AQUAGEM®

Mechanical Solutions

TECHNICAL TRAINING

CONTENT

AQUAGEM

Auto Inverter Mode (Flow rate)
Manual Inverter Mode (Running capacity)

Flow rate, Running capacity, Power consumption reading

IW20 (0.75kW): 17.4 m³/h@8m
IW25 (1.05kW): 23.1 m³/h@8m
IW30 (1.4kW): 27.5 m³/h@8m

Digital input, RS485, WIFI

InverWarrior

OPERATION

AQUAGEM

CONTROL PANEL

Auto Inverter (Flow rate control)
Manual Inverter (Running capacity 30% ~ 100%)

Power consumption reading

Running capacity / Flow rate reading

One-click backwash

Timer Mode

INITIAL STAR UP

UNLOCK THE SCREEN

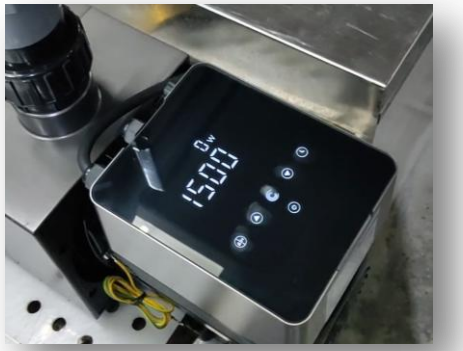
Hold  for more than 3s, all buttons on the screen will light up.

Press  to turn on the pump.

SELF PRIMING

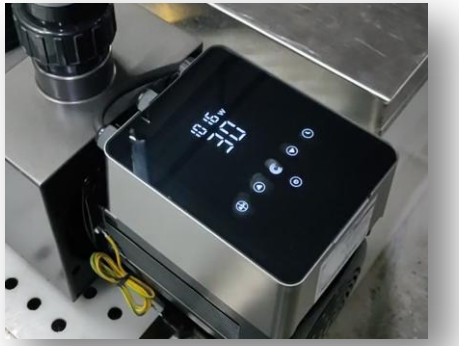
Counting down from 1500s,

it will stop automatically when the system detects the pump is full of water.



RECHECK

Recheck for 30s to make sure the priming is successful.



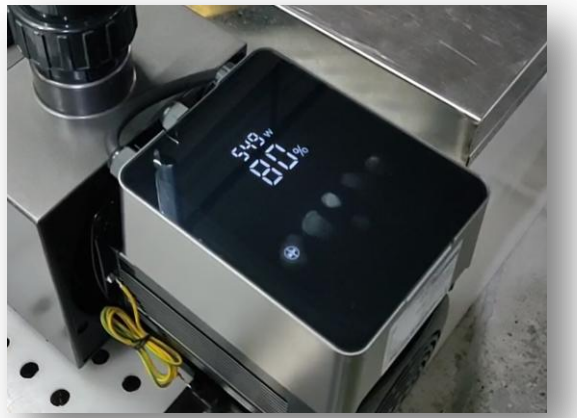
INITIAL STAR UP

SELF LEARING

Counting down from 180,
the system will redefine the adjustable flow range of Auto Inverter Mode
by detecting the pipeline pressure.

DEFAULT MODE

Manual Inverter Mode, 80%



MANUAL INVERTER MODE (DEFAULT)

RUNNING CAPACITY SETTING

- Press to switch between Manual Inverter Mode and Auto Inverter Mode.
- Under Manual Inverter Mode, the “%” icon will light up.
- Press and to adjust the running capacity from 30% - 100%, each step by 5%, the parameter will be saved and the motor speed will be changed immediately.

AUTO INVERTER MODE

FLOW RATE SETTING

- Press  to switch between Manual Inverter Mode and Auto Inverter Mode.
- Under Manual Inverter Mode, the “flow unit” icon will light up
- Press  and  to adjust the flow rate,

  (adjustable flow range as per the result of the self learning process)

  the system will adjust the running capacity automatically to reach the set flow.
- The unit of flow rate could be changed to lpm, IMP gpm or US GPM

  by pressing both   for 3 seconds

TIMER MODE

MAX. 4 TIMERS ON CONTROL PANEL

- Press to enter timer mode.
- Press and to set local time,
  press to confirm the HOUR and MINUTE and enter the TIMER 1 setting.
- In each TIMER setting, press and to select the timer period and running capacity / flow rate,
  (press to switch between running capacity and flow rate), press to confirm the setting.

TIMER MODE

NOTE

- When timer mode is activated, if the set time period contains the current time,
  the pump will start running according to the set running capacity or flow rate.

- If the set time period does not contain the current time,
  the timer number 1 2 3 4 (or 1 or 2 or 3 or 4) that is about to start running will be displayed on the controller and flash,
  88:88-88:88 will display the corresponding time period.

- All 4 time periods should be set in chronological order.
  Overlap setting of time will be considered as invalid, the pump will only run based on the previous valid setting.

- During timer setting, if you want to return to the previous setting, hold both  and  for 3 seconds

ONE-CLICK BACK WASH

BACK WASH TIME & CAPACITY

- Press to enter the back wash or fast circulation mode, and set the time.

- Back wash time will be shown on the screen and flash, press and to adjust the time from 0 ~ 1500s (default 180s), back wash will begin after 3s without operation.

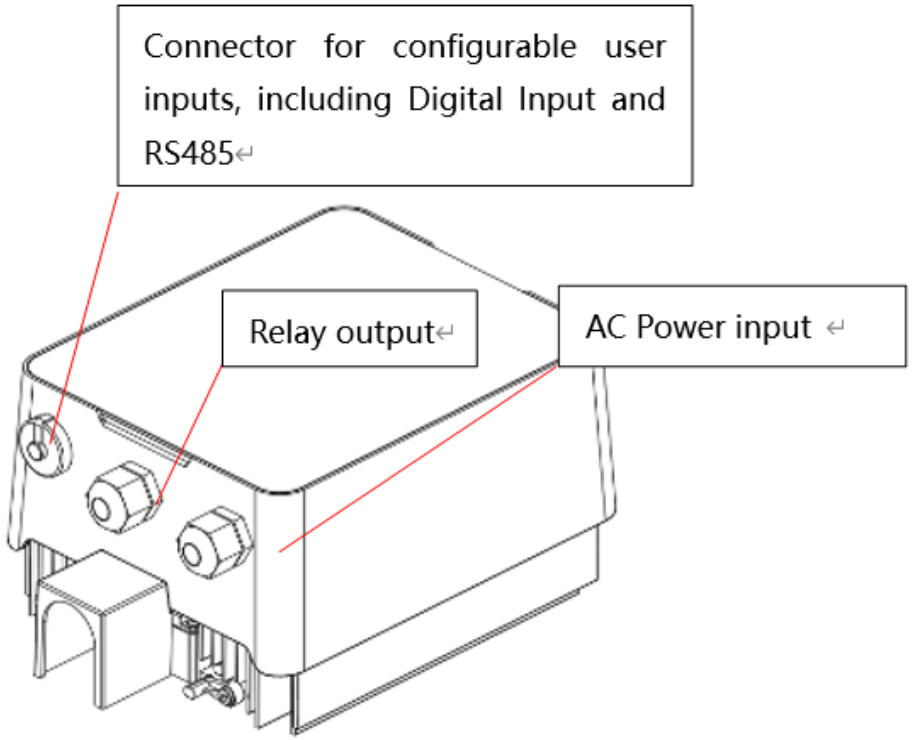
- Back wash capacity can be set in the "parameter setting"
  (Under "OFF" mode, hold and for 3s to enter parameter setting, default 100%)

- Hold for 3s can exit back wash mode during count down.

EXTERNAL CONTROL

PRIORITY:
DIGITAL INPUT > RS485 > PANEL CONTROL

DI PRIORITY: PIN 4 > PIN3 > PIN2 > PIN1



Name	Color	Description
PIN 1	Red	Digital Input 4
PIN 2	Black	Digital Input 3
PIN 3	White	Digital Input 2
PIN 4	Grey	Digital Input 1
PIN 5	Yellow	Digital Ground
PIN 6	Green	RS485 A
PIN 7	Brown	RS485 B

PARAMETER SETTING

Under "OFF" mode,

hold  and  for 3s to enter parameter setting

Restore factory setting	Under off mode, hold both   for 3 seconds
Check the software version	Under off mode, hold both   for 3 seconds
Manual priming	Under on mode hold both   for 3 seconds
Enter parameter	Under off mode, hold both   for 3 seconds; If current address does no need to be adjusted, hold both   to next address

Parameter Address	Description	Default Setting	Setting Range
1	PIN3	100%	30~100%, by 5% increments
2	PIN2	80%	30~100%, by 5% increments
3	PIN1	40%	30~100%, by 5% increments
4	Backwash capacity	100%	80~100%, by 5% increments
5	Control mode of Analog Input	0	0: current control 1: Voltage control
6	Enable or disable the priming that occurs at each start	25	25:enables 0: disables

TROUBLE SHOOTING

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MECAHNICAL SEAL

WATER LEAKAGE FROM THE SEAL PLATE

- Stop the pump immediately
- Check if the water go into the motor, and if the seal plate or mechanical seal are damaged

Reference

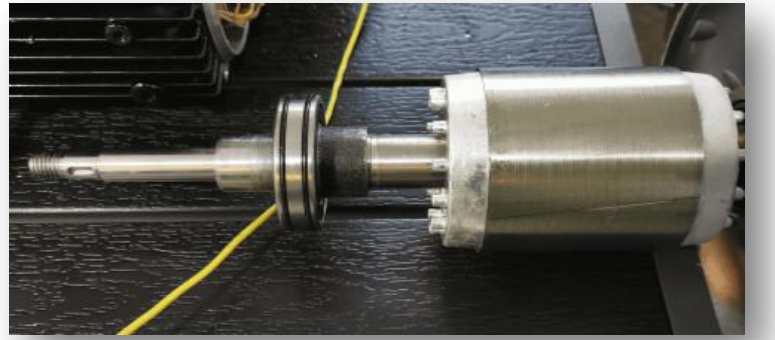
Seal plate improvement

NOISE

NOISE FROM THE WET END OR MOTOR

- Shoot a video of the noise.
- Replace the wet end accessories or the motor

Wet end improvement



Bearing

ERROR CODE 002

OUTPUT OVER CURRENT

- Turn off the pump.
- Remove the controller and check if the green connection terminal turn black
- Replace with the new controller and connection terminal

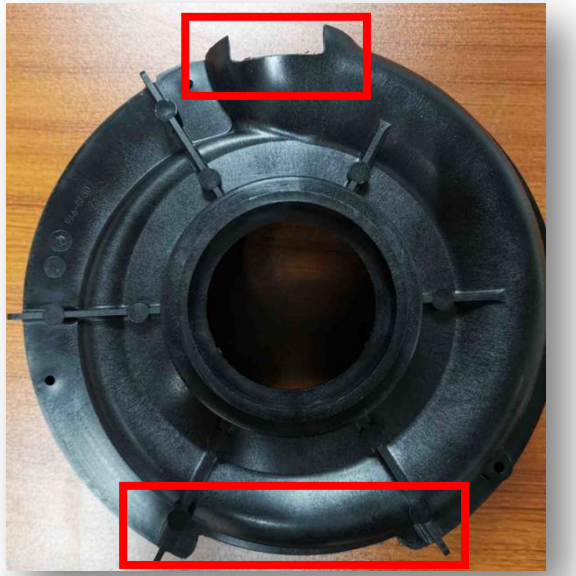
ERROR CODE 209

LOSS OF PRIME

- Record the power consumption during priming
- Check if the height between the water level and the pump is higher than 2m
- Check if suction side is too long or the pipeline system is too complex

Reference

Volute (1st generation)



Volute (2nd generation)

WARRANTY CLAIM

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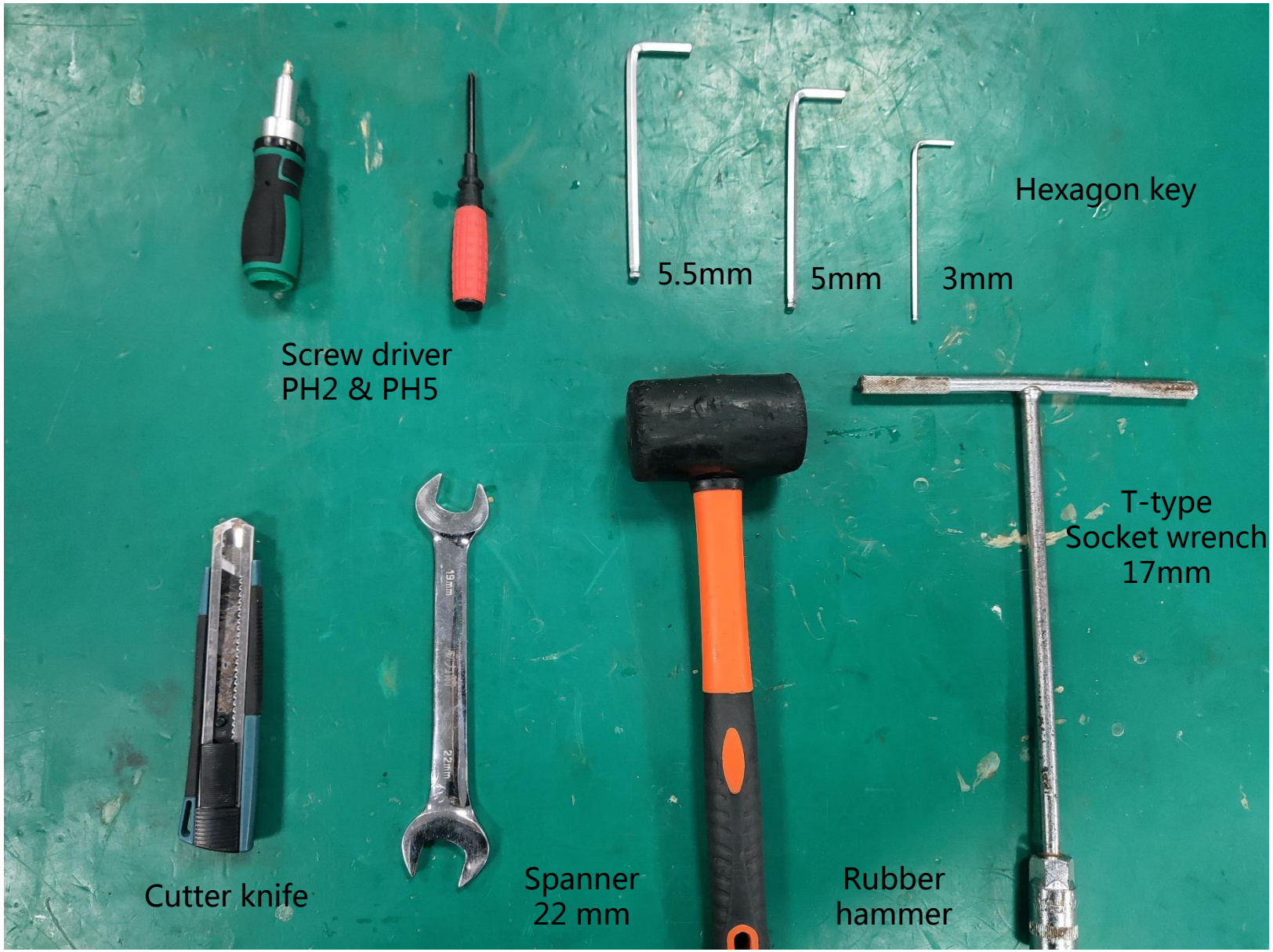
IFORMATION TO BE PROVIDED

- Serial No. on the nameplate.
- How long has the pump worked since the installation
- Problem description with photo / video
- Installation condition if needed

  (indoor or outdoor/ height between the pump and the water level/ pipeline size & length etc.)

DISASSEMBLY & ASSEMBLY

TOOLS


Screw driver
PH2 & PH5
5.5mm
5mm
3mm
Hexagon key
T-type
Socket wrench
17mm
Cutter knife
Spanner
22 mm
Rubber
hammer

REMOVE THE CONTROLLER

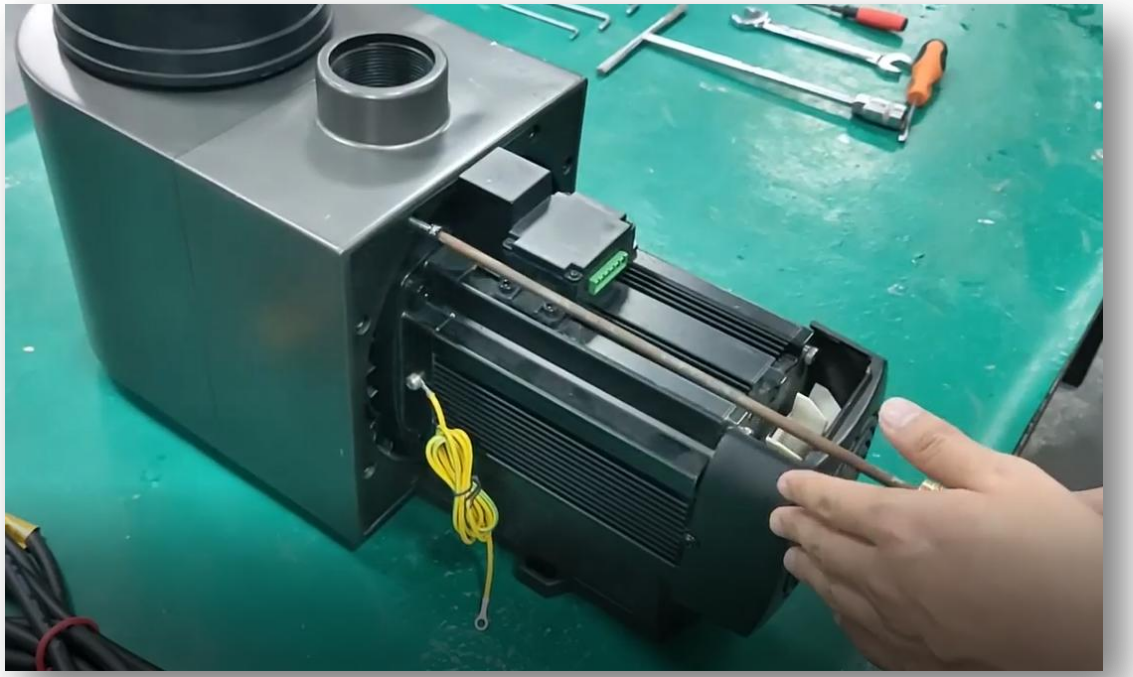
LOOSEN THE 2 SCREWS ON THE CONTROLLER COUNTERCLOCKWISE

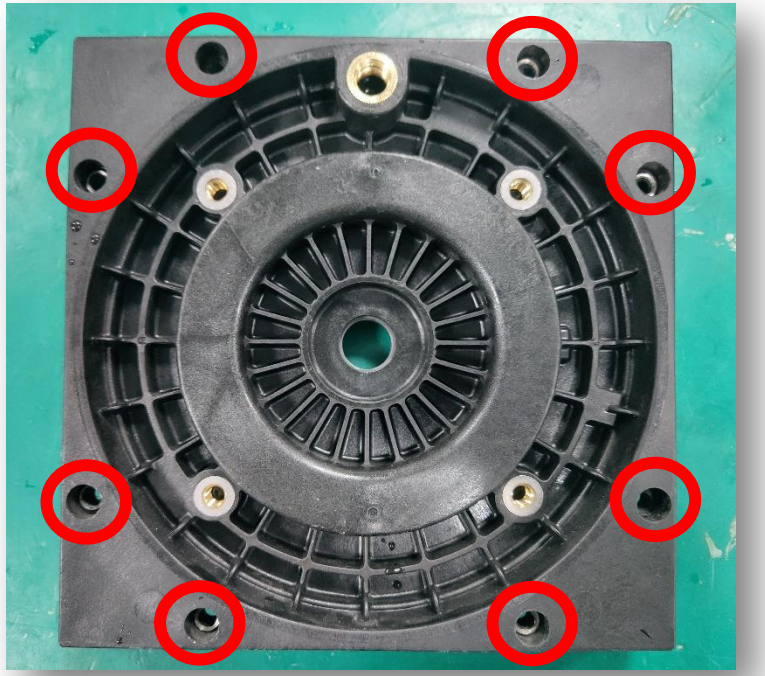
TOOL: HEX KEY 3MM

REMOVE THE WET END

LOOSEN THE 8 SCREWS ON THE BACK SIDE OF THE SEAL PLATE

TOOL: HEX KEY 5MM





REMOVE THE PUMP BODY

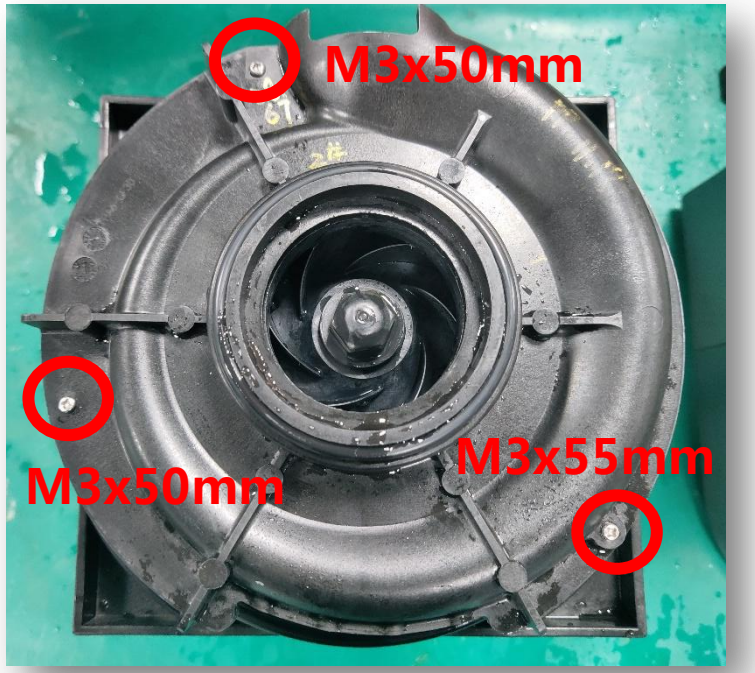
HIT THE MOTOR BASE WITH A HAMMER TO HELP REMOVE THE PUMP BODY

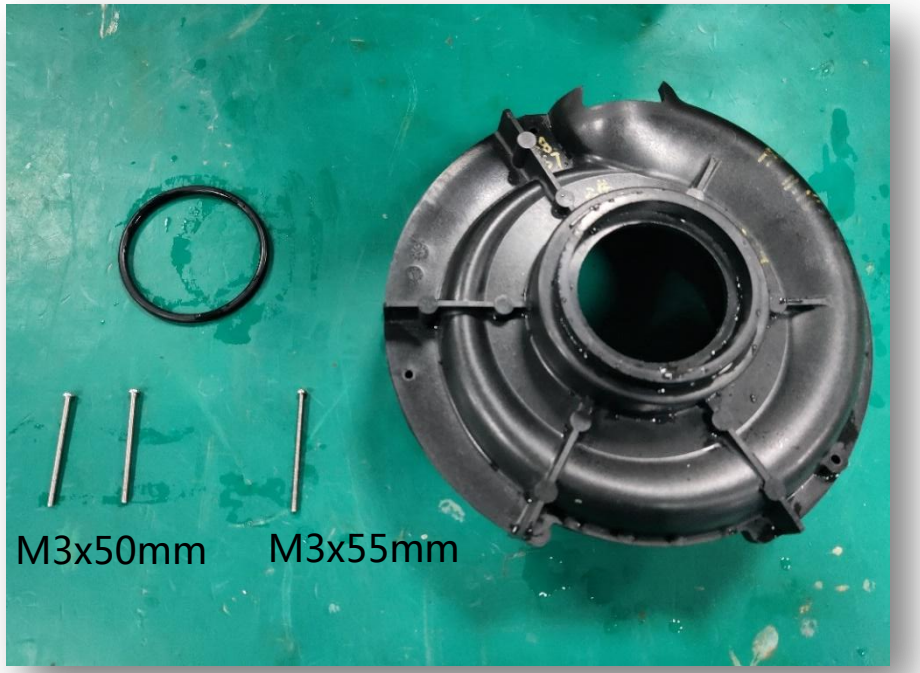
TOOL: RUBBER HAMMER

REMOVE THE VOLUTE

LOOSEN THE 3 SCREWS ON THE VOLUTE AND REMOVE THE O-RING ON THE VOLUTE

TOOL: SCREW DRIVER PH5





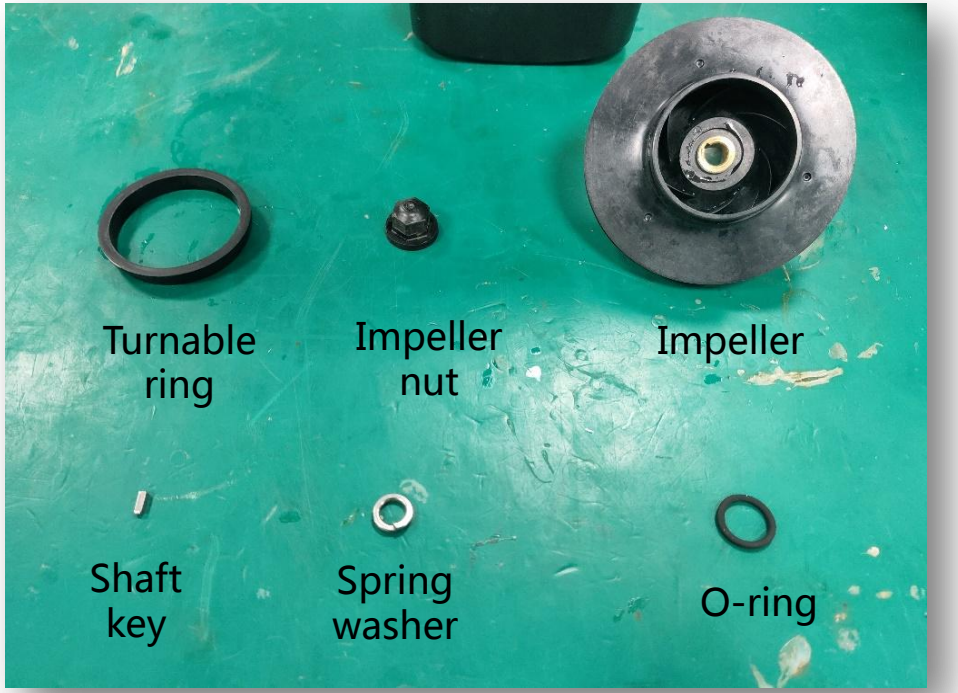
REMOVE THE TURNABLE RING, IMPELLER NUT, AND SPRING WASHER ON THE IMPELLER

TOOL: T-TYPE SOCKET WRENCH 17MM

REMOVE THE IMPELLER

TAKE OFF THE IMPELLER AND THE SHAFT KEY FROM THE MOTOR SHAFT

REMOVE THE O-RING ON THE IMPELLER



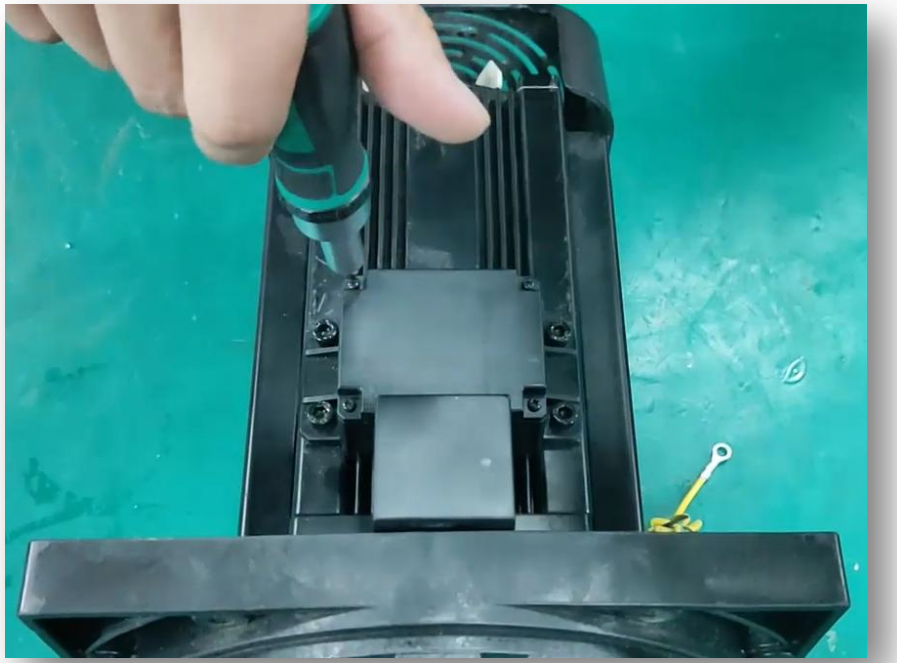
REMOVE THE O-RING

REMOVE THE 3 O-RINGS ON THE SEAL PLATE

REMOVE THE PRESSURE SENSOR

LOOSE THE 4 SCREWS ON THE COVER PLATE, REMOVE THE COVER PLATE & SEALING GASKET

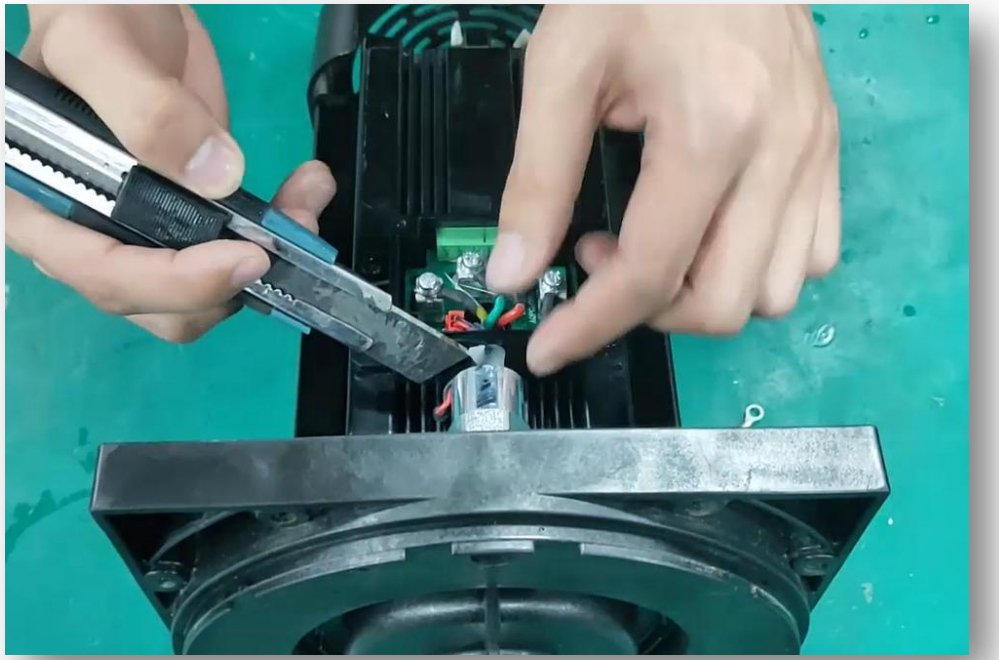
TOOL: SCREW DRIVER PH2

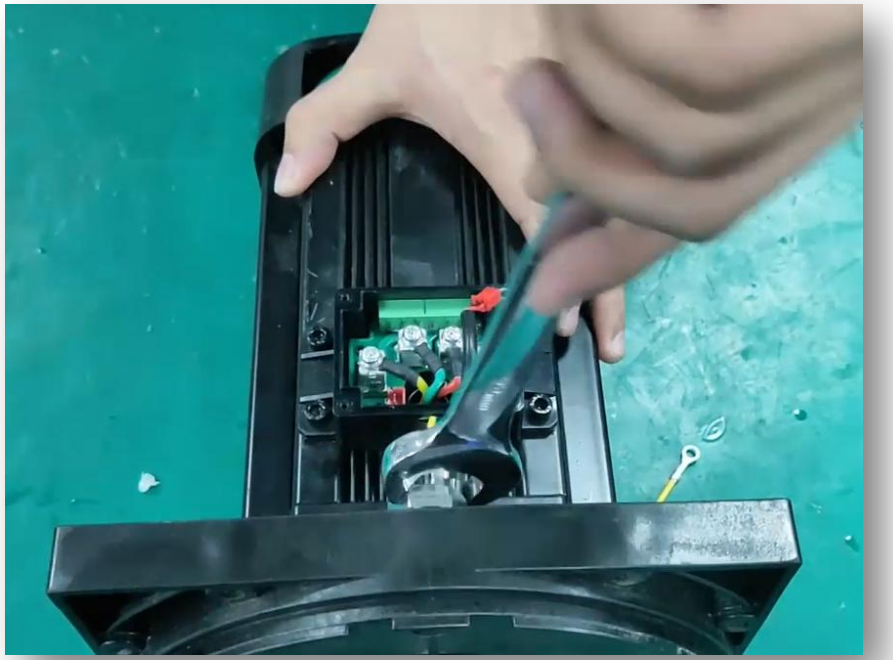


REMOVE THE PRESSURE SENSOR

REMOVE THE GLUE & UNPLUG THE RED CONNECTION ; LOOSEN THE PRESSURE SENSOR

TOOL: CUTTER KNIFE & SPANNER 22MM

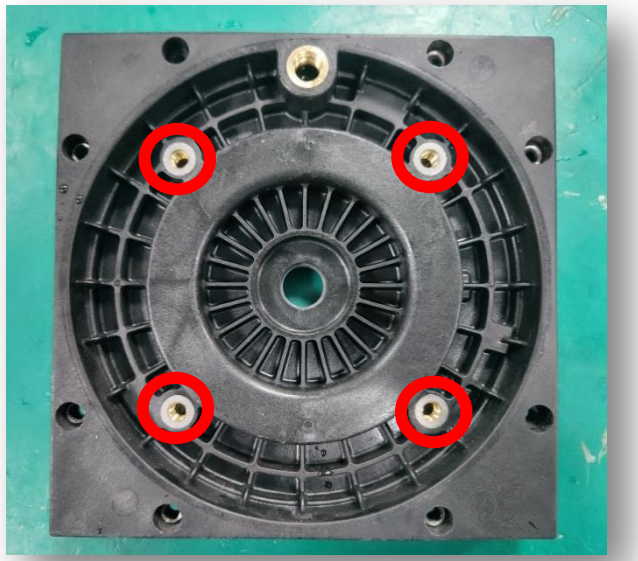


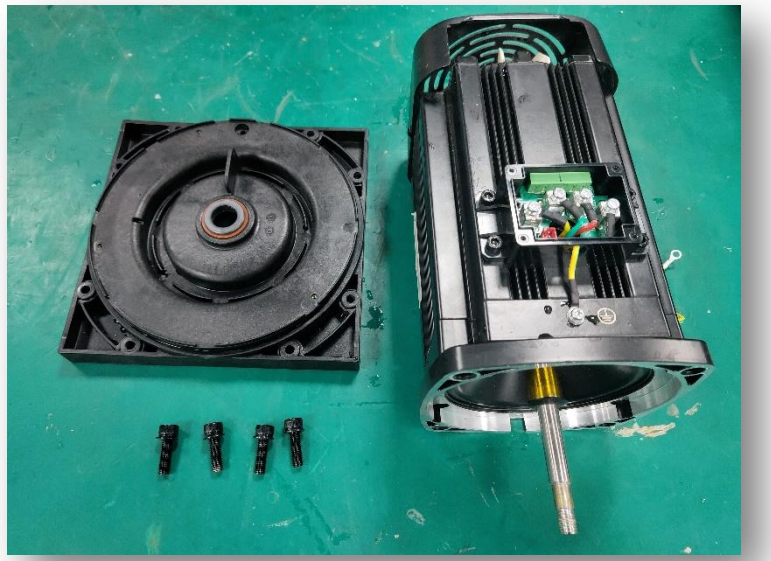


REMOVE THE MOTOR

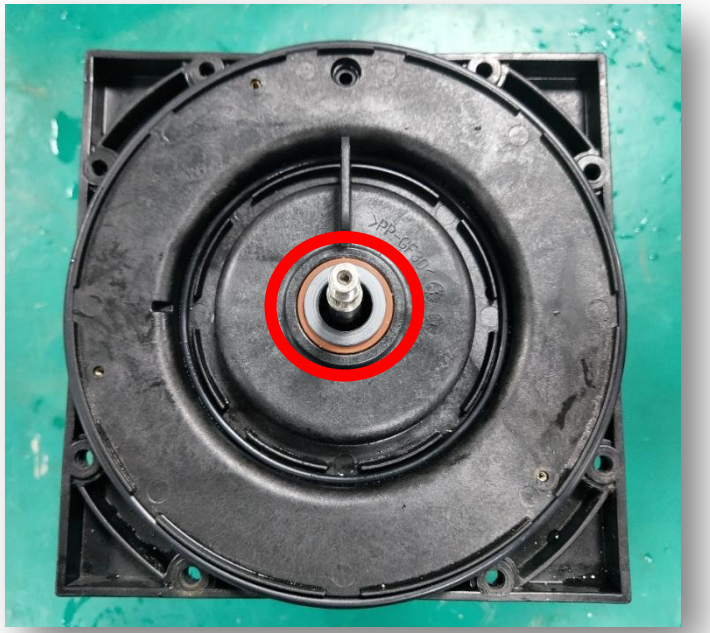
LOOSEN THE 4 SCREWS ON THE MOTOR
SEPARATE THE MOTOR AND THE SEAL PLATE

TOOL: HEX KEY 5.5MM



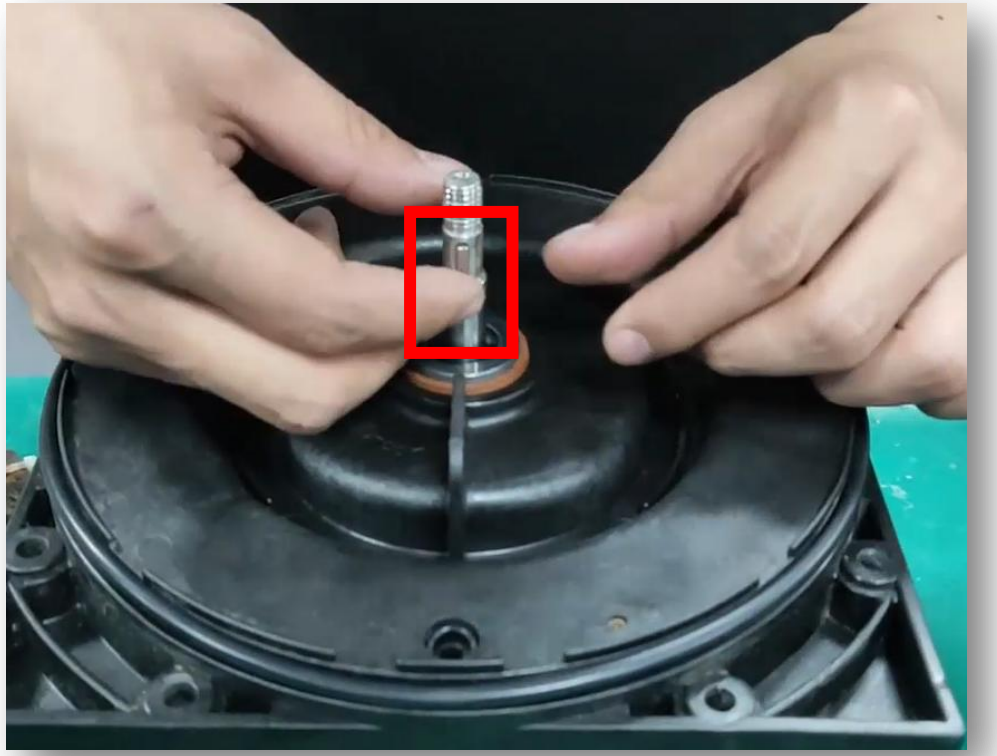


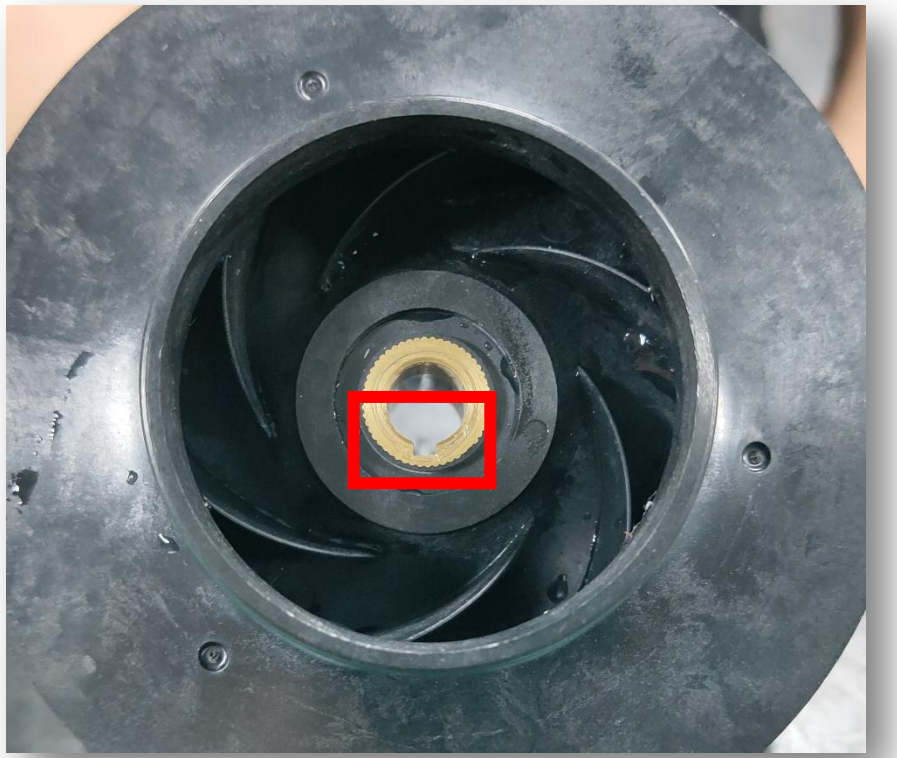
THE GRAPHITE SIDE OF THE STATIONARY & ROTATING RING OF THE MEACHANICAL SEAL SHOULD FACE OUTWARD



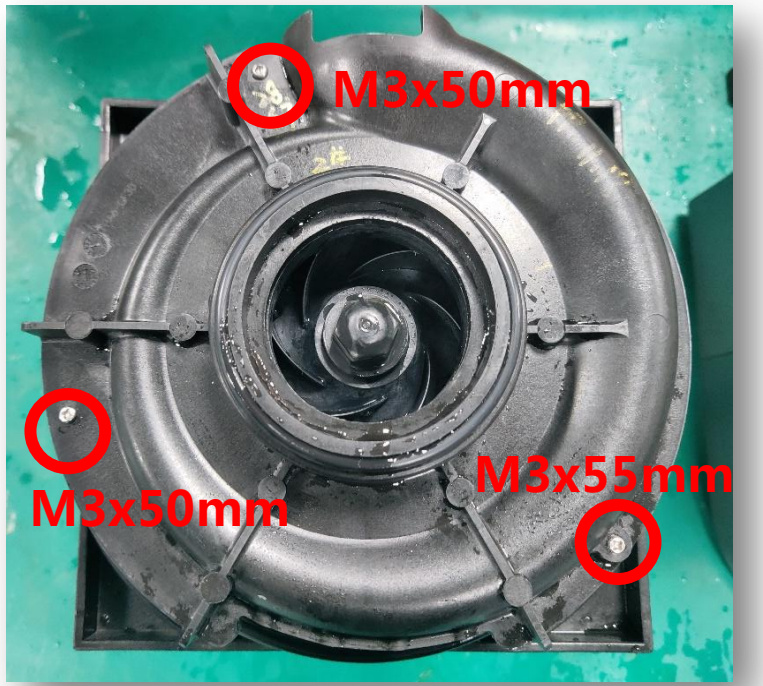
ASSEMBLY

THE KEYWAY AT THE IMPELLER SHOULD BE ALIGNED WITH THE SHAFTKEY WHEN ASSEMBLY





LARGER SIDE OF THE TURNABLE RING FACES UPWARD
SCREW LENGTHS ARE DIFFERENT ON THE VOLUTE



INSTALL THE RUBBER PLUG INSIDE THE PUMP BODY