

NSA Aerator Troubleshooting Guide

SAFETY FIRST

Have professional maintenance personnel or a certified technician review your aerator. Follow the general guidelines for troubleshooting the electrical-mechanical system. Pay particular attention to risks such as electrical shock, and risks related to rotating equipment.

SYMPTOMS AND POSSIBLE SOLUTIONS

Electrical Motor

Symptoms	Causes	Corrective Actions
Not rotating	Terminal wires are loose or not wired correctly	Check connections
	Wires to the motor are damaged	Check wires to the aerator
	Circuit breakers tripped	Reset and check running current
	Motor starter is not functioning	Check relay contacts and trace control signals
	Fuses have been blown	Replace fuses and check causes of overload
Over heating	Motor is overloaded	Check locked rotor current; identify loads Reduce rotor submergence Check rotor speed and Hp specifications
	Fan is loose or broken	Check the fan
	Motor operating on wrong voltage	Confirm line voltage on each leg. Confirm motor wiring
Excessive noise	Bearing Noise	Grease bearings Replace bearings
	Electric motor fan broken; fan cover is bent; or fan is hitting the cover.	Replace motor fan, repair or replace cover

Rotor

Symptoms	Causes	Corrective Actions
Rotor is not turning	Electric motor shaft coupling is loose.	Inspect the coupling. Make sure keys are in place and all bolts are tight. Use a new coupling if necessary
	Worn input spline to the gearbox.	Inspect both male and female splines. Replace if necessary.
	Damaged gearbox.	Replace the gearbox.
Flexible rotor damage	The aerator turning in wrong direction.	Replace damaged rotor blades. Correct direction of rotation.
	Hitting hard, sizable debris in the liquid.	Replace the damaged rotor blades. Remove objects that caused rotor damage

Planetary Gear Box

Symptoms	Causes	Corrective Actions
Oil leak	Bad oil seal	Inspect the seal area of the gearbox, replace the seal
Noise	Lack of or poor lubrication	Change oil
	Bearing noise	Replace bearings
	Damaged gears	Open the gearbox and check the gears
Overheat	Same as "noise"	Same as above
Stall	Lack of lubrication or poor lubrication	Change oil
	Aging	Inspect the planetary gearbox; overhaul as needed.
	Repeated hard-start damaged the gearbox	Inspect the planetary gearbox; overhaul as needed. Use a soft starter to start the motor

Water Pattern and Efficiency

Symptoms	Causes	Corrective Actions
Surging	Water level too low	Increase the water level; decrease rotor submergence; or operate at lower speed. Install baffle to break the wave.
Non consistent waves	Missing or damaged blades	Repair blades.
Low efficiency	Aerator oversize; incorrect submergence level	Reduce submergence.

Entire Machine

Symptoms	Causes	Corrective Actions
Vibration	Mounting platform is not rigid enough	Re-enforce the platform
	Impeller is damaged or out of balance	Check the impeller
	Mounting nuts are loose	Tighten the nuts