INTELLIGENT PERMANENT MAGNET MULTISTAGE

CENTRIFUGAL PUMP

VEGA PUMPS

DO IT RIGHT

25-01

SCOPE
OF APPLICATION

The self-priming horizontal multistage centrifugal pump is designed for high efficiency, low noise operation, and good corrosion resistance. It features a compact structure, an aesthetically pleasing appearance, and is both lightweight and space-efficient.

1. APPLICATION

The SSP water pump is suitable for transporting low-viscosity, neutral acidic, non-explosive liquids that do not contain solid particles or fibers. Liquids that will chemically corrode the pump material should be avoided.

- Clean water pressure supply to homes and buildings.
- Small irrigation systems.
- Water treatment (Purification of water).

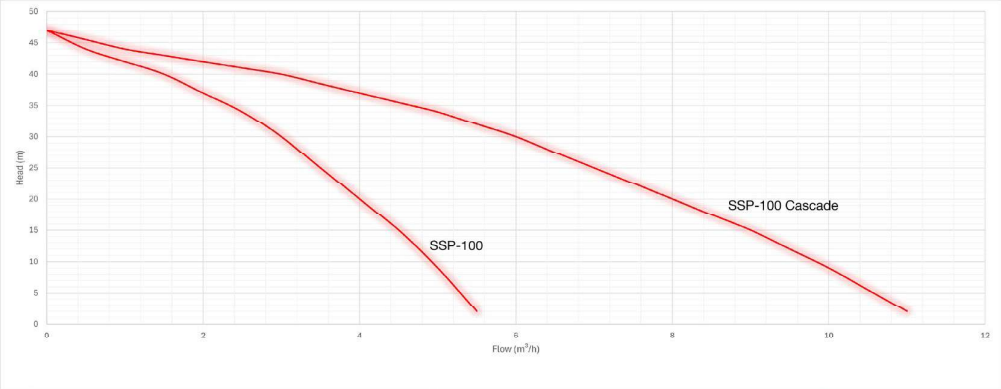
2. FLUID PROPERTIES

- Clean water with solid particle volume less than 0.1% and particle size smaller than 0.2mm
- Liquid temperature 0°C to 80°C
- Ambient temperature range: -15°C to 40°C
- pH level: 6.5 to 8.5

- Pumping fluids with densities and viscosities above that of water is not advised as this will place additional load on the electric motor.

TECHNICAL
DATA

Model:	SSP-100	**Inlet and Outlet size:**	G1, 1-Inch, BSP Threaded
Power Range:	Up to 0.75kW	**Maximum Pressure:**	4.5 Bar
Voltage:	230v +/- 10%	**Rated Pressure:**	3.0 Bar
Frequency:	50 Hz	**Maximum Flow:**	5 500 Litres per Hour
Speed Range:	Up to 4800 RPM	**Rated Flow:**	3 000 Litres Per Hour



MODEL		DELIVERY																						
Up to 0.75kW	m³/h	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11
	l/min	0	8.3	16.7	25	33.3	41.7	50	58.3	66.7	75	83.3	91.7	100	108.3	116.7	125	133.3	141.7	150	158.3	166.7	175	183.3
SSP -100	HEAD (m)	47	44	42	40	37	34	30	25	20	15	9	2											
SSP-100 CASCADE		47	45.5	44	43	42	41	40	38.5	37	35.5	34	32	30	27.5	25	22.5	20	17.5	15	12	9	5.5	2

- Read the user manual carefully before installation and operation.
- Ensure a reliable ground connection before powering on the pump.
- Do not touch the pump while it is powered on.
- Turn off the power switch or unplug the pump before performing any maintenance or cleaning.
- Do not open or dismantle any part of the pump while the pump is powered on.
- Ensure that the pump is operating within the specified operating conditions to prevent overloading.

INSTALLATION
GUIDELINES

Ensure that the AC voltage supply is 230v and within a voltage tolerance of 10%.

Before installation ensure that the pump has not been damaged during transport or storage.

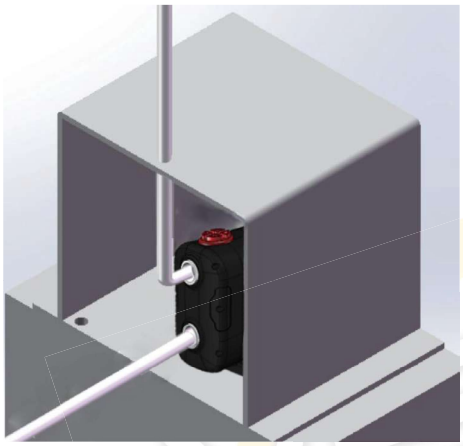
Ensure that the pump is electrically earthed.

When using an electrical extension cord, ensure that the cross sectional area of the cable is sufficient, the following guidelines should be adhered to:

Up to 50m – 1.5mm² cable
Between 50m and 100m – 2mm² cable
Between 100m and 150m – 2.5mm² cable

INSTALLATION GUIDELINES

The water pump should be kept dry at all times. The pump should be protected from sun, rain and freezing conditions by a suitable cover if installed outdoors.



The pump should be installed in a location that allows for easy maintenance and inspection, and should be kept dry and well-ventilated. If installing the pump in a confined space, ensure that there is a minimum of 25 cm clearance on each side of the pump.

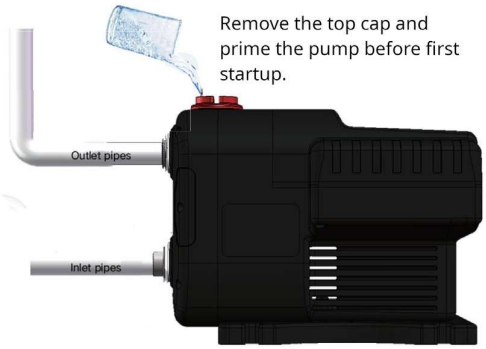
Ensure that the materials of the enclosure are not flammable as the enclosure may heat up due to the heat generated by the electric motor.

The pumped fluid should be clean, with solid impurities not exceeding 0.1% by volume. Particle size should not exceed 0.2mm and the pH should be between 6.5 and 8.5.

The target pressure of the pump should be set between 1.2 Bar and 3.5 Bar, depending on the application in which the pump will be used.

The diameter of the inlet and outlet pipes should match the size of the inlet and outlet ports of the pump.

The pump should be primed before it powered on for the first time. Remove the cap on the top of the pump and fill the pump with water. Replace the top cap once the pump has been filled.

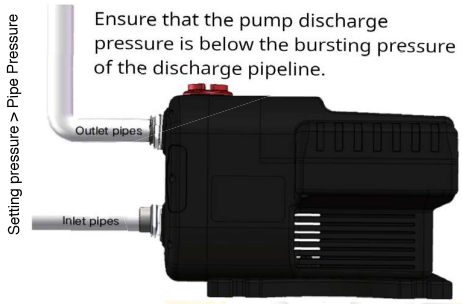


INSTALLATION
GUIDELINES

Ensure that the target pressure of the pump is not set higher than the rated pressure of the discharge pipeline.

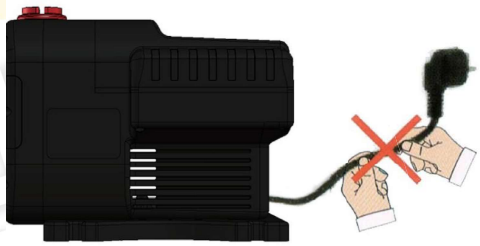
Ensure that the target pressure of the pump is set lower than the maximum pressure of the pump. Setting the target pressure higher than the maximum pressure of the pump will result in the pump not attaining the pressure and therefore never shutting off.

Set the startup pressure to approximately 80% of the target pressure value.

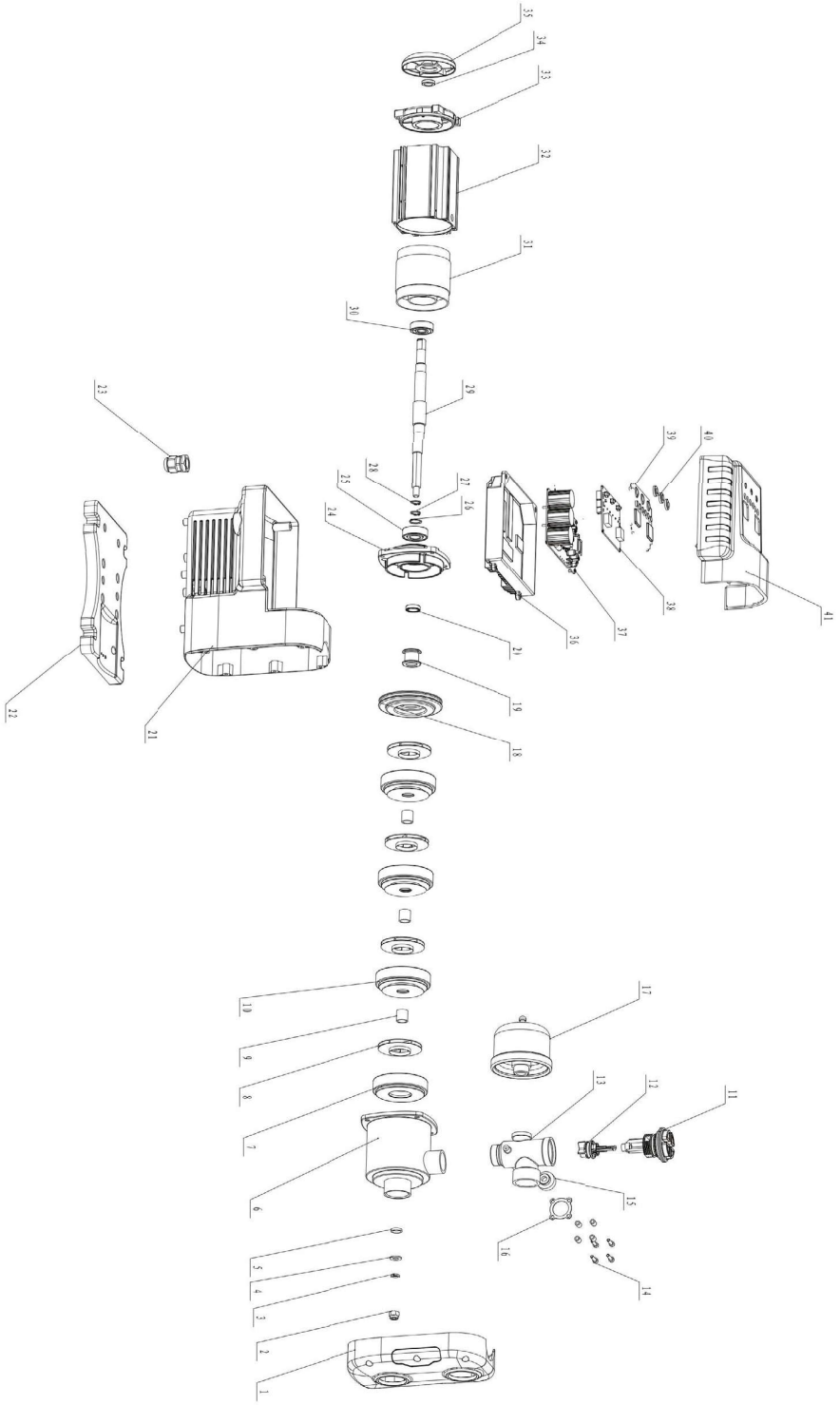


Never pull or lift the pump by the power cord

Always turn off the power supply to the pump before moving or disassembling the pump.



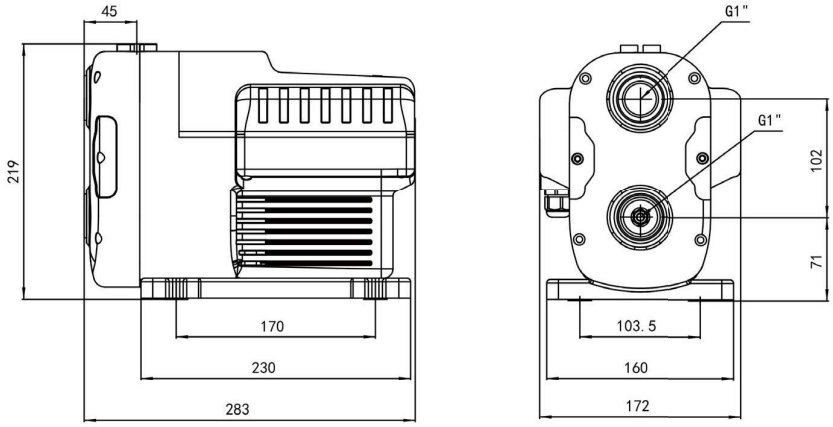
STRUCTURE
INSTUCTION



PART LIST
TABLE

No.	Name	No.	Name
1	Inlet guide vane (Plastic)	28	Shaft with spring retainer
2	Lock nut	29	Motor shaft (Stainless Steel)
3	Spring washer	30	Bearing
4	Flat washer	31	Stator
5	Spacer bush	32	Motor barrel
6	Pump body	33	Rear end cover
7	Outlet guide vane	34	Framework oil seal
8	Impeller (Plastic)	35	Fan
9	Spacer bush	36	Controller seat
10	Guide vane (Plastic)	37	Controller
11	Check valve body	38	Touching panel
12	Check valve core	39	Screen cover
13	Check valve seat	40	Control buttons
14	Socket head cap screw	41	Screen housing
15	Pressure sensor		
16	Pressure sensor pressure plate		
17	Pressure tank		
18	Bracket cover		
19	Mechanical seal (Silicone Carbide / Graphite)		
20	Framework oil sea		
21	Lower housing		
22	Base		
23	PG connector		
24	Front end housing		
25	Bearing		
26	Shaft with spring retainer		
27	Shaft with spring retainer		

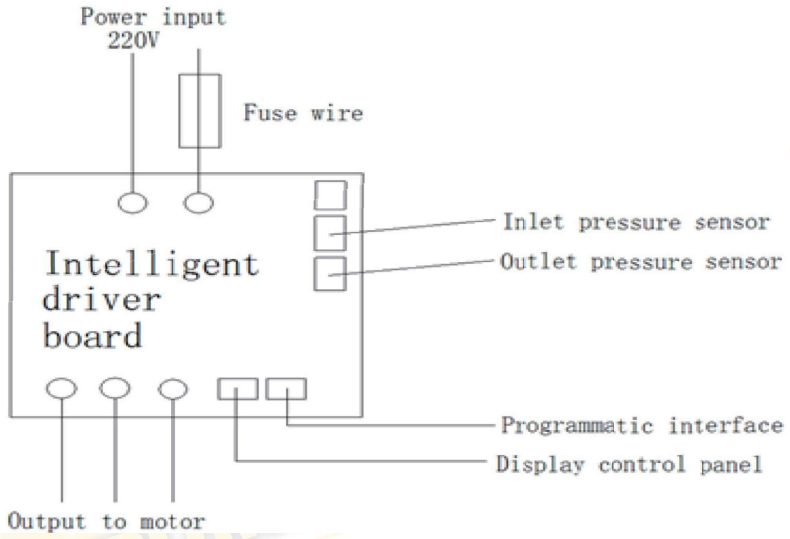
PRODUCT
DIMENSIONS



Packaging Dimensions: 365mm x 230mm x 290mm

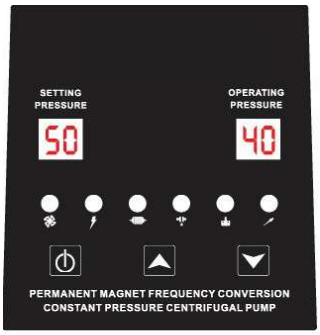
APPLIANCE
CONNECTION

Before attempting any electrical work, ensure the power is fully disconnected. The pump must be properly earthed. Electrical connections should comply with the relevant standards and should be done by an appropriately qualified artisan. Verify that the power supply voltage matches the motor's requirements, as indicated on the nameplate. For pumps far from the power source, ensure the transmission line is adequately sized to avoid voltage drop. Use a specialized outdoor rubber extension cable for outdoor installations, and check that the pump's direction of rotation is correct.



CABLE LENGTH	CABLE SIZING	FUSE RATING
Up to 50m	1.5 mm	10 A
Between 50m and 100m	2 mm	15 A
Between 100m and 150m	2.5 mm	18 A

CONTROL PANEL OPERATION
INSTRUCTIONS



Running

Leakage

Voltage protection

Water shortage

Motor Failure

Sensor failure

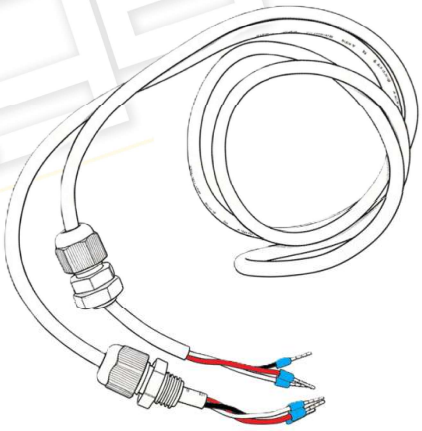
CONTROL PANEL OPERATION INSTRUCTIONS

OPERATION INSTRUCTIONS

- Short press "⏻" to start the pump, and short press "⏻" again to set the pump to standby. When the pump is on and the actual pressure is below the starting pressure, the pump will automatically start.
- To adjust the target pressure, short press "▲" or "▼" for 1 second. After 5 seconds of inactivity, the pressure setting will be set, and the water pump will operate at the new target pressure.
- Press and hold "⏻" and "▲" simultaneously for 3 seconds to display the software version and restore the factory settings.
- Long press "▼" for 3 seconds to view the operating parameters, and long press again for 3 seconds to switch to the next parameter.

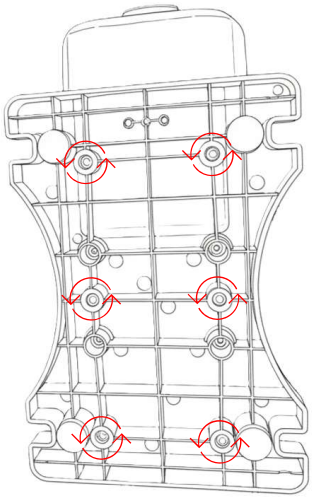
HOW TO CASCADE YOUR SSP PUMPS

Each pump is supplied with a Communication cable used for Connecting the pumps In Cascade operation



STEP 1

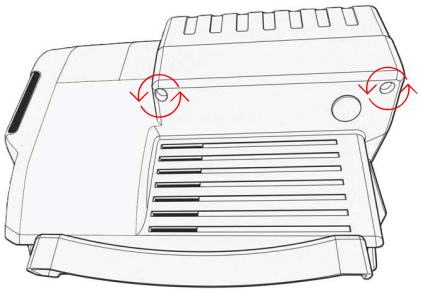
Remove the footpieces of the pumps by loosening the 6 Screws with a Starpoint screwdriver.



HOW TO CASCADE YOUR SSP PUMPS

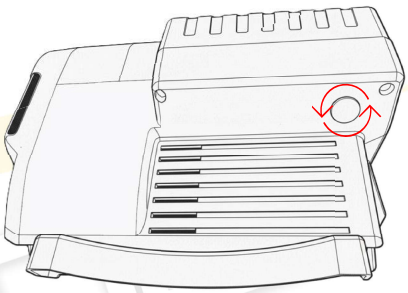
STEP 2

After the footpieces are removed, remove the screen covers of the pumps by loosening the 4 screws with a Starpoint screwdriver.



STEP 3

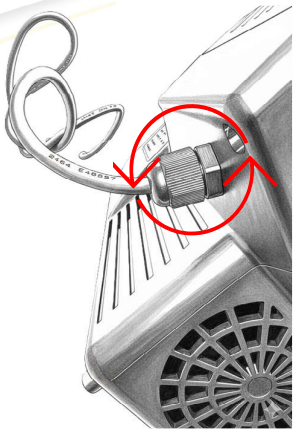
Remove the rubber gasket located at the bottom of the pump cover.



STEP 4

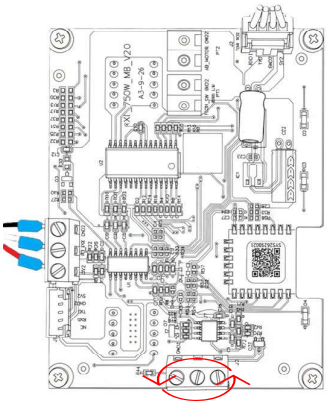
After the gasket is removed, insert the cable provided with the pump.

Please note that you will have 1 spare cable as all pumps are supplied with a cable.



STEP 5

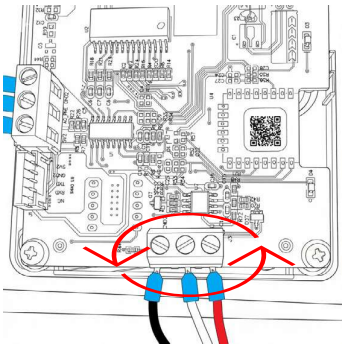
Locate the connection port on the PC board at the bottom of the PC Board



HOW TO CASCADE YOUR SSP PUMPS

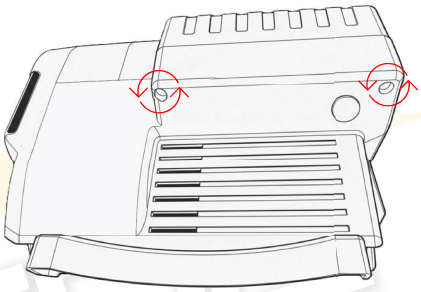
STEP 6

Connect the cable supplied with the pump in the same colour sequence as shown on both pump units.



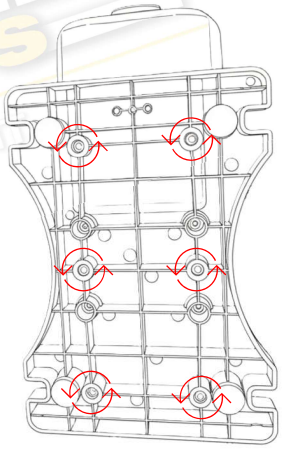
STEP 7

Fit the screen cover onto the pump by fastening the 4 Screws with a Starpoint screwdriver



STEP 8

Fit the footpieces of the pumps by tightening the 6 screws with a Starpoint screwdriver.



STEP 9

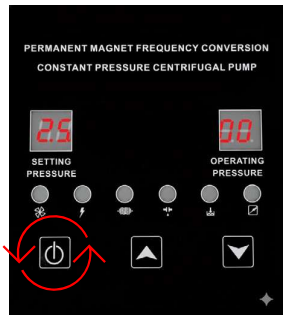
Supply power to both pump units

HOW TO CASCADE YOUR SSP PUMPS

STEP 10

Both pumps will display this screen and start running.

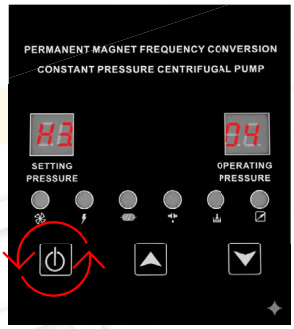
Press the power button on both pumps to stop them.



STEP 11

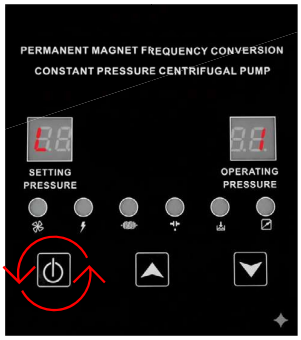
When both pumps are no longer running.

Press and hold the power button on the pumps until the following screen is displayed.



STEP 12

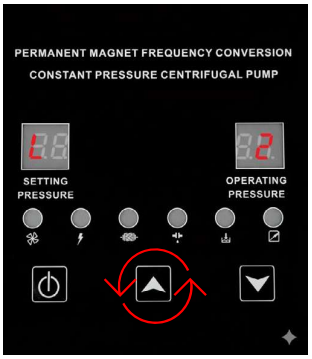
Continue to short press the power button until the display reads L on the setting pressure display and 1 on the operating pressure display.



STEP 13

Using the up button, set the secondary pump to L-2.

The primary pump will stay L-1.



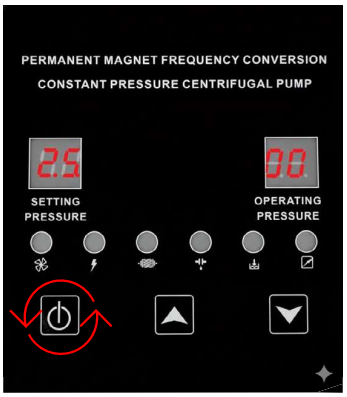
HOW TO CASCADE YOUR SSP PUMPS

STEP 14

After the primary and secondary pump values have been set.

Press and hold the power button for the changes to take effect.

The pumps are now set up for cascade operation.



TROUBLESHOOTING AND FAULT CODES

Ensure that the power has been turned off before removing the pump or motor terminal box.

Fault Code	Fault Name	Fault case	Troubleshooting method
E-01	Water pump is short of water	There is water in the pump chamber but there is no water or too little water at the inlet.	1 . The current pressure drops by more than 3 meters or the current pressure rises by more than 3 meters. 2. Regularly restart after scheduled shutdown. 3. The user presses the power to resume recovery.
E-02	Leakage reminder	Leakage was detected in the pipeline and the water pump started frequently.	1 . Continue for 10 minutes without any decrease in pressure. 2. Allow 180 seconds of uninterrupted operation.
E-03	Stall	Check if the motor is stuck.	1 . Automatically attempt recovery after 3 seconds, 5 attempts. 2. The user presses the power button to resume recovery.
E-04	Step out	Sudden excessive load impact, motor parameter mismatch.	1. Automatically attempt recovery after 3 seconds, 5 attempts. 2. The user presses the power button to resume recovery.
E-06	Pressure sensor failure	Check if the pressure sensor is damaged and if here is a short or open circuit in the wiring.	1. Clean the interface wiring. 2. Replace the sensor.

FAULT CODE DISPLAY & TROUBLESHOOTING

Fault Code	Fault Name	Fault case	Troubleshooting method
E-08	Overcurrent	Check for a short circuit in the motor and verify if there is any water on the motor wiring.	1. The system will automatically attempt recovery after 60 seconds, with up to 5 attempts. 2. The user can press the power button to restart and restore the system.
E-11	Low voltage protection	If the voltage drops below 150V, the system will shut down for protection.	The system will automatically recover when the detected voltage exceeds 165V.
E-12	Driver over temperature or driver temperature sensor failure.	1.Loss of signal from the built-in temperature sensor on the IPM circuit board. 2. The temperature detected by the controller power module exceeds 86°C.	1 . Internal damage to the circuit board. 2. The temperature drops below 70°C and then recovers.
E-18	Phase deficiency	Check if the three motor phases are properly connected and ensure the motor terminal is not disconnected.	1 . The system will automatically attempt recovery after 60 seconds, with up to 5 attempts. 2. The user can press the power button to restart and restore the system.
E-21	Communication failure	The motherboard did not receive panel data.	Check if the panel wires are properly connected. Reseat and unplug. If the issue persists, the panel or motherboard may be damaged.
E04	Communication failure	The motherboard did not receive data from the panel.	Check if the panel wires are properly connected. Reseat and unplug. If the issue persists, the panel or motherboard may be damaged.