

# Troubleshooting



Before removing the terminal box cover and before any removal/dismantling of the pump. Make sure the electricity supply has been switched off and that it cannot be accidentally switched on.

Fault	Cause	Remedy
Motor does not run when started	<ul style="list-style-type: none"> <li>- Supply failure.</li> <li>- Fuses are blown.</li> <li>- Motor starter overload has tripped out.</li> <li>- Thermal protection has tripped out.</li> <li>- Main contacts in motor starter are not making contact or the coil is faulty</li> <li>- Control circuit is defective.</li> <li>- Motor is defective</li> </ul>	<ul style="list-style-type: none"> <li>- Connect the electricity supply.</li> <li>- Replace fuses.</li> <li>- Reactivate the motor protection.</li> <li>- Reactivate the thermal protection.</li> <li>- Replace contacts or magnetic coil.</li> <li>- Repair the control circuit.</li> <li>- Replace the motor</li> </ul>
Motor starter overload trips out immediately when supply is switched on	<ul style="list-style-type: none"> <li>- One fuse/automatic circuit breaker is blown.</li> <li>- Contacts in motor starter overload are faulty.</li> <li>- Cable connection is loose or faulty.</li> <li>- Motor winding is defective.</li> <li>- Pump Mechanically blocked.</li> <li>- Overload setting is too low.</li> </ul>	<ul style="list-style-type: none"> <li>- Cut in the fuse.</li> <li>- Replace motor starter contacts.</li> <li>- Fasten or replace the cable connection.</li> <li>- Replace the motor.</li> <li>- Remove the mechanical blocking of the pump.</li> <li>- Set the motor starter correctly.</li> </ul>
Motor starter overload trips out occasionally.	<ul style="list-style-type: none"> <li>- Overload setting is too low.</li> <li>- Low voltage at peak times.</li> </ul>	<ul style="list-style-type: none"> <li>- Set the motor starter correctly.</li> <li>- Check the electricity supply.</li> </ul>
Motor starter has not tripped out but the pump does not run.	<ul style="list-style-type: none"> <li>- Supply failure.</li> <li>- Fuses are blown.</li> <li>- Thermal protection has tripped out.</li> <li>- Main contacts in motor starter are not making contact or the coil is faulty</li> <li>- Control circuit is defective.</li> </ul>	<ul style="list-style-type: none"> <li>- Connect the electricity supply.</li> <li>- Replace fuses.</li> <li>- Reactivate the thermal protection.</li> <li>- Replace contacts or magnetic coil.</li> <li>- Repair the control circuit.</li> </ul>
Pump capacity not constant	<ul style="list-style-type: none"> <li>- Pump inlet pressure is too low (cavitation).</li> <li>- Suction pipe/pump partly blocked by impurities.</li> <li>- Pump draws in air.</li> </ul>	<ul style="list-style-type: none"> <li>- Check the Suction conditions.</li> <li>- Clean the pump or the pump pipe.</li> <li>- Check the suction conditions.</li> </ul>
Pump runs but gives no water	<ul style="list-style-type: none"> <li>- Suction pipe/pump blocked by impurities.</li> <li>- Foot or non-return valve blocked in closed position.</li> <li>- Leakage in suction pipe.</li> <li>- Air in suction pipe or pump.</li> <li>- Motor rotates in the wrong direction.</li> </ul>	<ul style="list-style-type: none"> <li>- Clean the pump or suction pipe.</li> <li>- Repair the foot or non-return valve.</li> <li>- Repair the suction pipe.</li> <li>- Check the suction conditions.</li> <li>- Change the direction of rotation of the motor.</li> </ul>
Pump runs back-wards when switched off.	<ul style="list-style-type: none"> <li>- Leakage in suction pipe.</li> <li>- Foot or non-return valve is defective.</li> </ul>	<ul style="list-style-type: none"> <li>- Repair the suction pipe.</li> <li>- Repair the foot or non-return valve.</li> </ul>
Leakage in shaft seal.	<ul style="list-style-type: none"> <li>- Shaft seal is defective.</li> </ul>	<ul style="list-style-type: none"> <li>- Replace the shaft seal.</li> </ul>
Noise	<ul style="list-style-type: none"> <li>- Cavitation occurs in the pump.</li> <li>- Pump does not rotate freely(frictional resistance) because of the incorrect pump shaft position</li> <li>- System head and pump head ratio too low.</li> <li>- Frequency converter not run</li> </ul>	<ul style="list-style-type: none"> <li>- Check the suction conditions.</li> <li>- Adjust the pump shaft.</li> <li>- Improve system or choose a right pump.</li> <li>- Check the frequency converter operation.</li> </ul>

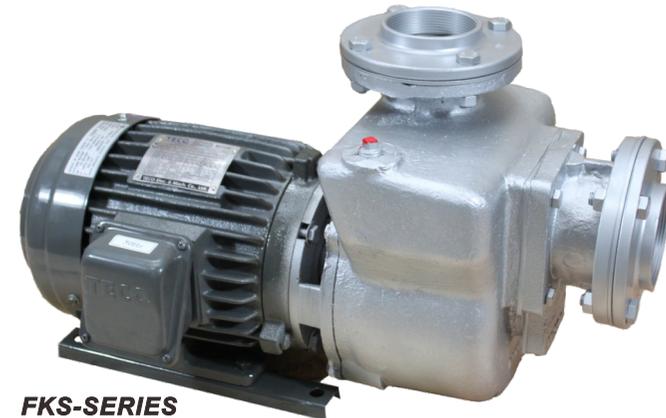
## Disposal

Disposal of this product or parts of it must be carried out according to the following guidelines:  
Use the local public or private waste collection service.



## FKS-SERIES FK-SERIES

# Close-Coupled Self-priming Pumps Instruction Manual



**FKS-SERIES  
Stainless Steel Pump**



**FK-SERIES**

**ASIA AUTOMATIC PUMP CO.,LTD**

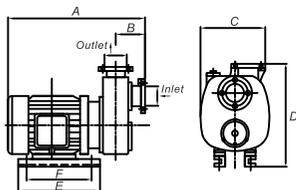
<http://www.evergushpump.com.tw>

## Specification

(60Hz, 3500rpm)

Model	Power	Phase	Pole	Inlet/Outlet	Rated Head	Rated Flow	Max.Head	Max.Flow
	HP	∅	P	Inch	M	L/min	M	L/min
FK(S)40-2.75(T)	1	1,3	2	1-1/2"	11	130	14	180
FK(S)50-21.5(T)	2	1,3	2	2"	14	240	17	350
FK(S)65-22.2T	3	3	2	2-1/2"	15	300	18	540
FK(S)80-23.7T	5	3	2	3"	15	570	22	830
FK(S)100-25.5T	7.5	3	2	4"	15	1000	20	1400
FK(S)100-27.5T	10	3	2	4"	18	1000	23	1400
FK(S)100-211T	15	3	2	4"	26	1000	31	1500

(T): 3 phase motor (S): Stainless Steel Pump



Unit: MM

Model	A	B	C	D	E	F
FK(S)40-2.75(T)	500	60	230	320	285	250
FK(S)50-21.5(T)	510	78	250	333	285	250
FK(S)65-22.2T	535	78	250	333	285	250
FK(S)80-23.7T	620	110	300	380	325	290
FK(S)100-25.5T	653	120	355	380	400	350
FK(S)100-27.5T	691	120	355	380	400	350
FK(S)100-211T	847	120	423	435	400	350

## Check before installation

- First of all, check model name on the nameplate, discharge/suction diameter, horsepower, phase, frequency, voltage, rated head and rated capacity..etc. Make sure the specifications are exactly what you need.
  - Make sure there is no damage during transportation. If it is damaged during transportation, please ask the supplier to replace a new one or refuse to accept the defect product. Please pay special attention on the appearance of cable. Make sure there are no wire exposed or screw loose problems.
  - As for accessories, please double check the types of accessories and quantities are correct.
  - If you are uncertain about the accessories, please feel free to contact local distributors or dealers.
- Please make sure the pump rotates in clockwise direction(it is labeled on top of fan cover).
- Do not operate it in counter-clockwise in order to avoid motor burn up. If it is in correct rotate direction, the capacity will be bigger than wrong rotate direction.
- When you use the pumps, please choose the right voltage. If you use high voltage, it could cause the motor burn up. If you use small voltage, the motor might not be able to start at all.
- Please double check your voltage before you connect to the motor.
- EVERGUSH products have went through strict quality management. When the pumps are finished, we will go through seal leakage check to make sure there is no leakage at all.
- Before the pumps are finished, we also will go through performance, power and efficiency examination. There will be manufacture code stickers on the pumps for consumer rights.

## Instruction

- Please provide support for the discharge or suction pipelines. Do not put the pipeline weight directly on top of the pump.
- The impeller is dynamically balanced. You can add rubber gaskets under the base of pump. It will act as a buffer. It can eliminate noise and vibration caused by the pump during operation. Below are a few necessary factors before you install the rubber gaskets:
  - The ground must be horizontal level.
  - It must be concrete base.
  - The size of base is based on the size of pump with additional 10cm.
  - Make sure there are screws to fasten the base of pump.
- If it is installed outdoor, please add additional cover to protect it from sun and rain.

- Three point for pipeline installation:

- If the water source is above the pump, the pipeline can't turn upward. It must be horizontal level to prevent air bubbles build up in the pipeline. If the water source is on the same horizontal level with pump,make sure the pump suction pipeline is lower than it. The length of suction pipeline should be shorter and closer to water source.
- Try to preserve some space for future disassembly. If something goes wrong with the pump, we don't need to disassemble the pipeline again. All we need to do is to remove the motor and pump bracket. And then the technicians could fix it easily.
- In theory, pump suction lift can reach 10.33m. Because of the weight of water and air pressure difference, there will be water level difference. It could cause the pump only have suction lift around 5~8m. Because of viscosity and temperature proportion, it is best to set suction lift up to 6m.

## Test Run

- After the pipelines are set up, you need to check if there is leakage in the pipeline. The testing pressure should be 1.2~1.5 times your working pressure.
- Before start the motor :
  - Make sure to fill water in the suction pipeline.
  - After the water has been filled, there should be overflow from the valve. Try to close it tightly.
  - Check direction of the motor. Make sure it is correct.
  - If the pump is not filled with water, do not start it to avoid damage with the mechanical seal.
- After it operates, try to pay attention with below points :
  - Capacity, head, suction pipeline. If one of these are not normal, try to adjust the gate valves.
  - Measure the loading current. Make sure it is correct.

## Disassembly

- When you need to disassemble the pump, no need to touch the pipeline, you can just simply remove the screws on the pump casing. And remove the motor and pump bracket from the back.
- Possible damage or wear parts :
  - O ring
  - Mechanical seal
  - (They are all replaceable)
- Please follow procedures during disassembly:
  - Remove screws on the pump casing.
  - Remove screws on the base of motor
  - Pull out the motor and remove the key on the shaft of motor.
  - Remove screws on pump bracket and take out the mech. seal.

## Materials

EVERGUSH pump structure is simple, lightweight and special material which are durable. Below are the essential parts :

- Casing : Made of cast iron or stainless steel.
- Impeller : Made of cast iron or stainless steel.
- Impeller nut : Adopts 304 stainless steel material.
- Mechanical seal : We can custom made different materials for different applications.
- Pump bracket: Made of Cast iron.
- Shaft: Adopts 304 stainless steel material.