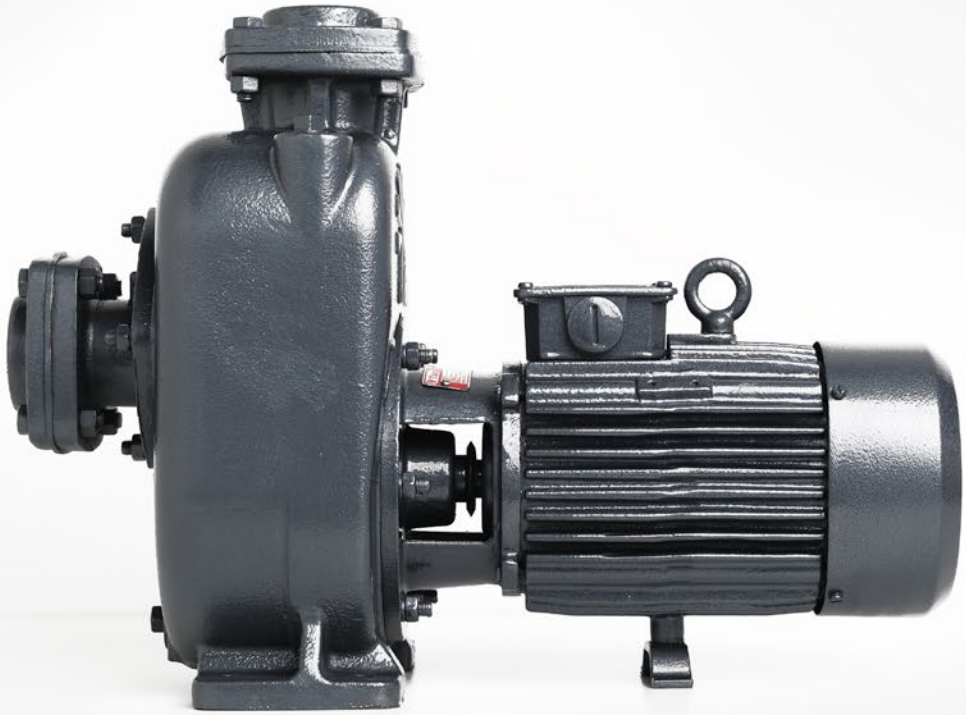
Non-Clog Sewage Pumps

Troubleshooting Guide



Taro™ Pumps

Texmo Industries
Est. 1956

TGSP001A

2020.01

Table of Contents

1. Basic troubleshooting 3

2. Preventive maintenance checks 6

3. Do’s and don’ts 8

4. Important safety instructions 9

5. Storage & handling 10

6. Company contact information 11

1. Basic troubleshooting

Warning

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

Read this Operation 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 causes for these, and suggested actions are provided in TABLE 1 below:

Fault	Possible causes	Suggested actions
Pump does not discharge water	Pump not primed	Prime the pump
	Faulty foot valve / blocked strainer (if used)	Check and replace foot valve / clean strainer if required
	Air leakage on the suction side	Check and correct for leakages
	Suction lift too high	Reduce the static suction lift
	Suction pipe free end / foot valve not sufficiently submerged	Lower the suction pipe free end / foot valve and ensure that the foot valve is submerged at least 1 metre below the free surface of water
	NRV is jammed	Check and replace
	Motor coil burnt	Rewind the motor
	Single-phase pump capacitor weak	Check and replace capacitor
	Low-voltage operation	Operate in the recommended voltage range
	The motor starter overload tripped	Reset the motor starter overload. If it trips again, check the voltage
	Fuse has blown	Replace fuse
	Loose connections	Tighten the electrical connections
	Shaft has sheared	Replace the shaft

Fault	Possible causes	Suggested actions
Less discharge from pump	Low-voltage operation	Operate in the recommended voltage range
	Wrong direction of rotation	Interchange the supply connections of any two phases for three phase pumps
	Static suction lift high	Position the pump within recommended suction lift
	Total head higher than specified head	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
	Discharge pipe internally coated with depositions	Clean the pipe
	Foreign bodies lodged in impeller / casing	Check the impeller / casing 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	Clearance between pump impeller and wear plate increased	Check and replace worn out parts
	Abrasive and or corrosive wear of pump hydraulics	Change the worn out pump parts
Current consumption in excess	Single phasing	Check line fuses / availability of three phase supply
	Voltage too low	Check the voltage
	Defective rotor	Change the rotor
	Rotor rubbing against stator ID due to bend	Check and replace the rotor
	Low system head and therefore higher discharge	Throttle the discharge

Fault	Possible causes	Suggested actions
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
	Excessive wear and tear	Check impeller. If excessive, replace impeller.
Pump leaks excessively	Gland not adequately tightened	Tighten the gland
	Packing rope and oil seal worn out	Replace packing Rope and Oilseal
	Casing gaskets damaged	Check and replace gaskets
	Pipeline damaged	Check and replace piping
	Mechanical Seal damaged	Check and replace Mechanical Seal

 Note	Conduct trial operation after maintenance
 Warning	Do not try to solve unspecified troubles of pump 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 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. The below checklist does not represent an exhaustive survey of maintenance steps necessary to ensure safe operation of the Non-clog sewage pump.

 Warning	The pump must not be operated with the delivery valve shut-off for more than a few seconds; otherwise the motor will overheat, possibly causing permanent damage
 Warning	Engage 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 pumpset. Diagnosis may be carried out by checking the following:

- ✔ Closing the delivery valve for a few seconds only and check the shut-off head generated by the pump. Do not run at shut-off conditions for a prolonged period of time as the water in the casing will get hot
- ✔ 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 reduction in shut-off head may indicate wear of the pump hydraulics
- Any increase in motor current at duty flow rate indicates a possible overload condition
- Measure the insulation resistance of the winding to check the condition of the motor

Monthly checks

- Priming time
- All pump connections
- Pump noise

Six monthly checks

- Open the pump and check and clean internal parts
- Replace gland packing if worn out
- Replace shaft sleeve if worn out
- Inspect the integral NRV and replace if necessary

Yearly checks

- Remove the impeller and inspect for wear and tear. Replace if wear is excessive
- Inspect the wear plate and replace if worn out
- Replace gland packing if worn out
- Replace shaft sleeve if worn out
- Inspect the integral NRV and replace if necessary

3. Do’s and don’ts

Do’s	Don’ts
Foot valve is not required. However, a quality foot valve with strainer can be used to prevent rags, leaves, etc. from being sucked into the pump and thereby clogging the pump	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 pump set so as to ensure proper airflow
After installation, prime the pump	Restrict the number of joints on the cable. More the number of cable joints, more will be the voltage drop
Rotate the shaft to ensure that pump is not jammed	Do not place the foot valve right near the bottom of the well / tank / river as there is possibility for solids to be entrained with water
Ensure proper earthing is provided	Do not over tighten the gland. Tighten so that at least 20 drops of water continuously flows past the gland, thereby ensuring cooling of the shaft
Mount the pumpset on a level foundation	Do not restrict the space behind the cooling cover as this will obstruct the flow of air required for cooling of the motor
Check the direction of rotation of the pumpset matches the arrow mark cast on the casing	Do not use to pump corrosive and flammable liquids
Rubber gaskets assembled on the pump do not have a central hole. Cut out the central hole and re-install	Do not earth to a water line or gas line
Check all fasteners are tight	Do not use undersized electric cables between Pump and Starter Panel. Factor in low-voltage usage
Motor portion of pump set is IP44 protected. Provide protection from rain	Do not cover the product as this will prevent effective cooling of the motor
Use a starter with Inbuilt Single-phase Preventer, Overload protection and High-Voltage and Low-Voltage protection for three phase	Do not keep the pump suction tapering down towards the pump suction to prevent air lock

4. Important safety instructions

Only qualified personnel should be involved for inspection, maintenance, and/or 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 Non-clog Sewage Pumps are 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 while 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 and the condition of grease in the ball bearings

 Caution	If the Non-clog Sewage Pumps are stored, the shaft must be turned by hand at least once a month
 Caution	If the Non-clog Sewage Pump has been stored for more than one year before installation, dismantle the motor and check the rotating parts before use. Ensure the impeller can rotate freely when turned by hand
 Caution	Non-clog Sewage Pump sealing is effected by means of a mechanical seal / gland and stuffing box arrangement. Do not attempt to run the pump dry as the mechanical seal can get damaged / overheating of the shaft in the location of the stuffing box can occur. Ensure the pump casing is filled with water before operating the pump

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