FLO-KWIP

Simply Better

"DRAINER"
SUBMERSIBLE PUMP MANUAL

240 VOLT
450 WATT
MODEL: LC45-A

OPERATION MANUAL & SAFETY INSTRUCTIONS

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TOOLKWIP PUMPS

Hazard Identification / Risk Assessment - Electric Pumps

This Product Safety Information Sheet has been developed by Toolkwip Pumps Pty Ltd to provide customers with the necessary information to enable the safe use of the equipment. This document will provide the customer with factors to consider prior to use and should be followed. This document does not remove the customer's responsibility for carrying out their own Hazard Identification Risk Assessment of the task and equipment prior to use. This document should be read in conjunction with the Operators Manual.

- Always read the Operators Manual prior to use.
- Ensure that the pump is appropriate for the task.
- Ensure that the product being pumped is compatible with the materials in which the pump has been constructed.
- Ensure that all flammable and combustible materials are removed from the immediate vicinity in which the pump is to be used.
- Ensure that the area in which the pump is to be positioned is clear of any obstructions.
- Ensure that the position in which the pump is to be positioned does not create any additional hazards (eg. noise, restricted access etc).
- Ensure that adequate precautions are taken having regard to the handling/lifting of the pump to reduce the likelihood of personnel suffering a soft tissue injury.
- Ensure that the appropriate protective equipment is worn when working with the pump (eg. hearing protection, face mask, gloves).
- Ensure that all electrical wiring is in good condition and appropriate to the pump.
- Where electrical leads are run ensure that the appropriate RCD/Earth Leakage .Protection is provided. Do not run leads across the ground, in wet areas or in areas of high traffic movement. Never lift the pump by the power or float cable.
- Ensure that all covers/guards are fitted where provided.
- Ensure that all personnel involved with the pump, including employees and maintenance personnel, are advised of the safety precautions that must be followed, including Operators Manual.
- **WARNING:** When servicing or attending pump, always ensure power is switched off and lead unplugged.
- Installation must be in accord with relevant electrical and plumbing codes and standards. Electrical connections and checks must be made by suitably qualified personnel.
- The use of the pump to pump flammable and other materials of a hazardous nature are specifically excluded.
- Release pressure from fluid plumbing before disconnecting for service.
- Do not use solvents or petroleum-based fluids on pump components or motor.

SUBJECT TO TOOLKWIP PUMPS PTY LTD CONDITIONS OF SALE.

Pump Instructions

Before operating or installing this pump, read this manual and follow all safety rules and operating instructions.

This series of pump is suitable for water with small mixture pumping. For safety considerations, it is forbidden to pump flammable, toxic, corrosive, abrasive, crystallizing, polymerizing and high-viscosity liquid.

Generally, this machine will be installed on the following conditions:

1. Supply voltage: 0.9 – 1.1 nominal supply voltage.
2. Source frequency: 0.99 – 1.01 nominal frequency.
3. Ambient temperature: 5°C - 40°C.
4. Altitude: shall be at altitudes up to 1000m above mean sea level.
5. Relative humidity: not exceed 50% at 40°C.
6. Atmosphere: free from excessive dust, acid fume, corrosive gases and salt.
7. Avoid exposing to direct sunlight or heat rays which can change the environmental temperature.
8. Avoid exposing to abnormal vibration.
9. Electrical equipment shall withstand the effects of transportation and storage temperature within a range of 25°C to 55°C.
10. Not intended for swimming pool use.

If you have any questions, please refer to distributor.

Safety Instructions

Before operating or installing this pump, read this manual and follow all safety rules and operating instructions.

1. Do not operate the equipment near potentially explosive environment.
   Do not use equipment in the presence of flammable liquids or gases.
2. Make sure the equipment grounding is properly connected before starting the equipment.
3. SHUT OFF the power before inspection, maintenance, adjustment.
4. Ensure careful disposal of waste material and waste lubricating oil obeying the local regulations.
5. Do not keep the pump inoperative for a long time. It is better to run it for 15 minutes or more every day.
6. The motor should be under the water surface to advance cooling the motor. Keep the temperature of the water under 40°C.
7. Never attempt to change the settings of protective devices without consulting us. For other maintenance, contact manufacturer or your distributor.

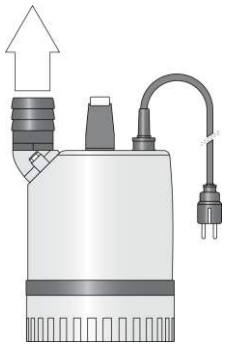
8. These types of pumps are designed for liquid and small mixture pumping. The following shall not be used for pump life and your safety:
   a. Flammable, toxic, abrasive, crystallizing and polymerising liquid.
   b. Liquid chemicals and food, alkaline and acidic corrosive liquid.
   c. High temperature, high viscosity and high solid matter content liquid.

If you have any questions, please refer to your distributor.

Installation

Before installation, check your local electrical and plumbing codes. These regulations are for your safety.

1. In order to reduce the risk of accidents during service and installation work, take extreme care and bear in mind the risk of electrical accidents.
2. Arrange the cable run so that the cables will not be kinked or nipped.
3. Connect the delivery piping. Ensure discharge hose size (refer specification) is the suitable pipe size and pumping direction. The permitted force and movements on the pipe connections shall not be less than 500N.



Model	LC45
Outlet	25 mm or 50 mm

4. Place the pump on a firm surface which will prevent it from overturning or burrowing down. User shall provide more than 0.5 m around the pump for operation and maintenance. The pump can also be suspended by lifting handle slightly above the bottom.

Electrical Connections

Warning – Electrical precautions
All wiring, electrical connections, and system grounding must comply with any local codes and ordinances. Employ a licensed electrician.

1. Be sure to provide an adequate grounding and install the leakage breaker without fail. It is important that pump should be properly grounded and provided with leakage breaker to prevent the users from serious electric shock injury.
2. Make sure the voltage of the power supply is identical to the one indicated on the nameplate (label) of the pump. Do not plug in to other voltage and phase than what is indicated on the nameplate.
3. Be careful of the direction of rotation (for three-phase motor). If the power source is connected to the reverse phase this may result in the wrong rotation of the motor. Please change the connection of any two incoming wires.
4. The pump must be supplied through a residual current device (RCD) with a rated residual operating current not exceeding 30 mA. (EN603352-41: 1996 class 1 portable pumps.)
5. Avoid unintentional starting and for the equipment safety, please install over-current protective device (circuit breaker or fuse) and overload protective device to protect it. Recommended electrical supply and control wiring as following reference.
   *Recommended: over-current protection capacity setting = 1.25 x motor full current
   over-load breaker capacity setting = motor full current

Operation

If the thermal overload has tripped, the pump will stop and restart automatically when it has cooled down.
The pump should not be used when people are in the water.

1. Do not dry-run the pump as it will damage the pump.
2. Do not use the electrical cable to carry the pump. Do not lift or lower the pump by the cable. Please carry with pump handle.
3. Extension of power cable – If the power cable has to be extended, select the proper cable size within the allowable extension. If cable is extended too far, a drop in voltage may occur, which will stop the running of motor and damage the pump. To prevent any possible accident, do not use the pump in the pond, swimming pool and bath tub if there are people present.
4. When the pump stops suddenly (by the motor thermal shut-off protection device). The motor protection device is built in to shut off the circuit automatically and to prevent the motor from burning out when the motor is overloaded due to the clogging by foreign particles or plug-in to wrong power source (voltage, frequency, etc). Should the pump stop suddenly please check piping, pump itself, connection or electrical cable to power source etc. The motor protector always automatically trips off in a few seconds if there is any abnormal response. Please resume the operation after clearing the trouble and leave the pump as it is.
5. Please consult your local dealers or distributor where you purchased if you were unable to find the trouble. Unauthorised persons are prohibited to disassemble or assemble the pump as it will probably result in inferiority in performance or damage in motor, and void warranty.

Service and Maintenance

Check the power cords, sealing medium and electrical outlet for damage or corrosion. Repairs or re-assembly should only be carried out by qualified persons using original spare parts.

For best results, and maximising pump life, please note the following points:

1. If pump is left in the water for a long period of time without running, pump may show signs of rusting and possibly accumulate floating matter which will shorten the life of your pump. In this case, let the pump run in clean water and remove floating matter from the pump inside. Restore it after being dried out.
2. When not in use, pump should be cleaned/lubricated and stored in a dry, high or locked up place, out of reach of children and the wet.
3. Please change the bearing every 5 years. You should appoint our engineers to perform the task. For your safety, do not attempt re-assembly yourself or IP protection may be affected.

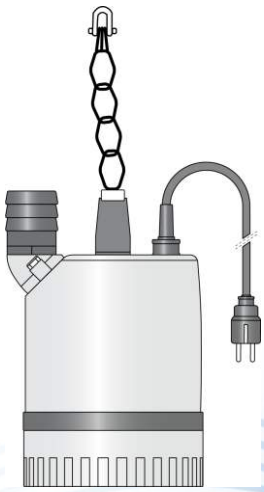
Applications

The pump cannot be used in an explosive or flammable environment or for pumping flammable liquid.
Should a person come in contact with either the pump or the pumped medium, an earth leakage detector must be used.

- Waste water discharge for households, industries, and small municipalities.
- Construction sites and civil engineering projects incl: subways, tunnels, dams etc.
- Utilities: telecommunications, power, generation plants.

Handling

Always lift the pump by lifting handle, never by the motor cable, float cable or hose.



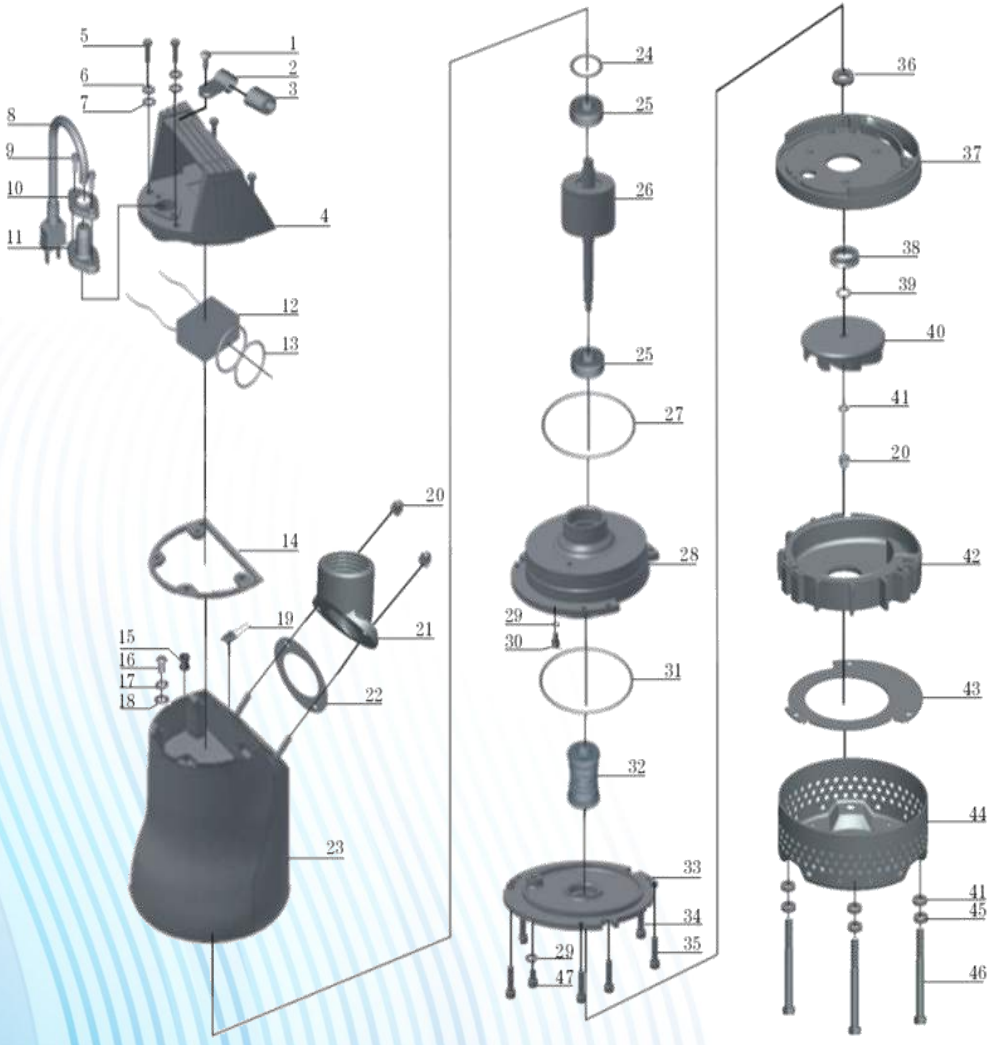
1. Always protect the cable end so that no moisture will penetrate into the cable.
2. If pump is stored for a long period of time, protect it against dirt and heat.
3. The handling and transportation shall be carried out by qualified persons.
   - To install the pump, use a cable or chain to drop it to the water bottom. Place it on the base (there is no need to use fixing bolts).
   - Do not fasten the cable or chain. Fix one of its ends to the hook.
   - When you need to use the pump, insert the hanger in the hanger hole or handle. Pull the hanger out of the hanger hole when the pump is not in use.
4. In transportation, keep attention to the balance of machine.
5. Do not lay down the unit, turn it upside down, or incline it to more than 15 degrees. Pump should be placed on a level surface.
   - ☐ The inlet and outlet pipeline above the water surface should have detachable flanges or joints to maintain. No need to discharge the water to hang the pump.
   - ☐ The volume of water should be kept above the lowest level to avoid dry running.
   - ☐ The temperature of liquid should be kept below 40°C.

Trouble Shooting

To prevent serious accidents, disconnect the power supply before inspecting the pump.

Conditions	Reasons	Counter Measure
Pump fails to start	No power is supplied (power outage)	Contact the electric power company or an electrician.
	Open circuit or poor connection of the cabtyre cable	Check if there is an open circuit in the cabtyre cable or wiring. Use qualified technician
	Impeller is obstructed	Inspect the pump and remove the obstruction.
Pump starts but stops immediately, causing the motor protector to actuate	Impeller is obstructed	Inspect the pump and remove the obstruction
	Voltage drop	Correct the voltage to the rated voltage or use an extension cable that meets the standard.
	A 50 Hz model is operated at 60 Hz.	Check the nameplate and replace the pump or impeller.
	The strainer is obstructed, and the pump was operated dry for long hours.	Remove the obstruction.
	Motor abnormal.	Return pump for repair, or replace pump.
	The pump is picking up too much sediment.	Place a concrete block under the pump to prevent the pump from picking up sediment.
The pump's head and pumping volume is lower	The impeller is worn.	Replace.
	The hose may be clogged.	Minimise the number of bends in the hose. (In an area with a large amount of debris use the pump in a meshed basket.)
	The strainer is obstructed or buried.	Remove the obstruction. Place a concrete block under the pump to prevent the pump from picking up sediment.
	The motor rotates in reverse.	Return pump to dealer for repair/replacement.
The pump generates noise or vibration	The bearing of the motor may be damaged.	To replace the bearing contact the dealer from whom you purchased the equipment.

PARTS DRAWING



N0.	DESCRIPTION	MATERIAL	N0.	DESCRIPTION	MATERIAL
1.	Screw	0Cr18Ni9	25.	Bearing	
2.	Cable presser	0Cr18Ni9	26.	Rotor	
3.	protector	Rubber	27.	"O" ring	Rubber
4.	Handle	ZL102	28.	Oil chamber	ZL102
5.	Bolt	0Cr18Ni9	29.	"O" ring	Rubber
6.	Spring washer	0Cr18Ni9	30.	Bolt	0Cr18Ni9
7.	Washer	0Cr18Ni9	31.	Rubber washer	Rubber
8.	Cable		32.	Mechanical seal	graphite to ceramic
9.	Screw	0Cr18Ni9	33.	Oil chamber cover	ZL102
10.	Flange	0Cr18Ni9	34.	Screw	0Cr18Ni9
11.	Cable protector	Rubber	35.	Screw	0Cr18Ni9
12.	Capacitor		36.	Oil seal	
13.	"O" ring	Rubber	37.	Pump seat	Nitrile rubber with stainless steel insert
14.	Gasket	Rubber	38.	Lip seal	Rubber
15.	Line protector	Rubber	39.	Washer	0Cr18Ni9
16.	Screw	H62	40.	Impeller	Nitrile rubber with stainless steel insert
17.	Spring washer	65Mn	41.	Washer	0Cr18Ni9
18.	Washer	0Cr18Ni9	42.	Pump casing	Polyethylene
19.	Thermal protector		43.	Pump cover	Lcr17Ni7 (301)
20.	Nut	0Cr18Ni9	44.	Filter mesh	Q235A spout plastic
21.	Outlet connector	ZL102	45.	Spring washer	0Cr18Ni9
22.	Gasket	Rubber	46.	Bolt	0Cr18Ni9
23.	Stator	ZL102	47.	Bolt	0Cr18Ni9
24.	Undulated washer	65Mn			

* Code "F" means pump assembled with float switch

* Sic mechanical seal is available if required