

### Einbau-Gegenstrom-Schwimmanlagen

Submerged counter swim units Contre-courant encastrés



### Einbau-, Montage- und Betriebsanleitung

Installation, Mounting and Operating instructions Instructions de montage et notice d'utilisation







## Foreword

You have chosen a BADU<sup>®</sup> Jet vogue or BADU<sup>®</sup> Jet wave - thank you for your confidence.

The submerged counter swim unit is a modern quality product. We recommend that you carefully read through these operating and installation instructions to ensure safe and smooth operation and long-term enjoyment with the product.

Please contact us if you have any further questions about your submerged counter swim unit. Questions, suggestions and constructive criticism are always welcome.

#### Speck Pumpen Verkaufsgesellschaft GmbH

## **Original installation and operating instructions**



#### 1. General

Speck Pumpen Verkaufsgesellschaft GmbH, Neunkirchen am Sand Country of origin: Federal Republic of Germany Fields of use: For wall-mounting in all types of pool, as a fitness attraction, as a wave or air bubble bath, underwater massage (following medical advice), counter current swimming.



#### 2. Safety

This Operating Manual contains basic instructions that are to be observed during installation, operation and maintenance. It is therefore imperative that this Operating Manual is read by the responsible personnel/ operator prior to assembly and commissioning. It must be kept available at the installation site at all times.

It is not only the general safety instructions contained under this main heading "Safety" that are to be observed, but also the specific information provided under the other main headings, e.g. for private use.

#### 2.1 Identification of safety instructions in the Operating Manual

The safety instructions contained in this Operating Manual, non-compliance with which would affect safety, are identified by the following symbol:



Safety sign to DIN 4844 - W 9

In case of electrical hazards they are specially marked with:



Safety sign to DIN 4844 - W 8

For safety warnings which, when ignored, may constitute a hazard for the machine and ist functions, the word

is added

CAUTION

Signs affixed to the machine itself, e.g.

- arrow indicating the direction of rotation

- symbols indicating fluid connections

must be closely observed and kept fully legible.

#### 2.2 Staff qualification and training

The operation, maintenance, inspection and installation personnel must be adequately qualified for these activities. The operator must specify sphere of responsibility, jurisdiction and supervision of the personnel. If a particular member of staff lacks the requisite knowledge, they must be trained and instructed. If necessary, this training and instruction can be provided by the manufacturer/supplier on behalf of the machine operator.

The operator must also ensure that its personnel fully understand the content of the operating instructions.

#### 2.3 Hazards caused by failure to comply with the safety instructions

Failure to comply with the safety instructions may pose a risk for both personnel and also for the environment and the machine. Failure to comply with the safety instructions may invalidate any damage claims.

Specifically, non-compliance can pose the following risks:

- Failure of important machine/unit functions
- Failure of specified maintenance and repair procedures
- Exposure of persons to electrical, mechanical and chemical hazards
- Risk to the environment owing to hazardous substances being released
- Damage to installations and buildings

#### 2.4 Safety at work

The safety instructions contained in the Operating Manual, the relevant national accident prevention regulations and any other service and safety instructions issuedby the operator must be observed.

#### 2.5 General safety instructions for the operator/user

If hot or cold machine components involve hazards, they must be guarded to prevent accidental contact. Guards for moving parts (e.g. coupling) must not be removed when the machine is in operation. Any leakage (e.g. from the shaft seal) of hazardous fluids (e.g. explosive, toxic, hot) must be drained away to prevent risk to persons or the environment. Statutory regulations must be observed. Electrical hazards must be prevented (for details see VDE Specifications and the by-laws of the local power supply utilities).

Attention must be paid to ensuring proper use by the swimmers.

The submerged counter swim unit is suitable only for countercurrent swimming and massaging. Any other use or alterations not approved by the manufacturer will invalidate any warranty or liability claims.

The optional remote control may be used only in the vicinity of the pool (visual range to the pool).

The nozzle jet is extremely powerful. Always reduce the jet pressure before massaging. Do not direct the full massage pressure against soft body parts. Switch off the unit to swivel the ball nozzle. For massaging large areas, reduce the flow rate. Switch off the unit to mount and remove the massage hose.

For a spot massage, keep the massage hose jet firmly under water in your hand. Guide the massage hose nozzle at a distance to the required positions. Never approach the suction openings with loose long hair.

#### Care must be taken to ensure that the water temperature does not exceed 35°C!

#### 2.6 Safety Instructions for maintenance, inspection and assembly work

The operator must ensure that all maintenance, inspection and assembly work is performed by authorised and qualified personnel who have adequately familiarised themselves by studying this Operating Manual in detail. The accident prevention regulations must be observed. Work on the machine is permitted only when it is at a standstill.

The procedure for bringing the machine to a standstill described in the Operating Manual must be closely observed.

Pumps and pump units which convey hazardous media must be decontaminated. Immediately on completion of work, all safety and protective facilities must be re-installed and rendered operational again.

Prior to restarting the machine, the instructions listed under 6. "Startup" must be observed.

#### 2.7 Unauthorised alterations and production of spare parts

Alterations or modifications to the machine are permitted only following consultation with the manufacturer.

In the interest of safety, genuine spare parts and accessories authorised by the manufacturer should be used. The use of alternative parts may exempt the manufacturer from any liability.



#### 2.8 Unauthorised modes of operation

The reliability of the delivered machine is guaranteed only if it is used in the manner intended as described in Section 1 "General" of the Operating Manual. The limit values specified in the datasheet must never be exceeded under any circumstances.

Referenced standards and other documents

DIN 4844 Part 1 Safety descriptions; safety signs W 8 Supplement 13

DIN 4844 Part 1 Safety descriptions; safety signs W 9 Supplement 14

#### 3. Transport and intermediate storage

To prevent damage to and loss of individual components, the original packaging must not be opened until just before installation.

#### 4. Description

The BADU Jet vogue / wave is a countercurrent swim unit that can be integrated into any pool. A powerful jet pump is connected via a suction and pressure pipe to the plastic jet housing, which is inserted flush into the pool wall (no risk of injury as no parts protrude into the pool). The pool water is drawn into the housing at low speed by the jet pump through the outer circumferential

The pool water is drawn into the housing at low speed by the jet pump through the outer circumferential channel and it is returned into the pool through the nozzle under high pressure.

The jet pump is switched on and off by the pneumatic button integrated into the nozzle housing. The delivery rate and hence the effect of the countercurrent unit can be individually controlled by the adjustable nozzle. The air regulator can be used to admit air to the nozzle current.

To create a lighting effect, the BADU Jet vogue / wave features integrated underwater illumination. The illuminant is a 2.5 Watt long-life LED lamp. This illumination is not a substitute for the swimming pool illumination. The illumination can be switched on and off using the left button inside the nozzle housing.

A remote control, a handle, a detachable massage nozzle, massage hose, pulsating massage hose and a detachable pulsator can also be supplied as options.

#### 5. Planning, setup, fitting, installation

Control boxes and pumps must be installed in a dry, well aerated and ventilated room. Condensation must be prevented.

#### An adequately dimensioned floor drain must always be provided to prevent backup when draining off any leakage, overflow or other water volumes accumulating in the event of a malfunction!

To guarantee sound functioning of the pneumatic buttons, the clearance between pool and control box must not exceed 10 m.

The pneumatic hoses must be laid in a protective hose so that they can be easily replaced at a later time.

If the pump is installed further away, the pipeline must be dimensioned accordingly so as to guarantee a practically loss-free current.

Use bends instead of angles where possible! Otherwise the countercurrent swim unit has less effect.



#### Target flow rate approx. 58 m³/h

Pipeline length up to		5 m	5-7,5 m	7,5-10 m
	Suction line	d 140	d 140	d 140
	Pressure line	d 140	d 140	d 140

# Caution! The jet housing is made from ABS. If the suction and pressure connections are glued in-situ, allow for a curing time of at least 12 hours!

The total salt concentration in the swimming pool water must not exceed 0,5% (equivalent to 5g/l).

#### The electrical connection must be made by a specialist!

Care must be taken to ensure that the electrical installation has an isolator, which permits disconnection from the mains with at least 3 mm contact distance for each pole.

The countercurrent swim unit is constructed to safety class 1. The ambient temperature must not exceed 40°.

The three-phase and ac motors installed in the countercurrent swim unit

are safeguarded by an appropriate motor protection switch in the original control box. Prior to commissioning, the set value must be compared to the value stated on the rating plate.

The electrical plant must be protected in accordance with the valid standard with a fault-current circuit breaker  $I_{\Delta N} \leq 30$  mA. The cable connecting pump and control box should be of the type H07 RNF 4G 1,5.

#### 6. Startup

With the 3-phase motor, the direction of rotation must be checked by briefly switching on. The direction of rotation must correspond to the arrow affixed to the fan hood.

This direction of rotation check is especially important with three-phase motors, as their pump can also run in the wrong direction. If this is the case, 2 phases are to be swapped so that this check can be repeated.

#### 7. Service / maintenance

If there is a risk of frost, the water level in the swimming pool must be lowered to the bottom edge of the jet housing so that the suction and pressure lines can be drained. It is advised to dismantle the pump during winter and store it in a dry room.

The Badu Jet vogue cover is made of stainless steel. Dissolved substances in the water may stain the cover and cause corrosion. Therefore the cover has to be cleaned occasionally.

#### 8. Malfunction

The wet-end of the pump is separated from the motor by a mechanical seal. If this seal is leaking, water drips from under the pump; in that case said mechanical seal must be replaced by an expert.

To dismantle the pump, proceed as follows:

Switch off the pump and disconnect safely from the mains. Replacement should only be effected by a specialist. Detach the pump, which is connected to the suction line by means of a threaded union and to the pressure line by means of a rubber elbow, from the jet housing and replace the mechanical seal.



### Suggested installation in concrete pools



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Place the gasket with nobs (26) onto the jet housing (1), push in and position at the back of the pool wall.

Working from the front, use the 10 self-tapping screws (52) to attach it to the pool wall via the clamping ring (28) and the gasket for clamping ring (27).

#### Caution! Tighten the self-tapping screws by hand. Do not use force!

Caution! The jet housing is made from ABS. If the suction and pressure connections are glued in-situ, allow for a curing time of at least 12 hours!



Place the gasket with nobs (26) onto the jet housing (1), push in and position at the back of the pool wall.

Working from the front, fasten the jet housing (1) to the pool wall using the 2 self-tapping screws (103).

Then place the liner and use the 10 self-tapping screws (52) to attach the jet housing (1) to the pool wall via the clamping ring (28) and the gasket for clamping ring (27).

#### Caution! Tighten the self-tapping screws to just hand tight. Do not use force!

Caution! The jet housing is made from ABS. If the suction and pressure connections are glued in-situ, allow for a curing time of at least 12 hours!



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### Final assembly of the BADU®Jet vogue

- 1) After installing the jet housing.
- 2) Glue in the cable protection hose and the air line hose. (Fig. 9)
- 3) Mount the suction housing (107) onto the clamping ring. Respect the installation position (Fig.10)
- 4) Place the nozzle housing (102.1) onto the jet housing (1).
- 5) Insert the pneumatic hoses and cables of the floodlight through the protective hose (14) and seal using the screwed cable gland (20).
- 6) Use clamp (8) to fasten the air hose to the factory-mounted air regulator (21).
- 7) Fasten the nozzle housing (102.1) to the jet housing (1) using the 4 self-tapping screws (95). **Tighten the self-tapping screws to just hand tight. Do not use force!**
- B) Guide the pneumatic hoses through the openings in the stainless steel trim (93) (light ON-OFF left; pump ON-OFF right) and fasten to the corresponding buttons using the hose clamps (46). (Fig. 12)
- 9) Place the stainless steel trim (93) on the suction housing and fasten to the nozzle housing using the two screws (49). Tighten the self-tapping screws to just hand tight. Do not use force! Insert the two pneumatic buttons through the trim in the nozzle housing and turn clockwise to lock. (Fig. 13)
- Attaching the light cover (110) also fastens the stainless steel trim (93). To do this, place the light cover (110) over the bullet nozzle and into the nozzle housing and fasten using the two screws (112). Tighten the self-tapping screws to just hand tight. Do not use force! (Fig. 13)
- 11) Fasten the decorative caps (113) into the light cover (110) as shown in Fig. 14 A-C. Note that there are decorative caps for left (L) and right (R).
- 12) Attach cap for air regulator (Fig. 15)
- 13) Connect the jet pump (92) with the half fitting (98, 99, 100), the rubber bracket (79) and the corresponding clamps (75) on the suction and pressure side to the jet housing.
- 14) Connect the pump motor according to the wiring diagram.
  Ensure the correct direction of rotation with the three-phase motor!
  Perform the rotation check only when the pump is completely full of water.
- 15) Switching on and off from the pool using pneumatic buttons:

Pump ON-OFF (38/1) - right button

Light ON-OFF (38/2) - left button

16) The air regulator (21) can be used to admit air to the nozzle.

The jet housing is made from ABS. If the suction and pressure connections are glued in-situ, allow for a curing time of at least 12 hours!

Please observe!

The use of a lubricant is recommended to make it easier to insert the pneumatic hoses and the floodlight cable through the protective hose.











### Final assembly of the BADU®Jet wave

- 1) After installing the jet housing.
- 2) Glue in the cable protection hose and the air line hose. (Fig. 9)
- 3) Place the nozzle housing (102.1) onto the jet housing (1).
- 4) Insert the pneumatic hoses and cables of the floodlight through the protective hose (14) and seal using the screwed cable gland (20).
- 5) Use clamp (8) to fasten the air hose to the factory-mounted air regulator (21).
- 6) Fasten the nozzle housing (102.1) to the jet housing (1) using the 4 self-tapping screws (95). (Fig. 16)
  Tighten the self-tapping screws to just hand tight. Do not use force!
- Guide the pneumatic hoses through the openings in the trim (93) (light ON-OFF left; pump ON-OFF right) and fasten to the corresponding buttons using the hose clamps (46). (Fig. 17)
- 8) Fasten trim (93) to the nozzle housing using the four screws (113).
  Tighten the self-tapping screws to just hand tight. Do not use force! Insert the two pneumatic buttons through the trim (93) in the nozzle housing and turn clockwise to lock. (Fig. 18)
- 9) Mount the cap for the air regulator. (Fig. 19)
- 10) Connect the jet pump (92) with the half fitting (98, 99, 100), the rubber bracket (79) and the corresponding clamps (75) on the suction and pressure side to the jet housing.
- 11) Connect the pump motor according to the wiring diagram.Ensure the correct direction of rotation with the three-phase motor!
- 12) Switching on and off from the pool using pneumatic buttons:

Pump ON-OFF (38/1) - right button

Light ON-OFF (38/2) - left button

13) The air regulator (21) can be used to admit air to the nozzle.





# **Electrical connection**



The electrical connections must be made in compliance with the provisions of DIN VDE 0100 T1 and T702 by a qualified electrician. The units must be permanently installed outside the protected area in a dry place (shaft or min. 3.5m from the edge of the pool).

The circuit is wired ready for connections, the connections are made in accordance with the wiring diagram.

- 1. With the three-phase motor  $3\sim$ , the power consumption of the pump motor is approx. P<sub>1</sub> 2.72 kW. With the ac motor  $1\sim$ , the power consumption is approx. P<sub>1</sub> 2.27 kW.
- 2. The motor protection relay must be set to the rated current stated on the motor rating plate.
- 3. On commissioning, the direction of rotation must be checked (three-phase only). If the direction of rotation is wrong, swap the phases.
- 4. Connect the pneumatic button control hose to the end of the hose on the control box.

#### **Existing connection**

- 1. GFCI,  $I_{AN} = 30$ mA
- 2. Fuse 1~ 230 V / 3~ 400 V cutout 20 A / 16 A slow, or 20 A / 16 A K-circuit breakers
- 3. All-pole switching switch designated 0 and 1
- 4. A connection for equipotential bonding, which is attached to the earthing strip, must be provided.

Further information can be found on the connection diagram.

These parts are not supplied as standard and must be provided by the customer prior to the unit being installed.

#### Wiring diagram 3~ 400/230V 50 Hz



### Annex

Replacing the LED floodlight





