Single Phase Jet Monoblocks

Troubleshooting Guide

Taro™ Pumps

Texmo Industries
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1. Basic troubleshooting

Warning

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

Read this Operation Manual carefully before requesting repair. Contact the dealer from whom this equipment was purchased. Servicing and troubleshooting must be handled by qualified persons with proper tools and equipment. Common faults, root cause for these and suggested actions are provided in TABLE 1 below:

Fault	**Possible causes**	**Suggested actions**
Pump does not run	No power supply	Check incoming power supply and rectify
	Motor tripping by TOP	Allow the motor to cool
	Very low voltage	Operate in the recommended voltage range
	Pump is jammed	Dismantle the pump and clear the jammed parts
	Capacitor failure	Change the capacitor
	Loose connections	Check the connections
	Pump has been kept idle for long time	Ensure free rotation of shaft by running the pump for few minutes at least every alternate day
Pump does not discharge water	Foot valve leakage	Change the faulty foot valve
	Pump not primed	Prime the pump
	Air leakage on the suction side	Check and correct for leakages
	Foot valve exposed due to large draw down / poor yield of bore	Lower the foot valve and ensure that the foot valve is always submerged after draw down. Wait for water level to rise before pumping
	Low-voltage operation	Operate in the recommended voltage range
	Pump shaft has sheared	Replace the assembly rotor

Fault	Possible causes	Suggested actions
Less discharge from pump	Low-voltage operation	Check and wait for voltage to increase. Contact local EB representative if required
	Wrong direction of rotation	Repair in the nearest authorised service center
	Drop in water table	Adjust the pressure regulating valve
	Increased delivery head	Ensure delivery head within specified value
	Seal leakage	Change the complete mechanical seal assembly
	Smaller pipe size used when compared to nameplate recommendations	Replace with suggested pipe size
	Air lock in the suction line	Ensure that the horizontal portion of the suction line does not slope upwards away from the pump
	Blocked / jammed pressure valve	Check and clean / replace the valves, if necessary
	Impeller is worn out	Check and replace
Total head developed is too low	Abrasive wear of pump hydraulics due to operation in water of higher sand content or corrosiveness	Change the worn-out pump parts
	Capacitor becomes weak	Replace capacitor
	Running on low voltage	Wait for voltage to increase or contact local EB representative
	Defective rotor	Change the rotor
Pump runs rough and noisy	Dry running of pump	Keep pump idle for sometime or lower the jet unit
	Pump not grouted	Grout the pump
	Rotor shaft is bent, resulting in rotor rubbing against stator bore	Replace rotor shaft
	Excessive wear and tear	Service the pump replacing the worn out parts

Fault	Possible causes	Suggested actions
Pump leaks excessively	Damaged mechanical seal	Replace mechanical seal
	Casing gaskets / delivery flange gasket damaged	Check and replace gaskets
	Pipe line / pipe fittings damaged	Check and replace piping

 Note	Conduct trial operation after maintenance
 Note	Dispose replaced components with appropriate care so as to protect the environment
 Warning	Do not try to solve unspecified troubles of the pumpset as it may lead to severe damage to the pump or injury to personnel. Contact the dealer from whom this pump was purchased

2. Preventive maintenance checks

PRECAUTIONS TO BE TAKEN

 Warning	Disconnect the power supply before starting maintenance or inspection of the pump to avoid electrical shock
 Note	If you find any damages or abnormalities, switch OFF the pump and report the problem to the dealer from whom the set was purchased

NOTE: The manufacturer assumes no responsibility for damage or injury due to disassembly in the field.

A definite schedule of preventive maintenance inspections should be established to avoid breakdown, serious damage and extensive downtime. The schedule will depend on operating conditions and experience with similar equipment. The checklist below does not represent an exhaustive survey of maintenance steps necessary to ensure safe operation of the Single Phase Jet Monoblock.

 Warning	Utilise the services of an electrician to carry out electrical measurements / checking the functioning of the control panel

It is good practice to monitor the conditions and performance of the Single Phase Jet Monoblock. Diagnosis may be carried out by checking the following:

- Check the current drawn by the pump at the duty flow rate
- Compare with data recorded when the unit was initially installed
- Any increase in motor current at duty flow rate may indicate a overload condition, possibly due to impeller rubbing against the stationary pump casing
- Measure the insulation resistance of the winding to check the condition of the motor
- Check for leakage from the mechanical seal location
- Check the capacitance of the capacitor

3. Do’s and don’ts

Do’s	Don’ts
Use the Jet Unit with Foot valve provided with the pump	Do not use piping smaller than what is mentioned on the nameplate
Ensure leak proof joints on the suction side to prevent air entry and therefore loss of priming	Provide sufficient space around the pumpset so as to ensure proper airflow required for cooling of the motor
Use as few joints as possible on the suction line	Restrict the number of joints on the cable. More the cable joints, more will be the voltage drop
After installation, prime the pump	Do not place the jet unit right near the bottom of the borewell / well as there is possibility for solids to be entrained with water.
Rotate the shaft to ensure that pump is not jammed	Do not use pump for corrosive and flammable liquids
Ensure proper earthing is provided	Do not earth to a water line or gas line
Horizontal Jet Pumps are to be placed on a level foundation. Grout the pump	Do not use undersized electric cables between Pump and starter panel. Factor in low-voltage usage
While powering up the pumpset, ensure the direction of rotation of the shaft matches the arrow marked on the casing	Do not cover the product as this will prevent effective cooling of the motor
Rubber gaskets assembled on the pumpset do not have a central hole. Cut out the central hole and re-install	Do not keep the pump suction pipe tapering down towards the pump suction to prevent air lock
Check if all fasteners are tight	Do not operate the pump at shut-off conditions
Motor portion of pumpset is IP44 protected. Provide protection from rain	As far as possible, avoid the usage of elbows. Prefer long radius bends
Operate the pump in the specified operating head range	Do not use flexible pipes on the suction side as they can get pinched and thereby affect the flow
Pump shall be used for pumping cold, clear water	Do not operate the pump beyond the specified operating range

4. Important safety instructions

Only qualified personnel should be involved for inspection, maintenance and repairs. The successful and safe operation of such a product depends on proper handling, installation and maintenance. It is suggested that in case of non-functioning of the product, the customer is requested to contact the dealer through whom the purchase was made.

Danger

Hazardous voltage will cause death, serious injury, electrocution.
Disconnect all power before working on this equipment.
Maintenance should be performed by only qualified personnel.

5. Storage & handling

- The Single Phase Jet Monoblock is supplied from the factory in proper packing in which it should remain until it is to be installed
- The product should be stored in a closed, dry and well ventilated room
- Do not store the products in direct sunlight
- Handle the pumps with care and do not expose the product to unnecessary impact and shocks
- During unpacking and prior to installation, care must be taken when handling the pump to ensure that the product is not subjected to shock loads
- If the product has been stored for a very long period, check the condition of the rubber components like suction and delivery flange gaskets and those with the mechanical seal

 Caution	If the pumpset are stored, the shaft must be turned by hand at least once a month
 Caution	If the Jet Pump has been stored for more than one year before installation, dismantle the motor and check the rotating parts before use. Re-assemble and check for free rotation of shaft
 Caution	The pump casing houses a mechanical seal. Do not attempt to run the pump dry as the mechanical seal can get damaged. Ensure the pump is primed and then run it

6. Company contact information

For most up to date information on Industries, please visit www.taropumps.com

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