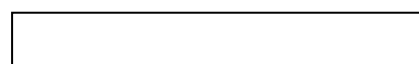


Swimming Pool Counter Current Unit

AQUA JET 100

Instruction for Installation, Mounting and Operation



General

The unit is produced for Mountfield, a.s., by Garsys, s.r.o., Industrial Zone at František Mine, K Prádlu Str. 735 Horní Suchá; Country of origin: Czech Republic.

Use

The unit is designed and intended for operation in private swimming pools and garden pools. It is not intended and should not be used for public swimming pools and other commercial applications.

The directions included in this Instruction for Installation, Mounting and Operation (hereinafter referred to as "Operating Instruction") shall be strictly observed, as special demands are made upon electrical equipment used in swimming pools and adjacent areas..

The counter-current unit is able to provide a flowrate controllable within the range of 60 – 100 m³/hr and, therefore, it is suitable both for sturdy and holiday swimmers. The unit should be installed in swimming pools of adequate size. For the optimum location of your counter-current unit a swimming pool specialist should be consulted.

Description

The AQUA-JET 100 hang counter-current unit may be operated in in-ground pools of any type (such as, e.g., plastic foil, polypropylene or glass-fibre swimming pools).

Water is sucked into the turbo-pump space through intake holes made in the rear part of the unit. The turbine pump drives the water through a chamber and a mixing nozzle back to the pool. The turbine pump should be turned ON or OFF using an air-operated pressure knob found on the machine front side. The water driven back to the pool may be aerated in the nozzle by sucking additional air in. Aeration may be turned ON, OFF, or controlled using a rotational controller. The immersed coloured light of the counter-current unit may be switched ON/OFF by a light switch.

Warning Symbols



Safety instructions given in this Operating Instruction and marked with this general warning symbol of danger shall be strictly observed, as any failure to observe of it may result in danger to the health and/or safety of people or damage to the environment.



Safety instructions, given in this document and marked with this general warning symbol of electrical hazard shall be strictly observed, as any non-observance of it may result in danger of electrical current accident. .

The employed safety signs and symbols comply with the requirements of ČSN ISO 3864 Standard.

Safety Instructions

All and any safety instructions given in this document shall be strictly observed without any exception!

This Operating Instruction comprises basic guidelines that shall be taken into account in installing, operating and maintaining the counter-current unit. That is why the user, as well as experts that might be invited to take part in professional installation of the unit, shall read this document very carefully.

Any failure to observe the safety instructions may threaten not only the health of involved persons, but can present an environmental hazard and the risk of equipment damage.

The unit shall not be operated, if any of its protective covers is not in place.

The counter-current unit is intended only for swimming and massages. If used for any other purpose or modified (no matter how) without manufacturer's previous consent, any warranty provided with the unit by its manufacturer and/or seller shall become void, as well as manufacturer's and/or seller's liability for product safety.

Persons performing professional installation of the unit shall possess relevant professional qualification in accordance with applicable electrical regulations (they shall be certified according to Decree 50/1978 Coll., Article 6).

Persons, who are to operate, maintain and inspect the unit, shall be informed within the scope of duties and responsibilities set out in this Operating Instruction. The equipment owner shall be responsible for equipment operation and maintenance as well as for full compliance with relevant safety instructions.

This equipment shall not be used by underage persons and persons with reduced physical, sensual or mental capabilities, if not instructed and are not acting under supervision of other responsible person. Persons not familiar with operation of the unit within the scope hereof and persons, whose abilities are reduced by drugs, narcotics, etc., and people of slow response shall not use the equipment!

Water level in the pool shall not be higher than 300 mm above the axis of the counter-current nozzle (see Fig. 1).

The temperature of pool water shall not exceed 35 °C.



Safety Guidelines for Installation and Maintenance

The equipment may be subject to any handling, maintaining or assembling/disassembling works only after has been disconnected from power mains!

Without any exception, the procedures prescribed for putting the equipment out of operation and given in this Operating Instruction shall be strictly adhered to.

Immediately after works have been completed on the equipment, all its protective and safety covers shall be installed back onto the counter-current unit body and secured against loosening.

In case the unit is to be started again, all the guidelines set out in the paragraph dealing with equipment re-starting shall be taken into consideration.

Any modification of or change in equipment design may be made only after being agreed upon with the manufacturer. Only genuine replacement parts authorised by the manufacturer may be used for any maintenance and repair works. Any use of unauthorized spare parts shall result in the loss of any warranty and refusal of claims for compensation.

Machine operational safety will be guaranteed only if all the terms and conditions set out in this Operating Instruction have been complied with.

Do not operate the machine, if it is incomplete or damaged. If it is the case, the unit has to be disconnected from mains and professionally repaired.

Do not step or sit on the machine or any of its parts.

The pool light shall not be turned on, if not completely immersed in water. Failing this, the light may either lose partially its illumination power or be even completely destroyed.

Transport and Storage

In order to prevent damage to the unit and loss of its particular parts, the unit should not be unpacked and removed from its original package (as delivered) earlier, than immediately before its installation.

The consignment includes:

- AQUA Jet 100 swimming pool counter-current unit
- Mounting plate for in-ground pools.

Counter-Current Unit Parameters

AQUA Jet 100

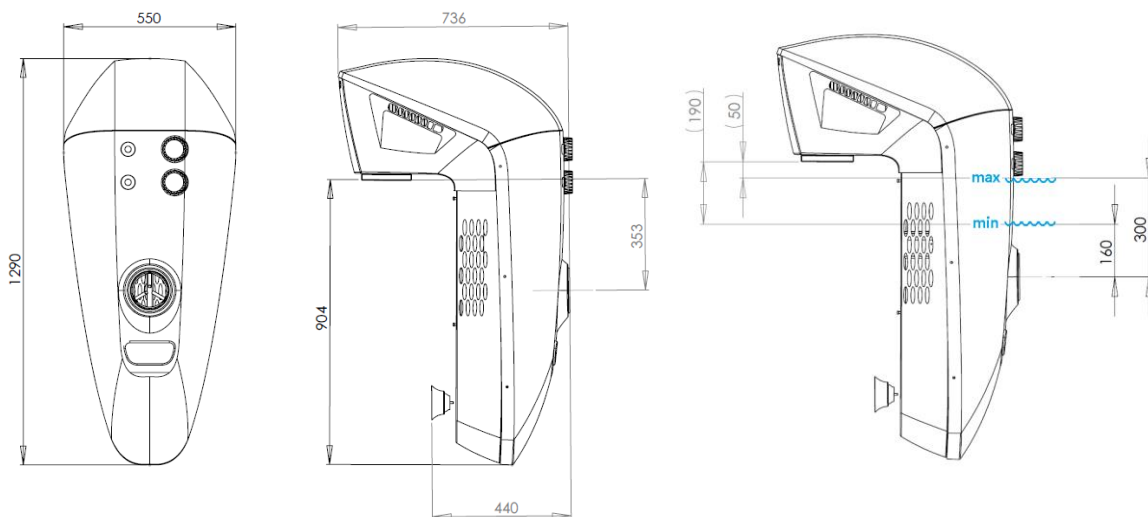


Fig. 1

Technical Specification

Supply voltage	single-phase 230 VAC/50 Hz
Pump power output	controllable, 100 m ³ /hr max.
Input power	1.1 kW
Control system	air-operated control
Overall weight	35 kg, approx.
IEC protection class	IP 14D



Installation

In order to provide for the correct operation of the counter-current machine its nozzle shall be immersed, but not more than 300 mm below the pool water level (see Fig. 1). The optimum position of the nozzle should be within the range of 170 – 290 mm below the pool water level. As it is not necessary to let air out from the pump body, the counter-current unit can be installed even in an empty pool, before filling the latter with water.



Counter-Current Unit Installation in a Full In-Ground Pool

The mounting plate, included in the delivery and attached to the lower cover of the counter-current machine, should be used for installing the unit in the pool.

Installation of the unit requires a concrete foundation plate to be built at the pool (of B30 grade concrete), whose upper surface should be 20 mm above the upper pool edge. In that configuration, the counter-current unit will fit onto the upper edge strip of the pool.

The upper counter-current unit cover should be removed before installation.

The counter-current machine should be installed so that its cylindrical part is located as close as possible to the pool wall or the pool edge strip.

The counter-current unit shall be attached to the pool body by means of M8-160 anchor bolts (Fig. 2) using a “chemical anchor” (consisting in two-pot resin-based mortar intended for attaching mechanical parts to mineral substrates). The bolts shall be run in concrete down to the depth of 138 mm. For safe connection wide washers (ID 8.2 mm) and self-locking nuts should be used. The abovementioned bolts, washers, nuts and other required materials are not included in the delivery.

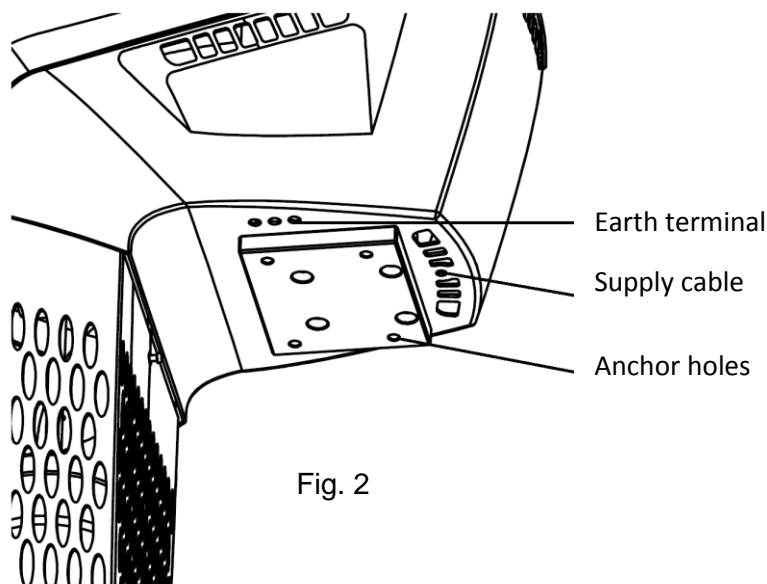


Fig. 2

Counter-Current Unit Wiring



The counter-current unit may be connected to the mains only after its body has been properly (mechanically) anchored to the pool. Connection to (or disconnection from) the power supply network may be carried out only by a duly qualified electrician (to Decree 50/1978 Coll., Art. 6) in compliance with applicable electrical regulations and standards, ČSN 33-2000-7-702 in particular.

AQUA Jet 100 Wiring Diagram (Fig. 3):

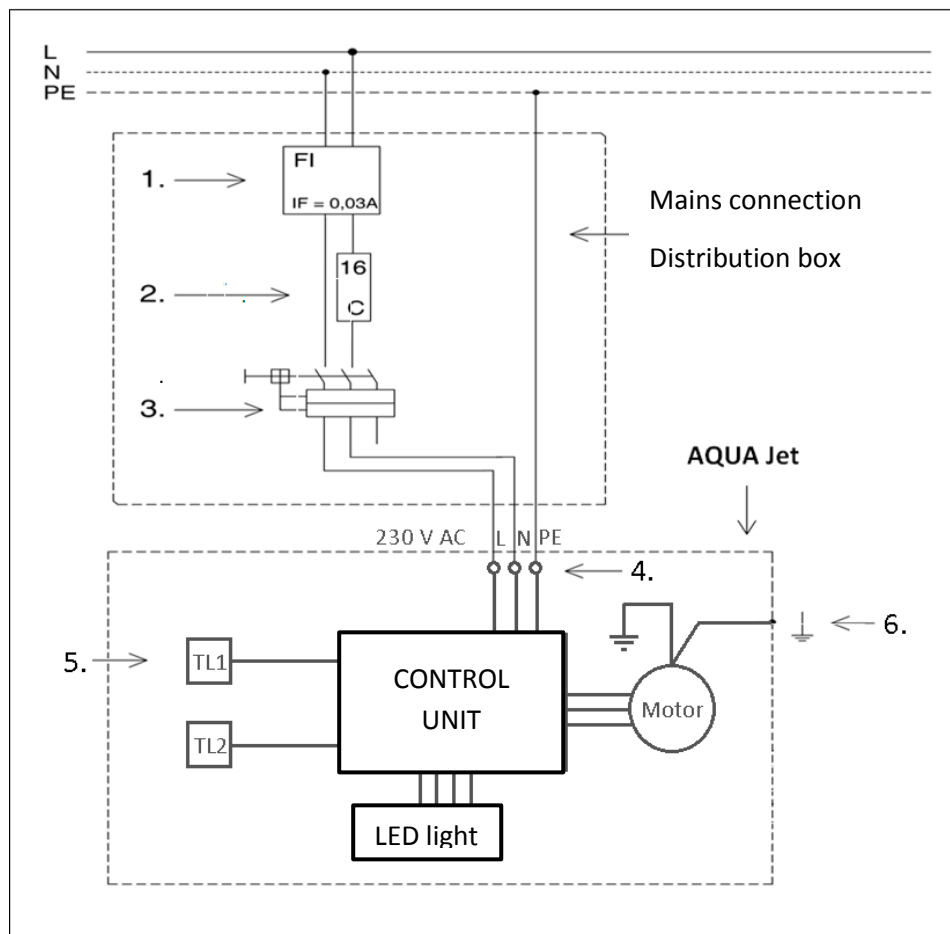


Fig.3

1. Residual current circuit breaker; IF=30mA
2. Circuit breaker 16A, C type
3. Motor starter; 6A to 10A
4. Terminal block connector
5. Counter-current air operated control
6. Earth terminal

NOTE: Items 1, 2 and 3 are not included in the delivery.



The counter-current unit shall be connected to the distribution network by means of the motor starter, fuse and residual current circuit breaker (as indicated in the wiring diagram in Fig. 3). Failure to instal any of those safety devices may result in (even fatal) electrical accident and represents a cause of general hazard. The concerned equipment shall be located outside of the pool protective zone (i.e. zones 0, 1 and 2 to ČSN 33 2000-7-702), including the areas found within the distance of 3.5 m from the pool wall, see Fig. 4.

The motor starter, fuse and residual current circuit breaker shall be placed in a lockable distribution box, well secured against any intervention of unauthorised persons.

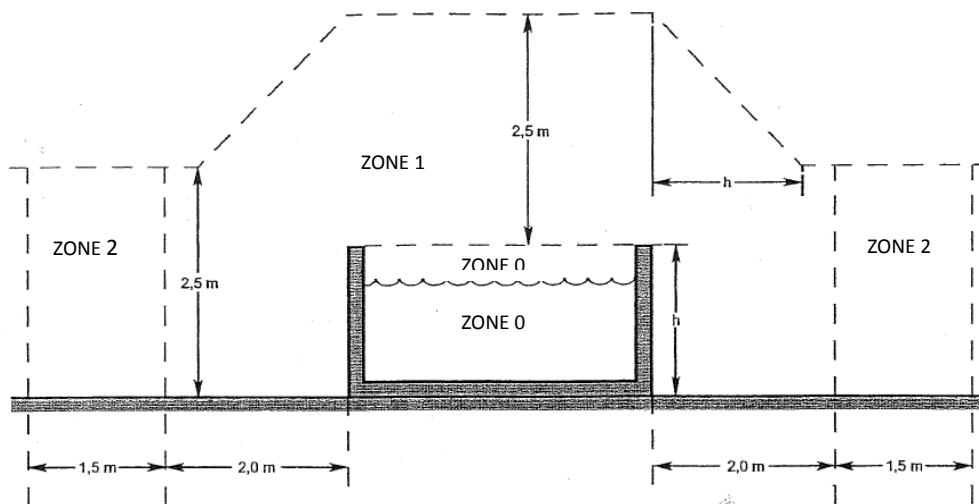


Fig. 4



The supply cable of the minimum wire cross section of 1.5 mm^2 shall be pulled through the grommet in the lower cover of the unit (see Fig. 2) In the box it shall be secured against pulling it out by routing it over the distribution box cable grommet. The supply cable shall be routed to the counter-current unit in a buried cable protecting tube, see Fig. 5.

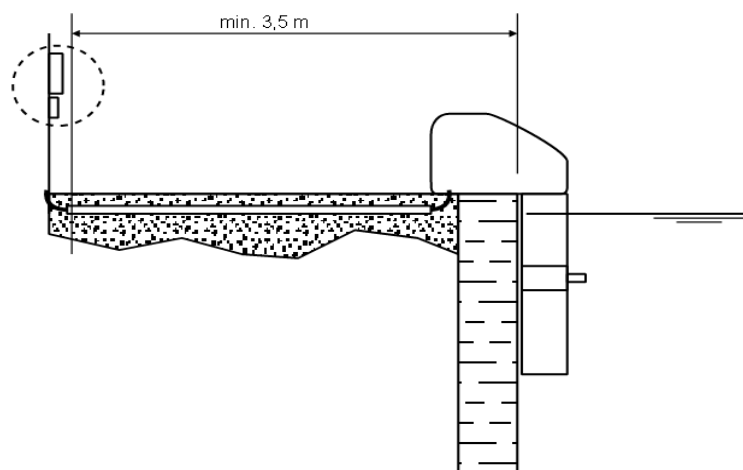


Fig. 5



The counter-current unit shall be earthed using a separate earth wire of the minimum cross-section of 2.5 mm^2 . Its lug should be connected to the earth terminal found in the lower part of the unit cover, as shown in Fig. 2. The earth wire shall be routed to the unit in the buried cable protector, together with the supply cable. On its other end the earth wire should be connected to the earth terminal in the distribution box.



Before connecting the unit to the supply network all protective covers and guards of the unit shall be put back to their positions and secured.



Putting the Unit into Operation and Its Control

After the counter-current unit has been mechanically fixed and connected to the mains and its safety covers have been replaced, it is ready for putting into operation.

The equipment should be switched ON and OFF using the main (power) switch (see Fig. 6).



CAUTION: During equipment operation the ventilation holes made in its cover shall not be covered.

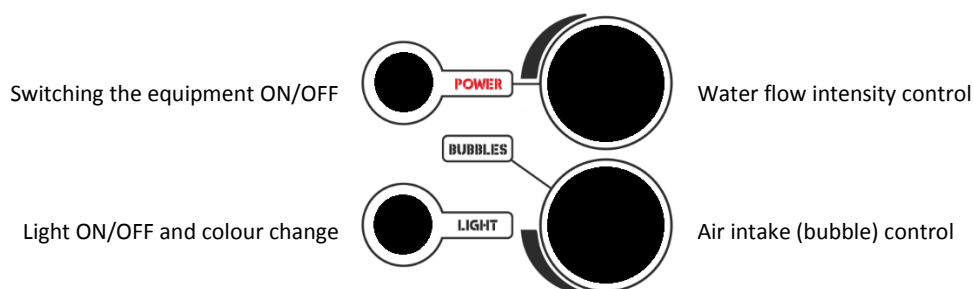


Fig. 6

After a longer operation time (several hours) at extraordinary high outdoor temperatures the counter-current machine may spontaneously go off. It is caused by a thermal fuse protecting its motor from overheating. After the motor has got cold, it will be possible to restart the machine again.

In case the counter-current unit will not be operated for a longer period, it is recommended the unit to be disconnected from mains using the motor starter.

Air Intake (Bubble Generation)

The control wheel of air intake is connected to three air intake nozzles by distribution pipes. By turning the control wheel the intake air inlet may be closed or opened as required.

Immersed Light Fitting

Light colour change is controlled using an air-operated switch, see Fig. 6. One can select out of the following 7 colours of light: white, blue, green, red, yellow, violet and turquoise.



Operation

Warning: Certain parts of the machine are made of steel. In spite that stainless steel is used predominantly, in connection with application of certain chemical agents (chlorine containing ones, in particular) the following precautionary measures are recommended and should be taken into consideration.

Chemical agents, if used, should be applied in correct amounts (doses). In particular, the agents should not be added in higher amounts than recommended. In case that chlorine containing agents are used, the levels of chlorine in pool water should be regularly measured and adjusted, if necessary. (A chlorine drop test kit is commercially available in Mountfield stores, e.g., may be used for the purpose.) **M&C of pool water acidity (pH value) represent other_important factor for maintaining pool water quality.**

Incorrect or negligent care of pool water and application of excessive dosage of chemicals may result in the corrosion of metal parts of the counter-current machine, the stainless steel ones inclusive. The most frequent causes of damage to machine metal parts are given herein below:

- 1) Metal parts of the machine are resistant to chlorine in water up to a certain Cl₂ concentration. However, higher, excessive chlorine levels may attack even stainless steel products and cause their corrosion.
- 2) Acidity (pH value) of pool water: (pH values within the range between 7.0 – 7.4 are deemed correct). Any change in pH value of water, particularly toward lower values, will result in its increased corrosiveness and possible corrosion of stainless materials.
- 3) Contents of dissolved salts – 0.5 % maximum.

When pool chemicals are added to and dissolved in pool water, the chemicals must not get in the counter-current unit. It is, therefore, recommended THE UNIT IS NOT TO BE USED for the time of such operations.

Further, before performing so-called “shock treatment” of pool water (using the agents of Azuro Chlor Šok G or Azuro Modrý blesk¹ type), it is recommended to remove the unit from the pool and wait until the chlorine level drops down to its correct value.



Maintenance & Storage in Winter Period

The operator shall provide that all maintenance, supervision and installation are carried out by persons, duly acquainted with this Operating Instruction.

Take due care of pool water purity to prevent the pump inlet strainer or even the pump body from fouling.

Check regularly the ventilation holes made in the counter-current cover for possible obstruction and remove any possible items or dirt that could restrict the free passage of air.

In case the equipment is not used or is left dry (e.g., in winter season), the motor starter has to be disconnected from its supply circuit, to prevent the motor from being accidentally switched on.

Check the equipment regularly for completeness and integrity of all covers and other components of the counter-current unit.

For winter season it is recommended the unit to be uninstalled, removed and stored in a dry area. However, it is also possible to let the unit installed outdoors, provided that no of its parts remains immersed in water.

When the swimming pool is filled with water again, or the unit is installed back to its place, the water inlet holes in the unit body shall be checked for free cross section.

The counter-current machine shall not be started without being immersed in water!

Liability for Defects

Provided that all the conditions of use have been met, as stipulated by the manufacturer in this document, the manufacturer shall provide the user with the extended period of liability for defects lasting 7 (seven) years. Other terms and conditions of manufacturer's liability for defects are set out in seller's warranty.

The service and replacement parts for the product shall be provided by Mountfield, a.s., through the network of their stores.

¹ “Azuro Chlorine Shock G” and “Azuro Blue Lightning” – transl. note.

Product Tests

This product, the AQUA Jet100 Swimming Pool Counter-Current Unit, does comply with the requirements of the following EU Directives and corresponding Governmental Orders as last amended: 2006/95/EC ("Low Voltage Directive") and relevant Governmental Order No. 17/2003 Coll., establishing technical requirements for low-voltage electrical equipment; 2004/108/EC (EMC Legislation Directive) and relevant Governmental Order No. 616/2006 Coll. establishing technical requirements for products in terms of their electromagnetic compatibility and 2011/65/EU (RoHS Directive) and relevant Governmental Order No.481/2012 Coll. on the restriction of the use of certain hazardous substances in electrical and electronic equipment;.

The product passed the tests carried out in the Engineering Institute of Testing (SZÚ) Brno (the SZÚ is the **EC Notified Body 1015**),