Troubleshooting for:

Neptune™

A DOVER COMPANY

PSG™

PUMP SOLUTIONS GROUP

A DOVER COMPANY

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SECTION V
TROUBLE SHOOTING CHART

SYMPTOMS	CAUSES	REMEDIES
1. Pump Motor Will Not Operate.	A. Blown Fuse.	A. Check for short circuit or overload.
	B. Open thermal overload device in starter or motor.	B. Reset.
	C. Low liquid level in tank (where low level cut-off is used).	C. Fill tank.
	D. Broken wire.	D. Locate and repair.
	E. Low voltage.	E. Check for too light wiring.
	F. Oil “frozen” in pump.	F. Thaw out.
*2. Pump Does Not Deliver Rated Capacity	A. Starved suction.	A. Replace suction piping with larger size, or increase suction head.
	B. Leaky suction piping.	B. Pressure test, repair or replace defective piping.
	C. Excessive suction lift.	C. Rearrange equipment location to reduce suction lift.
	D. Liquid too close to boiling point.	D. Lower temperature or increase suction head pressure.
	E. Air or gas trapped in oil or pumpage.	E. Decrease capacity to 20% for 5 mins., then increase to 100% for 5 mins.
	F. Worn or dirty valves or seats, or both.	F. Clean or replace.
	G. Viscosity of liquid too high (CPS).	G. (1) Reduce viscosity by heating or other means; (2) Increase size of suction piping; (3) Increase suction pressure
	H. Insoluble materials settling out, or crystallization of saturated solution.	H. Check solution strength. Flush and clean solution tank periodically. Suction connection should be 2 to 4” from bottom of solution tank.
	I. Low discharge pressure.	I. A minimum discharge pressure of 50 psi is required to insure proper capacity control.
	J. Capacity adjustment set above 100% capacity mark.	J. Reposition adjustment knob to 100% mark.
	K. Air in hydraulic or chemical systems.	K. Bleed system.

SYMPTOMS	CAUSES	REMEDIES
	L. No foot valve strainer.	L. Install one.
*3. Pump delivers erratically.	A. Leaky suction line.	A. Repair or replace piping.
	B. Worn or dirty valves or seats, or both.	B. Clean or replace cartridges.
	C. Excessive excursion of ball from valve seats (indicated by ball chatter).	C. Replace cartridges.
	D. Liquid too close to boiling point.	D. Reduce temperature or raise suction pressure.
	E. Leaky internal or external relief valve.	E. Repair or replace relief valve.
4. Motor Overheats Thermal Overload Activates	A. Overload caused by operating pump beyond rated capacity.	A. Check operating pressure against pump manufacturer's data plate maximum rating.
5. Noisy Operation (1) In Pump	A. Pump Valves.	A. Valves must move to open and close, and they will make a clicking noise as they operate. These noises are sometimes amplified by natural resonances in piping system. They are usually indications of normal valve functioning.
(2) In Gear Reducer	A. Pounding noise at high discharge pressure.	A. Fluid compressibility causes reversal of load on gears at end of pressure stroke. Not considered detrimental.
6. Improper Oil Level in Reservoir.	A. Increases and overflows.	A. Flexible diaphragm punctured by foreign material – replace diaphragm. Clean and flush hydraulic system at once.
7. Pump Delivery is Not Adjustable	A. System pressure too low.	A. Install back-pressure spring, provided, into discharge cartridge.
		B. Install Back-pressure valve.
8. Pump Does Not Develop Required Pressure	A. Internal relief valve leaking.	A. Check setting as per pressure change procedure, Paragraph 4.0.
	B. Internal relief valve being actuated.	B. System pressure exceeds relief valve set pressure. Refer to Paragraph 4.0 for adjustment procedure.

* Symptoms 2 and 3 ---- A Diaphragm may need replacing.