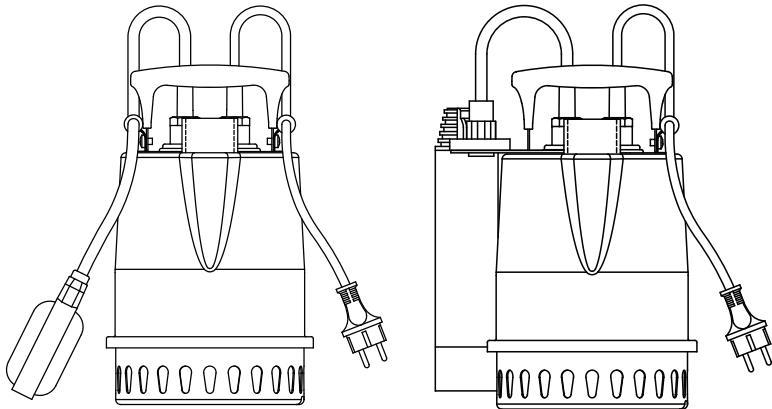




X1 series

Submersible drainage pump
Instruction manual



STAIRS INDUSTRIAL CO., LTD.

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Submersible drainage pump

Thank you for choosing our X1 Submersible drainage pump

- Please take a few minutes to read Carefully the following instruction and Warning before starting the pump. Warranty is void if this installation manual is not readied.
- Installation and Operation of the pump is subjected to local authority regulatory requirements, and the proper and safety usage described herein, of our products.
- All instruction, warning and installation described herein shall be briefed and understood by maintenance and operator personnel.

1. Precautions



WARNING

- All electrical connection shall be done by a certified electrician by the local authority. The pump shall be grounded to pumps grounding wire as indicated by yellow/Green colored insulated wire. To prevent electricity leakage that may cause electric shocks that can result in DEATH or FIRE.
- When in operation no personnel shall be in contact with the fluid that is pumping. All electrical power to the pump shall be shut-off when personnel contact is necessary. This is to prevent any electrical shock due to faulty wire connection or pumps that may result in electrical shocks and casualties.
- All pump installation shall be checked for electricity leakage and polarity(pump rotation) When irregular noise and no pressure developed when pump is started.SHUT-OFF power immediately and refer to trouble shoot guide below.To prevent pump damaged and damaged to facilities due to fire.



ATTENTION

- At all time when lowering the pump during installation and removal for maintenances, use a lifting rope or chain, DO NOT pull from the pump electrical cable. This will damaged the cable connection, at the cable entry that will result in leaked water into the motor and electric leak, resulting in property and personnel damaged and harm.
- Pump shall NOT be run dry at all time. The minimum water level from pump suction base shall be always maintained. To prevent cavitation from air sucked into the pump,to prevent mechanical seals from running dry and motor overheat.
- Pump shall not be operated beyond its operating temperature range of 5°C to 45°C Deg. (need to change elastomer material to suit pumping temperature.)
- Pump shall be used for NON-Portable water and NON-Food grade or NON-Chemical application.
- Only qualified service personnel is allowed to service or dismantle the pumps.Stairs will not be liable for any property damaged or personnel harm or down time,affected from breached of the above mentioned condition.

2. Installations Tips



WARNING

- All electrical connection must be done with an qualified electrician. Care should be taken and the pump is protected with properly sized circuit breaker and any leakage of electricity shall be prevented by grounding pumps through the grounding leads provided with the pump cable, colored with Yellow and Green cable. Non compliance may lead to property damaged or human casualties.
- Pulling the electrical cable to move the pump position is prohibited and shall not be used in this manner. The force of the pull will damaged the wire connection and cause electrical leak that will result in electrical shocks and thus, human casualties or even fire.
- Should the pump be required to move around or lowered into the pit, it must be done with a rope or chain attached to the pump handle.



ATTENTION

- All pumps is provided with an built-in temperature protection switch. When pump over heat due to dry running or low water level, the temperature switch will turn the pump off and restart, when the temperature is back to normal. Pro-long over heat of the motor will damaged the pump.
- Before operating the pumps, confirm electrical parameters shall be according to pumps specification purchased. E.g. Voltage, Phases, Frequency, Duty condition. This will prevent nonperformance of the pump.
- Pump are not built to work with large foreign objects and should be removed from the sump pit as it will clot the pump suction or even damaged the impeller that leads to pump damaged. It will also prevent the float switch from working properly, should the foreign objects gets in the way of the free movement of the level switch.
- Care should be used when placing pump so that the float switch movement is not obstructed from its free movement. Hence, prevent the pumps to cut-in or cut-out during operation.
- After installation, the rope or chain should be secured with min. length of slack and not to be left too long. To prevent the rope of chain get sucked into the pump suction and damaged the pump.

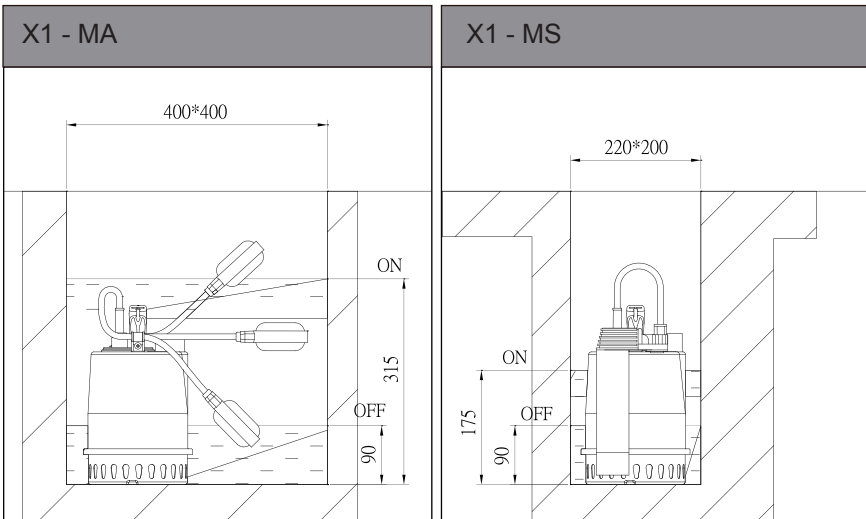
3. Application Parameters



WARNING

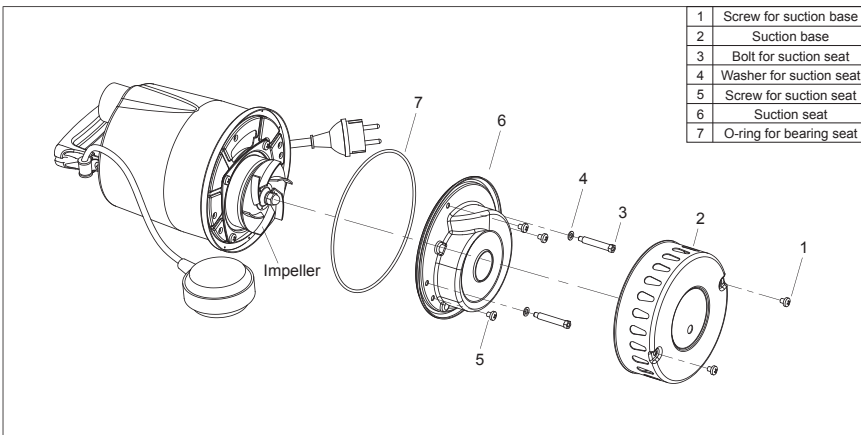
- Pump shall not be used RUNNING DRY! At all times.
- Application: De-watering of Ponds, Garage basement flooding, air-con condensate, landscaping, Koi Ponds.
- Pump is not suitable for chemical solution, sea water or water temperature above 50° C clean water
- Liquid Temperature: up to 50°C (122°F)
- Solid Passage: 10mm
- MAX.depth: 5M
- Connection Outlet: 1 1/4"

4. Dimension – Pump and Installation limits



5. Preventive and Maintenance Notes

- Regular clearing of the sump pit of foreign objects, suction screen and impeller vane area will pro-long the pump operation.
- Any sign of noise, vibration, reduced in flow rate or pressure is an indication of pump issue. STOP the pump immediately and perform trouble shooting to de-bug the issue or contact our distributor for further assistance.
- At all time when the pump is to be serviced or inspected, make sure that the power to the pump is **TURNED-OFF!**
- At all times when taking the pumps down for maintenance, PPE(Personnel Protective Equipment) shall be wore at all time to prevent injuries.
- Exploded Views – Dismantle / Assemble
 1. Remove Suction Screen(Pos. 1) by loosening 2 x Suction screen screws (Pos. 2)
 - 2.To remove Impeller Diffuser (Pos. 6)
 - a.Unscrew suction screen bolt x 2 (Pos. 3) and Washer x 2 (Pos.4)
 - b.Unscrew impeller Diffuser screw x 3 (Pos. 5)
 - 3.Remove Impeller Diffuser Oring (Pos.7).
- For Assembly of pump.
 - 1.To assemble the pump back, reverse the orders for the steps in the above dismantle procedure.



6. Troubleshooting Guide

Malfunction	Cause	Countermeasures
Operation failure	Power supply	Check if the voltage is correct
	Broken wire or poor contact	Send for reparation and replace wire
	Motor thermal protector triggered (only for 1Ø model)	Eliminate the triggering cause
	Motor burnt	Send for reparation
	Water gets into motor due to worn out shaft seal	Send for reparation
	Flow switch malfunction	Send for reparation or replace it
	Jammed or blocked impeller	Eliminate the foreign material
Stopped during operation	Tangled or blocked impeller due to foreign material in pumped liquid	Eliminate the foreign material
	Power supply malfunction	Check if power is correctly supplied or has poor contact
	Motor thermal protector triggered(only for 1Ø model)	Eliminate the triggering cause
Insufficient discharge flow	Motor rotate reversely(only for 3Ø model)	Adjust revolution direction
	Worn out impeller or cavitation	Replace impeller
	Blocked suction Base	Eliminate the foreign material
	Foreign material inside the pump	Eliminate the foreign material
	Pipe leakage or block	Check for reparation or eliminate foreign material
Over current	Pumping air due to insufficient water level	Adjust height of flow switch
	Voltage malfunction	Check if the power is correctly supplied
	Motor rotate reversely(only for 3Ø model)	Adjust revolution direction
	Pumping liquid with excessive consistency	Dilute the consistency of the liquid
	Worn out bearing	Check and replace the bearing
	Jammed or blocked impeller	Eliminate the foreign material



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