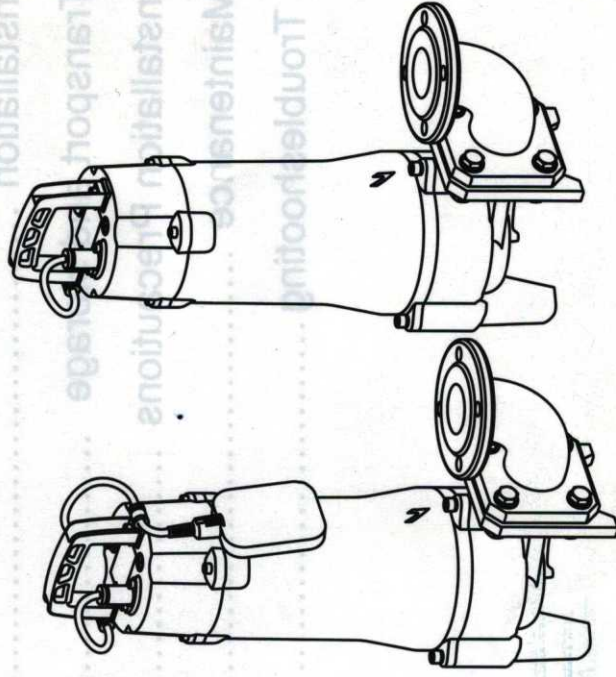




*Watering the Life*

## SUBMERSIBLE SEWAGE PUMP

### Instruction Manual



*Watering the Life*



• ED





Before starting the installation, make sure to read this manual.

## 1. Applications

The ED series of submersible sewage pump is widely used in industry, agriculture, mining, construction, municipal projects, etc. The pump can deliver short fibrous materials, paper, sand and other solid waste, such as domestic wastewater, sewage water, manure, etc. The main material of the pump is cast iron, thus the pump is not suitable for pumping medium which is strong corrosive or medium containing abrasive solids, and not suitable for transfer of flammable and explosive liquids.

## 2. Operation Conditions

Voltage and frequency: 1 x 220 V/50 Hz; 3 x 380 V/50 Hz

Voltage tolerance :  $\pm 10\%$

Max. liquid temperature: 40°C

Liquid pH value: 4 - 10

Max. liquid density:  $1.2 \times 10^3 \text{ kg/m}^3$

Max. immersion depth: 5 m (in case a greater depth is required, refer to the relational table below and consult professionals or the manufacturer).

The pump is NOT suitable for use in the environment with explosion-proof requirements.

**Relational table of cable length and cross-sectional area**

Power (kW)	Rated Pressure (V)	Cross-Sectional area of the cable $\text{mm}^2$	Cable length (m)									
			50	100	200	300	500	700	1000			
0.37	220		1.0	1.5	1.5	2.5	4.0	4.0	6.0	6.0		
0.75			1.0	1.5	2.5	4.0	6.0	6.0	10.0	10.0		
1.1			1.5	2.5	2.5	4.0	6.0	10.0	10.0	10.0	10.0	
1.5			1.5	2.5	4.0	6.0	10.0	10.0	16.0	16.0	16.0	
2.2			2.5	4.0	6.0	10.0	10.0	16.0	25.0	25.0	25.0	
0.37			380		0.5	0.75	0.75	1.0	1.0	1.5	1.5	1.5
0.75					0.75	0.75	1.0	1.0	1.5	1.5	1.5	1.5
1.1					0.75	0.75	1.0	1.0	1.5	1.5	2.5	2.5
1.5					1.0	1.0	1.5	1.5	1.5	2.5	2.5	2.5
2.2					1.5	1.5	1.5	2.5	2.5	2.5	4.0	4.0
3	2.5	2.5			2.5	2.5	4.0	4.0	6.0	6.0		
4	2.5				2.5	2.5	2.5	2.5	4.0	4.0	6.0	
					2.5	2.5	2.5	2.5	4.0	4.0	6.0	

## 10. Troubleshooting



Please shut down the power before repairing the water pump.

Problem	Likely Cause	Solution
Start-up is difficult.	<ol style="list-style-type: none"> <li>Voltage is low;</li> <li>Phase loss (for 3 phase);</li> <li>Impeller is clogged;</li> <li>Voltage drop of the cable is high;</li> <li>Stator winding is damaged.</li> </ol>	<ol style="list-style-type: none"> <li>Adjust voltage to the rated value <math>\pm 10\%</math>;</li> <li>Check wires, cable and plug;</li> <li>Clean impeller;</li> <li>Select a proper cable;</li> <li>Return pump to the service center or factory.</li> </ol>
Flow is low.	<ol style="list-style-type: none"> <li>Head is too high;</li> <li>Pump inlet is clogged;</li> <li>Impeller is damaged;</li> <li>Immersion depth is not enough;</li> <li>Impeller runs in reverse direction.</li> </ol>	<ol style="list-style-type: none"> <li>Refer to the recommended head range;</li> <li>Clean pump inlet;</li> <li>Replace impeller;</li> <li>Adjust the immersion depth (more than 0.5 m);</li> <li>Exchange any 2 phases of a 3-phase pump.</li> </ol>
The pump suddenly stops.	<ol style="list-style-type: none"> <li>Protector is activated or fuse is burnt;</li> <li>Impeller is clogged;</li> <li>Stator winding is damaged.</li> </ol>	<ol style="list-style-type: none"> <li>Check voltage;</li> <li>Clean impeller;</li> <li>Return pump to the service center or factory.</li> </ol>



- 8). Some #25 transformer oil is injected into the oil chamber of the pump to make sure the mechanical seal is well lubricated and cooled. In case of pump damage or malfunction, a leakage of the #25 transformer oil may occur. The leakage may damage the plants or pollute the drinking water and food in planting, breeding, transfer and processing of drinking water and food. It is recommended to evaluate the operating environment and consequences before selecting this pump. If an oil leakage is found, stop the pump running immediately and handle it properly.
- 9). Disconnect the power before adjusting the pump position or touching the pump.
- 10). Do not immerse the cable joint or plug board into the water. If the power supply is out of reach of the cable equipped by the manufacturer, please extend it with thicker cable accordingly and wrap the joint carefully. Refer to the relational table of cable length and cross-sectional area (Page 2).
- 11). To remove the pump out of water, only after the power-off, and cool-down.
- 12). This product matches the protection degree of IPX8 according to standard ICE/EN 60529. In case this product is maintained or repaired, it can be used again when IPX8 test is passed.
- 13). Before use of a 3-phase pump, the pump must be reliably grounded by connecting the ground point on upper cover.

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Model	Voltage / Frequency	Rated Power (kW)	Rated Flow (m <sup>3</sup> /h)	Rated Head (m)	Qmax (m <sup>3</sup> /h)	Hmax (m)	Max. Diameter of Particle (mm)	Pipe Diameter (mm)
50EDSU12-8-0.75	380V/50Hz	0.75	12	8	22.5	13		50
50EDSU12-8-0.75	220V/50Hz	0.75	12	8	22.5	13		50
50EDSU9-6-0.37	380V/50Hz	0.37	9	6	19	9.5	35	50
50EDSU9-6-0.37	220V/50Hz	0.37	9	6	19	9.5		50
50EDSU15-5.5-0.75	380V/50Hz	0.75	15	5.5	27	9		50
50EDSU15-5.5-0.75	220V/50Hz	0.75	15	5.5	27	9	50	50
50EDSU13.2-4-0.37	380V/50Hz	0.37	13.2	4	22	6		50
50EDSU13.2-4-0.37	220V/50Hz	0.37	13.2	4	22	6		50
65EDSU30-16-4	380V/50Hz	4	30	16	54	24		65
65EDSU30-11-3	380V/50Hz	3	30	11	46	18		65
65EDSU24-12.5-2.2	380V/50Hz	2.2	24	12.5	40	17		65
65EDSU24-12.5-2.2	220V/50Hz	2.2	24	12.5	40	17	55	65
65EDSU4-8.5-1.5	380V/50Hz	1.5	24	8.5	38	13		65
65EDSU24-8.5-1.5	220V/50Hz	1.5	24	8.5	38	13		65
80EDSU30-7-2.2	380V/50Hz	2.2	30	7	55	8		80
80EDSU30-7-2.2	220V/50Hz	2.2	30	7	55	8	76	80
80EDSU30-4.5-1.5	380V/50Hz	1.5	30	4.5	50	6		80
80EDSU30-4.5-1.5	220V/50Hz	1.5	30	4.5	50	6		80
50EDSU8-20-1.5	380V/50Hz	1.5	8	20	25	22		50
50EDSU8-20-1.5	220V/50Hz	1.5	8	20	25	22	15	50
50EDSU8-16-1.1	380V/50Hz	1.1	8	16	26	19		50
50EDSU8-16-1.1	220V/50Hz	1.1	8	16	26	19		50
50EDSU15-25-3	380V/50Hz	3	15	25	51	27		50
50EDSU15-20-2.2	380V/50Hz	2.2	15	20	45	23		50
50EDSU15-20-2.2	220V/50Hz	2.2	15	20	45	23		50
65EDSU25-27-4	380V/50Hz	4	25	27	55	31.5		65
65EDSU25-22-3	380V/50Hz	3	25	22	45	28.5	25	65
65EDSU25-17-2.2	380V/50Hz	2.2	25	17	40	24		65
65EDSU15-15-1.5	380V/50Hz	1.5	15	15	44	20		65
65EDSU15-15-1.5	220V/50Hz	1.5	15	15	44	20		65
65EDSU5-10-1.1	380V/50Hz	1.1	15	10	34	14		65
65EDSU15-10-1.1	220V/50Hz	1.1	15	10	34	14		65
80EDSU40-18-4	380V/50Hz	4	40	18	83	23		80
80EDSU40-13-3	380V/50Hz	3	40	13	76	21	30	80
80EDSU40-9-2.2	380V/50Hz	2.2	40	9	69.5	17		80
32EDSP3.6-30-2.2/QG	380V/50Hz	2.2	3.6	30	10	30.2	-	32
32EDSP3.6-30-2.2/QG	220V/50Hz	2.2	3.6	30	10	30.2	-	32
32EDSP3.6-23-1.5/QG	380V/50Hz	1.5	3.6	23	6	23.2	-	32
32EDSP3.6-23-1.5/QG	220V/50Hz	1.5	3.6	23	6	23.2	-	32
32EDSP3.6-17-1.1/QG	380V/50Hz	1.1	3.6	17	6	18	-	32
32EDSP3.6-17-1.1/QG	220V/50Hz	1.1	3.6	17	6	18	-	32
50EDSP12-30-4/QG	380V/50Hz	4	12	30	26.5	33	-	50
50EDSP12-22-3/QG	380V/50Hz	3	12	22	26	25.5	-	50
50EDSP12-19-2.2/QG	380V/50Hz	2.2	12	19	24.5	23	-	50



5). Do not pull or lift the pump cable to move the electric pump. Sealing may be damaged or cable may be broken to cause electric shock injuries.

Fix a rope to the handle to install the electric pump in deep water.  
Do not hang the electric pump in the water during operation to avoid any possible damage.

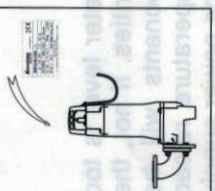
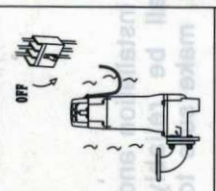
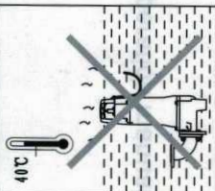
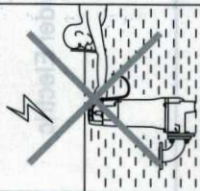
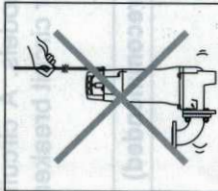
6). It is strictly prohibited to touch the pump during working of the pump.

Do not wash or swim in the working area.  
Keep all children, bystanders and animals away from the working area.

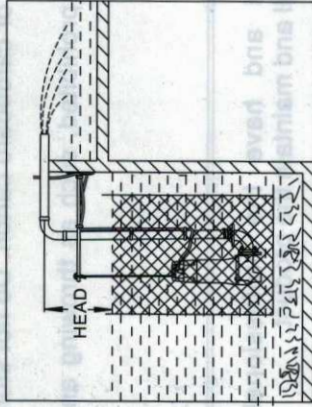
7). Do not use the pump in the water which temperature is more than 40°C. Motor malfunction may occur due to deformation of the sealing parts.

8). Make sure the rotation direction of the pump is correct before operation. Wrong rotation may cause malfunctions.

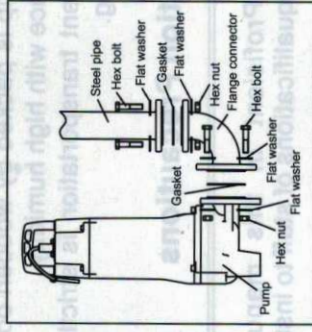
9). Please follow the voltage and frequency stated in the nameplate while using the pump.



## 6. Installation



Installation Diagram



Pipe connection

### 1). Pipe connection

The gasket should be placed between two flange surfaces when connecting the pump with joints. Tighten the joints with hex bolts, hex nuts and flat washers (The pump outlet should not be interfered by the gasket). The steel delivery pipe can be reliably connected with welded flange. See picture above.

### 2). Electrical connection

A leakage protection device should be correctly installed when wiring. Make sure the yellow-green wire of 3-phase pump is reliably grounded. The socket must be reliably grounded in case of use of pump with plug. The selection of circuit breaker for 3-phase pump shall be in accordance with current or power value, refer to the table of Circuit Breaker Selection (page 5).

### 3). Hoisting

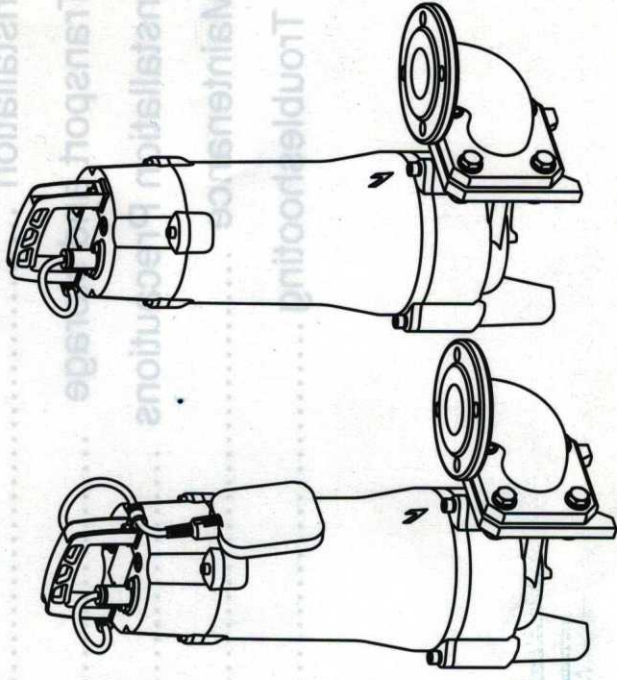
Fix a strong rope on the pump handle, hoist the pump and sink it slowly to the mounting position. Fix the pump, pipes and the rope. Hoist the pump by the rope for maintenance only (During hoisting, it's not allowed to pull the cable and float switch).

### 4). Startup

Before starting, make sure that the cold insulation resistance should be over 50 MΩ (megohms) and hot insulation resistance over 1 MΩ (megohms). Before immersion, a trial operation with duration less than 10 seconds is required. In the meantime, it's necessary to check whether the rotation direction is the same as the arrow indication. If it's found that the 3-phase pump runs in reverse direction, exchange any 2 wires of the cable to fix this problem.



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## 10. Troubleshooting

 Please shut down the power before repairing the water pump.

Problem	Likely Cause	Solution
Start-up is difficult.	<ol style="list-style-type: none"> <li>1. Voltage winding is damaged.</li> <li>2. Start capacitor is disconnected.</li> <li>3. Impeller is clogged.</li> <li>4. Phase loss (for 3 phase).</li> <li>5. Outside is low.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust voltage to the rated center or factory.</li> <li>2. Return pump to the service.</li> <li>3. Clean impeller.</li> <li>4. Check phase voltage and plug.</li> <li>5. Adjust voltage to the rated.</li> </ol>
Flow is low.	<ol style="list-style-type: none"> <li>1. Head is too high.</li> <li>2. Impeller runs in reverse direction.</li> <li>3. Impeller is damaged.</li> <li>4. Immersion depth is not enough.</li> <li>5. Pump inlet is clogged.</li> </ol>	<ol style="list-style-type: none"> <li>1. Refer to the recommended head range.</li> <li>2. Exchange any 3 phases of a 3-phase pump.</li> <li>3. Adjust the immersion depth (more than 0.5 m).</li> <li>4. Replace impeller.</li> <li>5. Clean pump inlet.</li> </ol>
The pump stops suddenly.	<ol style="list-style-type: none"> <li>1. Protector is activated or fuse is burnt.</li> <li>2. Start capacitor is disconnected.</li> <li>3. Impeller is clogged.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check voltage.</li> <li>2. Return pump to the service.</li> <li>3. Clean impeller.</li> </ol>

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

### Attention!

The appliance must be installed by professionals. If the appliance or the supply cord is damaged, it must be repaired by manufacturer, its service agent or qualified person.

Table of cable length and cross-sectional area

Rated Power (kW)	Rated Pressure (N)	Cable length (m)					
		20	100	200	300	500	1000
0.37		1.0	1.2	1.5	2.0	3.0	4.0
0.75		1.0	1.2	1.5	2.0	3.0	4.0
1.1		1.2	1.5	2.0	2.5	3.5	4.5
1.5		1.5	2.0	2.5	3.0	4.0	5.0
2.2		2.0	2.5	3.0	3.5	4.5	5.5
3.0		2.5	3.0	3.5	4.0	5.0	6.0
4.0		3.0	3.5	4.0	4.5	5.5	6.5

Meaning of crossed-out wheeled dustbin:

Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.

Contact your local government for information regarding the collection systems available.







## 7. Transport and storage

- 1). The pump is packed by wooden box or cardboard carton. Do not store it in a place with high humidity.
- 2). Any violent transportation is strictly prohibited, such as throwing and smashing.

## 8. Installation Precautions



Proficient in this manual and have the professional qualifications of staff to install and maintain the product.



Unless the power is off, or else do not junction box wiring work.

Pump should be grounded to prevent leakage, and should be equipped with leakage protection switch. If the pump outdoor use, you must use an extension cord for outdoor use rubber cable.

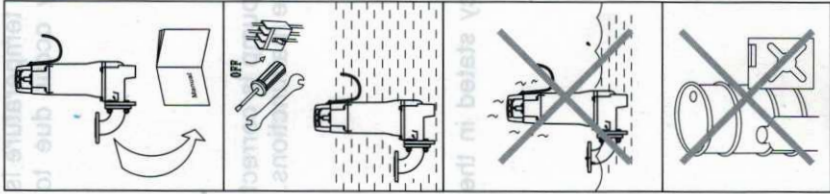
- 1). Thoroughly check on the pump to make sure of no damage during transportation, or storage, especially the cable. If damaged, it is timely to professionals to be replaced or repaired in use.
- 2). Protect the cable carefully to avoid any tear and wear. Never pull the pump by the electric cable. If not, it is dangerous for the pump itself and the people around there.
- 3). The immersion depth of the pump should be not less than 0.5 m and not more than 5 m. Do not place the pump into the mud or let weeds clog or stuck the impeller, otherwise the pump cannot work properly. Regularly check the water level. The pump is prohibited to work above water surface.
- 4). A warning sign (such as: Danger! Electrical hazard) shall be set up to avoid accidents in the place where the pump is used.
- 5). The built-in protector does not work when the pump runs properly. In case of frequent activation of the protector, disconnect the power and check the reason. It's not allowed to operate the pump before the malfunction is solved.
- 6). In case the pump location is far from the power, it's necessary to use a thicker cable. Refer to the relational table of cable length and cross-sectional area (Page 2).
- 7). Do not fill any oil or water into the motor chamber.

An overcurrent protector is integrated for single-phase models. A circuit breaker is required for three-phase models, see the table for circuit breaker selection below.

### Circuit Breaker Selection

Power (kW)	Model	Setting of current	Supplier (recommended)
0.37	GV2-ME07	2.2	Schneider Electric
0.75	GV2-ME08	3	
1.1	GV2-ME08	3.5	
1.5	GV2-ME10	5	
2.2	GV2-ME14	8	
3	GV2-ME16	12	
4	GV2-ME16	14	

## 5. Safety Precautions



- 1). Please read and fully understand the operation manual before operation.
- 2). Cut off the power supply before any installation and maintenance. The electric pump shall be reliably grounded. To prevent the electric shock, make sure to install an electric leakage circuit breaker.
- 3). Do not operate the pump when the water level is too low or the water inlet is blocked by impurities. If not, the service life of motor and other components will be shortened or damaged due to high temperature raised inside the pump. Repair the pump when the power supply is cut off and impeller keeps still.
- 4). It's strictly prohibited to transfer liquid with pH value other than 4 - 10 or any flammable, gasifiable or explosive fluid.