

Badu Jet Universal

General	02
Country of Origin	02
Application	02
Safety	04
Identification of Safety Instructions	04
Hazards	04
Hazards in the Event of Non-Compliance with the Safety Instructions	04
Compliance with Regulations Pertaining to Safety at Work	04
Safety Instructions for Maintenance, Inspection and Assembly Work	04
Cited Standards/Norms and Other Documentation	04
Transport and Immediate Storage	04
Description	05
Assembly and Installation	06 - 08
Initial Start-Up and Commissioning	09 - 13
Fitting of the Jet Housing in Concrete Pools	09
Adjusting the Water Level	09
Fitting of the Jet Housing in Liner Pools	10
Badu Jet Smart	11
Badu Jet Classic	12
Badu Jet Supersport	13
Final Assembly of the Badu Jet Smart Unit	14 - 15
Final Assembly of the Badu Jet Classic Unit	16 - 17
Installation of the Nozzle Housing with pneumatic Push Button Control	16
Installation of the Cover Plate of the Nozzle Housing	16
Square Cover for Vacuum Protection	16
Final Assembly of the Badu Jet Supersport Unit	18 - 19
Installation of the Nozzle Housing with Pneumatic Push Button Control	18
Square Cover for Vacuum Protection	18
Electrical Connections for all Units	20 - 21
Connections to be made by a Qualified Electrician	21
Servicing/Maintenance	22
Pump Seal Replacement	23

Speck-Pumpen Verkaufsgesellschaft Karl Speck GmbH and Co. Lauf is the manufacturer of the Badu Jet Classic, Supersport and Smart Universal Systems.

Country of Origin

Germany. Distributed in the UK by Golden Coast.

Application

Installation in all types of swimming pools, as an attraction, as a wave or air-bubble bath, for underwater massage (after medical advice), swimming without turning.

This operation manual gives basic instructions, which are to be observed during installation, operation and maintenance of the pump. It is therefore imperative this manual is read by the responsible personnel/operator, prior to assembly and commissioning. It is always to be kept available at the installation site.

It is not only the general safety instructions contained under safety which are to be observed but also the specific information provided under the other headings.

Identification of Safety Instructions

The following symbols are used to identify aspects of safety which, if not complied with, could result in injury or damage:



See DIN 4844-W9

Or where electrical safety is involved, with:



See DIN 4844-W8

For safety warnings which, when ignored, may constitute a hazard for the machine and it's functions, this word is added:

CAUTION

It is imperative signs affixed to the machine are observed and kept legible, e.g.

- Arrow indicating the direction of rotation.
- Symbols indicating fluid connections.

Hazards in the Event of Non-Compliance with the Safety Instructions

Non-compliance with the safety instructions may present a risk to the personnel as well as the environment and the machine. This would result in a loss of any right to claim damages.

Compliance with Regulations Pertaining to Safety at Work

When operating the pump, the safety instructions contained in this manual, the relevant accident prevention regulations and any other service and safety instructions issued by the plant operator are to be observed.

Safety Instructions for Maintenance, Inspection and Assembly Work

- Any work on the machine shall only be performed when it is at a standstill. It is imperative the procedure for shutting down the machine described in this manual is followed.
- Prior to restarting the machine, the instructions listed under Initial Start Up and Commissioning are to be observed.

Cited Standards/Norms and other Documentation

DIN 4844 Part 1, Supplement 13 | Safety marking; Safety symbol W8

DIN 4844 Part 1, Supplement 14 | Safety marking; Safety symbol W9

Transport and Intermediate Storage

In order to avoid damage to and the loss of individual parts, the original packing must not be opened until immediately before installation.

Badu Jet Classic, Supersport and Smart Universal counter current units can be installed in any swimming pool.

A powerful jet pump is connected by a suction and discharge line with the flush-mounted plastic jet housing in the pool wall (no risk of injury as no parts protrude into the pool).

The pool water is sucked in by the jet pump at a low flow speed through the circular ring channel in the housing, then pumped back into the pool at high pressure through the nozzle. The jet pump is switched on and off by means of a pneumatic push button installed in the jet housing.

The adjustable nozzle affects the amount of discharge flow and thus the efficiency of the counter current unit. An air intake control valve adds air to the water jet, if desired. A massage nozzle attachment, a massage hose with pulsator and a pulsator attachment are available as an optional extra.

The pump should be installed as close as possible to the jet housing. If this is not possible, the pump can be remotely installed at a maximum distance of 10m from the pool. The longer the distance, the larger the pipe section should be to prevent head loss. Please see the table below.

Badu Jet		Pipe Distance		
		5m	7.5m	10m
Smart	S	Ø 110	Ø 110	Ø 125
	P	Ø 110	Ø 110	Ø 110
Classic	S	Ø 140	Ø 140	Ø 160
	P	Ø 140	Ø 140	Ø 140
Supersport	S	Ø 160	Ø 160	Ø 160
	P	Ø 140	Ø 140	Ø 140

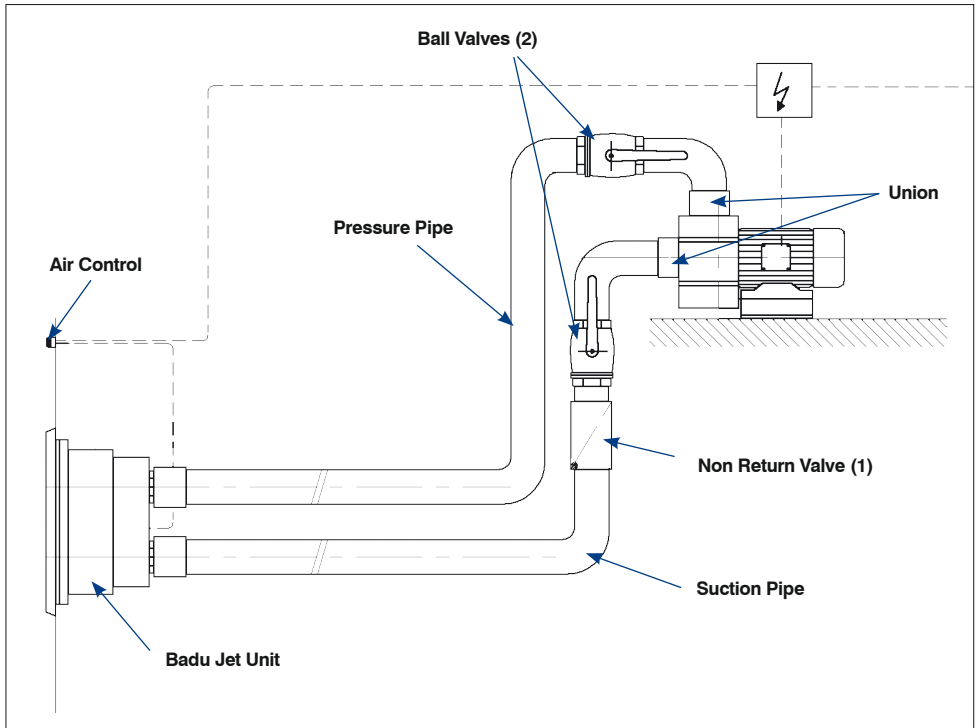
S = suction pipe, p = Pressure pipe

The pump should be installed below water level. If this is not possible, a self-priming pump can be installed. However, in this case the level difference between pump and water level should not exceed 1m. In extreme cases, where the difference is greater than 1m, a non-return valve must be installed in the suction line below the water level, and the pressure line from the pump must be at least 300mm vertically above the pressure connection, in order to prevent water loss before priming.

When a non self-priming pump is used on an installation where the pump is above water level a non-return valve must be installed in the suction line.

Note: this is not to be recommended as the valve will add a restriction to the flow and if subject to irregular use the valve may allow the pump to lose it's prime.

The pipe should be laid below water level and then must be led vertically to the pump, as close to the pump as possible.



- (1) Must be installed from 1m distance onwards with a self priming pump when installed above water level. Can be installed to ease priming.
- (2) When necessary e.g. when installing the pump under water. To improve head loss, only swept bends should be used in the pipe work, not elbows.

The pipe work should be equivalent to PN10.

The electrical switch box and pump must be installed in a dry ventilated room and not further than 10m from the pool, in order to ensure the functioning of the pneumatic push button. The hose connecting this button to the switch box should be inside a plastic tube for protection.

Only use a qualified electrician for the electrical connection of the unit.

Ensure the electrical installation is equipped with a cut-off switch permitting all-pole disconnection from the mains with a minimum contact spacing of 3mm. The Badu Jet universal units are designed following safety class 1 specifications. The ambient temperature must not exceed 40°. A built-in thermal cut-off switch in the original control box protects the single and three phase AC motors incorporated in the units. The amperage setting must be checked with the nominal amperage indicated on the motor label.

The main electrical system must be secured through an RCCB 1FN 30mA.

When three phase AC is used, the direction of rotation must be checked by switching the motor on briefly. The motor must rotate in the same direction as the arrow on the fan cover.

Checking the rotation is especially important with three phase motors as the pump may turn in the wrong direction. If this is the case, interchange two of the phases and repeat this check.

Take care the counter current system is never operated with the shut-off valves in the suction and pressure lines closed.

If self-priming pumps are installed, the pump housing has to be filled via the red filling plug, the plug must then be screwed in again so it is hand-tight. Normal priming time for the pump should be no more than two minutes.

The Classic and Supersport have a pre-priming chamber on the pump, which should be filled with water prior to starting.

Fitting of the Jet Housing in Concrete Pools

Make sure the suction connection is arranged above the pressure connection; the small segment in the housing must face downwards.

Adjusting the Water Level

The centre of the housing should be positioned 250mm below the water level (with Badu Jet Classic, 290mm).

Carefully insert and position the housing gasket.

Attach plastic cover plate and screw in four stud bolts, attach housing securely and fasten by means of nuts and washers to the (formwork) shell.

Before concreting, check whether housing gasket and plastic cover are correctly positioned.

Caution: Do not use force when tightening bolts, screws or nuts.

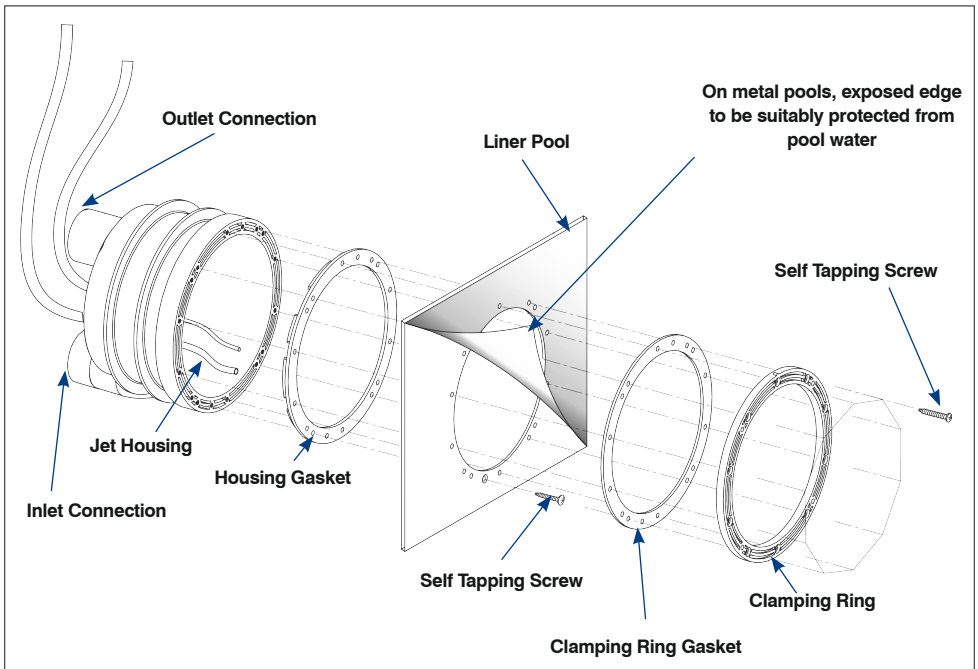
Fitting of the Jet Housing in Liner Pools

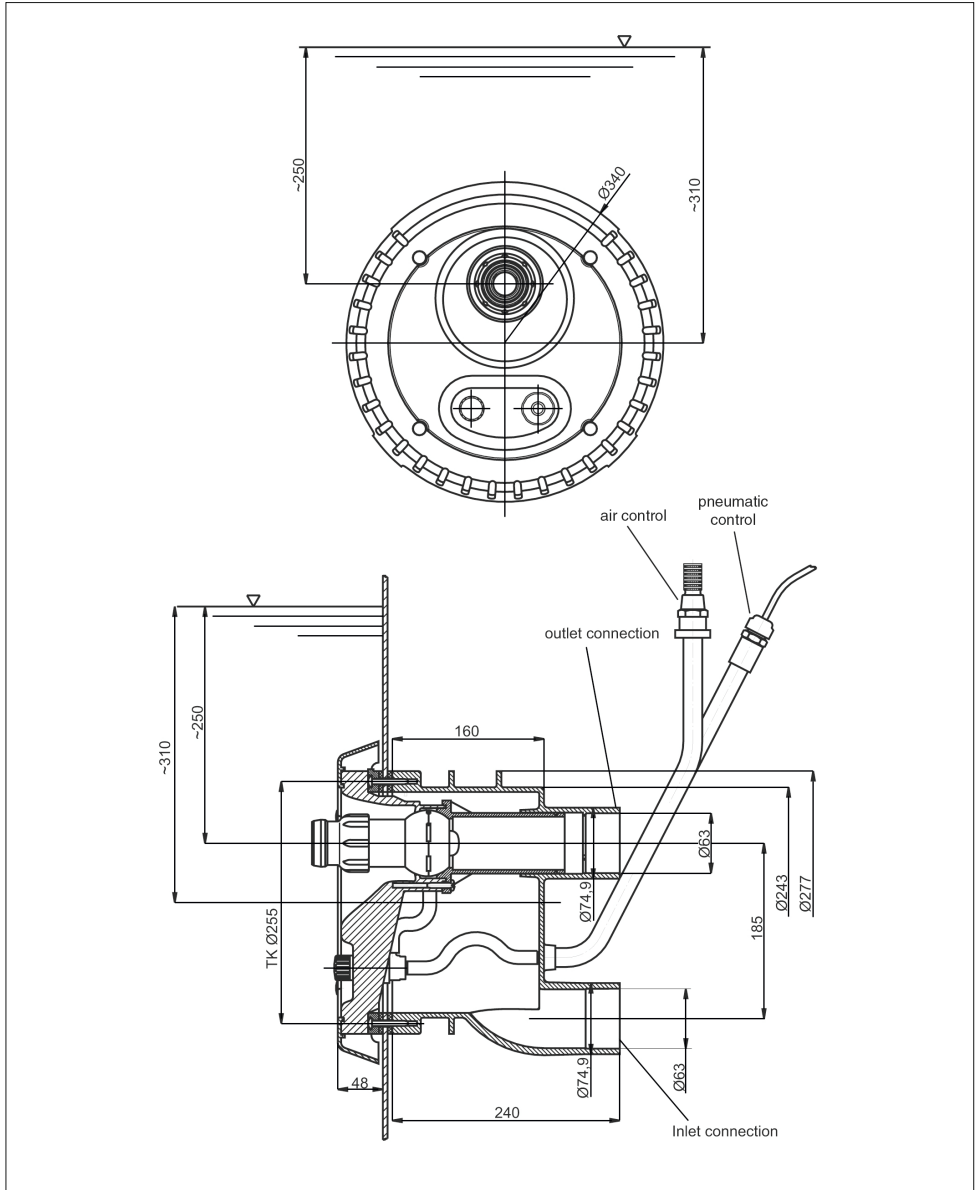
Press housing gasket into jet housing and place against the back of the pool wall. Fix the jet housing from the front with the two self-tapping screws to the pool wall (without liner).

After installing the liner, fix the jet housing with the ten self-tapping screws through clamping ring and clamping ring gasket to the pool wall. Tighten the self-tapping screws only by hand. Do not use force.

Attention: the jet housing is made of ABS. If the suction and pressure tubes are to be glued into the housing when the housing is already in place, a minimum hardening time of 12 hours must be observed.

For block and liner pools the front of the housing must finish flush with the final render coat. Apply gaskets and face plates as shown above with the liner sandwiched between the two gaskets.

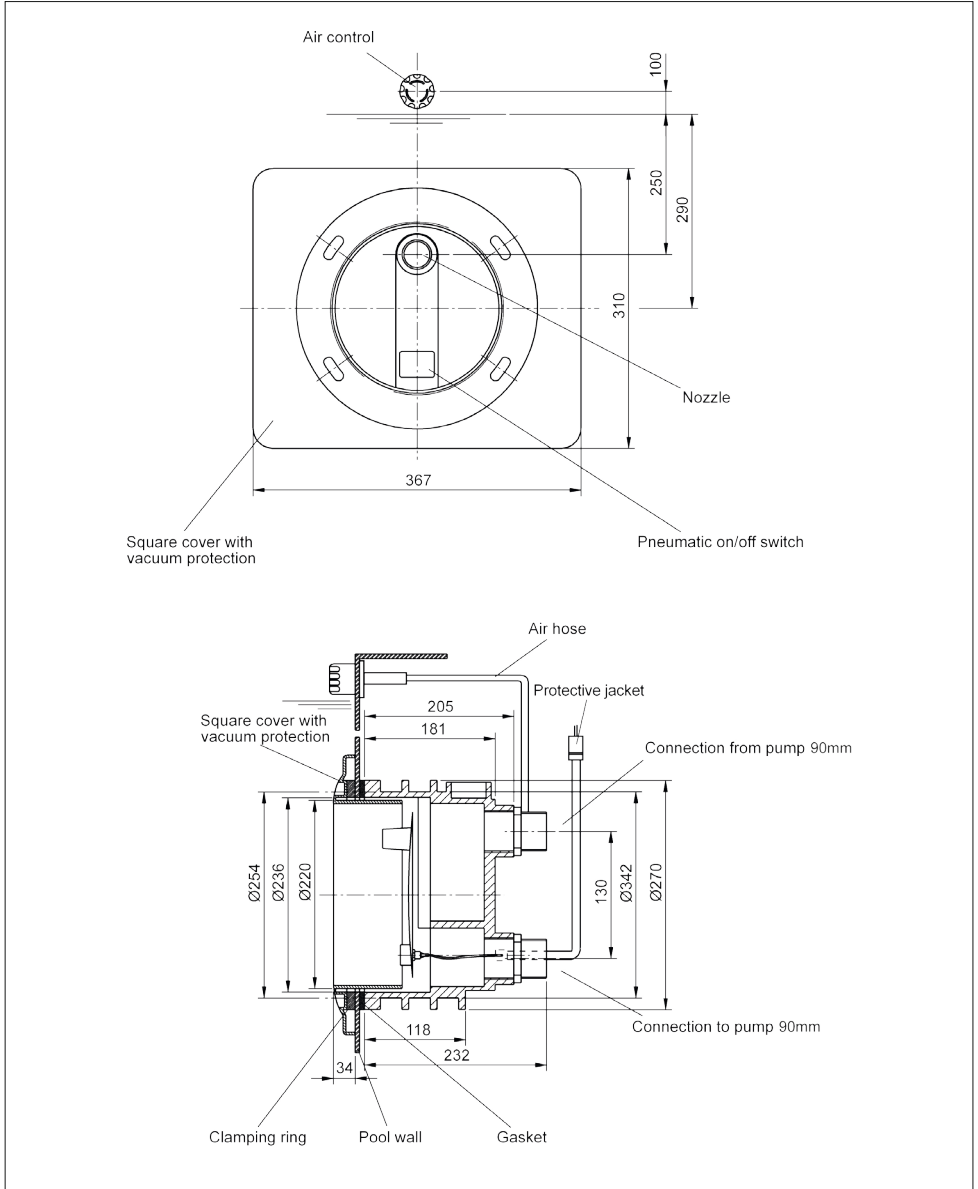




Badu Jet Smart

All measurements are in millimetres (mm).

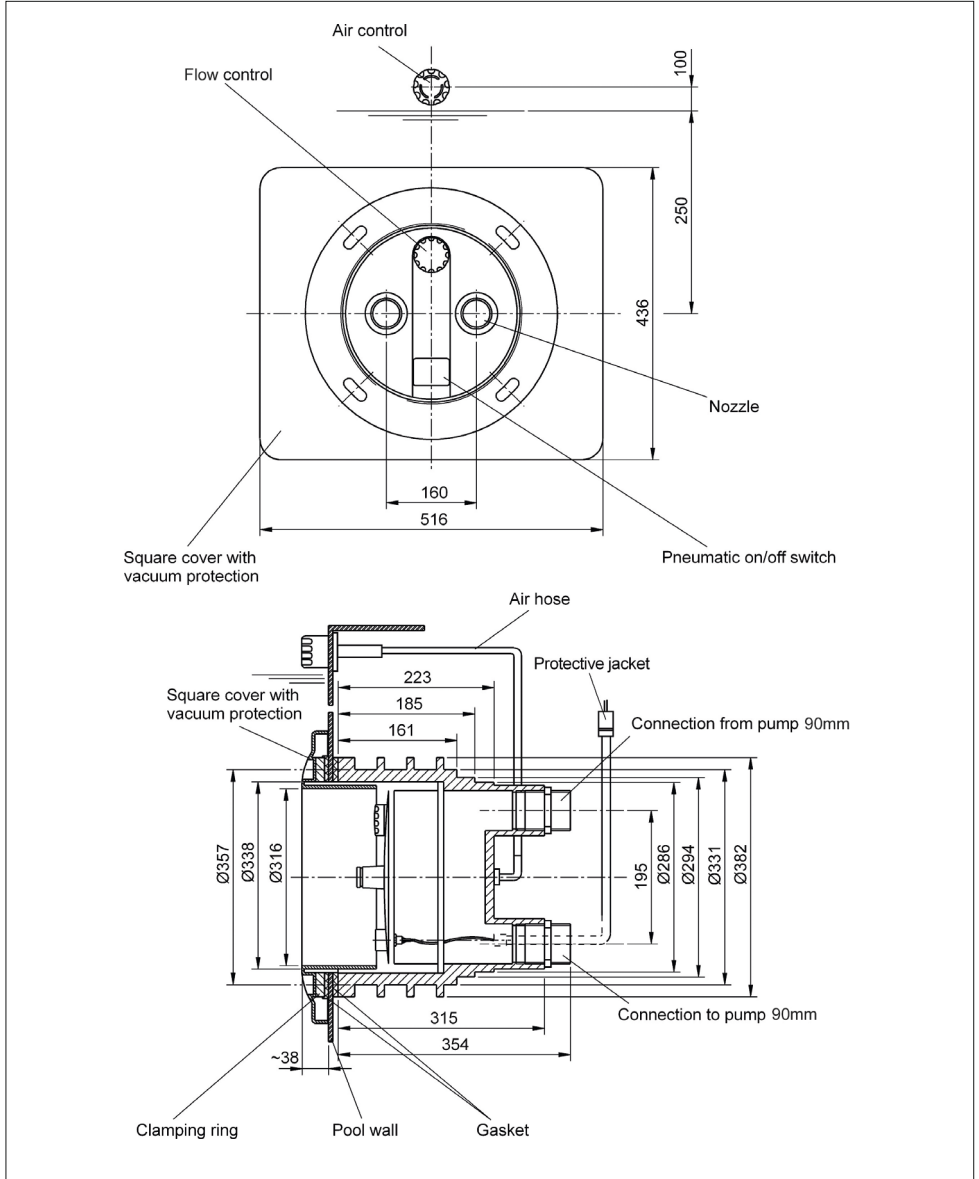
For the final assembly of this unit see page 14.



Badu Jet Classic

All measurements are in millimetres (mm).

For the final assembly of this unit see page 16.

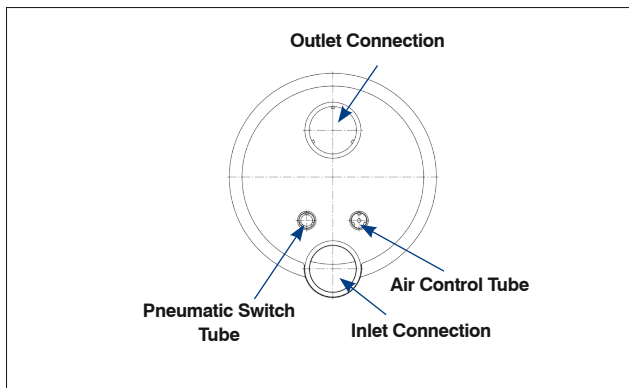


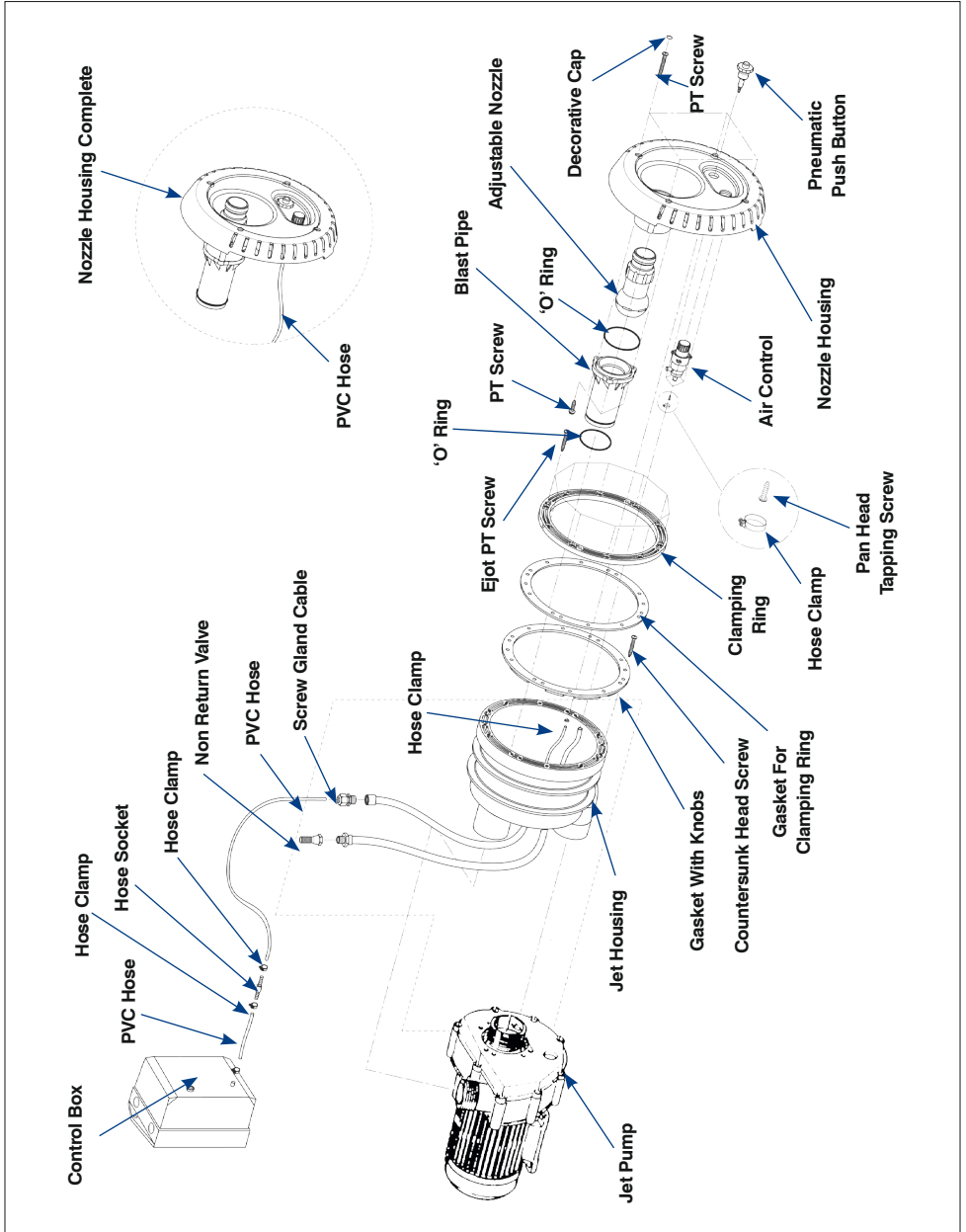
Badu Jet Supersport

All measurements are in millimetres (mm)

For the final assembly of this unit see page 18.

1. After installation of the jet housing:
2. Place the complete nozzle housing against the jet housing.
3. Slide pneumatic tube through protective conduit and seal conduit with cable gland.
4. Attach air tubing with clip to air control valve.
5. Fasten complete nozzle housing with 4 self-tapping screws on jet housing. Hand tighten the self-tapping screws. Do not use force.
6. Connect jet pump with threaded half-unions, to the suction and pressure pipes.
7. Connect the pump motor as shown in the wiring diagram. If a three phase AC supply is used, check the pump rotates in the correct direction - see page 9, initial start-up and commissioning.
8. The pump is switched on and off from the pool by means of pneumatic push button.
9. The air control valve can be used to inject air into the water jet.





Installation of the Nozzle Housing with Pneumatic Push Button Control

Important: the 'O' rings must have good contact with small air ducts of the clamping rings. The nozzle housing should snap effortlessly in the housing.

Pull the pneumatic control unit hose through the protective plastic tube all the way to the marker; first push the pressure screw, rubber gasket and washer over the control hose and tighten heavy-gauge conduit screws.

Insert the screws for the rim and the long screws into the pressure section of the nozzle housing and tighten. Screws must be tightened carefully so the thread is not damaged. Make sure the nozzle housing snaps effortlessly into position at the separation ridge.

Caution: Do not use force when tightening screws and bolts.

Installation of the Cover Plate of the Nozzle Housing

Pull the hand wheel off the regulator spindle, place the cover plate in position and fasten it to the nozzle housing by means of 5 screws.

Now put the hand wheel on again.

Square Cover For Vacuum Protection

The square cover plate can only be mounted onto the clamping ring: the clamping ring is mandatory for all pool types. Place the square cover plate in position, adjust and, if necessary, shorten mounting screws and tighten screws.

Then close the slots by means of enclosed caps.

Installation of the Nozzle Housing with Pneumatic Push Button Control

Unscrew the regulation dial from the regulator spindle and slide it onto the guide ridge of the Badu Jet housing situated in front of the pressure connection.

Insert the pre-assemble nozzle housing with nozzles and regulator spindle and screw the regulator spindle counter-clockwise into the regulator dial, fixing it into the housing. Important: the O rings must have good contact with small air ducts of the clamping rings. The nozzle housing should snap effortlessly in the housing.

Pull the pneumatic control unit hose through the protective plastic tube all the way to the marker; first push the pressure screw, rubber gasket and washer over the control hose and tighten heavy-gauge conduit screws.

Now the screws for the rim and the long screws are inserted into the pressure section of the nozzle housing and tighten. Screws must be tightened carefully so the thread is not damaged.

Make sure the nozzle housing snaps effortlessly into position at the separation ridge.

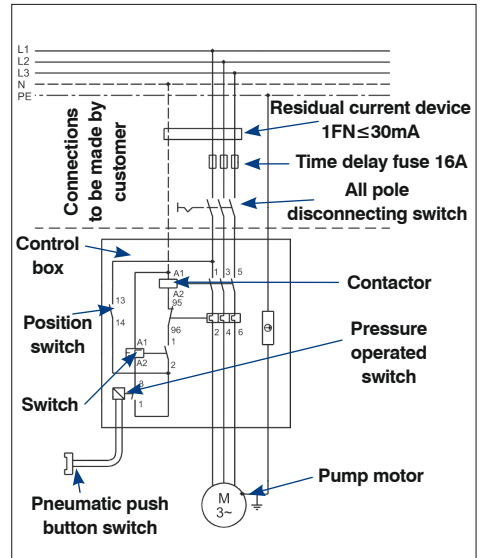
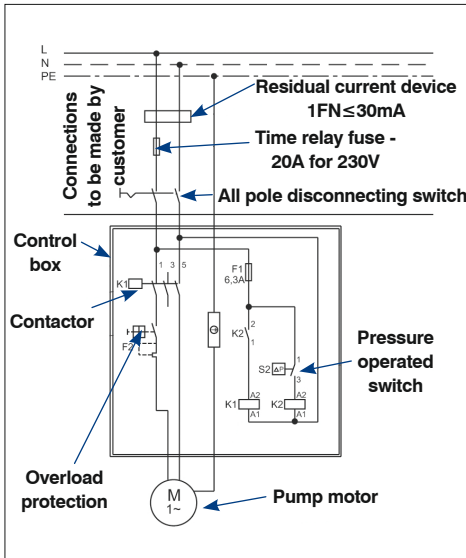
Caution: Do not use force when tightening screws and bolts.

To install the cover plate of the nozzle housing, pull the hand wheel off the regulator spindle, place the cover plate in position and fasten it to the nozzle housing by means of 5 screws. Now put the hand wheel on again.

Square Cover for Vacuum Protection

The square cover plate can only be mounted onto the clamping ring; the clamping ring is mandatory for all pool types. Place the square cover plate in position, adjust and, if necessary, shorten mounting screws, and tighten screws.

Then close the slots by means of enclosed caps.



The electrical connection of the unit must be made by a qualified Part P electrician. The electrical equipment is to be installed as fixed-mounted unit and outside the safety zone in a dry place (in a shaft or at least 3.5m away from edge of pool). The equipment is wired ready for connection. The connections must be made in accordance with the connection diagram.

1. Power consumption P1 of the pump motor is approx. 2.72 kW for three phase AC operation and approx. 2.27 kW for the single phase AC pump motor.
2. The motor protection relay is to be set to the nominal current indicated on the motor rating plate.
3. The sense of rotation (for three phase AC only) must be checked during commissioning. If the pump turns in the wrong direction, interchange phases.
4. Connect the control tube from the pneumatic push button with the one from the control box.

Connections to be made by a qualified electrician

1. Residual current device, 1FN + 30mA
2. Electrical protection 1 – 230 V/3 – 400 V with fuse 20A/16A, time delay, or type K automatic circuit breaker.
3. All pole disconnecting switch with positions marked 0 and 1.
4. Equipotential bonding for connection of grounding strap must be provided.

For more information please refer to the connection diagram.

These devices are not included in the scope of supply and must be provided by the contractor before the installation of the unit.

To prevent frost during the winter season, the water level in the pool must be lowered to the bottom edge of the jet body to allow for emptying of the suction and discharge lines. It is recommended to remove the pump during the winter and to store it in a dry room.

The jet pump is equipped with a mechanical seal between the motor and pump. If water leaks out permanently under the pump, the mechanical seal must be replaced.

To dismantle the pump, proceed as follows:

- Switch off the pump and disconnect safely from the mains. Replacement should only be carried out by a specialist.
- Detach the pump from the jet housing, which is connected to the suction line by means of a threaded union and to the pressure line by means of a rubber elbow.
- Dismantle in compliance with the separate fitting instructions, replace the mechanical seal and refit in reverse order.

Golden Coast Ltd | Fishleigh Road | Roundswell Commercial Park West | Barnstaple | Devon | EX31 3UA

Phone: +44 (0) 1271 378100 | Fax: +44 (0) 1271 371699 | Email: swimmer@goldenc.com | Web: www.goldenc.co

As a quality assured company we reserve the right to alter and improve the specification of products as deemed necessary. Registered in England and Wales 2420044 VAT Reg. No 540 4110 02

