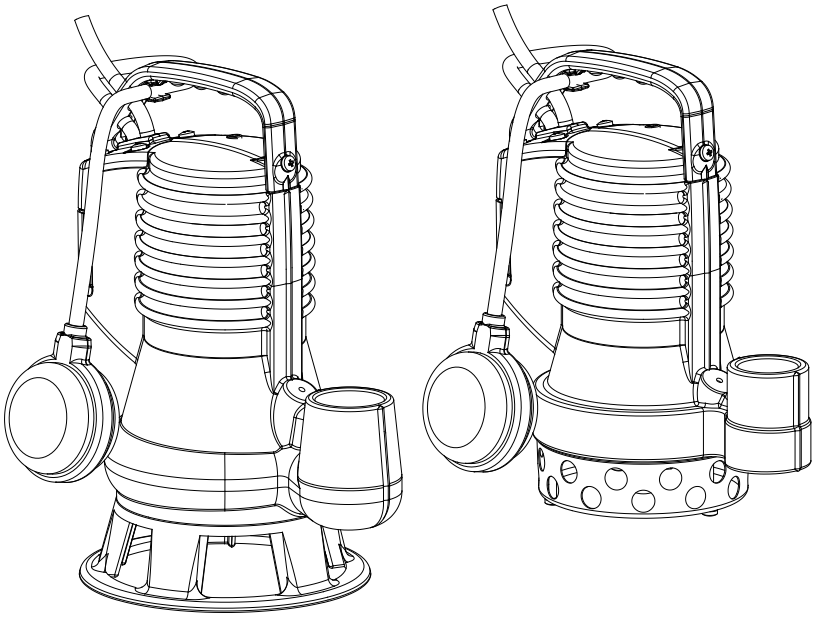
A TSURUMI PUMP COMPANY



INSTRUCTION MANUAL FOR ASSEMBLING/DISASSEMBLING

BLUE SERIES PUMPS

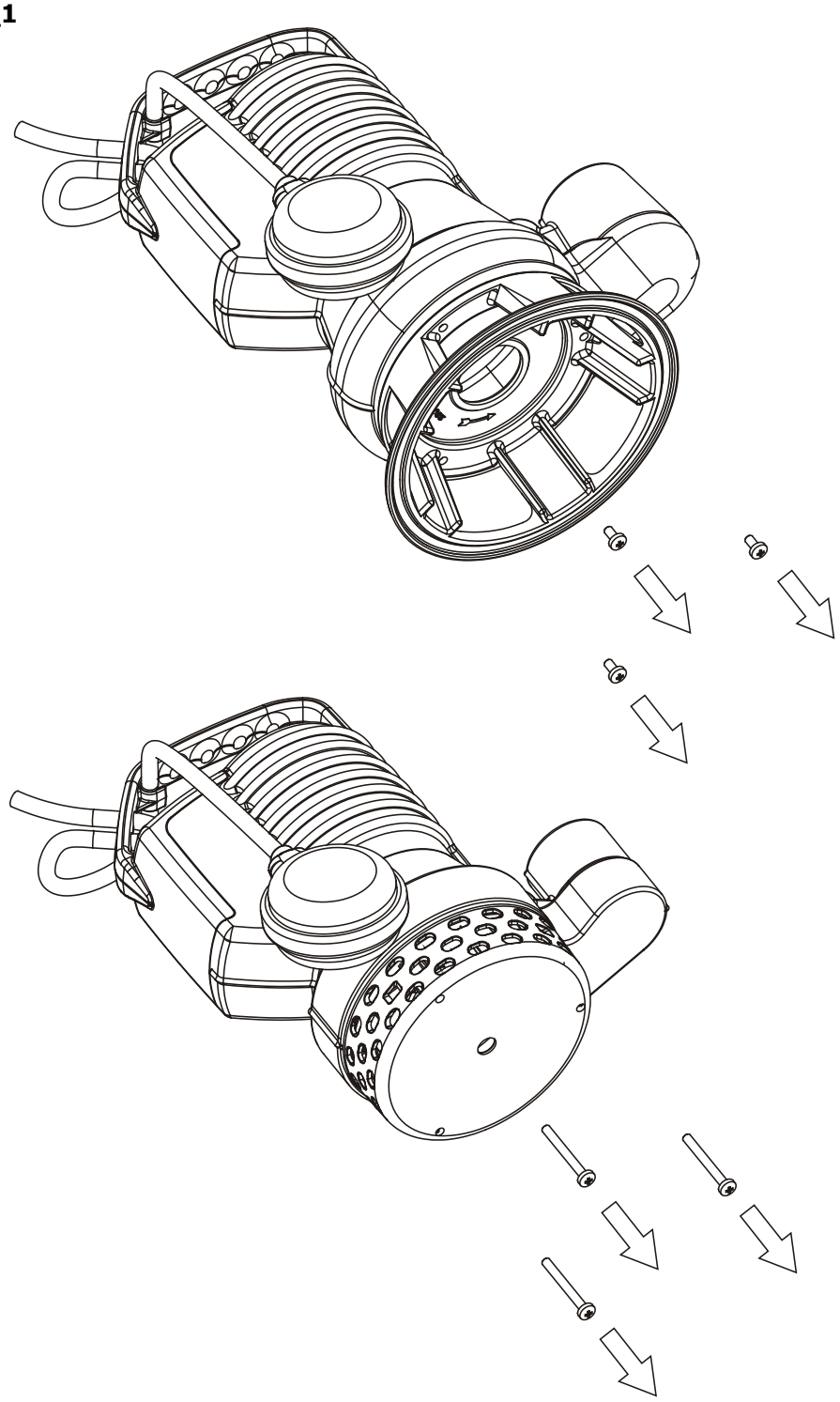
TABLE OF CONTENT

Disassembling Blue pump

Assembling Blue pump

DISASSEMBLING BLUE PUMP

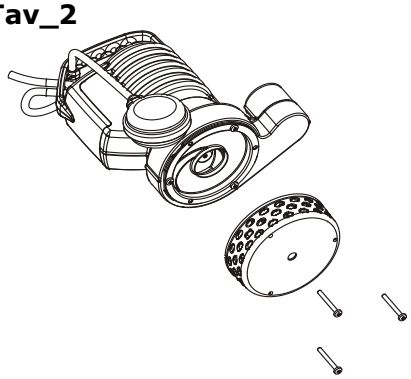
Tav_1

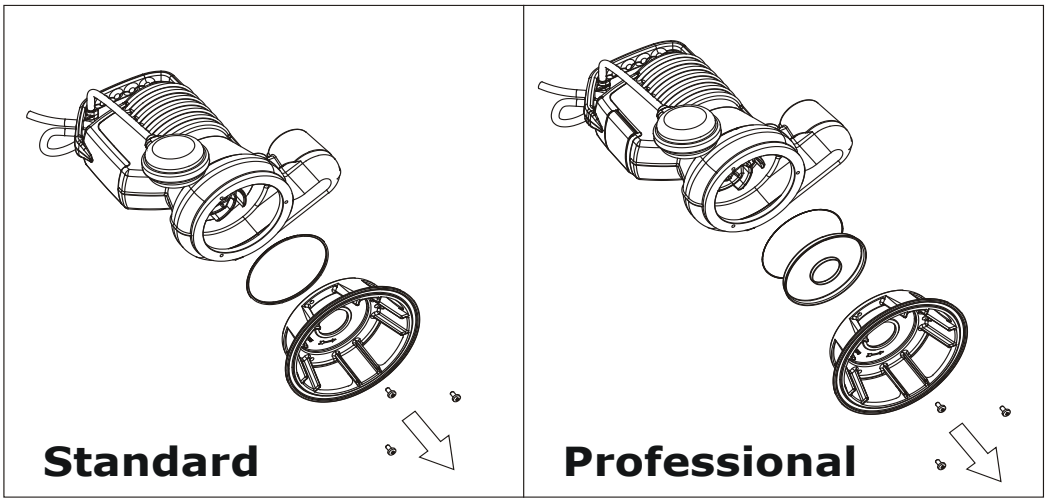


Hydraulic section

1: Undo the screws on the intake grating/ support foot using a crosshead screwdriver.

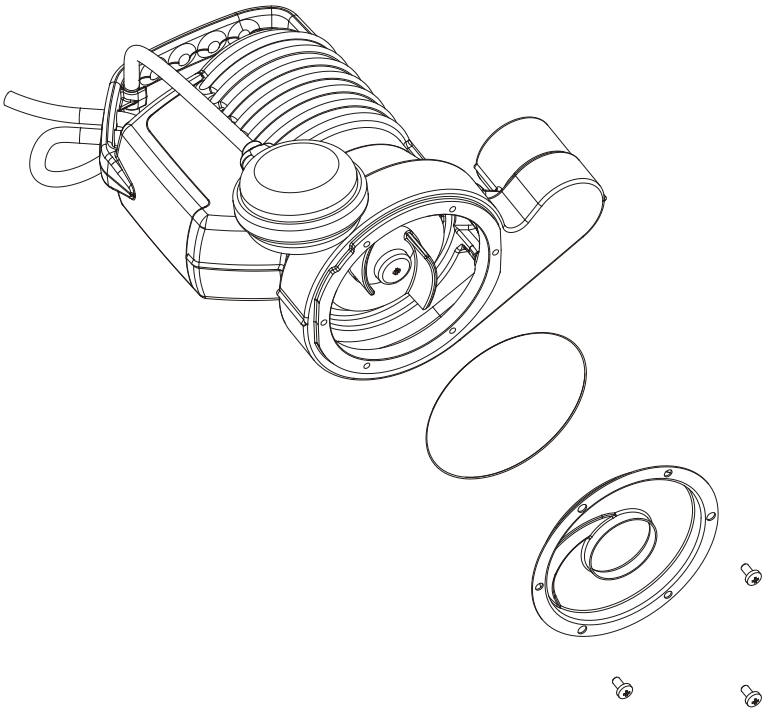
Tav_2





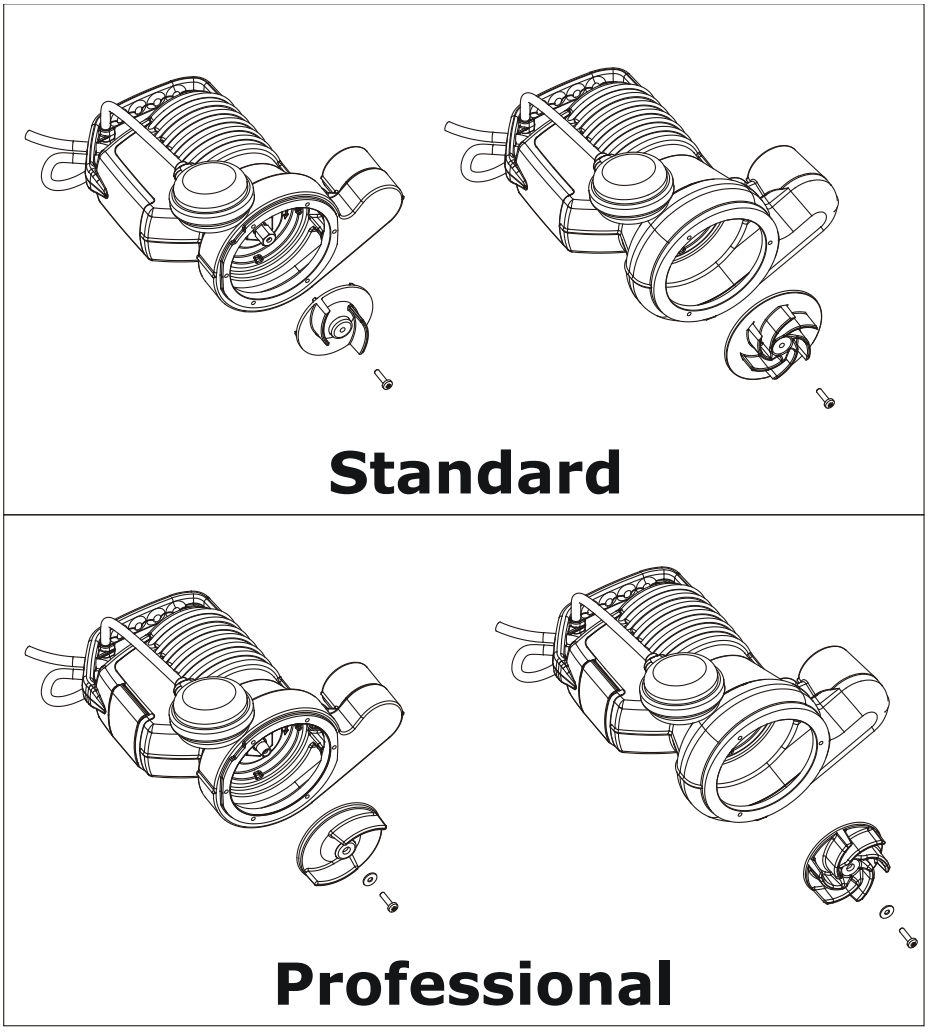
2: Take off the intake grating/ support foot (and Oring/inox flange for DG BluePro).

Tav_3



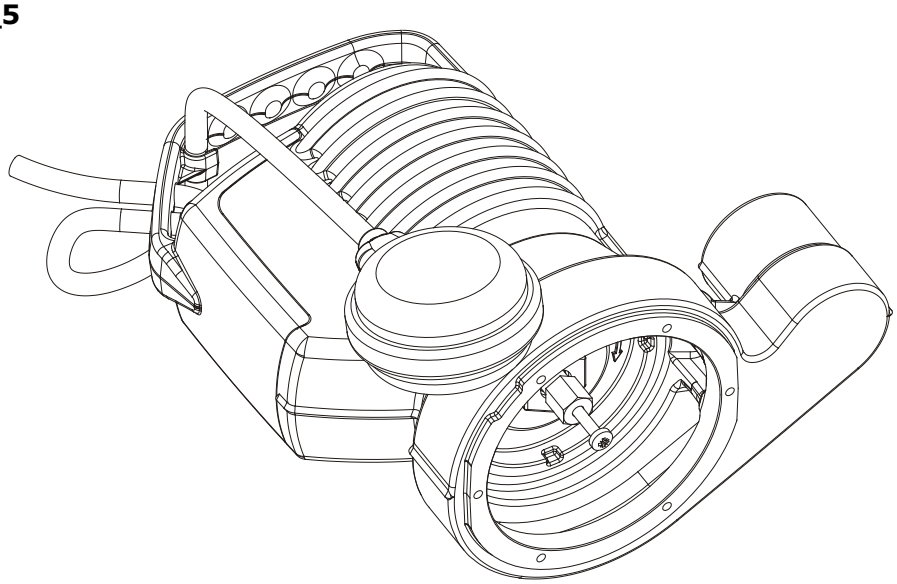
3: Undo the screws on the intake flange using a crosshead screwdriver and remove intake flange and Oring.

Tav_4



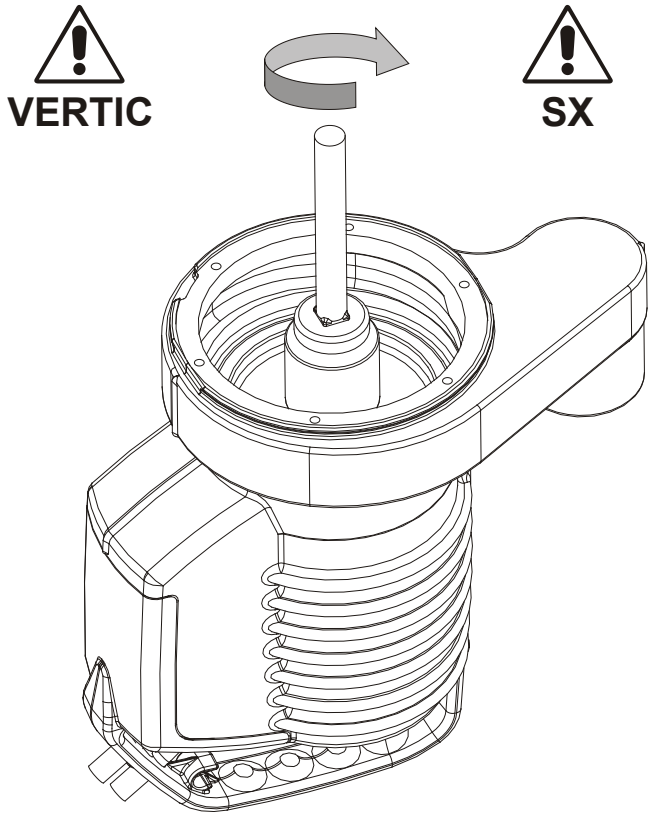
4: Undo the screw on the impeller with a crosshead screwdriver, holding the impeller still (with a pair of pliers for example) and take off the impeller using a pair of pliers applied to the impeller hub.

Tav_5



5: Tighten the rotor screw back onto the shaft using a crosshead screwdriver, making 6/8 whole turns. **Not necessary for *Pro* version**

Tav_6



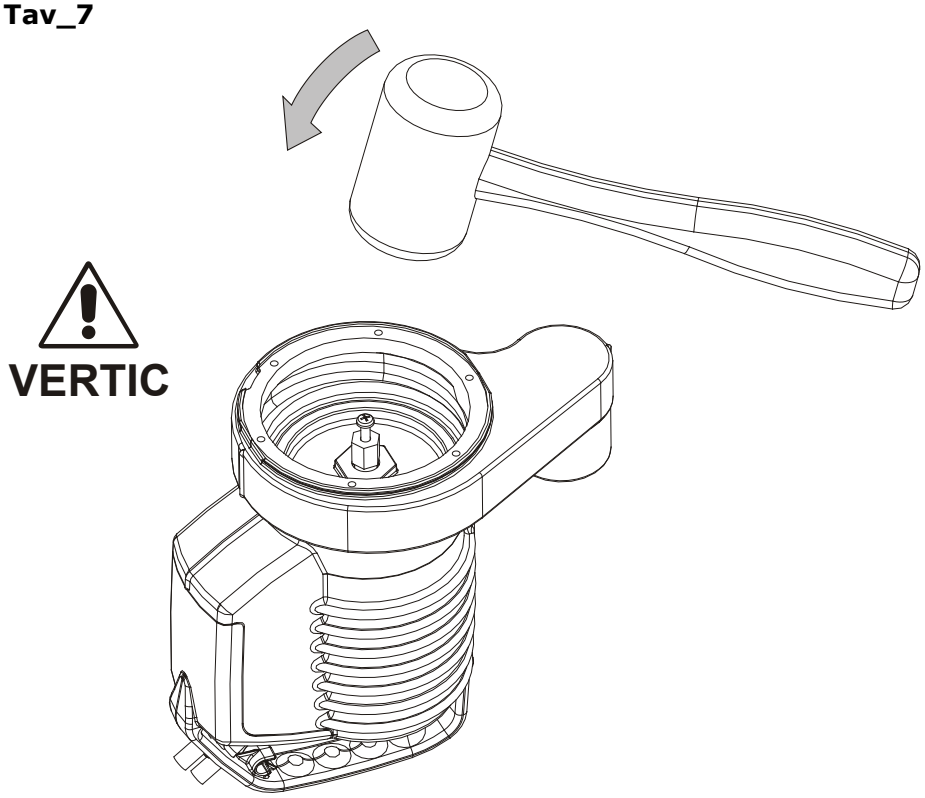
Opening the oil sump

6: **WARNING!** Keep the pump UPRIGHT to prevent oil leakages. Unscrew the flange on the oil sump until it touches the bronze hexagonal socket screw, use a 30mm socket wrench.
Make sure the flange is completely free.

WARNING! Turn clockwise: the threading is left-hand!

Not necessary for *Pro* version

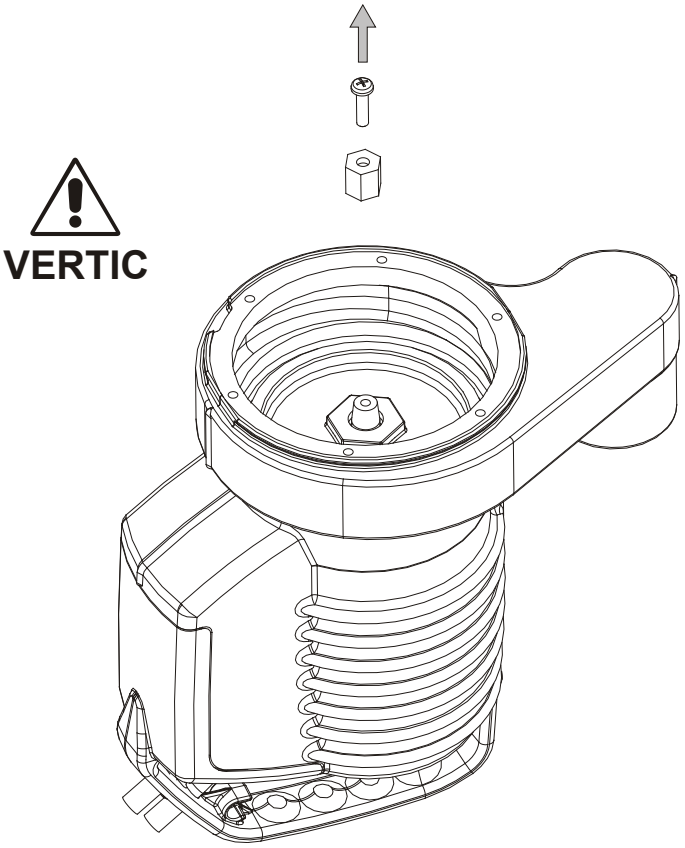
Tav_7



7: **WARNING!** Keep the pump UPRIGHT to prevent oil leakages. Tap the head of the shaft screw with a rubber hammer to release the bronze hexagonal socket screw from the tapered end of the shaft.

Not necessary for *Pro* version

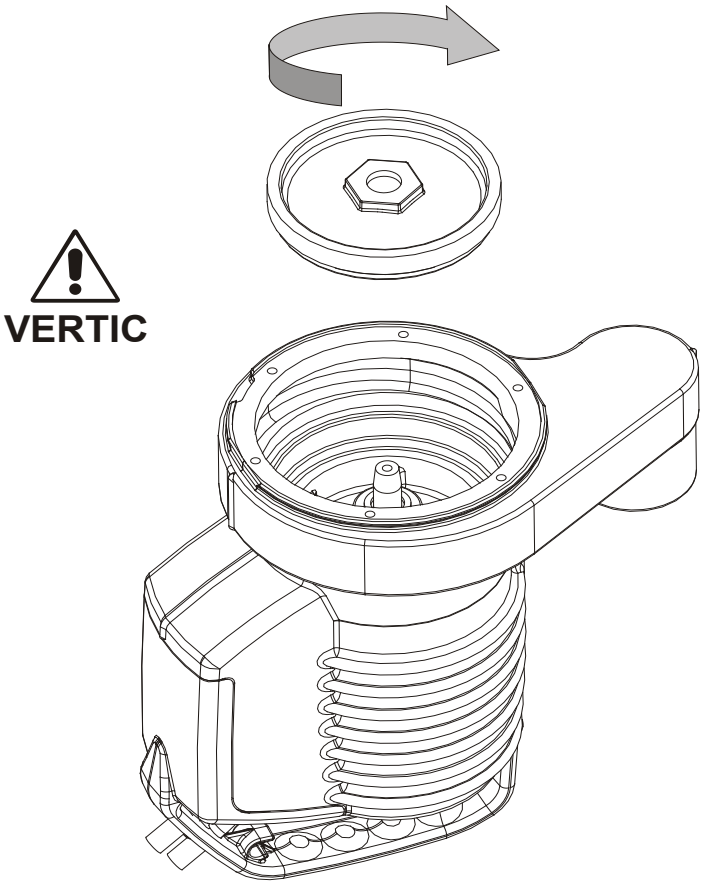
TTav_8



8: **WARNING!** Keep the pump UPRIGHT to prevent oil leakages. Remove the screw and the bronze hexagonal socket screw.

Not necessary for *Pro* version

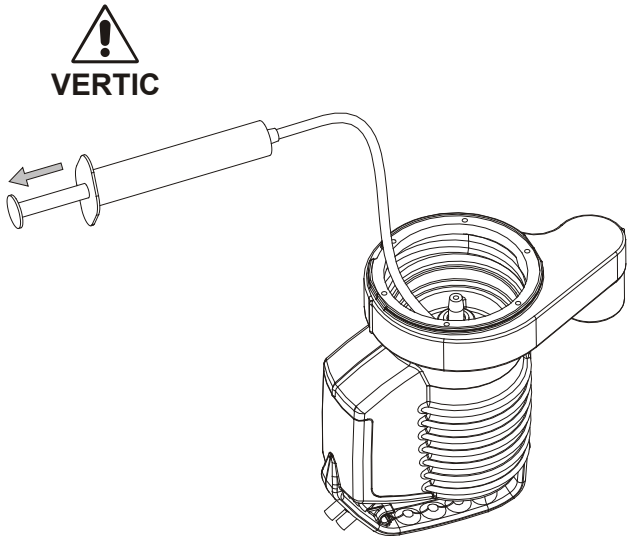
Tav_9



9: **WARNING!** Keep the pump UPRIGHT to prevent oil leakages. Unscrew the oil sump flange completely and lift it up, pulling it off the shaft.

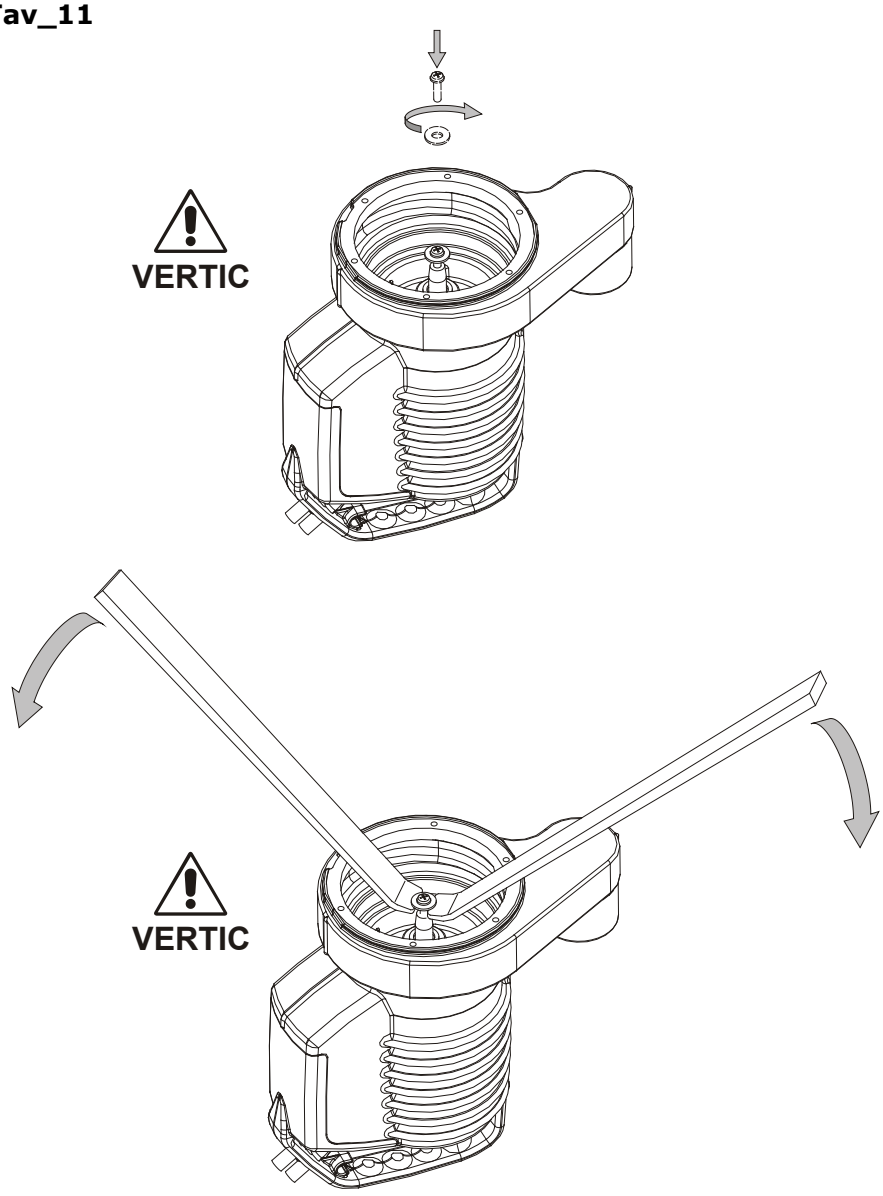
WARNING! Turn clockwise: the threading is left-hand.

Tav_10



10: **WARNING!** Keep the pump UPRIGHT to prevent oil leakages. Drain away the oil contained in the sump.

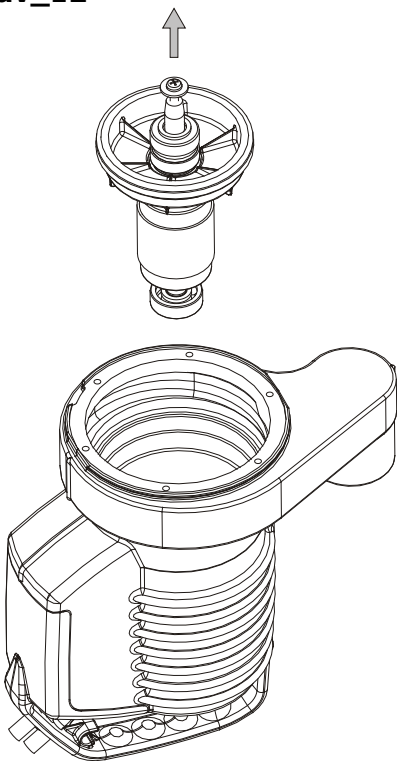
Tav_11



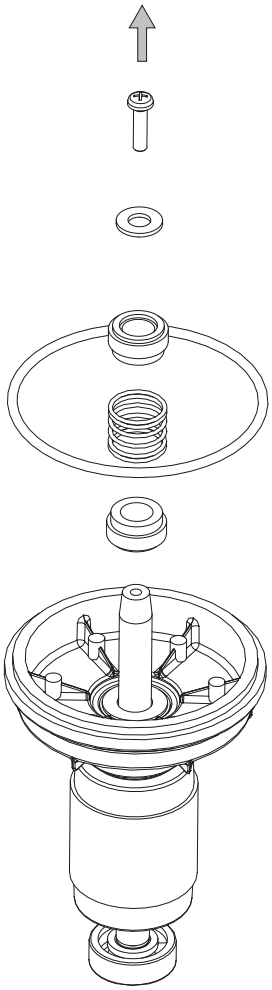
Removing the mechanical seals

11: Tighten the rotor screw onto the shaft with a crosshead screwdriver, positioning a washer under the head of the screw or, if this is not possible, under the bronze hexagonal socket screw, reversing its positioning in relation to normal use. Position the two levers under the washer/socket screw in order to exert sufficient force to release the shaft unit.

Tav_12



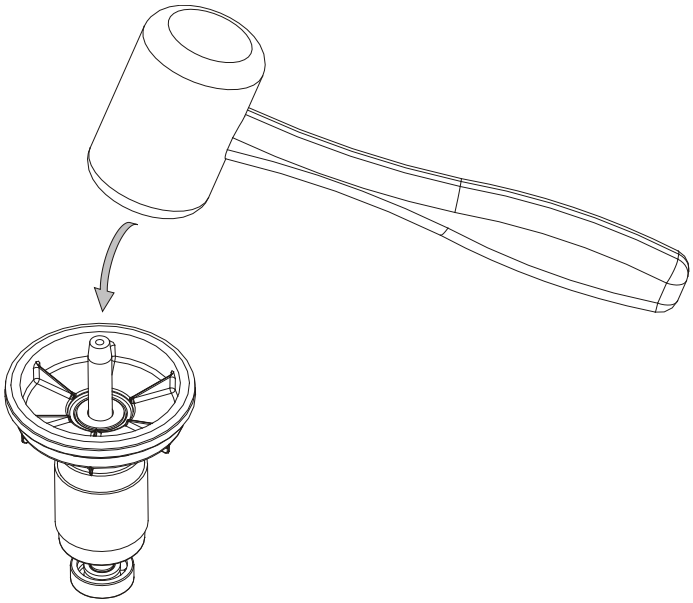
Tav_13



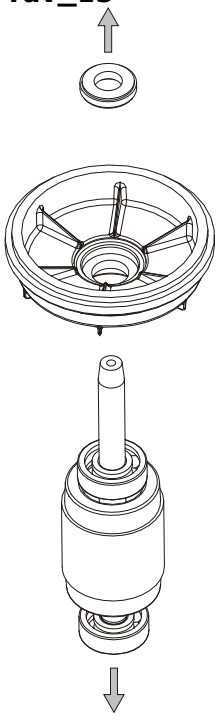
12: Pull out the shaft – lower bearing mount unit from the motor unit.

13: Undo the screw on the rotor using a crosshead screwdriver, remove the washer/ hexagonal socket screw, remove the rotating parts, the spring, the O-ring and the rubber boot (if still on the bearing) from the shaft.

Tav_14



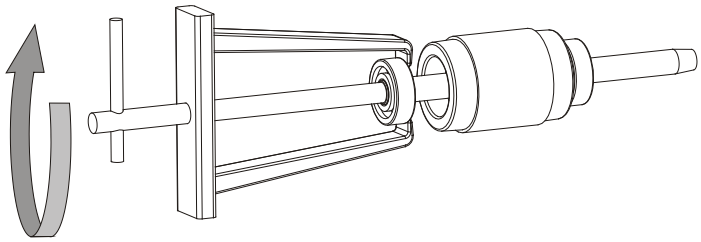
Tav_15



14: Tap the tapered end of the shaft with a rubber hammer, keeping the lower bearing mount resting on the bench.

15: Remove the shaft and the seal counterface from the lower bearing mount, using a screwdriver and working from the rear part.

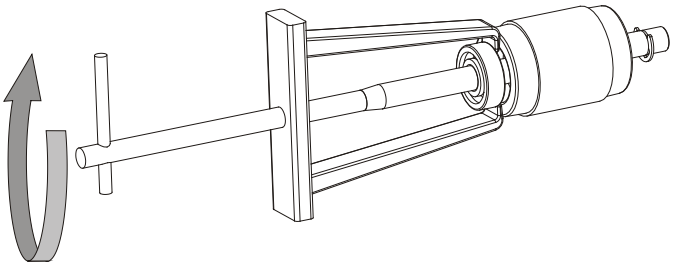
Tav_16



Removing ball bearings

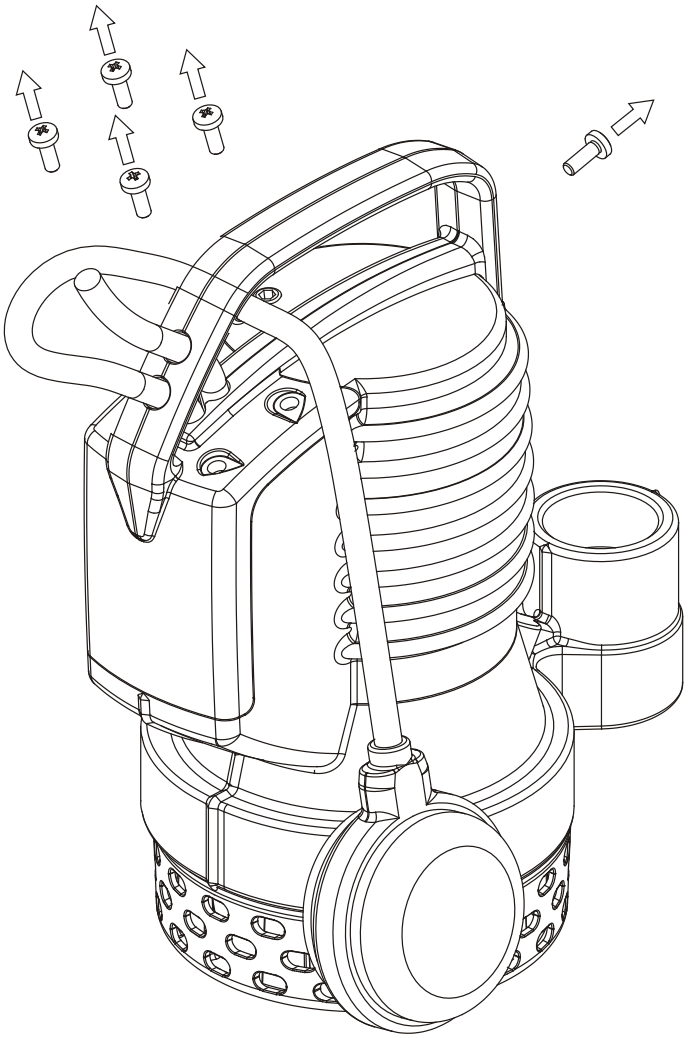
16: Using an extraction tool, remove the upper bearing from the shaft.

Tav_17



17: Using an extraction tool, remove the lower bearing from the shaft, taking care to protect its tapered end.

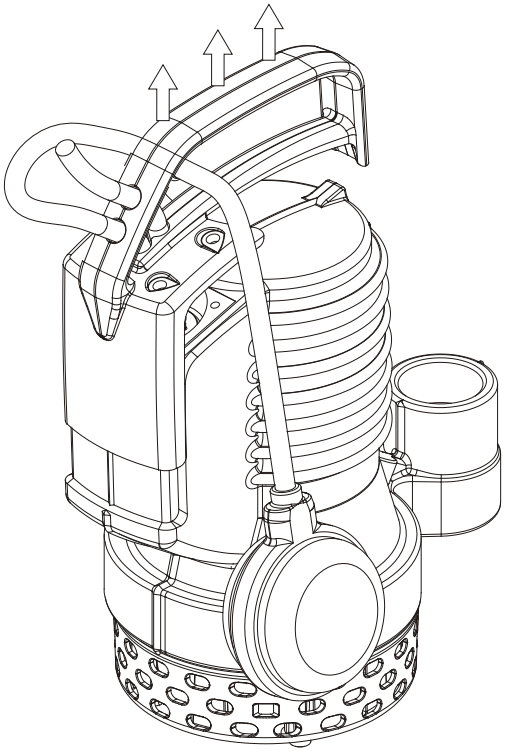
Tav_18

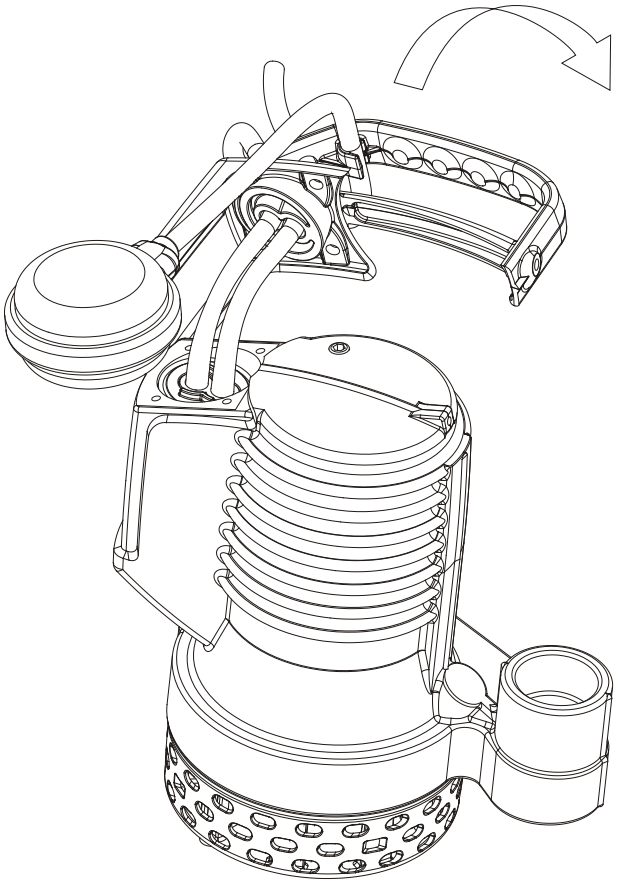


Removing handle

18: Undo the screws on the handle with a crosshead screwdriver.

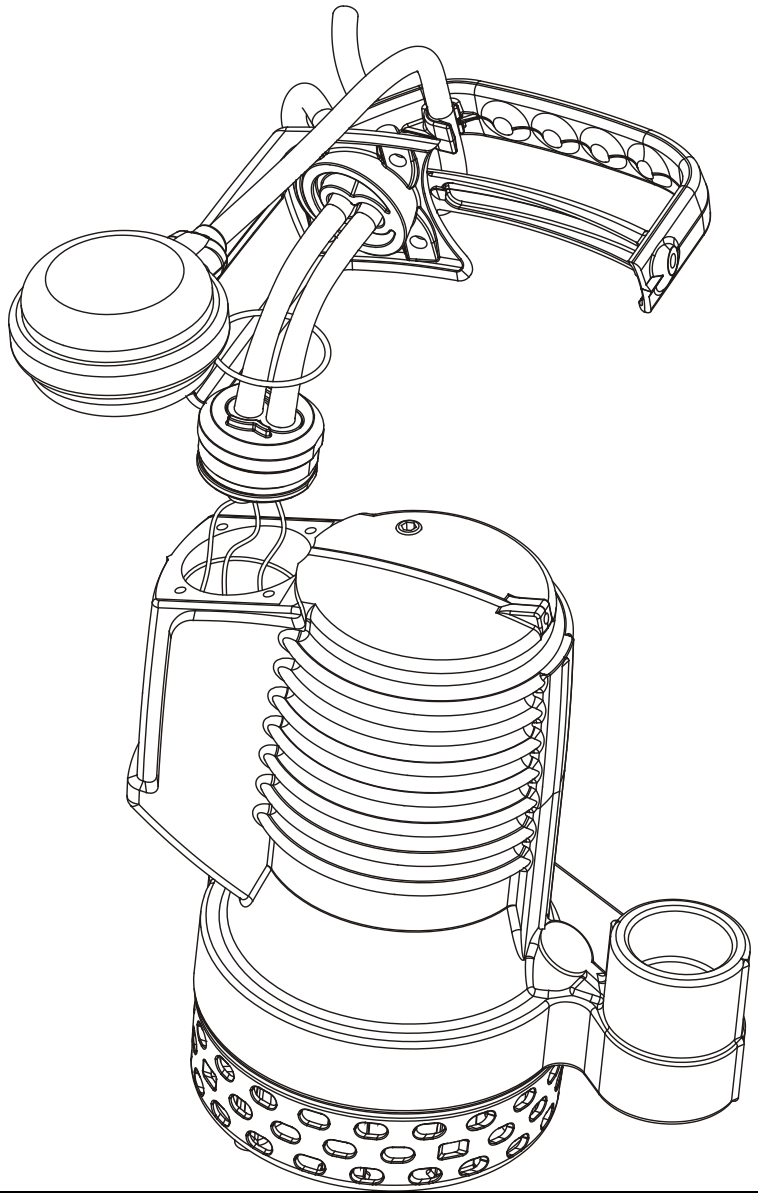
Tav_19





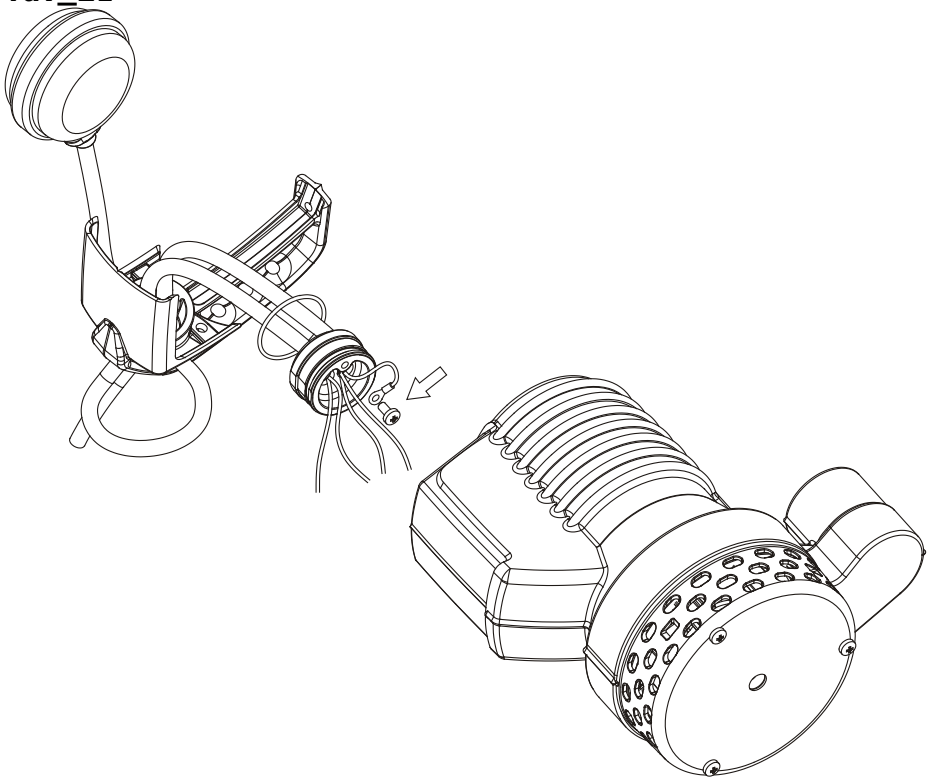
19: Grip the handle and lift it upwards, keeping the motor unit steady.

Tav_20



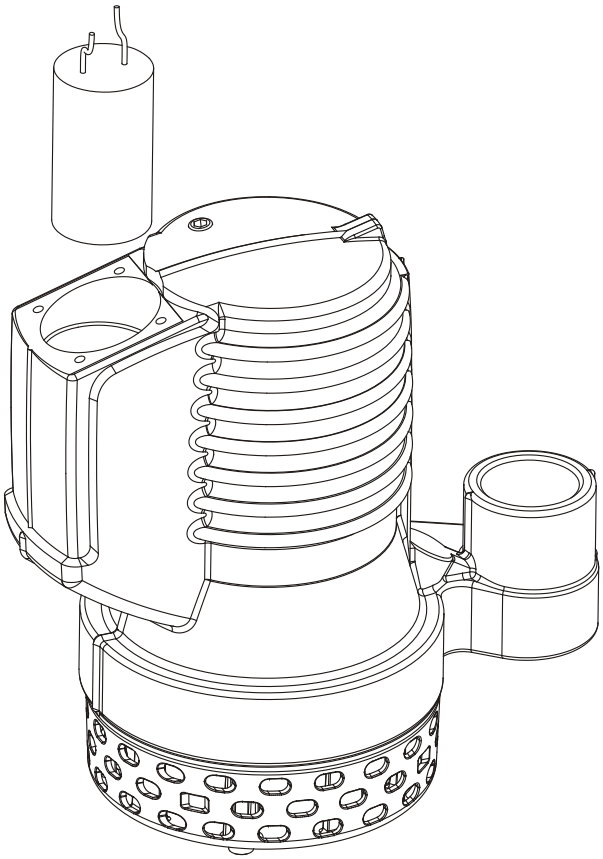
20: Pulling the electric cable take off the inside components. Note down the colours of the electrical connections on a piece of paper. In any case, there are diagrams available for all the pump types. Cut the electrical connections on the connectors.

Tav_21



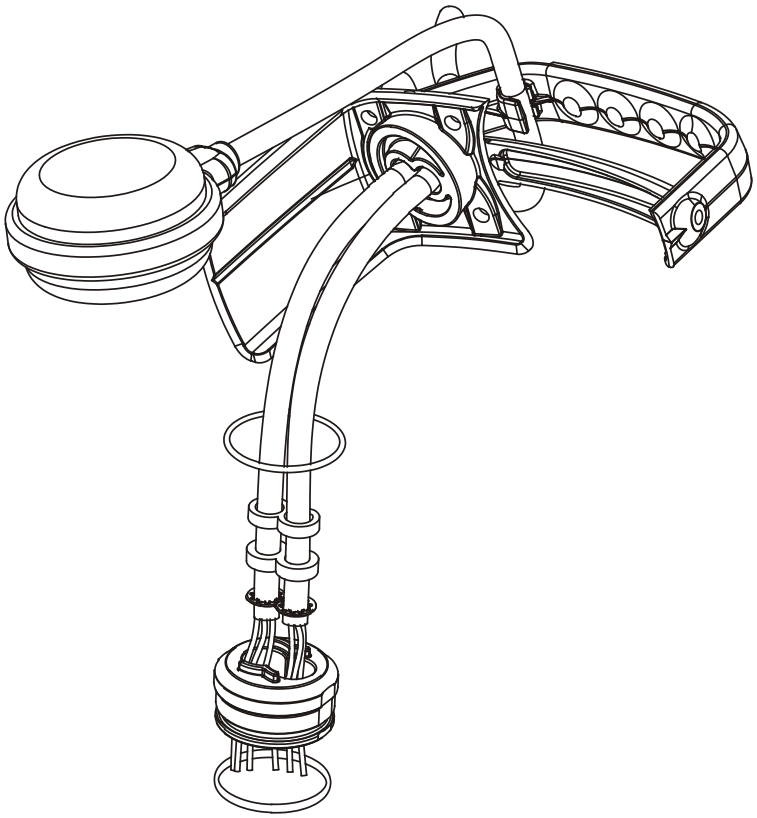
21: Undo the earth screw with a crosshead screwdriver, cut the eyelet.

Tav_22

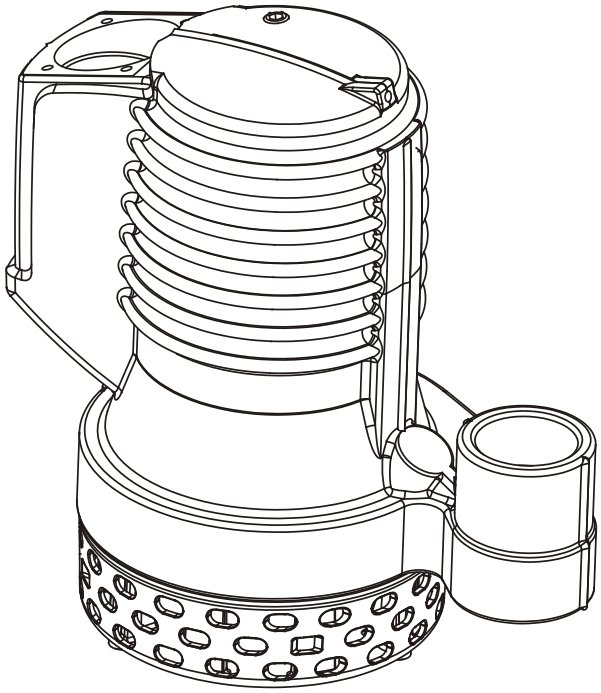


22: Take the condenser out of the electrical compartment (if provided).

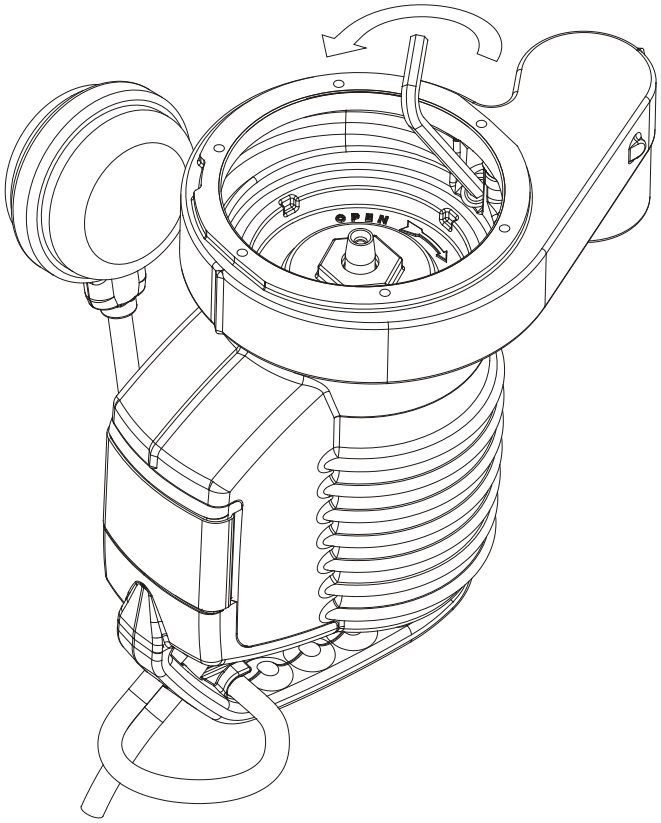
Tav_23

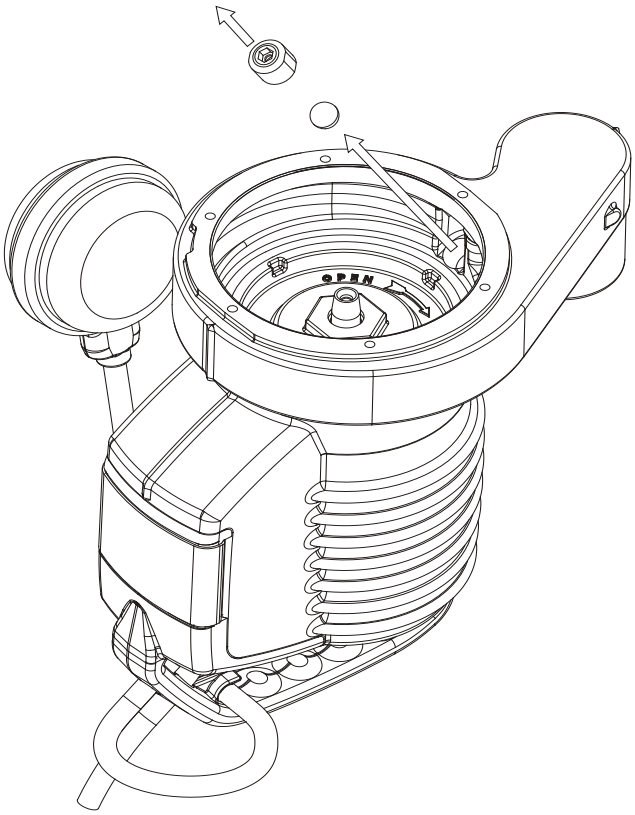


23: Take off the components from the electric cable.



Tav_24

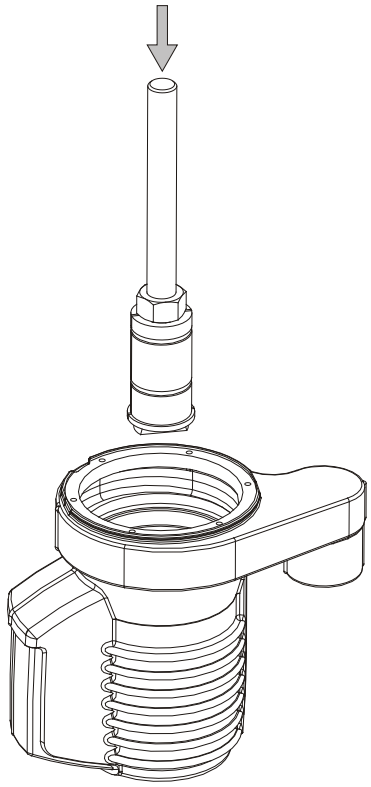




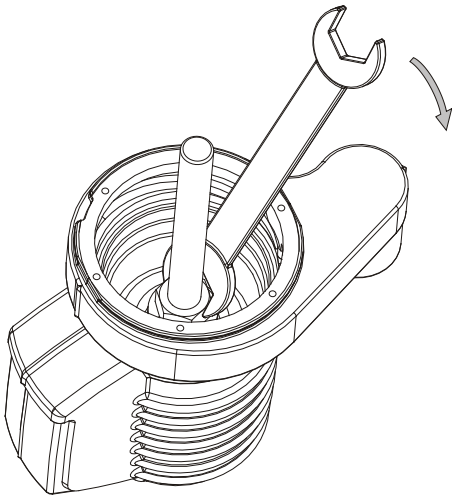
Removing Air Valve

26: with exagonal wrench undo the plastic nut and remove the rubber ball.

Tav_25



Tav_26

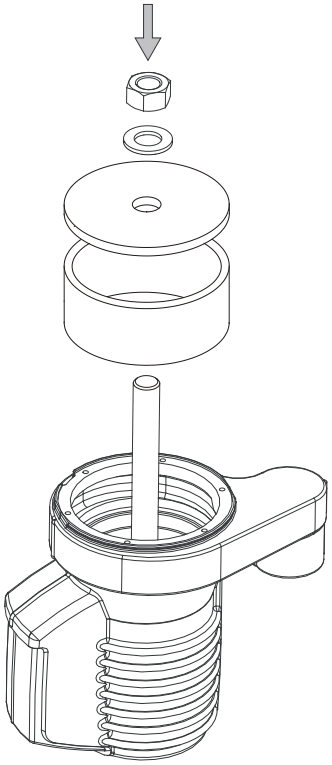


Removing the stator

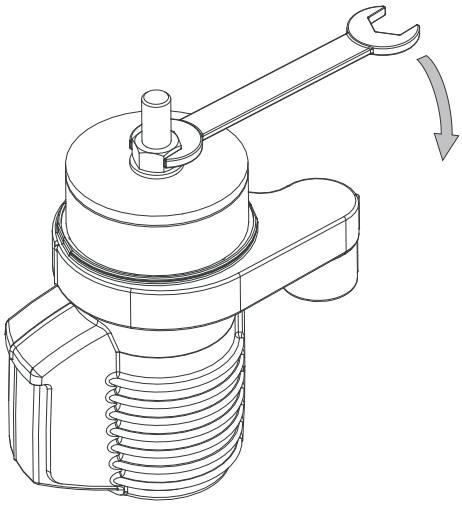
27: Fit the specific extraction tool supplied by Zenit inside the stator.

28: Tighten the nut with a 30mm fork wrench, turning it clockwise until the tool is fully extended.

Tav_27



Tav_28

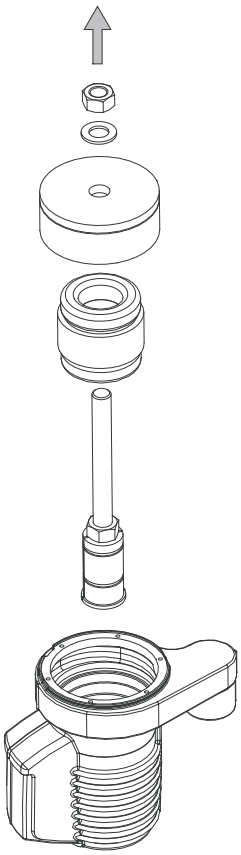


Remove the cables running out of the stator, pulling them out of the condenser housing, then position them inside the punch.

29: after greasing the thread of the threaded bar on the extraction tool, fit the spacer, to be used to remove the stator, into the threaded bar and tighten the M20 nut.

30: Tighten the nut clockwise with a 30mm fork wrench, until the stator has been completely removed.

Tav_29

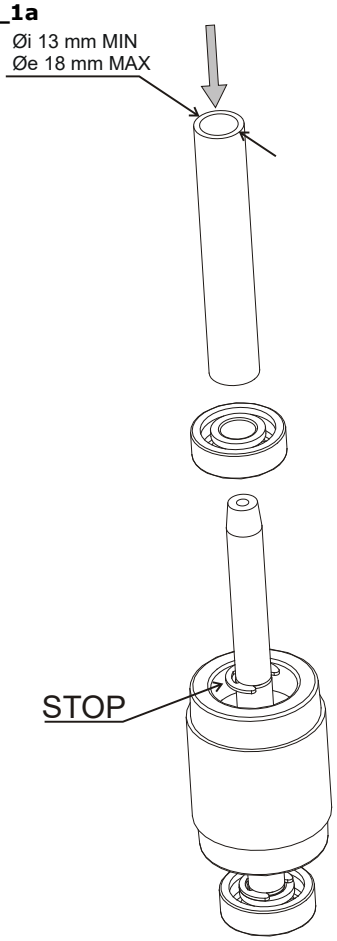


31: Remove the stator and the tools.
Clean the frame carefully then proceed with refitting.

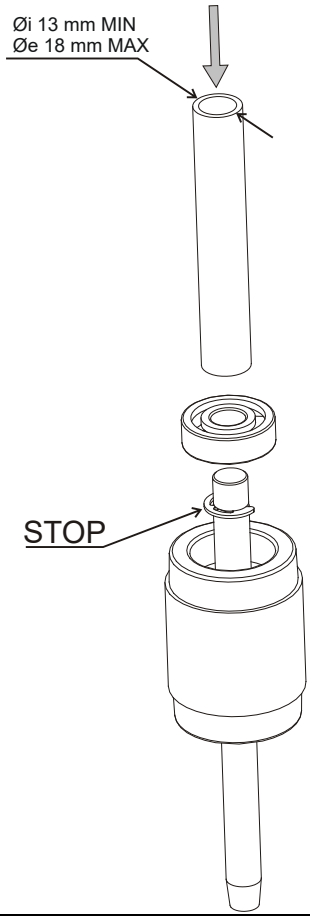
END OF DISASSEMBLING PROCEDURE

ASSEMBLING PROCEDURE

Tav_1a



Tav_2a

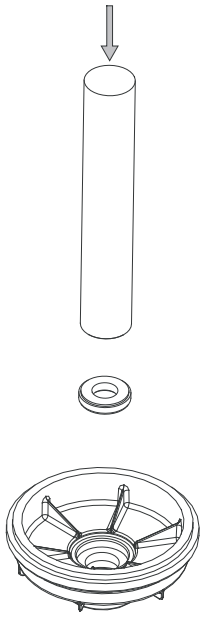


Preparing the driving shaft

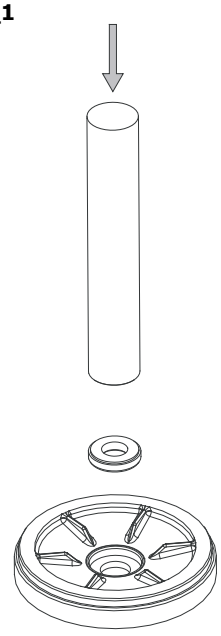
1a: Fit the lower bearing using a steel pipe with max. external diameter of 18mm and max. thickness of 2.5. We recommend you use a small press or a hammer.

2a: Fit the upper bearing using a steel pipe with max. external diameter of 18mm and max thickness of 2.5. We recommend you use a small press or a hammer.

Tav_3a



Tav_3a_1

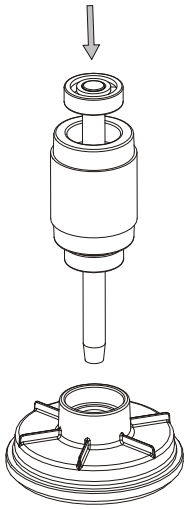


Fixed section of the mechanical seals

3a: Fit the in Aluminium Graphite counterface of the mechanical seal into its seat on the lower bearing mount, using the Nylon bushing provided.

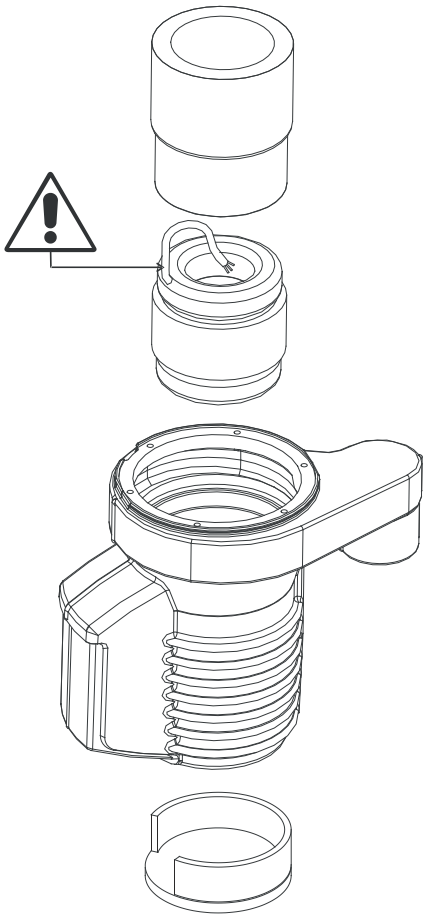
3a_1: Fit the Silicon Carbide counterface of the mechanical seal into its seat on the oil sump flange, using the Nylon bushing provided for this purpose.

Tav_4a



4a: Fit the pre-assembled shaft into the hole in the lower bearing mount, taking care not to touch the counterface.
Gently tap the bearing into its seat with a hammer until it is flush.

Tav_5a

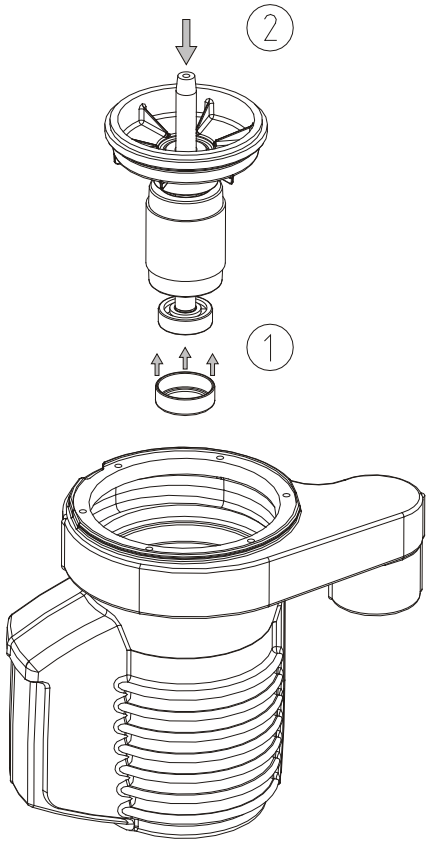


Fitting the stator

5a: Fit the stator into the frame using the specific tools (see drawing) until it is flush with the punch.
To fit the stator, use a press with max. capacity of 8 Tons.

WARNING! The stator's cable outlet must follow the direction shown in the figure, in position with the condenser seat.

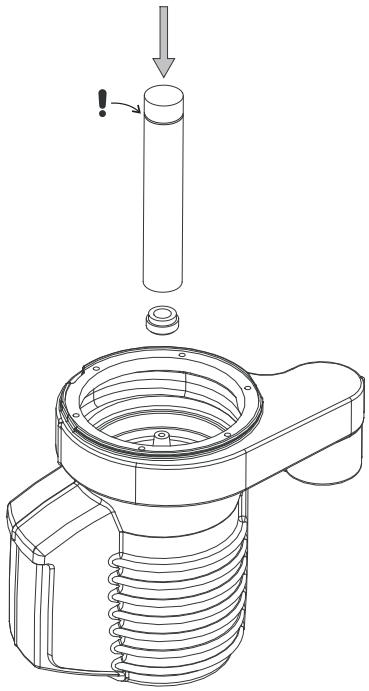
Tav_6a



Fitting the driving shaft

6a: Fit the rubber boot onto the upper bearing. Fit the body of the shaft-lower bearing mount into the frame, exerting pressure with your hands.

Tav_7a

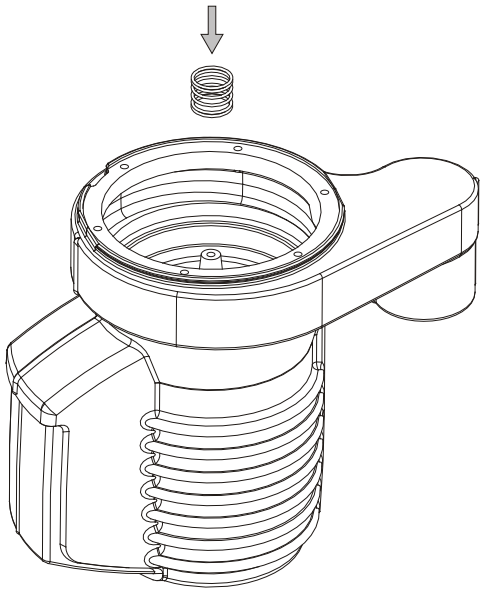


Mobile section of the mechanical seals

7a: Fit the (aluminium graphite) rotating part of the mechanical seal onto the shaft, using the nylon punch provided until it is flush.

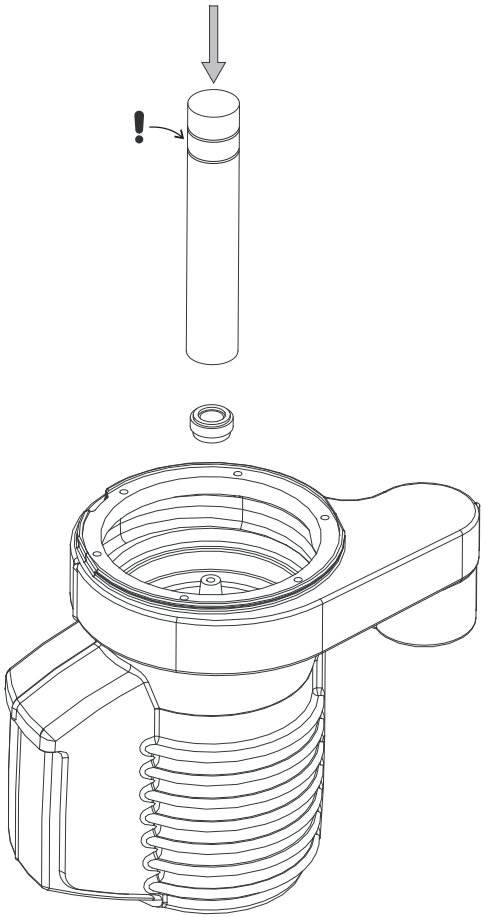
WARNING! Check that the parts in contact with each other are clean and correctly positioned (observe the fitting direction)

Tav_8a



8a: Insert the mechanical seal spring onto the shaft fitting it onto the collar on the mechanical seal below.

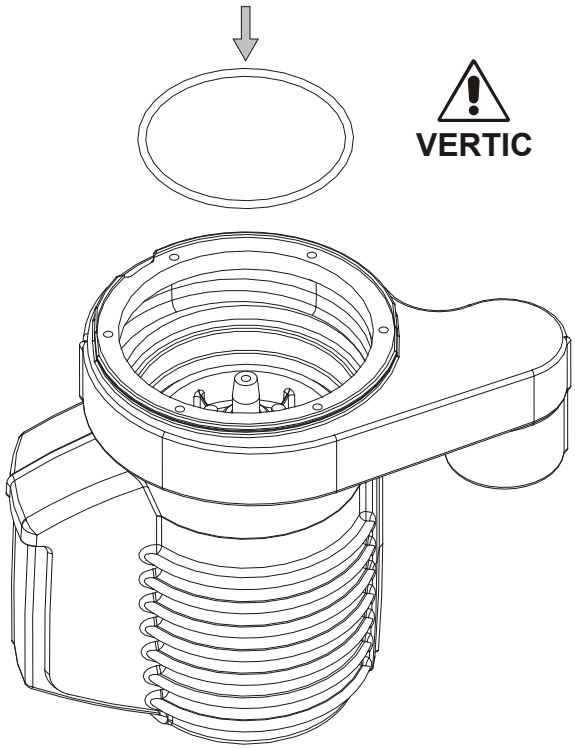
Tav_9a



9a: Fit the (silicon carbide) rotating part of the mechanical seal onto the shaft, using the nylon punch provided until it is flush.

WARNING! Check that the parts in contact with each other are clean and correctly positioned (observe the fitting direction)

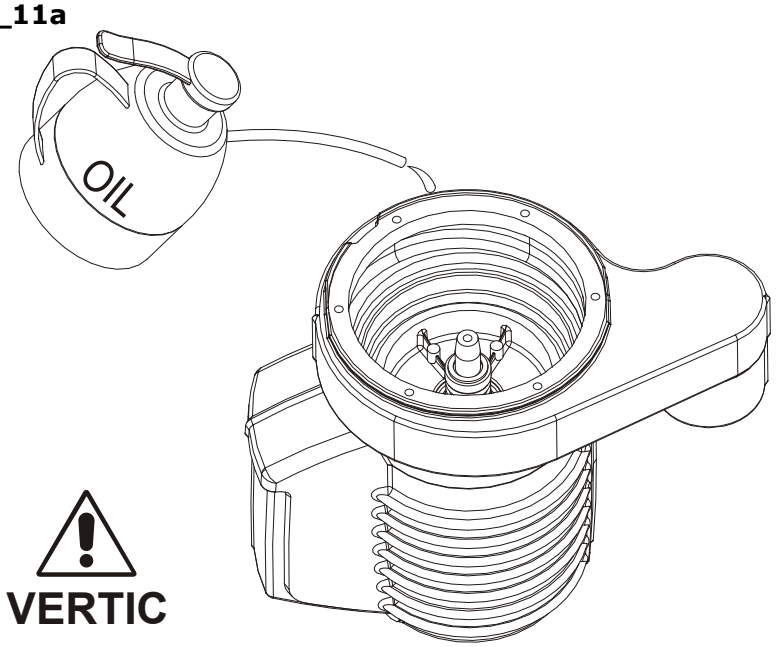
Tav_10a



Closing the oil sump

10a: **WARNING!** Keep the pump UPRIGHT. Rest the NEW O-ring in its seat.

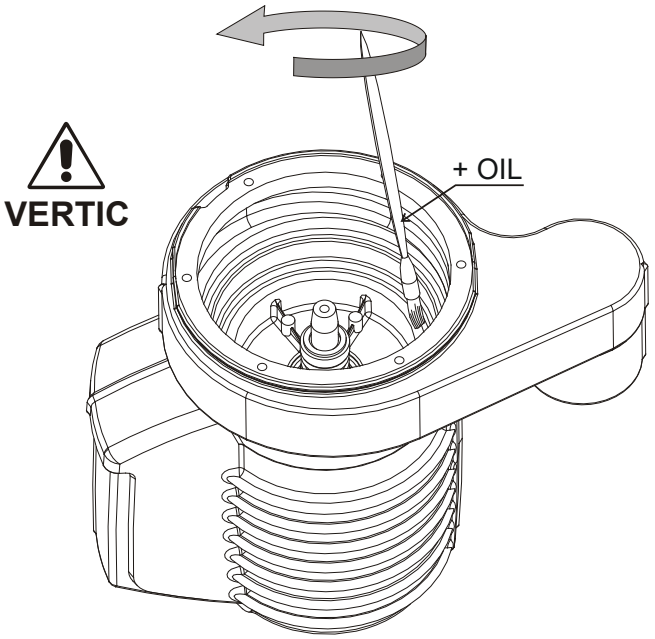
Tav_11a



Filling the oil sump

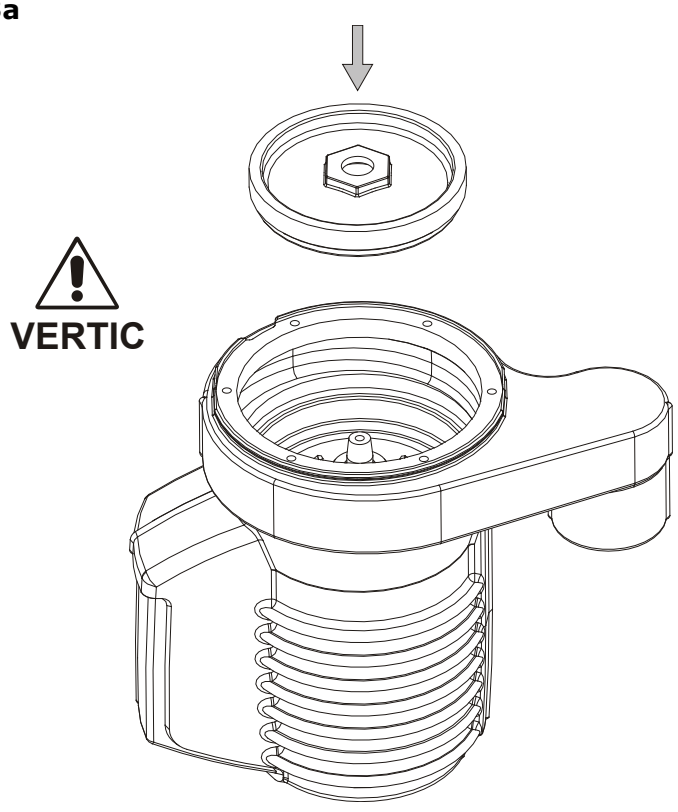
11a: **WARNING!** Keep the pump UPRIGHT to prevent oil leakages. Fill the sump with CASTROL PRODUCT L 320 oil until the stakes are covered, as shown in the figure.

Tav_12a



12a: **WARNING!** Keep the pump UPRIGHT to prevent oil leakages. With a soft-bristled brush, slightly lubricate the O-ring with CASTROL PRODUCT L 320 oil.

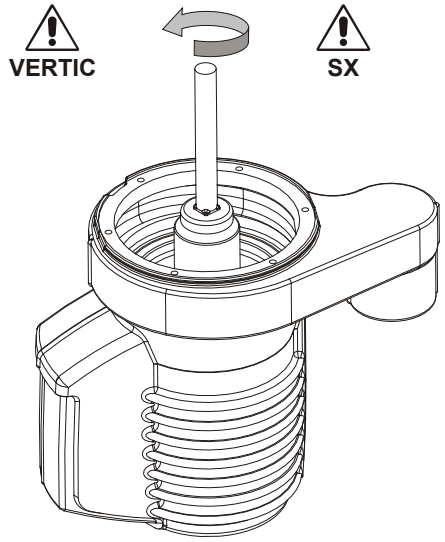
Tav_13a



13a: **WARNING!** Keep the pump UPRIGHT to prevent oil leakages. Join the flange-counterface assembly with the motor unit, taking care not to hit the counterflange. First screw the flange onto the oil sump with your hands, in order to engage with the thread.

WARNING! Turn anticlockwise: the threading is left-hand.
It is absolutely essential that the mechanical seal components are clean.

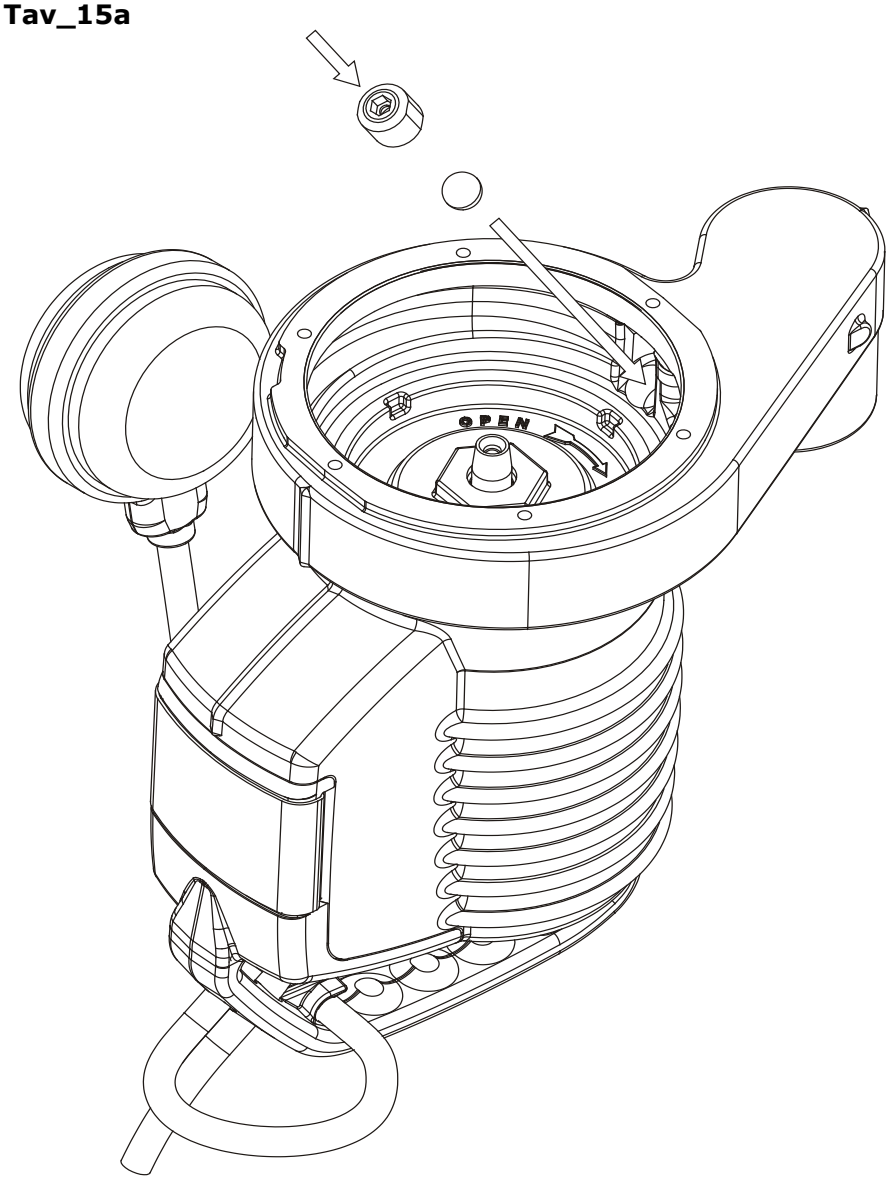
Tav_14a



14a: **WARNING!** Keep the pump UPRIGHT to prevent oil leakages. Tighten the oil sump flange fully with a 30mm socket wrench to a max. tightening torque of 100 Nm.

WARNING! Turn anticlockwise: the threading is left-hand.

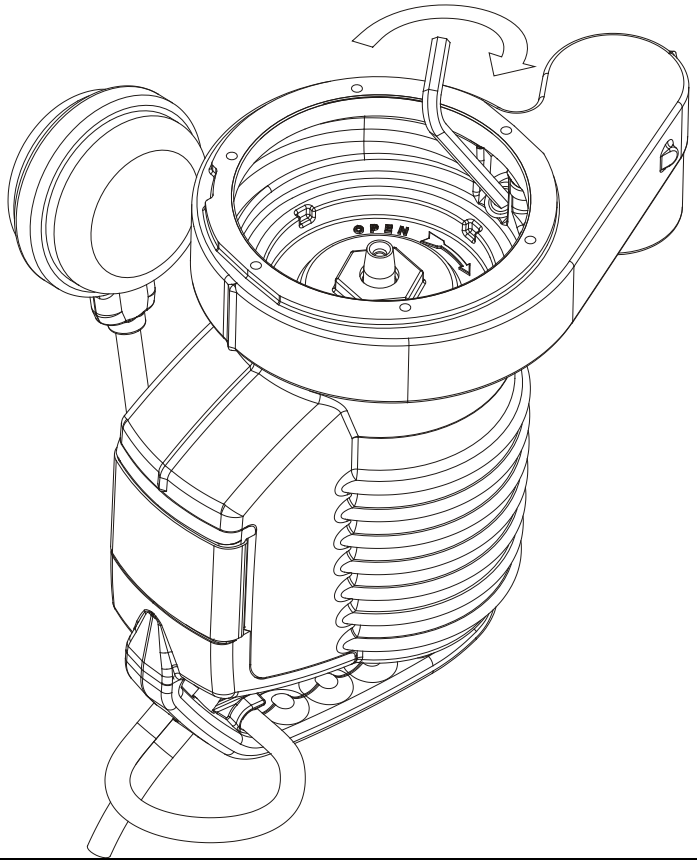
Tav_15a



Closing the Air Valve

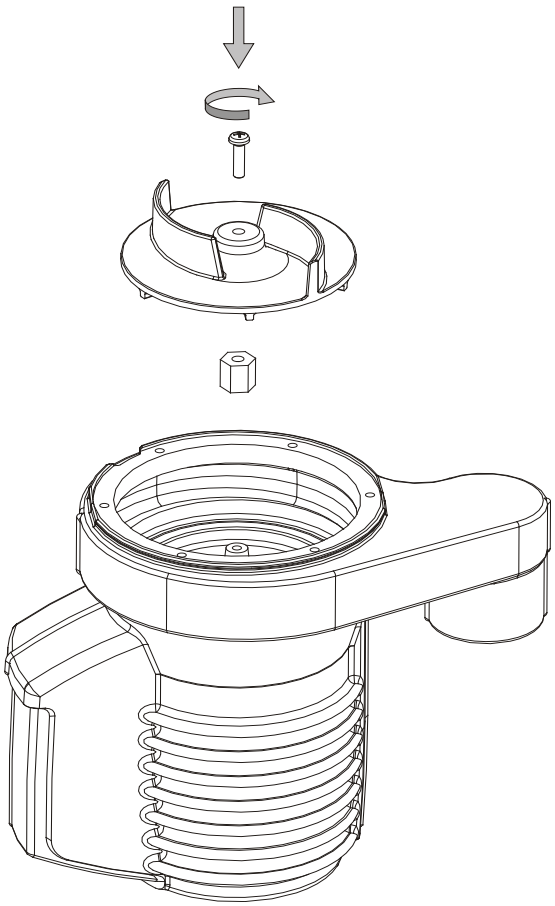
15a: insert the rubber ball and the plastic nut as indicated.

Tav_16a



16a: with exagonal wrench fully thigten the plastic nut.

Tav_17a

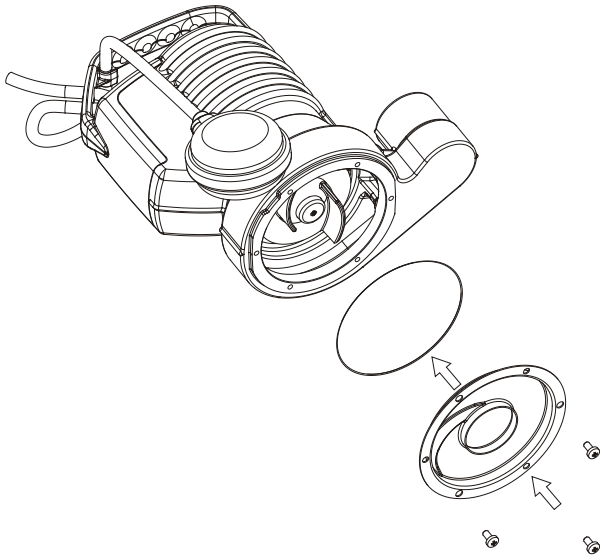


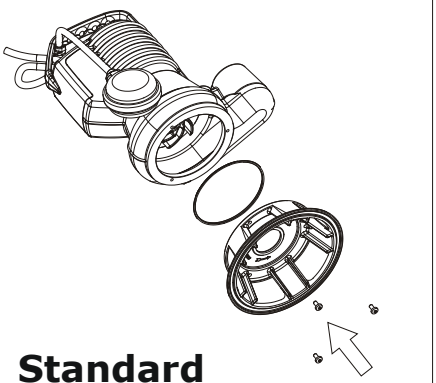
Hydraulic section

17a: Fit the bronze hexagonal socket screw onto the tapered end of the shaft. Fit the rotor onto the bronze hexagonal socket screw. Fully tighten the screws on the rotor with a crosshead screwdriver to a max. tightening torque of 3 Nm.

WARNING! Apply a few drops of medium-strength 'thread-locking' product to the screw.

Tav_18a





Standard

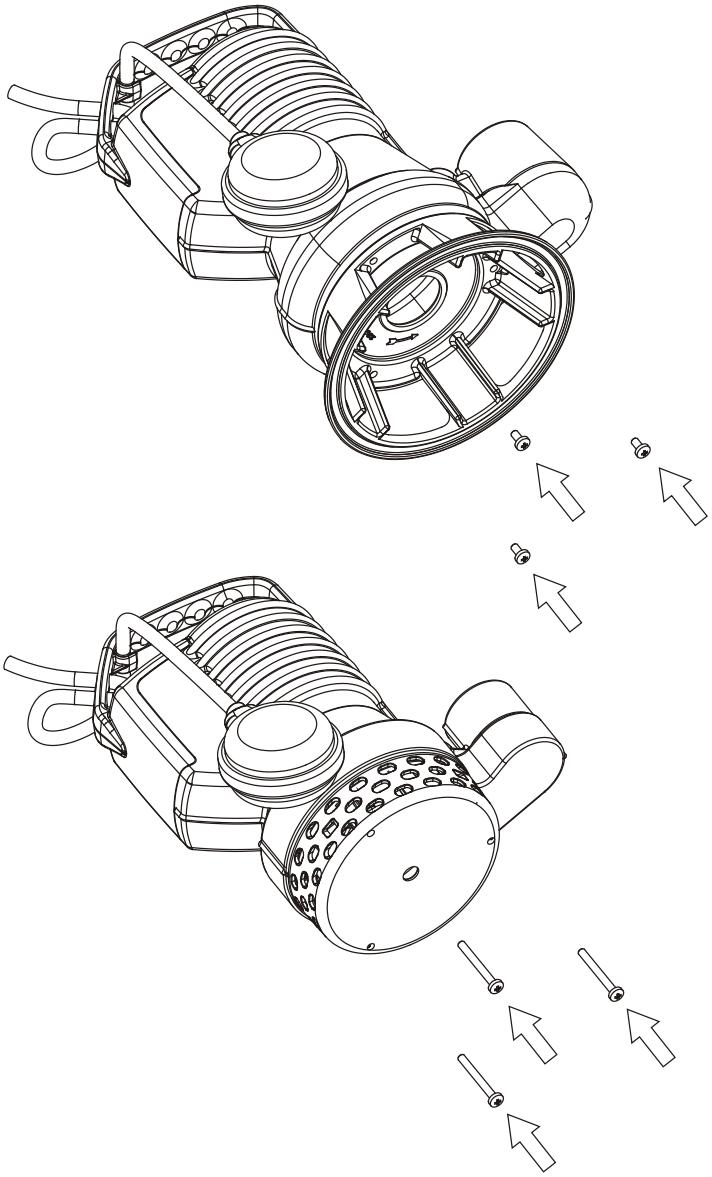
Professional

18a: Fit the intake flange and the Oring and tighten the screws for DRBlue type. For DG Blue type fit the foot base and Oring (and inox flange for DG Blue*Pro* version).

WARNING! The DRBlue intake flange groove must be facing the side opposite to the delivery inlet.

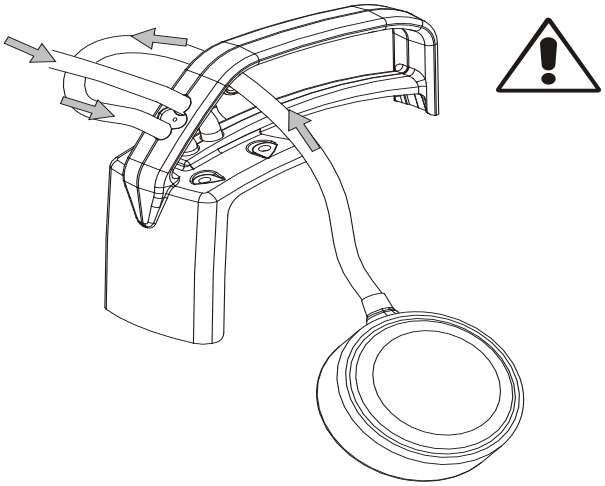
WARNING! The screws must be positioned as shown in the figure and tightened fully with a crosshead screwdriver to a max. tightening torque of 2 Nm.

Tav_19a



19a: Couple the intake grating, positioning it so that one of the inner feet is in position with the delivery inlet. For the DG Blue series, position the feet on the base as shown in the figure.
Fit the 3 screws and tighten them fully with a crosshead screwdriver to a max. tightening torque of 2 Nm.

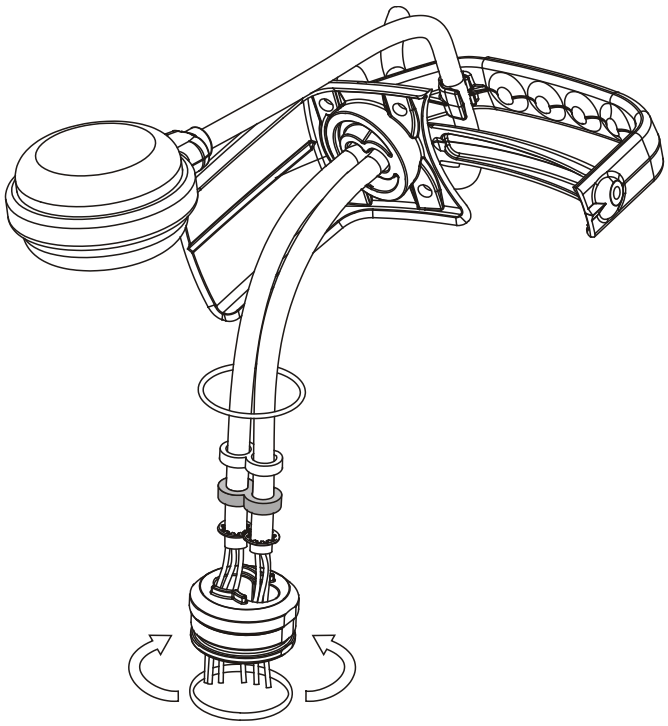
Tav_20a

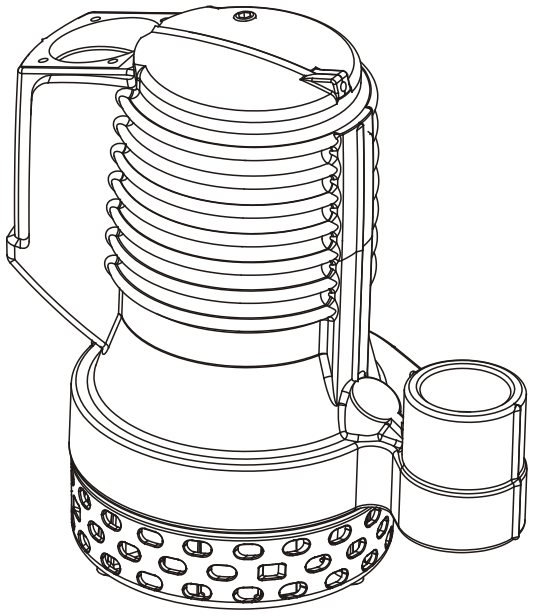


Handle

20a: Insert the power cables and the float cables (if the unit is equipped with a float) as shown in the figure.

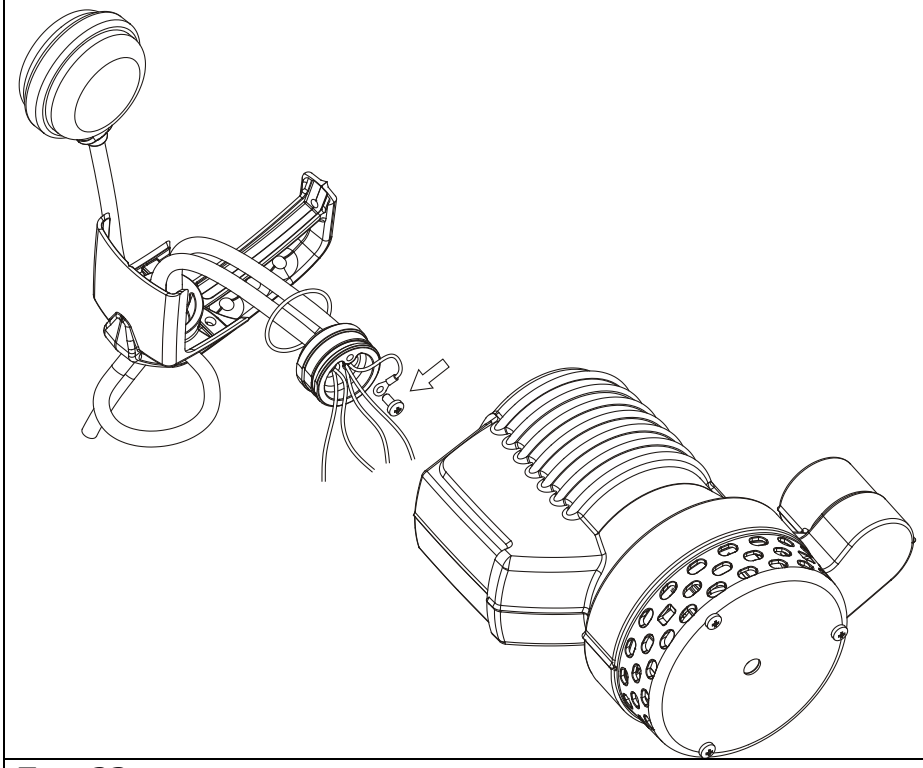
Tav_21a





21a: insert the components on the electric cables in the order represented in figure.

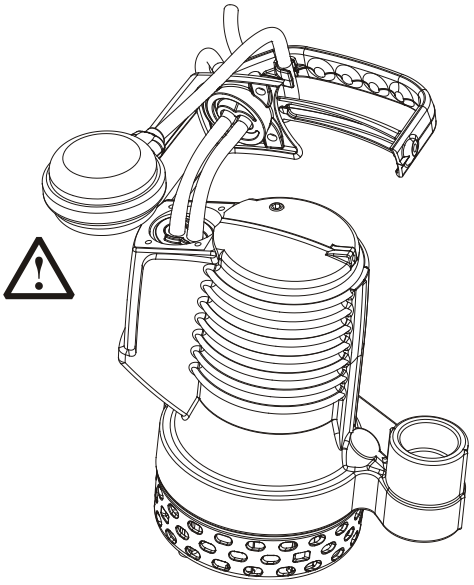
Tav_22a

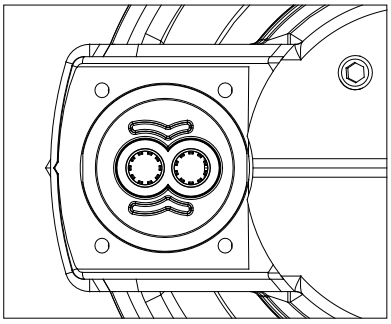


22a: Fit an eyelet for screws with diam. 5 onto the earth cables coming from the float and the power cable.

Position the eyelet on the earth underneath the screw head and tighten the screw on the aluminium support fully, using a crosshead screwdriver, to a max. tightening torque of 3,5 Nm.
Connect the wires as illustrated in the diagram, or according to the positions noted down during removal.

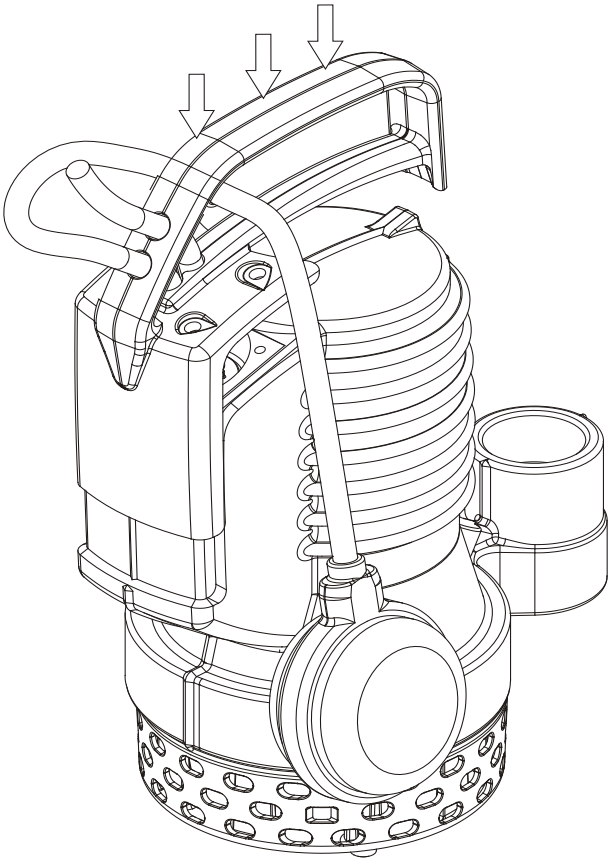
Tav_23a





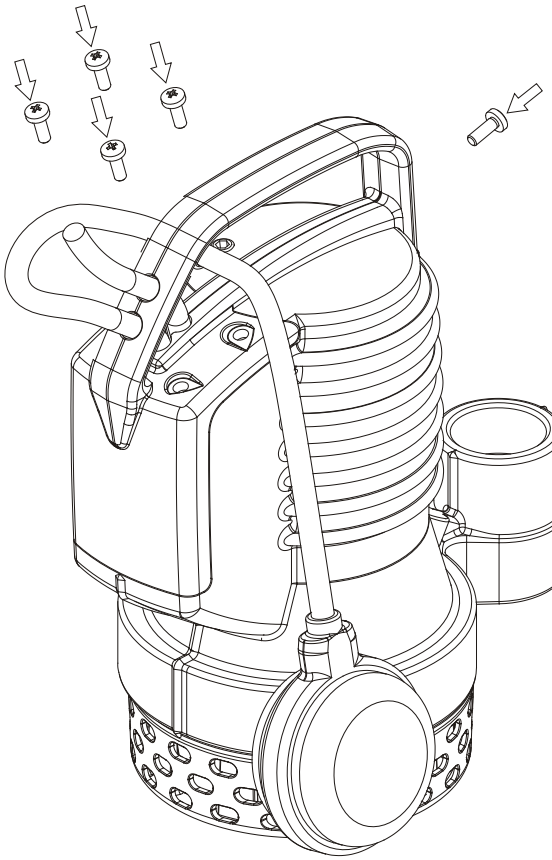
23a: fit the aluminium support/rubber basket/anti-stress cable and cable gland assembly, keep attention on the aluminium support orientation: the short ribs must be positioned toward the pump center.

Tav_24a



24a: Fit the handle-cable clamp assembly so that it closes up the electric compartment, pulling the cables slightly outwards to keep the assembly together throughout this stage.

Tav_25a



25a: Insert the screws as shown in the figure. Screw them in with a crosshead screwdriver but do not tighten them fully.
Tighten screws fully, working crosswise, to a max. tightening torque of 3Nm ±30%.

END OF ASSEMBLING PROCEDURE

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Cod. 2727NN00061
Rev. 2 – 01/11/2024