

TROUBLESHOOTING GUIDE

Problem / Symptom	Probable Root Cause	Solution
Excessive vibration on Machinery room	▪ Equipment blocked because inlet of estrange object or suction blocked.	▪ Check around the suction zone. Release the pump taking out the garbage.
	▪ Engine-transmission misalignment	▪ Realign Engine and transmission.
	▪ High revolution Chutch.	▪ Check the clutching procedure at low rpms.
Excessive vibration on sumerged area of the pump and around.	▪ Garbage at the suction zone or on impeller zone	▪ Cleaning the suction zone and the interior impeller zone to completely remove any obstruction
	▪ Presence of swirl. Inadequate flow pattern in the suction	▪ Check the bathymetry in the suction. Remove obstructions mounds have been formed by sedimentation at this site. ▪ Check submergence level as operations manual
Diesel engine doesn't reach all the r.p.ms	▪ Missing engine capacity	▪ Check that the fuel feed line is unobstructed ▪ Check that the air filter is not clogged ▪ Filtration systems can raise discharge dynamic head (power required) to levels that impair engine performance. Clean the filters. Do a test without the filters. ▪ Call the nearest Representative
	▪ Suction obstructed	▪ Cleaning the suction cone and the interior impeller area to completely remove any obstruction
	▪ Pumping level higher than expected in the design ▪ Dynamic losses higher than expected	▪ Check station heights vs drawings pumps ▪ Consult to the Technical Support Department ETEC SA
	▪ Transmission in relation different than expected	▪ Read the plate and manually verify the rate. ▪ Consult to the Technical Support Department ETEC SA
Excessive leakage through the mechanical seal	▪ Poor calibration of mechanical seal. ▪ Compression boot failure ▪ defective clamps	▪ recalibrate / replace mechanical seal as indicated in the manual of your pump ▪ Replace wear items

FLOATING CONTAINER LIST FAQ PUMPS ELECTRICAL & DIESEL

General questions (applicable to any type of pump)

- **How many hours can operate the pump daily?** It depends on the conditions and needs of the client regarding their crop (production intensity or water requirements), the submergence required equipment and the design of the pumping solution (water levels).

- **What is the submergence and why it is so important in the operation of axial pumps?** Submergence is the water column that requires the impeller to avoid cavitation. Cavitation is a phenomenon that gradually destroys the team and respecting avoiding submergence levels of equipment.

- **How do I consume less fuel pumps operated by internal combustion engines?** Considering preventive maintenance routines specified in the engine manual and are kept in good filtration system and engine air fuel. In addition to meeting the design conditions related to the heights or levels of operation, site clean suction and discharge.

- **How do I consume less energy by electric motors powered pumps?** Considering preventive maintenance routines indicated in the manual of the engine, such as ranges keep greasing bearings. In addition to meeting the design conditions related to the heights or levels of operation, site clean suction and discharge.

- **What if the pump vibrates excessively?** Turn off the computer and check the possible causes of vibration according to the operations manual of the equipment, such as obstruction in the grid, pumping site sedimentation or bolts loose. If vibration persists seek advice aftersales department ETEC SA

- **What happens when the engine fails to turn up the RPM?** It may happen that there is obstruction in the pumping or discharge failure may also be the electrical connection (in case of electric motors) or failure of the internal combustion engine. In both cases you should consult the manual for operation and maintenance of the engines (troubleshooting) to identify possible causes. If the problem persists, seek advice aftersales department ETEC SA

- **How often to do maintenance on the engine and transmission?** Should consult the maintenance manual and engine and transmission to check maintenance intervals. Usually these are expressed in hours of equipment operation and consists of oil and filter changes that accumulate particulate product of normal wear of engine parts in contact.

- **How often should I take the pump out of the water?** Recommended every year or so operational cycle. Also every time it is not possible to pump or long periods without operation exist.
- **How I can pump other fluids?** ETEC pumps are designed to pump water (salty, sweet), not suitable for pumping high viscosity liquids or particulate matter is present.
- **What happens if I break working levels during operation?** They increase the power requirement for which the equipment is designed and could start generating vibration and cavitation with disastrous consequences in the impeller and team structure.
- **How I can work the pump at higher engine speed to the design?** It is not advisable, since the design of the equipment is based on an average flow and a rotational speed of the impeller in areas of high efficiency. The nameplate shows the speed of rotation of the impeller according to the rated motor speed.
- **Is Al electric motor can fall rainwater?** Depend on the degree of protection IP or NEMA motor operating as required. See whenever you get an electrical degree of protection of the motor and electrical accessories.
- **How I can use biodiesel in diesel engine?** If using a pre-filter that filters the fuel before it reaches the engine.
- **How do I turn off the pump?** This procedure is in the operations manual of the equipment. In the case of internal combustion engines, is to slow (down revolutions) gradually engine and disengage the power takeoff (clutch) as the revs are at about 1,000 RPM. Once the engine disengaged, allowed two (2) minutes without cooling load and off. In the case of electric motors with soft starter or variable frequency drive must be programmed ramp stopped properly.
- **How many people will be uploaded to the pump when it is floating on water?** This team has a floating design maximum allowable load of four (4) people maximum with a maximum total weight of 320 kg.
- **Where I can contact for advice on maintenance and operation of equipment?** You can contact the aftersales department ETEC SA telephone number (57 5) 6689300 in Cartagena (Colombia) or email address info@etecsa.com. It is suggested that the device serial number and description of the problem.

- **What is the lifespan of a diesel engine?** Depending on the use, care and maintenance performed, we suggest that after the first 10,000 hours of operation efficiency testing the diesel engine.

- **What is the life of the electric motor?** Depending on the use, care and maintenance performed, suggest that once revealed loss of isolation or speed, contact the representative of the engine to check insulation, winding, etc..

General Questions container floating pump

- **What is a container type floating axial pump?** Axial Pump Floating ETEC is built with the dimensions of a container, to serve as a module and to protect pump components during operation.

- **What makes the differentiating features a versatile floating bomb?**

Pumping systems floating high capacity pumping stations replace traditional civil works required large concrete. The pump type floating axial impellers currently only produced and sold worldwide ETEC. ETEC has innovated to receive this product and promote it on the market for moving large volumes of water. The floating bomb has changed the way they conceived the pumping stations in a global framework.

- **How often to do maintenance on the pump element?** They should consult the manual of operations and maintenance of floating pump to check maintenance intervals. These are divided into cleaning equipment (suction and discharge) protection elements (zinc anodes), support elements (hubs and presses) and drive train (shaft and impeller).