.com](http://www.usa.speck-pumps.com)

