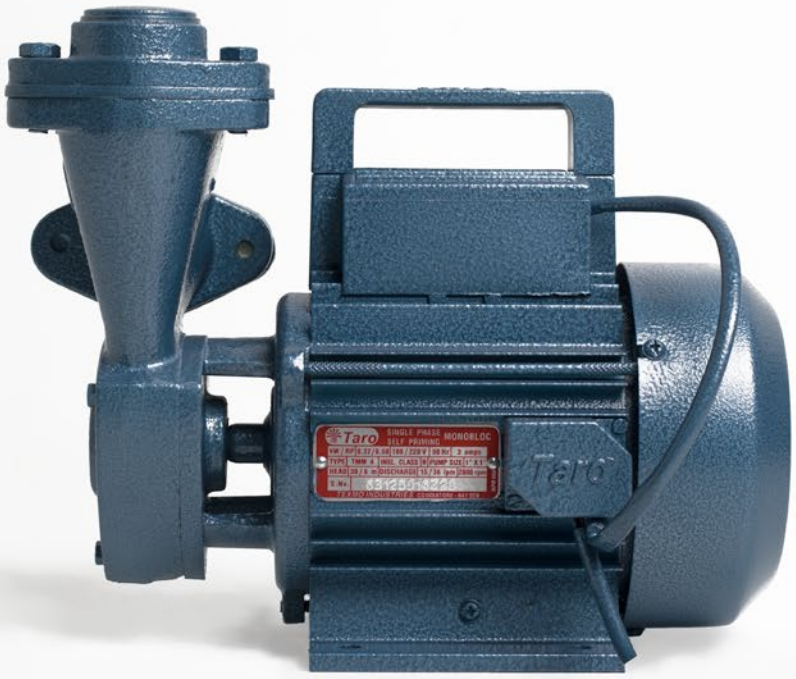
# Single Phase Domestic and Mini Monoblocks

**Troubleshooting Guide**




Taro™ Pumps

Texmo Industries
Est. 1956

# Table of Contents

# 1. Basic troubleshooting

Warning

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

Go through this manual thoroughly 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 discharge water | Faulty foot valve / strainer | Check and replace |
| | Pump not primed | Prime the pump |
| | Air leakage on the suction side | Check and correct for leakages |
| | Suction lift too high | Reduce the static suction lift |
| | Foot valve not sufficiently submerged | Lower the foot valve and ensure that the foot valve is submerged at least 1 metre below the free surface of water |
| | Motor coil burnt | Rewind the motor |
| | Low-voltage operation | Operate in the recommended voltage range |
| Less discharge from pump | Low voltage operation | Operate in the recommended voltage range |
| | Wrong direction of rotation | Repair in the nearest authorized service centre |
| | Static suction lift high | Position the pump within recommended suction lift |
| | Total head higher than specified | Ensure delivery head within specified value |
| | Leaky pipes | Check the piping system and rectify the faults |
| | Smaller pipe size used when compared to nameplate recommendations | Use recommended size of pipes |

| Fault | Possible causes | Suggested actions |
|---|---|---|
| Less discharge from pump | Discharge pipe internally coated with depositions | Clean the pipe |
| | Foreign bodies lodged in impellers | Check the impellers and remove the foreign bodies |
| | The valve in the discharge pipe is partly closed / blocked | Check and clean / replace the valves, if necessary |
| | Impeller is worn out | Check and replace |
| Total head developed is too low | Weak capacitor | Replace capacitor |
| | Running at low-voltage | Operate in the recommended voltage range |
| | Defective rotor | Change the rotor |
| | Rotor rubbing against stator ID due to bend. | Check and replace the rotor |
| Pump runs rough and noisy | Bearings worn out | Dismantle and replace worn out bearings |
| | Pump cavitating due to high suction lift | Reduce static suction lift |
| | Pump not grouted | Grout the pump |
| | Rotor shaft is bent, resulting in rotor rubbing against stator bore | Replace rotor shaft |
| | Impeller rubbing against pump casing | Check rotor run out at location of impeller. If excessive, replace rotor |
| Pump leaks excessively | Mechanical seal damaged | 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 and oil with appropriate care so as to protect the environment |
|  Warning | Do not try to solve unspecified troubles of Single Phase Self-Priming Monoblocks as it may lead to severe damage to the pump or injury to personnel. Contact the dealer where 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 / or extensive downtime. The schedule will depend on operating conditions and experience with similar equipment. Below checklist does not represent an exhaustive survey of maintenance steps necessary to ensure safe operation of the Single Phase Self-Priming Monoblock.

| | |
|---|---|
|  Warning | The pump must never be operated with the delivery valve shut-off as the current drawn is maximum at shut-off conditions, resulting in damage to the motor |
|  Warning | Utilise the services of an electrician to carry out electrical measurements / checking the function |

It is good practice to monitor the conditions and performance of the Single Phase Self-Priming Monobloc. Diagnosis may be carried out by checking the following:

- Checking the current drawn by the pump at the duty flow rate.
- Both these data should be compared to corresponding data recorded when the unit was initially installed.
- Any increase in motor current at duty flow rate indicates a possible overload condition, possibly due to rotating 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 a quality foot valve with strainer | Do not install the pump with high static suction lift |
| Ensure leak proof joints on the suction side to prevent air entry and therefore loss of priming | Do not use piping smaller than what is mentioned on the nameplate |
| Use as few joints as possible on the suction line | Provide sufficient space around the pumpset so as to ensure proper airflow |
| After installation, prime the pump | Restrict the number of joints on the cable. More the cable joints, more will be the voltage drop |
| Rotate the shaft to ensure that pump is not jammed | Do not place the strainer right near the bottom of the well / tank as there is possibility for solids to be entrained with water |
| Ensure proper earthing is provided | Do not restrict the space behind the cooling cover as this will obstruct the flow of air required for cooling of the motor |
| Mount the pumpset on a level foundation / surface | Do not use to pump corrosive and flammable liquids |
| While powering up the pumpset, ensure the direction of rotation of the shaft, looking from the cooling fan side, is clockwise | Do not earth to a water line or gas line |
| Rubber gaskets assembled on the pumpset do not have a central hole. Cut out the central hole and reinstall | Do not cover the product as this will prevent effective cooling of the motor |
| Check all fasteners are tight | Do not keep the pump suction tapering down towards the pump suction to prevent air lock |
| Motor portion of pumpset is IP44 protected. Provide protection from rain | Do not operate the pump at shut-off conditions |
| Operate the pump in the specified operating head range | As far as possible, avoid the usage of elbows. Prefer long radius bends |

| Do’s | Don’ts |
|---|---|
| Pump shall be used for clear water | Do not use flexible pipes on the suction side as they can get pinched and thereby affect the flow |
| When water is to be pumped from a pipeline, ensure the strainer gasket is fixed between the pump suction flange and corresponding mating portion of the pump casing | Do not operate the pump at very low heads as there is a possibility for the rotating impeller to rub against the casing |
| The pumpset is to be used for pumping cold clear water | When pumping from a pipeline, never connect the pump suction to the pipe bottom or top or to the air space |

# 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 Self-Priming Monoblock, filled with anti-corrosive liquid in casing, is supplied from the factory in proper packing in which they should remain until they are to be installed
- The product should be stored in a closed, dry and well ventilated room
- Do not store the products under 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 motors are stored, the shaft must be turned by hand at least once a month |
|  Caution | If the motor 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 only run it |

# 6. Company contact information

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

P.B.No. 5303,
Mettupalayam Road,
Coimbatore - 641 029, India

1800-102-8888
www.taropumps.com
info@taropumps.com

Taro™ Pumps

Texmo Industries
Est. 1956