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ASSEMBLY AND DISMANTLING GUIDE

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REQUIRED TOOLS



- VARIOUS-SIZE FLAT SCREWDRIVERS
- PHILLIPS SCREWDRIVERS, MEDIUM AND LARGE SIZE
- TORX SCREWDRIVERS, SIZE T20 AND T25
- ALLEN KEY, SIZE 4
- WRENCH, SIZE 13
- MULTI-GRIP PLIERS (2 PCS)
- RUBBER HAMMER

DISMANTLING



Pull up and remove the transparent cover



Take out the hex key tool



Take out the flat tool

Pull out the small key tool



The small key may be used to unscrew the front display's small screws. This will allow the user to rotate the display and adapt the view to the position of installation



Put the hex key tool and flat tool together: the flat tool may be inserted both in the hole no. 1 and 2, according to the needs and comfort of the user



DISMANTLING



With the resulting composite tool, unscrew the all the external caps





7
c



7
d



7
e

DISMANTLING

8



Note that the non-return valve access cap (left) has a bigger size than the other ones (1 ¼" vs 1"). Be careful not to mix them up when reassembling the pump

9



Pull out the non-return valve. Use the composite tool (or pliers)

10



Unscrew the self-priming valve access cap

Pull the self-priming valve out (use pliers if you cannot do it manually)

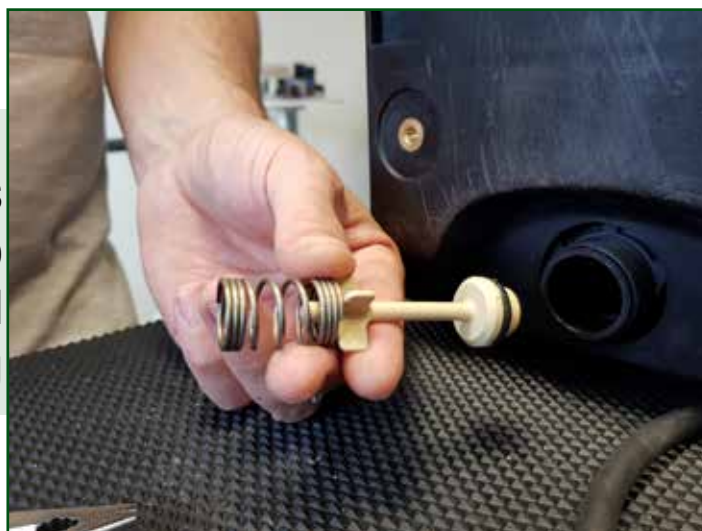


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If the pump is working with a positive suction head, trade places of the screw and the spring to exclude the self-priming effect and avoid noises during priming

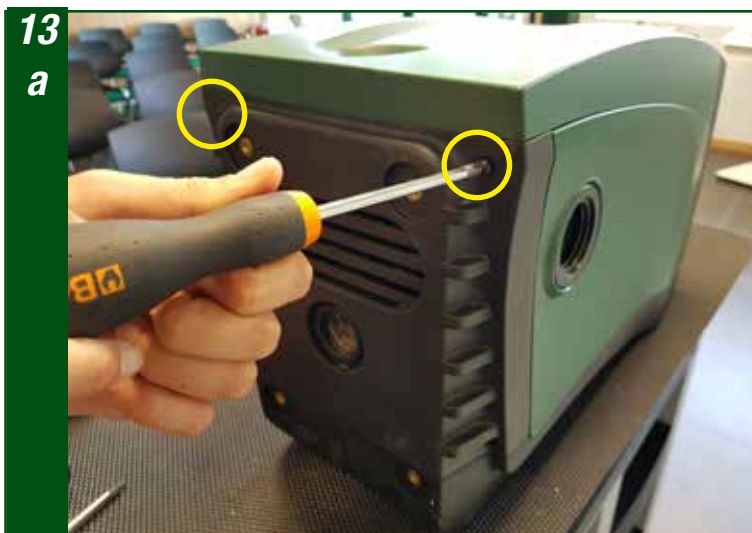


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DISMANTLING



To remove the front cover, unscrew the highlighted screws from the top cover and the bottom cover



Lift the front cover, paying attention not to pull the flat cable excessively



Unplug the display flat cable from the display board



15

To remove the top cover, unscrew the two screws next to the filling hole and the other two highlighted in the next picture



16

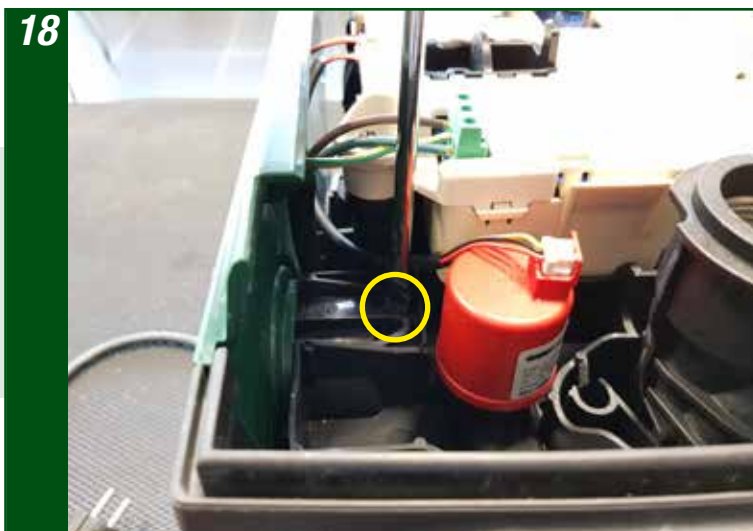


16
a

DISMANTLING



Remove the top cover



Remove the fittings on the sides with the help of a flat screwdriver, by inserting it as shown in the picture below



Remove the side covers by pulling sideways first, and then up



19

To remove the bottom cover, unscrew the two screws from the outside and the two from the inside, as seen in the following pictures

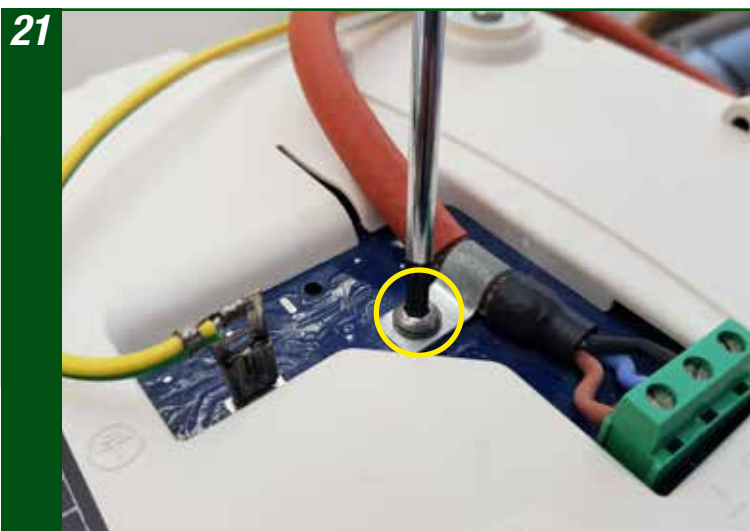


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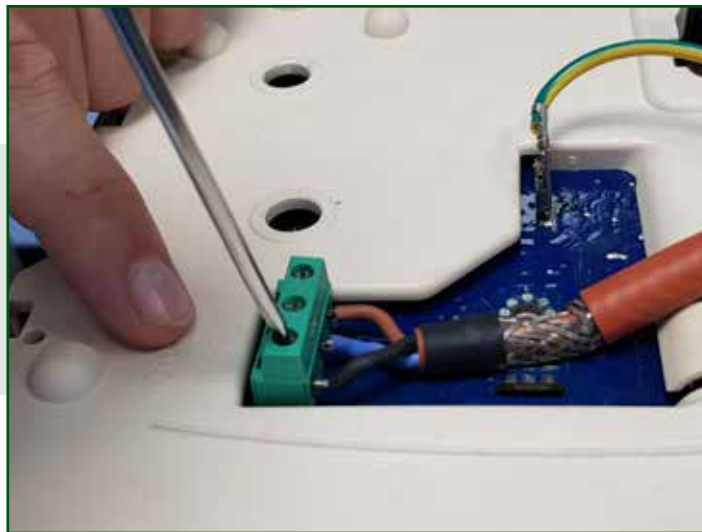
20
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DISMANTLING



Using the T20 pin torx screwdriver, remove the metal band that secures the motor cable to the main board

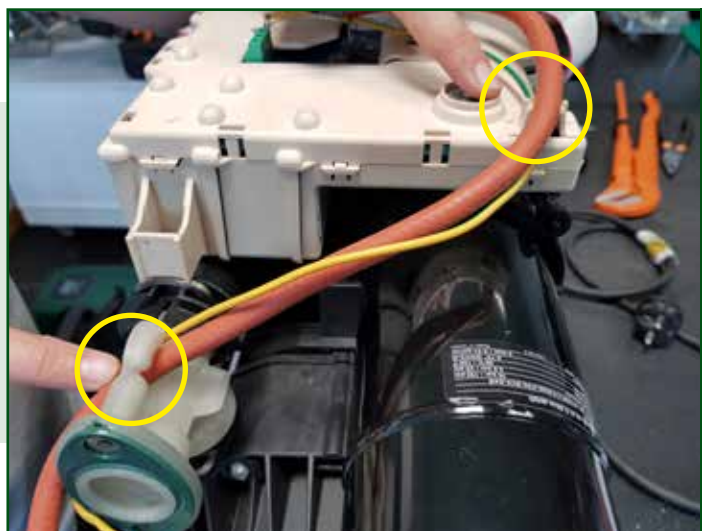
Unscrew the motor cable wires with the small flat screwdriver



Use the same screwdriver to pull up and remove the ground wire

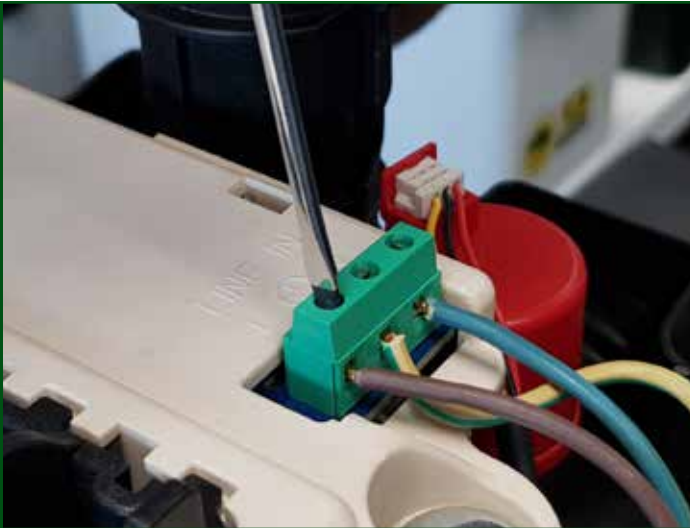


Pay attention to the position of the motor cable, in particular the slots through which it passes (see picture). The cable must be positioned identically when assembling the pump



DISMANTLING

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Unscrew the power cable wires

26



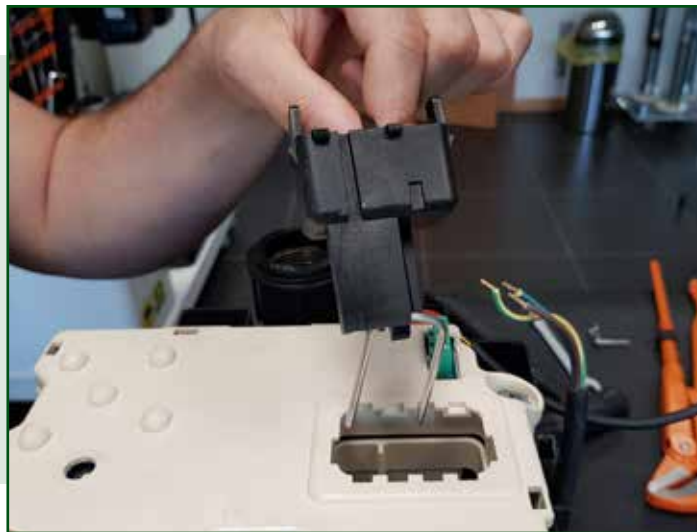
Unplug the pressure sensor (1) and flow sensor (2) connectors

27



Lift and remove the extractor accessory in picture

To easily remove the pressure vessel's klammer, after pulling out the extractor, rotate it by 180° and reinsert it. Push it well till it clicks. Then pull it out again, and you will see it has caught and removed the klammer



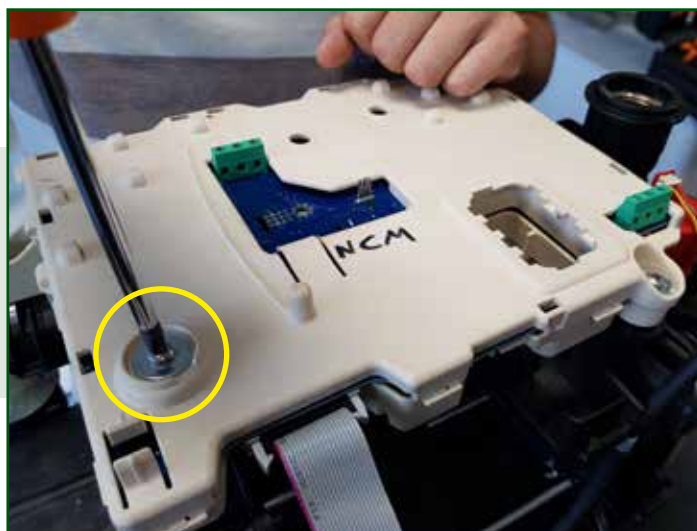
28

Easily pull out the pressure vessel



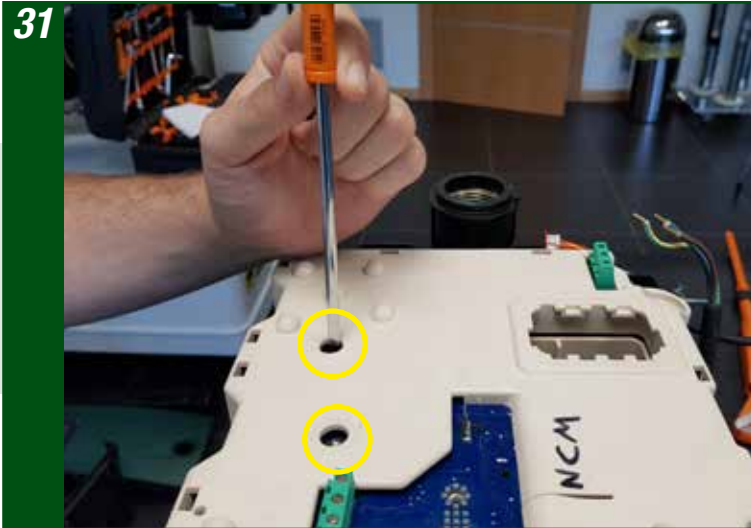
29

Unscrew the two screws and washers highlighted in this picture



30

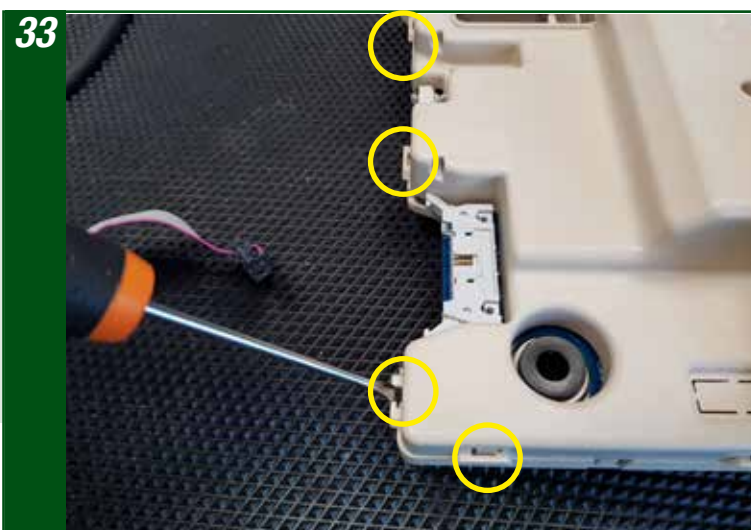
DISMANTLING



Remove the other two screws by using the Allen key



Gently lift and remove the main board block



If an inspection/analysis of the electronic board is required, remove the covers by opening the plastic joints with the help of a small flat screwdriver

Before removing the pressure sensor, remove the protection cap to check the state of the connection wires



34

Remove the pressure sensor by unscrewing it counterclockwise



35

Unscrew the three circled screws to detach the suction duct



36

DISMANTLING



Pull out the klammer on the filling duct side



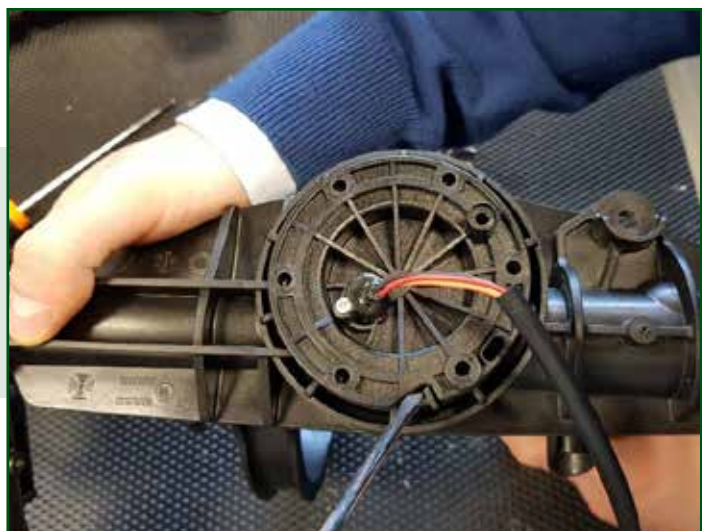
Lift and remove the sensors block

Unscrew the six screws in picture to dismantle the flow sensor



39

Lift the cover with a screwdriver inserted in the marked part



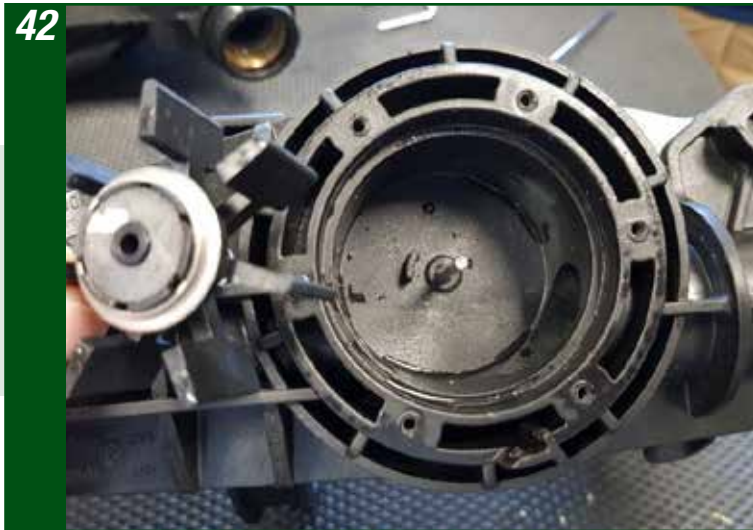
40

Check/replace the O-ring



41

DISMANTLING



Remove and check the flowmeter



To remove the pressure vessel's support, first lift and detach the highlighted part



Tilt it as shown in picture and lift to remove completely



Remove the back cover first by unscrewing the two circled screws



Then use the rubber hammer to detach the cover from the pump



DISMANTLING



Unscrew the six torx screws (T40 torx screwdriver) and use the rubber hammer to remove the pump body





Remove the first stage box



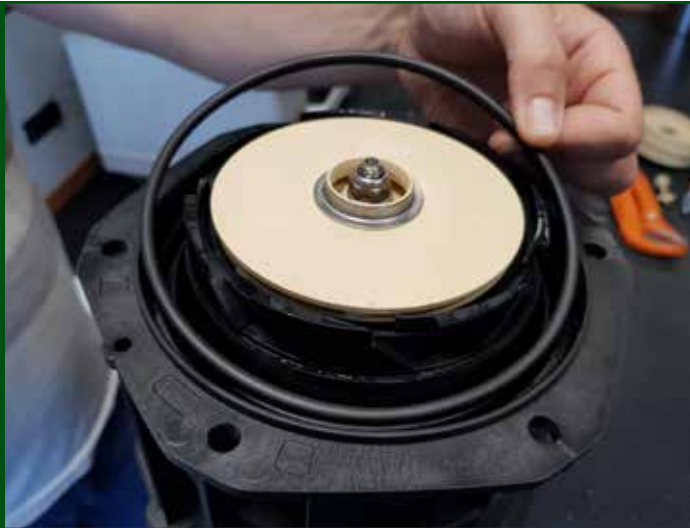
DISMANTLING

49



Use the rubber hammer to detach the outer cover

50



Remove/replace the upper O-ring

51



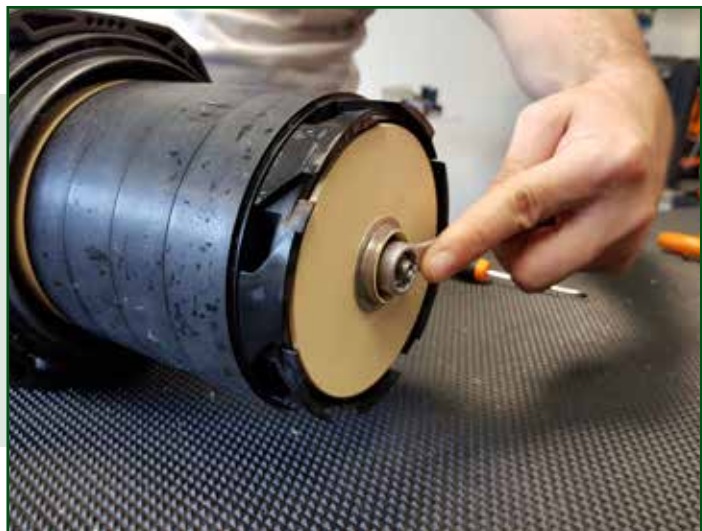
Lift and remove the cover

Remove/replace the lower O-ring



52

To remove the nut, keep it still with the wrench and at the same time rotate the shaft, using the big flat screwdriver, from the access on the bottom (or vice versa



53



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DISMANTLING

54



After removing the nut, remove the washer

55



Using two screwdrivers as levers, lift and remove the first stage

56



You should be able to remove the other stages (or most of them) all together, otherwise keep using the screwdrivers to facilitate the operation

If required, dismantle the stages in their single parts: diffuser (conveyor, left, and diffuser box, right) and impeller (middle)



Remove the last stage box



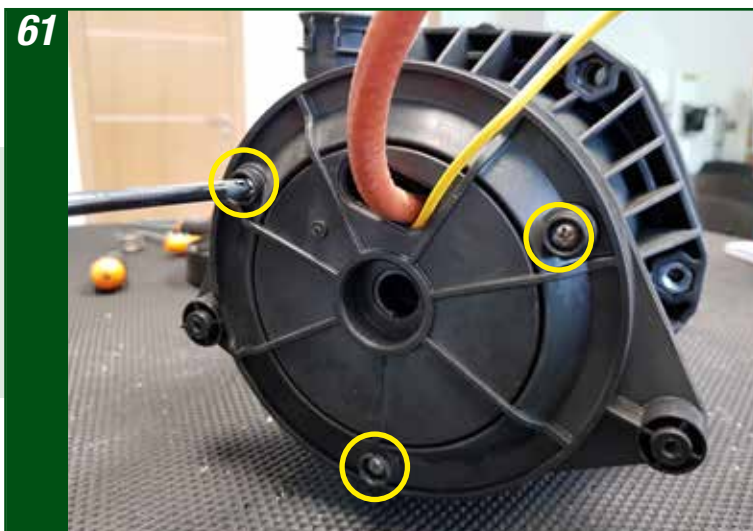
Remove the washer



DISMANTLING



Remove the mechanical seal's rotating part



Unscrew the three screws of the bottom motor cover



Remove the torx screws (use the T20 pin torx screwdriver) to undo the motor casing

By means of the rubber hammer,
remove the casing



63



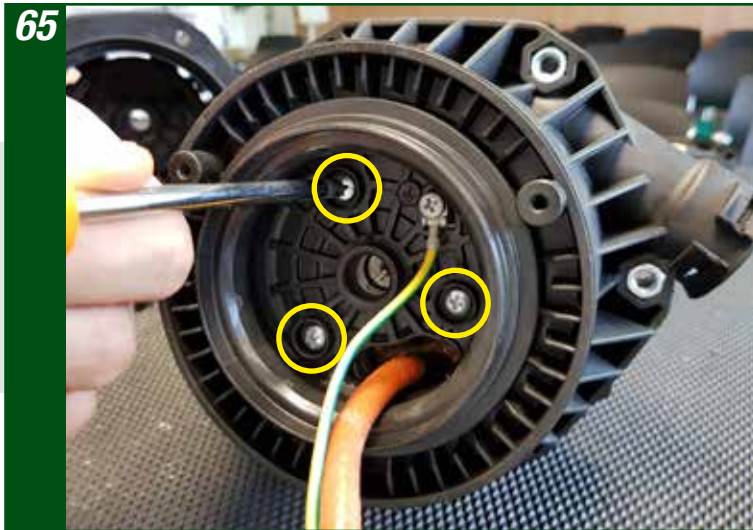
63
a

Remove/replace the O-ring

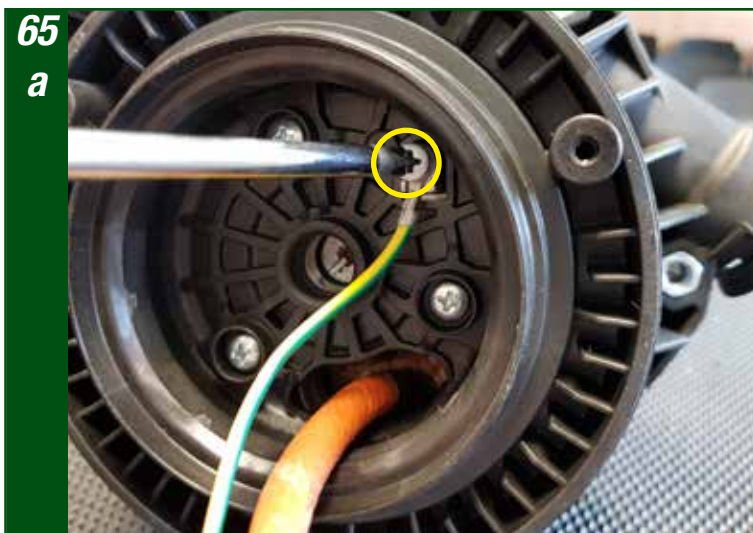


64

DISMANTLING



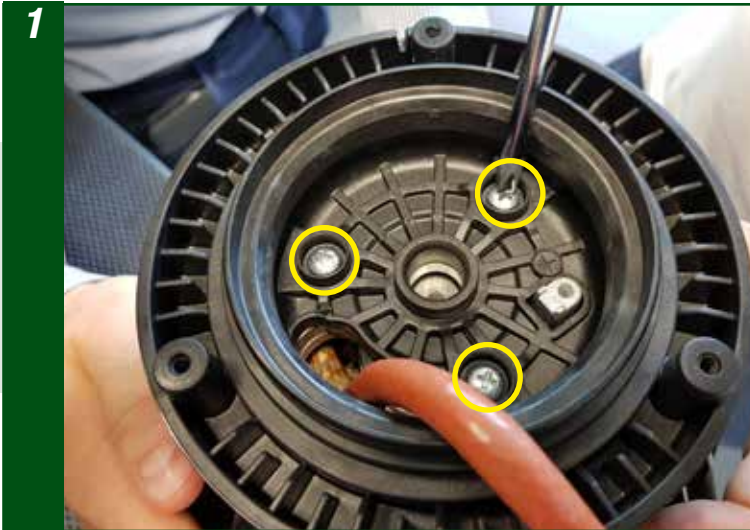
Unscrew the four screws (three fastening screws + ground wire) and remove the bottom motor support



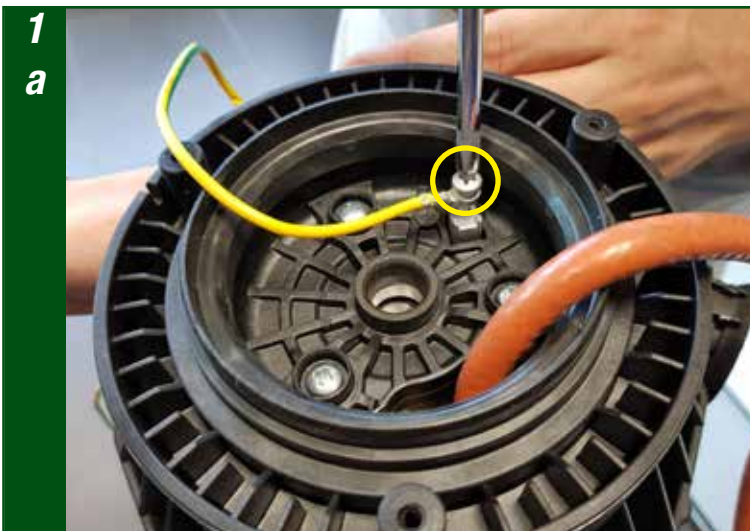
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ASSEMBLING



Assemble the motor support by screwing the four screws in the pictures (three fastening screws + ground wire)



Insert the motor cable and the ground wire in the hole of the lower motor cover, and let it slip in position

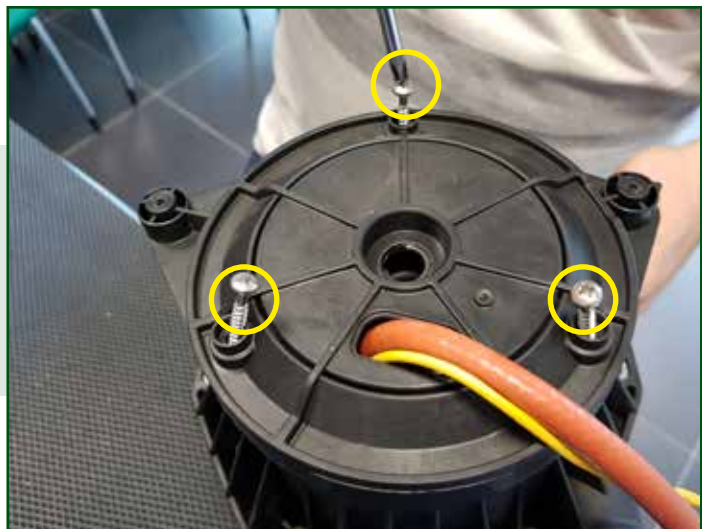
3

Respect the correct orientation, which is represented in picture



4

Screw the three screws and close the cover



5

Reposition the motor vertically, install the O-ring



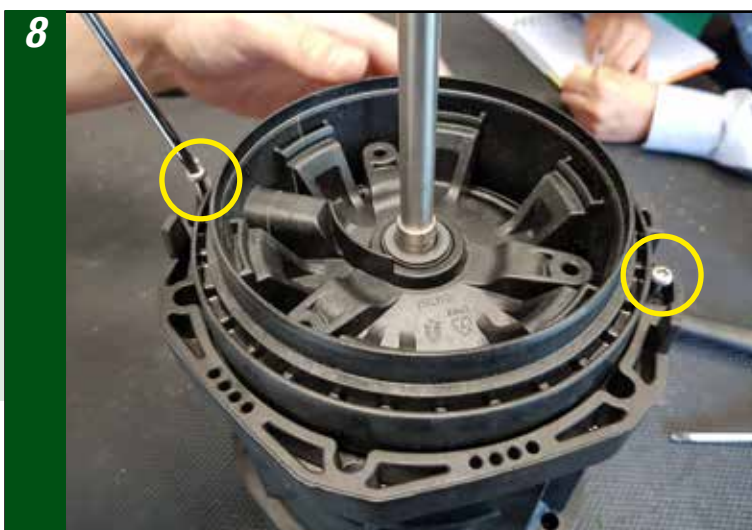
ASSEMBLING



Insert the main motor casing, aligning the parts as shown in picture



Using the two multi-grip pliers, tighten the two parts, acting on opposite sides at the same time (be careful not to damage the plastic)



Fasten the two torx screws

Insert the mechanical seal, first the fixed part (if it had been removed), then the rotating part



9

Push the seal into position: pay attention to the correct insertion of all components



10

Insert the washer



11

ASSEMBLING



Insert the bottom stage box



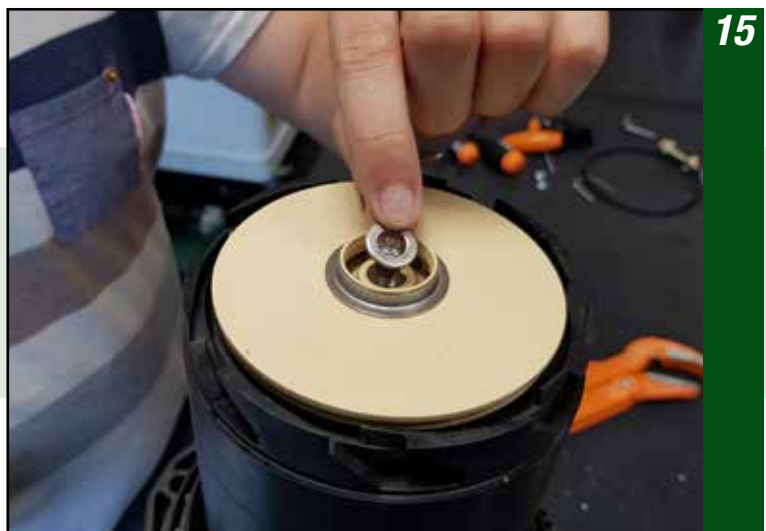
Insert all the stages



Always push downwards to make sure all the hydraulic parts are well packed



Insert the nut washer



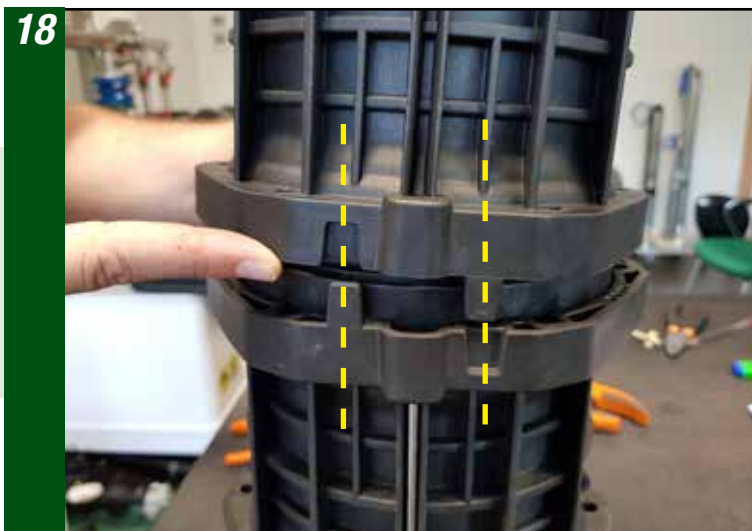
Insert the nut and secure it by holding it still with a wrench and screwing through the shaft's bottom access hole using the big flat screwdriver



ASSEMBLING



Install the O-ring



Insert the plastic body covering the hydraulics, aligning it correctly as shown in picture



By means of the two multi-grip pliers, tighten the body downwards, acting on opposite sides at the same time (be careful not to damage the plastic)

Insert the top stage box



20

Install the pump body's O-ring



21

Insert the pump body in the right position (see picture)



22

ASSEMBLING

23



Using the two multi-grip pliers (and the rubber hammer if required), close the pump body

24



Insert and screw the six torx screws, alternating the sides for a more uniform tightening

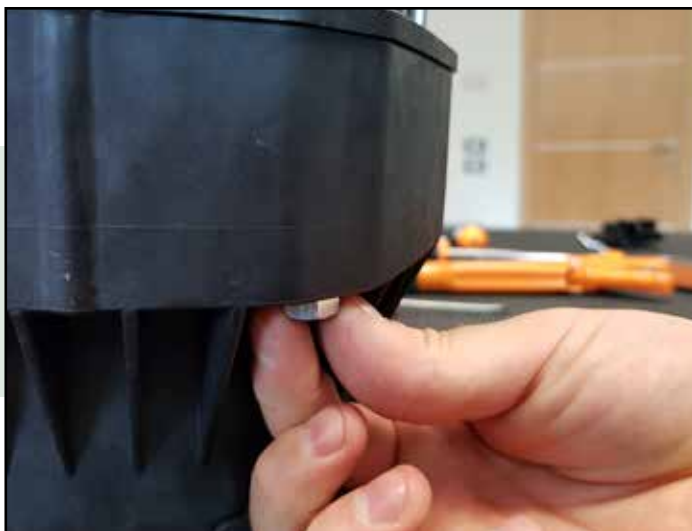
NOTE: Optimal torque range: 5.8 – 6.2 Nm

24

a

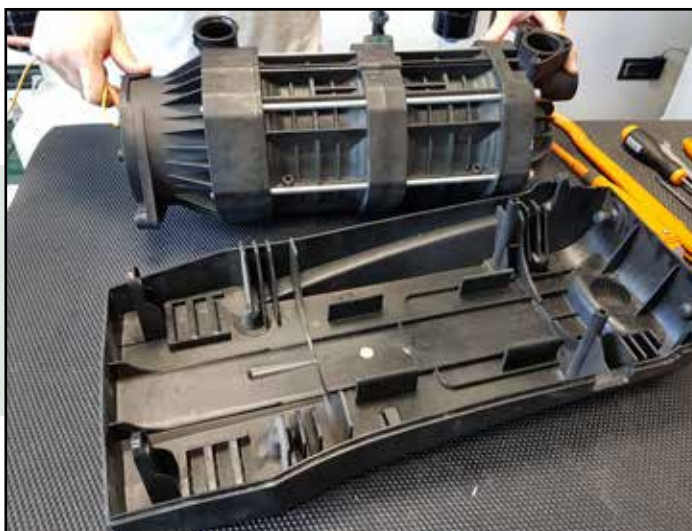


While screwing, keep the nut in position



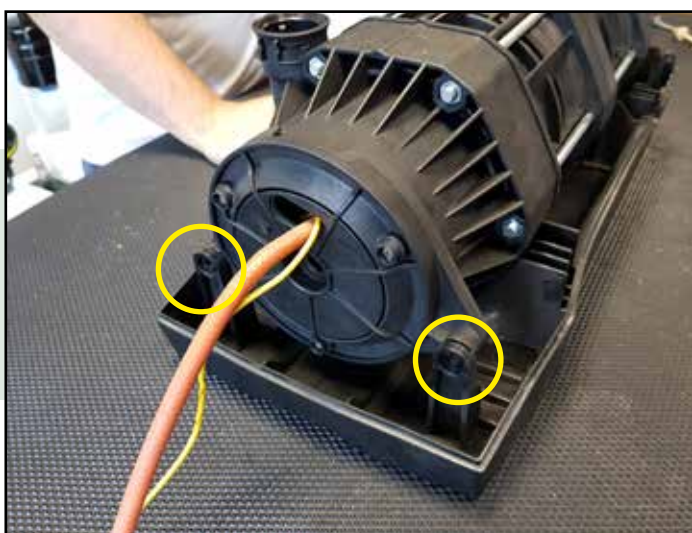
25

Place the pump on the back cover



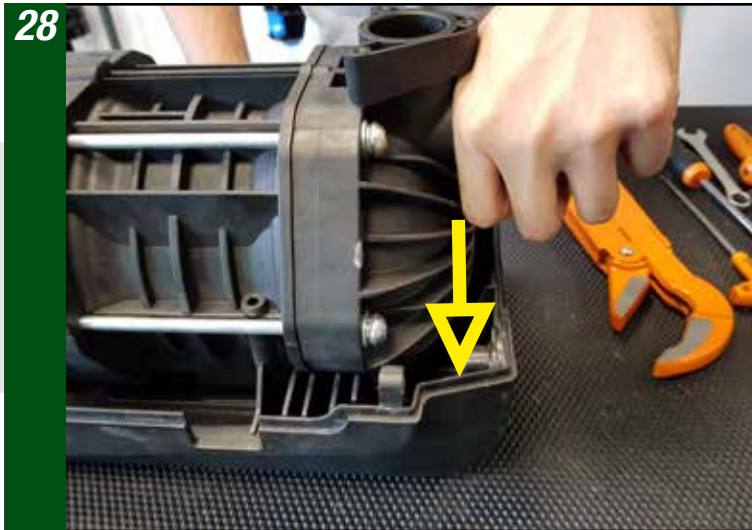
26

First insert the part highlighted in picture

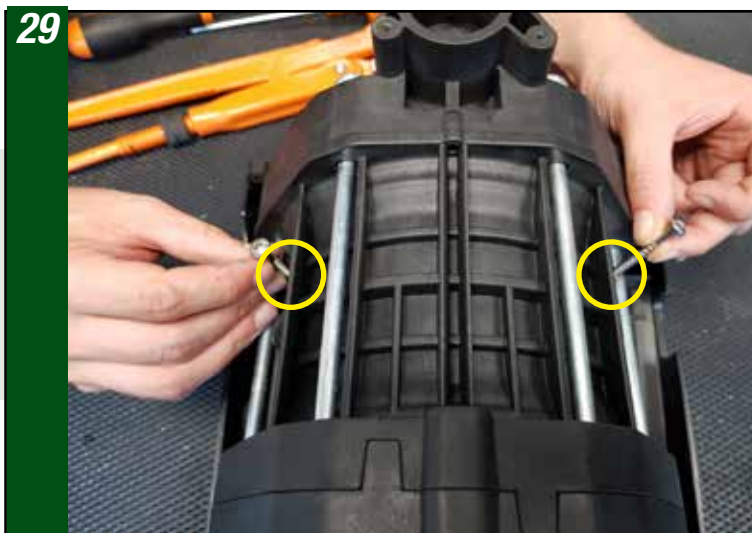


27

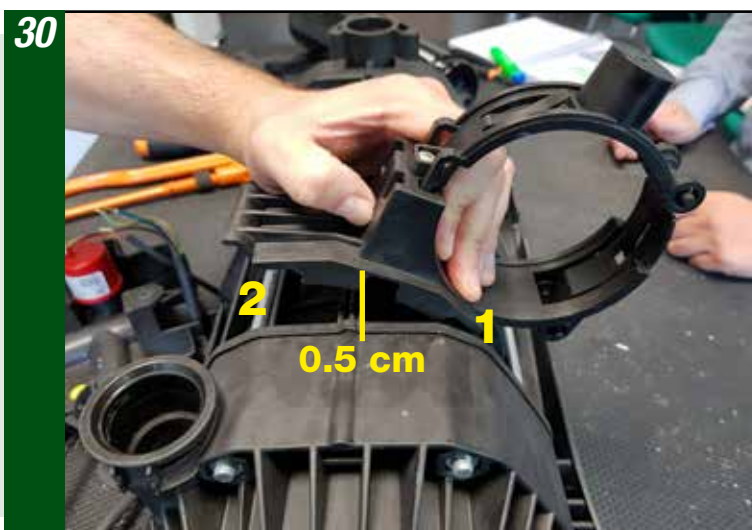
ASSEMBLING



Then push downwards from the top part of the pump



Tighten the two screws in picture



To install the pressure vessel's support, insert from position no. 1 first, then push down position no. 2 and slot in the component

NOTE: this component will not fit any possible position. The distance at which it will, is around 0,5 cm from the pump body

Replace/install the O-ring of the filling duct



31

Assemble the sensors block with the pump by pressing it in position



32

Insert the klammer



33

ASSEMBLING

34



Insert the pressure vessel through its support and into its fitting

35



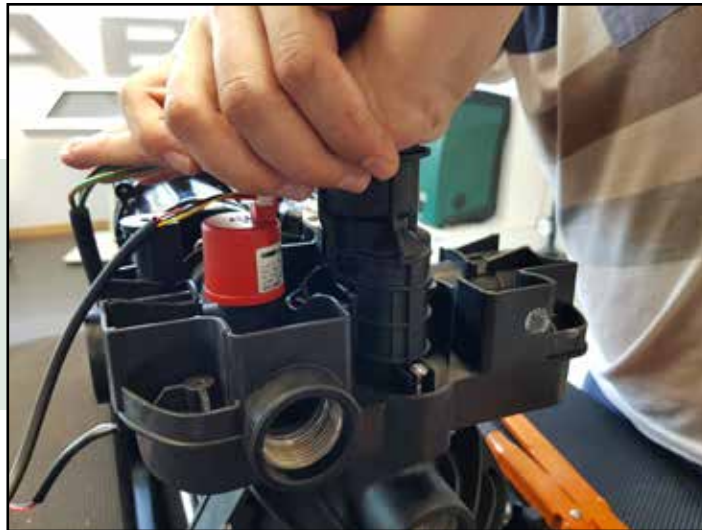
Secure the vessel by inserting the klammer

36



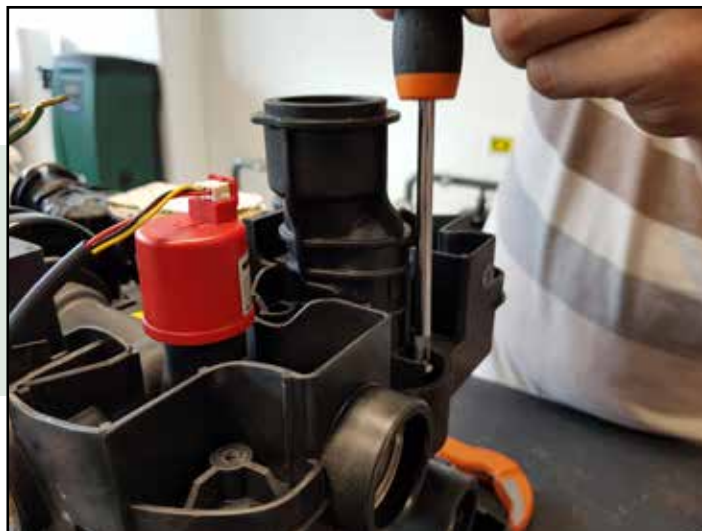
Insert the suction duct: there is only one right position, due to the particular shape of the component and the consequent positions of the screws

Push the part well in position



37

Fasten the three screws



38

Place the main board with the
right alignment

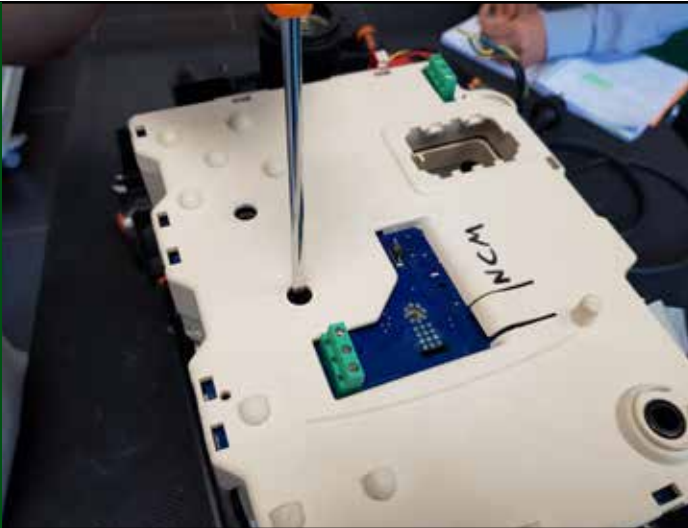
NOTE: spread new thermal paste
on the heatsink before reinstalling
the main board



39

ASSEMBLING

40



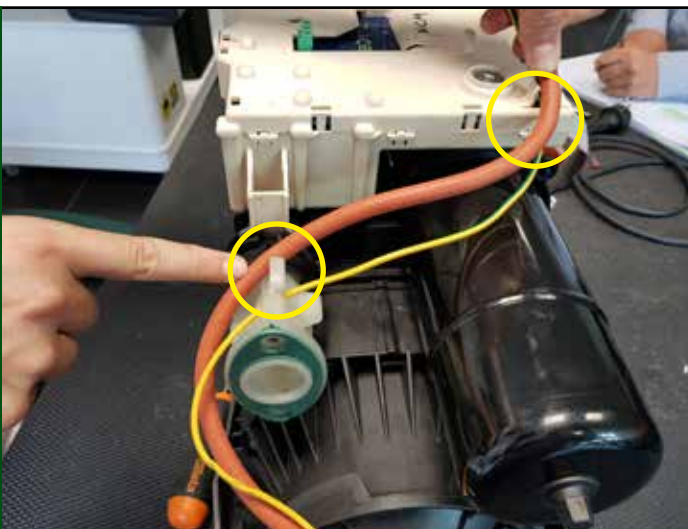
Screw the two hex screws using the Allen key

41



Screw the two Phillips screws and do not forget the washers

42

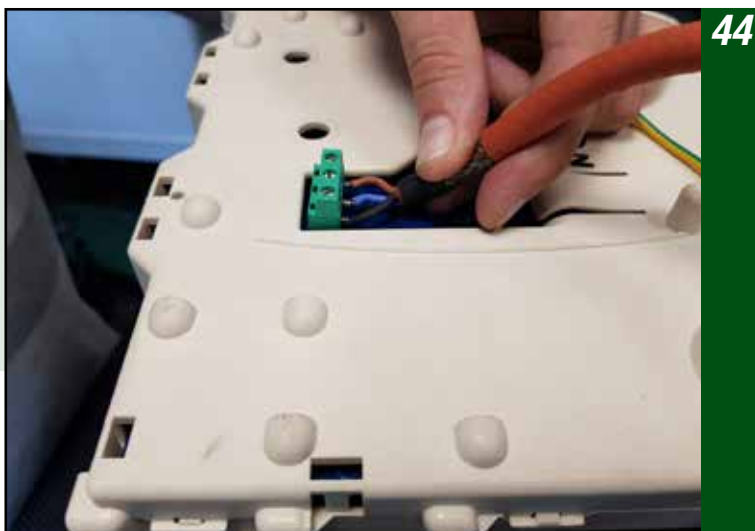


Position the motor cable as shown in picture, letting it pass through the right spots

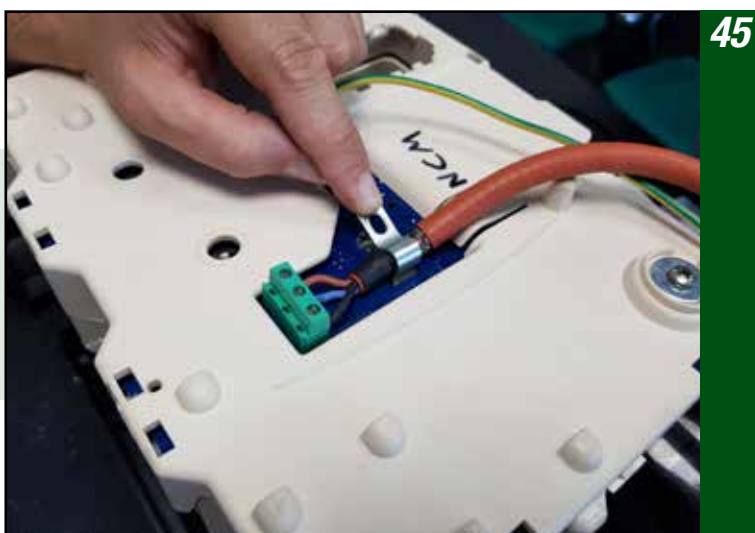
Insert the ground wire



Insert and fasten (using the small flat screwdriver) the motor cable wires

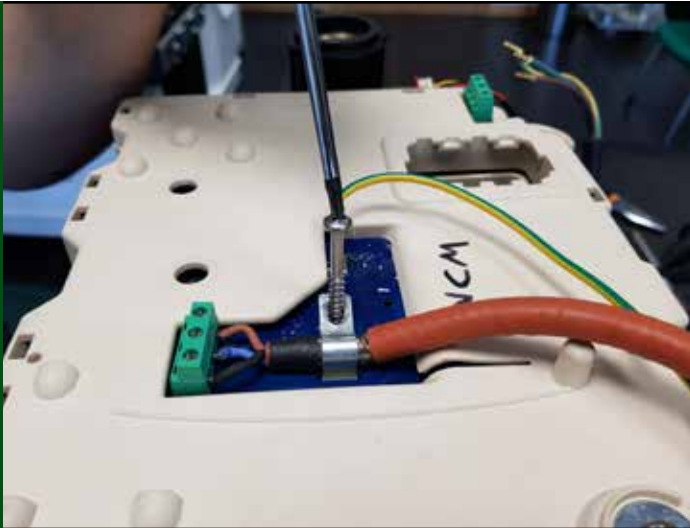


Insert the metal strip



ASSEMBLING

46



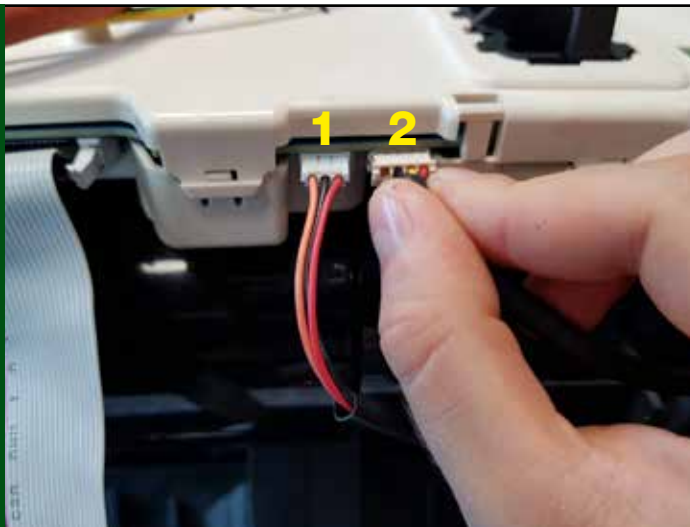
Secure the strip by screwing it to the board

47



Insert and fasten the power cable wires

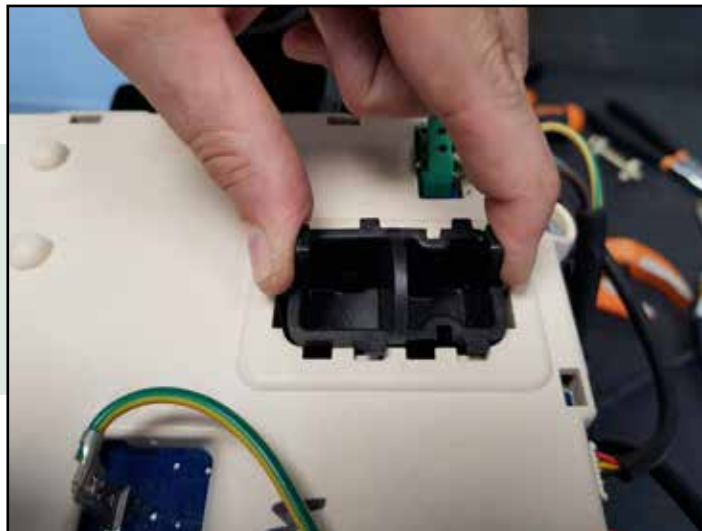
48



Plug in the connectors of the flow (1) and pressure (2) sensors



Insert the extractor accessory



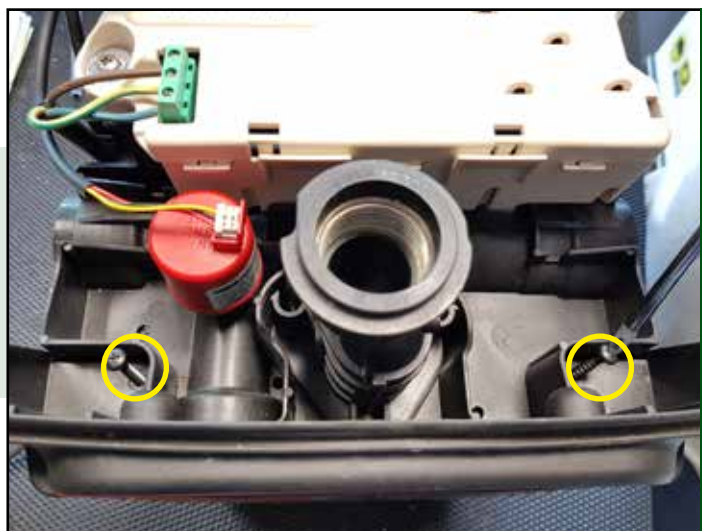
49

Insert the bottom cover



50

Screw the four screws highlighted in this picture and in the following one



51

ASSEMBLING

51
a



52



Insert the right-side cover

53



Before inserting the left-side cover, place the cable gland in the right position

Insert the left-side cover



54

Insert the clip rings



55

Insert the top cover



56

ASSEMBLING



Screw the two screws next to the filling-duct hole



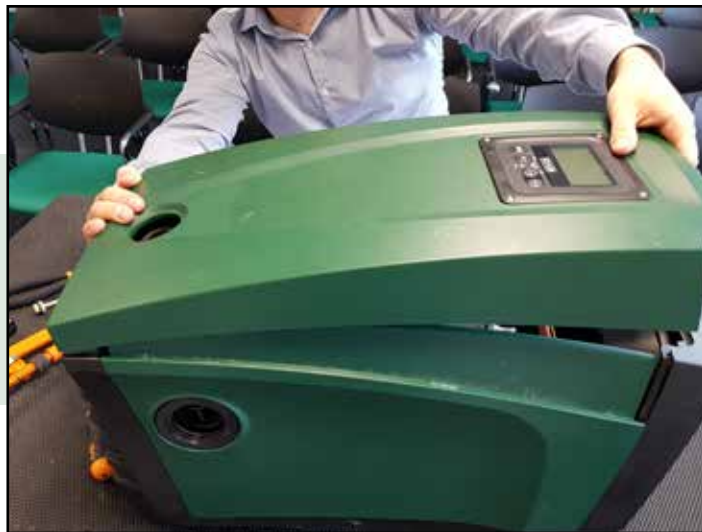
Screw the two screws highlighted in the picture



Plug in the display flat cable at both extremities



Insert the front cover



60

To fasten the front cover, screw the two screws seen in this picture, on the top-cover side, and the two in the following picture, on the bottom-cover side



61



61
a

ASSEMBLING

62



Before reinstalling the non-return valve, check/replace the O-rings

63



Use the composite tool to insert the non-return valve

64



Close all the external caps by screwing them with the composite tool



64
a



64
b



64
c

ASSEMBLING



Insert the self-priming valve
(Negative suction head position)

(Positive suction head position)



54

Screw the cap



61