TROUBLESHOOTING MOTOR

⚠ WARNING HAZARDOUS VOLTAGE

DISCONNECT power cord before removing motor cover for service. **Electrical service should be performed by trained personnel only.**

PROBLEM	POSSIBLE CAUSE	SOLUTION
Loud or excessive noise	Worn ball bearings	Replace rotor assembly
	Damaged bearing brackets or tolerance rings	Replace bearing brackets and tolerance rings
	Insufficient gear lubrication	Apply AquaShield™ to gears and gear posts
	Worn gears or gear posts	Inspect and/or replace gears and gear posts
Motor does not work; fan does not turn	Faulty electrical supply	Check electrical supply
	Bearing brackets broken	Replace bearing brackets
	Damaged motor coil	Replace motor coil
	Worn or damaged rotor bearings	Replace rotor assembly
	Damaged power cord	Inspect and/or replace power cord
	Rotor bound or rusted to coil	Buff off coil and rotor or replace
	Faulty wire connections	Inspect and/or repair electrical connections
	Obstructed fan	Remove obstruction
Motor runs; fan turns, output shaft does not	Worn or damaged gears	Replace gears as needed
Motor overheats and shuts off and on	Incorrect voltage	Check voltage and frequency matches pump label
	High ambient temperature	Pumps are rated to 125˚F (51 °C) maximum
	Damaged/malfunctioning coil	Replace motor coil
Phenolic gear is stripping	Water intrusion	Use rain roof, replace phenolic gear & all affected components
	Cracked bearing bracket	Replace bearing bracket & phenolic gear
	Worn gear posts	Replace gear posts & affected gears
	Rusted helical gear at end of rotor	Buff off rotor or replace rotor, replace phenolic gear
	Worn or cracked gear case cover	Replace gear case or gear case cover
	Missing phenolic gear spacer	Replace phenolic gear and install spacer on top of gear
	Insufficient lubrication	Apply AquaShield™ to gears and gear posts

TROUBLESHOOTING FEED RATE CONTROL

PROBLEM	POSSIBLE CAUSE	SOLUTION
Dial ring will not turn	Seized or broken variable cam	Apply Aquashield™ to variable cam & cam slot in feed rate control housing
	Seized dial ring	Clean then lubricate dial ring & cam slot with AquaShield™
Dial ring turns, output doesn't change	Variable cam disengaged from dial ring	Re-insert 90˚ end into ring
	Broken variable cam	Replace variable cam
Pump head does not rotate	Worn index plate	Turn over or replace index plate
	Motor problem	Refer to motor troubleshooting
	Pump head roller assembly stripped	Replace roller assembly
	Index pin holder loose	Tighten holder into spider assembly
	Index pin broken	Replace index pin and lifter assembly
Pump head rotates continuously	Variable cam out of place or worn	Replace or re-insert variable cam
Ratcheting sound	Index plate worn	Turn over or replace index plate
	Variable cam worn	Replace variable cam
	Lifter worn	Replace lifter or complete index pin assembly

TROUBLESHOOTING PUMP HEAD

PROBLEM	POSSIBLE CAUSE	SOLUTION
Roller Assembly will not expand or collapse with tube housing cover	Motor not locked	Fixed Rate Pumps: Place tube housing latch into motor slot; Adjustable Rate Pumps: Set feed rate control to 10
	Stripped or cracked roller assembly hub	Replace roller assembly
Components cracking	Chemical attack	Check chemical compatibility
	Chemical intrusion from tube failure	Identify and correct cause, clean components of chemical & replace tube according to manual
Pump head leaking	Pump tube rupture	Identify and correct cause, clean components of chemical & replace tube according to manual
No pump output, pump head rotates	Roller assembly not fully expanded	Expand roller assembly using pump head cover as a tool, according to manual
	Depleted or weighted strainer is above solution tank	Replenish solution and position suction line 3" above bottom of tank
	Leak in the suction line or at connections	Inspect or replace suction line and/or connections
	Ferrules installed incorrectly, missing or damaged	Replace ferrules, beveled end faces pump
	Sleeve and/or plastic gripper inside 3/8" connecting nut is missing damaged, or incorrectly assembled	Replace if damaged or missing. Reorient if incorrectly assembled; gripper beveled end faces nut; sleeve wide end faces gripper
	Injection point is clogged	Inspect and clean injection point
	Clogged suction and/or discharge line and/or check valve	Clean and/or replace as needed
	Life of pump tube exhausted	Replace tube according to manual, schedule tube replacement based on application
	Suction line is flush with the nose of the weighted strainer	Pull suction line approximately 1" from bottom of strainer, cut bottom of suction at an angle
Low pump output, pump head rotates	Life of pump tube exhausted	Replace tube according to manual, schedule tube replacement based on application
	Rollers worn or broken	Replace roller assembly
	Injection point is restricted	Inspect and clean injection point regularly
	Incorrect tube size or setting	Refer to pump output chart and determine dial ring setting or replace tube & ferrules
	High system back pressure	Verify system pressure against tube psi, replace tube and ferrules
No pump output, pump head doesn't rotate	Stripped or cracked roller assembly hub	Replace roller assembly
	Feed rate control problem	Refer to feed rate control troubleshooting
	Motor problem	Refer to motor troubleshooting
Pump output high	Incorrect tube size or setting	Refer to pump output chart and determine dial ring setting or replace tube and ferrules
	Roller assembly broken	Replace roller assembly
	Malfunctioning feed rate control	Refer to feed rate control troubleshooting
	Incorrect motor rpm	Replace with motor that matches pump model

TROUBLESHOOTING PUMP TUBE

NOTICE: A leaking pump tube damages the metering pump. Inspect pump frequently for leakage and wear. Refer to Tube Replacement section for additional safety precautions and instructions.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Tube leaking	Pump tube ruptured	Identify and correct cause, clean components of chemical & replace tube according to manual
	Calcium or mineral deposits	Clean injection fitting; replace tube and duckbill according to manual
	Excessive back pressure	Verify system pressure against tube psi, replace tube and ferrules
	Tube is twisted	Replace tube and ferrules according to manual, hold tube fitting while tightening connecting nut to prevent twisting
	Tube not centered	Clean components of chemical, replace tube and ferrules according to manual & confirm tube is centered
Tube life is shortened	Chemical attack	Check chemical compatibility
	Mineral deposits at injection point	Clean injection fitting. Replace tube, ferrules & duckbill according to manual
	Sediment blockage at check valve	Clean injection fitting, ensure suction line is 3" above tank bottom. Use suction line strainer.
	Degraded check valve duckbill	Replace duckbill. At every tube change, replace duckbill & ferrules.
	Duckbill in wrong orientation	Reverse duckbill orientation
	Seized rollers caused abrasion on tube	Clean roller assembly or replace, do not lubricate
	Exposure to heat or sun	Do not store tubes in high temperatures or in direct sunlight
Tube connection is leaking	Ferrules installed incorrectly, missing or damaged	Replace ferrule, beveled end faces pump
	3/8" nut loose	Firmly hold adapter and finger tighten nut. Wrench tighten additional 1/2 turn.
	Missing ferrule in 3/8" adapter	Insert new ferrule into adapter or replace adapter fitting
	Sleeve and/or plastic gripper inside 3/8" connecting nut is missing damaged, or incorrectly assembled	Replace if damaged or missing; Reorient if incorrectly assembled; gripper beveled end faces nut; sleeve wider end faces gripper