

## Proof of Plant Delivery and Warranty

1. Various products manufactured by the company have gone through strict quality control and inspection before they can be allowed to leave the plant. We guarantee with assurance for your utility.
2. Please keep this certificate of warranty well, and we should require your understanding that if it won't be re-issued if lost.
3. From the date this product is purchased, we will guarantee that it can function well under normal utility conditions for one year, and we will render responsibility of warranty within the year.
4. During the period of warranty, the buyer can demand the company to honor the responsibility of warranty based on the standards of the company examination report.
5. For period in excess of the above-stipulated time, we will charge the buyer, if accessory has to be replaced or changed, with the cost expense of the accessory and service fee.
6. The company has always made improvement to our products. During the period of warranty, if the buyer has to replace accessory, the company can use the improved accessory for replacement. If the buyer demands for designated brand of accessory for replacement, the company will charge for the cost expense.
7. The company won't be responsible for break-down incurred as of natural disaster, earthquake, fault of user, self modification, relocation, or overload.
8. For installation of the product, it should be done by specialized personnel based on items of administration, or the company won't be liable for liability of warranty for problems generated as of improper administration or handling.

Product Name :	<i>CPU-controlled auto booster silent pump</i>
MODEL :	
SPECIFICATION:	
MFG No :	
USER'S NAME :	



## **ESV-SERIES** **CPU-controlled** **Auto Booster Silent Pump** **INSTRUCTION MANUAL**



- **SILENT OPERATION**
- **DRY RUNNING SHUTDOWN PROTECTION**
- **STABLE WATER PRESSURE**
- **EQUIPPED WITH THERMAL PROTECTOR**

**ISO9001 CERTIFIED**  
**MADE IN TAIWAN**

## I. Troubleshooting



Before installing or maintaining the pump, make sure that the power supply has been switched off, and the power can't be accidentally switched on.

- Confirm correct voltage before turn on power, and prime water inside the pump before starting.
- Avoid excess glue when connecting with pipeline, excessive glue would permeate into check valve from outlet side which would cause the check valve got stuck, then cause on/off frequently.
- Try to avoid the pump exposing to direct sun & rain outdoors. It is recommended to put on EVERGUSH customized water-proof cover for protection.
- If the pump gets stuck after a long-time idle, please use a screwdriver to rotate the shaft end of motor until it spin freely, in order to remove the rusts that got stuck inside the pump casing.

ESV CPU-controlled auto booster silent pump		TROUBLESHOOTING
 		  
Unusual phenomenon	Malfunction Routine/Cause	Solutions
The pump can't start	1. Power is not turn on	1. Re-connect the power again.
	2. Connects to wrong voltage.	2. Check and make sure it's the right voltage.
	3. Pressure sensor is broken.	3. Replace it.
	4. CPU controller is burned up.	4. Replace it
	5. Capacitor is burned up.	5. Replace it.
	6. Too low or high voltage	6. Check $\pm$ if supply voltage is within 10%.
	7. Motor wiring is burned up.	7. Replace it.
	8. Shaft jammed	7. Use a screwdriver to rotate the shaft end of motor until it spin freely.
The pump can't stop, On/Off frequently	1. Pressure switch is malfunction.	1. Adjust or replace it.
	2. Diaphragm inside pressure tank is broken.	2. Replace it.
	3. Check valve is hardened or stuck.	3. Replace it.
	4. There is air inside the pump.	4. Open check valve lid and expel the air.
	5. Discharge pipeline has leakage.	5. Check for leakage in the pipeline.
Motor is running, but pressure or flow is small	1. Impeller is damaged.	1. Change impeller.
	2. Air is inside the pump.	2. Open drain plug and discharges the air.
	3. Actual performance can't reach customer's requirement.	3. Change to a bigger horsepower pump.
	4. Pipeline or valve leakages.	4. Check for leakage in the pipeline or valve.
	5. Inlet strainer blocked.	5. Clean strainer inside or replace it.
During operation, the pump stops suddenly.	1. Abnormal voltage.	1. Check voltage and use right voltage.
	2. Impeller is stuck with obstacle.	2. Dismantle pump and clean impeller.
	3. When water shortage occurs, the pump will stop automatically.	3. Restart the pump when water returns.
Motor is producing loud noise	1. Bearing is broken	1. Replaces bearing
	2. Dusts/obstacles inside the pump	2. Dismantles and cleans it
<p>The ESV pump is not suitable for underground water. It is recommended that professionals install and maintain the pump.</p>		

## K. Main Parts & Materials

NO	Name	Material	NO	Name	Material
1	Pressure Tank	SUS304	8	Terminal Box	ABS
2	Pump casing	FC200	9	Motor Shell	Aluminum Alloy
3	Impeller	SUS304	10	Motor Coil	Copper
4	Guide Vane	PPO	11	Base	ABS
5	Shaft	SUS420	12	Flanges	SS400(SS41)
6	Mechanical Seal	CA/CE	13	Flow sensor	
7	CPU board		14	Check valve	NYLON66
			15	Motor fan	ABS
			16	Back cover	ABS

## L. Specifications

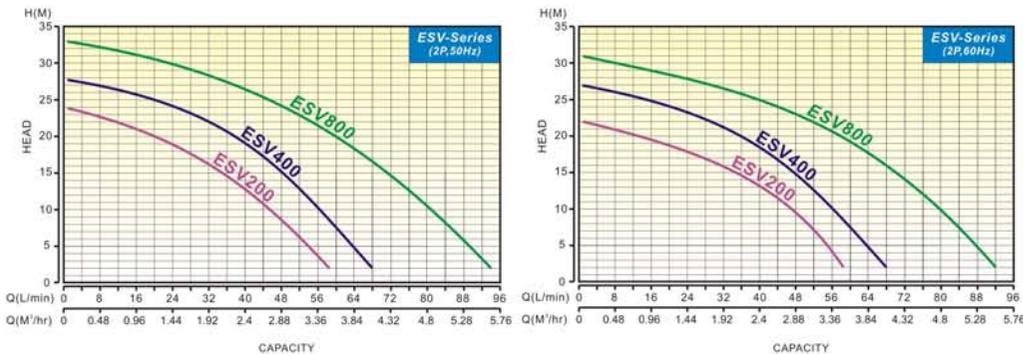
Model	Cycle Hz	Power W	HP	Inlet/Outlet		Pole P	Phase	Voltage V	Pressure		Rated Head M	Rated Flow L/min	Max. Head M	Max. Flow L/min
				Inch	mm				On (Bar)	Off (Bar)				
ESV200	50Hz	180	1/4	3/4"	20	2	1	220~240	1.5	2.4	15	35	24	60
	110/220							1.5	2.2	15	35	22	60	
ESV400	50Hz	370	1/2	1"	25	2	1	220~240	1.8	2.8	20	38	28	70
	110/220							1.8	2.7	20	36	27	70	
ESV800	50Hz	750	1	1"	25	2	1	220~240	2.2	3.3	25	45	33	95
	110/220							2.2	3.1	25	40	31	95	

Suction Lift: Max. 4M

## M. Dimensions

Model	Cycle Hz	Dimensions (mm)					Net Weight (KG)
		L	L1	W1	H	H1	
ESV200	50Hz	215	168	210	235	150	11.0
	60Hz	215	145				10.5
ESV400	50Hz	235	168	210	235	150	12.6
	60Hz	235	145				12.0
ESV800	50Hz	260	168	210	235	150	14.3
	60Hz	262	148				13.7

## N. Performance Curves



## EKV Series Instruction Manual

Please read all instructions carefully before installing your new systems, as failures caused by in proper installation or operation are not covered by the warranty.

### A. Pump Structure

The ESVSeries constant pressure pump is a combination of pump, motor, diaphragm pressure tank, pressure sensor and high tech CPU controller, all incorporated into one constant pressure system.

### B. Suitable Liquids

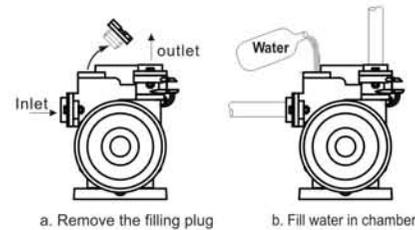
The ESVseries are designed for the pumping of non-aggressive water, or water not containing solid particles.

### C. Operating conditions:

1. Ambient temperature: Max. +40° C.
2. Liquid temperature: +2° C~+40° C.
3. Relative humidity: Max. 85%(RH).
4. Before using the pump, be sure the inlet pressure setting is lower than factory pressure setting.

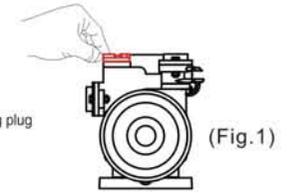
### D. Installation

1. It is recommended that the plumber/installer provides an adequate draining system to avoid damage in case of leakage, particularly when installed indoors. When it is installed outside, it should be covered by a weather-proof housing, well ventilated to allow motor heat to escape.
2. The pump should be installed as close as possible to the liquid source.
3. Prime water inside pump before running(Fig.1).



a. Remove the filling plug

b. Fill water in chamber



c. Tightened the priming plug

(Fig.1)

4. If the pump is for 60Hz area, EVERGUSH standard ESV is bi-voltage 110/220V design. Installer can open the back cover of control box, to switch 110V or 220V button. (Fig.2)



a. unscrew cover of control box

220V area Push 220V button

110V area Push 110V button

(Fig.2)

5. No water inflow occurs, pump will auto-shutdown in 1 minute, CPU (Fig.3) will auto detect the pump water status and restart the pump within 1 hour. If user want to actuate during the period, please turn off first power sources, then supply power sources again.



CPU Controller for ESV (Fig.3)

6. To avoid your furniture damage, do not install the pump on ceiling, carpet or any place close to electrical appliance.
7. Try to avoid the pump exposing to direct sun & rain outdoors. It is suggested to put on EVERGUSH customized water-proof cover for protection.(Fig.4)



(Fig.4)

## E. Electrical connection



This mark located outside the electronic box is a warning for an electrical hazard.

1. Ensure the main voltage is the same as the value shown on the motor label and the pump is safely connected to ground/earth.
2. ESV models are designed for single phase motors, which are supplied with plug and lead and can be connected directly to the main power supply.

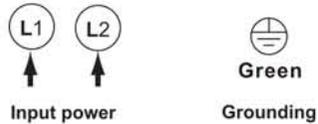
## F. Wiring diagram

### WARNING:

Risk of Electric Shock - This pump is supplied with a grounding conductor and grounding-type attachment plug. To reduce the risk of electric shock, be certain that it is connected only to a properly grounded, grounding-type receptacle".

Before operation, please ensure the voltage is correct or the circuit breaker and grounding connectors are all connected in accordance with local regulations.

### Single-phase power supply



## G. Piping

1. When used on a suction lift, a foot valve should be fitted on the suction line, below the liquid level.
2. To minimize pressure drop, the discharge pipe should be at least the same size as the discharge port of the pump.
3. For long suction pipes or high suction lifts over 4M, the suction pipe should be of greater diameter than the suction port.
4. Ensure all connections are completely sealed using thread tape only.

## H. Operation & Maintenance

Under normal operating conditions, the pump does not require any maintenance as long as the following points are observed:

1. Periodically check the condition of the check valve and strainer (if used).
2. If the pump is to be inactive for long periods, it should be rinsed thoroughly with clean water, then, drained and stored in a dry place.
3. If the pump sticks after periods of inactivity, a screw driver slot is provided on the motor shaft end to free up the pump/motor. To do so, insert a screw driver in the slot in the motor shaft as shown in Fig. 5 and turn to free the rotor.



(Fig.5)

"Use a screwdriver to rotate the shaft end of motor until it spin freely"

5. Pre-pressure (1kg/cm<sup>2</sup>) Diaphragm tank can be replaceable and should be checked or refilled air pressure (1kg/cm<sup>2</sup>) after long term idle. To check the Pressure Tank air pressure, turn off power, open a tap on the discharge line to release pressure from the pump, unscrew the cover and apply an accurate pressure gauge to the valve as shown in Fig. 6.



(Fig.6)

6. If inlet pressure value is higher than factory pre-set activation point, it will cause the pump can't start. Please inform professional personnel to improve and reduce inlet pressure.

The factory preset activation point is as follows:

Model	Power	Activation Pressure
ESV200	1/4HP	1.5 bar
ESV400	1/2HP	1.8 bar
ESV800	1 HP	2.2 bar

●Pre-set activation pressure is not adjustable.

## I. Precautions

1. The pump should be shut down and the trouble corrected if the pump is running at speed and found to have any of the following problems:
  - No liquid discharged - Not enough liquid discharged
  - Excessive vibration - Motor runs hot
2. Do not allow the pump to continually start and stop (cycling) as this will reduce the motor life.
3. Cycling can occur on pressure units where the pressure tank pre-charge drops, or where there is a leak in the discharge plumbing.
4. When connecting with PVC pipeline, must avoid using too much glue, excessive glue would permeate into check valve from outlet side which would cause the check valve getting stuck and ESV would start and stop too frequently. It would probably cause the less discharge of water which is due to adhesion of strainer at inlet side.(Fig.7)



## J. ESV Applications

- Auto boost water pressure to the house, apartment, villa, school, restaurant, school, beauty shop,...etc.
- Auto boost water pressure to garden sprinkler, heater, toilet, washing machine, sanitary equipment, etc.

