Troubleshooting - Sidewinder Solar C1D2 Chemical Injection Pump

Problem	Possible Cause	Action
Pump not running	• Battery low or dead	**CAUTION! BEFORE ANY CHANGES, CONNECTIONS, TESTING… CERTIFY THAT AREA IS FREE OF ANY EXPLOSIVE FUMES, GASES, ETC! ANY CONNECTIONS OR CHANGES MUST BE PERFORMED BY AN ELECTRICIAN CERTIFIED TO WORK IN C1D2 HAZARDOUS AREAS!**
		• Check all electrical connections.
		• Test battery and replace if necessary.
		• Insure that solar panel is clean and getting full sunlight.
		• Verify system design is adequate to meet autonomy requirements.
	• Speed set to zero	• Set speed to point where acceptable volume output is registered on pump setting gauge.
	• Blown fuse	• Check fuse located in battery/control box. Check all connections. Verify that discharge line is not blocked or a valve closed, as this would lock up the pump and blow the fuse. **SEE WARNING ABOVE!**
	• Loose connection in wiring	• Have C1D2 Certified Electrician verify wiring is proper, with no loose connections. **SEE WARNING ABOVE!**
	• Motor failure	• Replace motor (if above actions do not correct issue.) **SEE WARNING ABOVE!**
Pump runs, no fluid discharge	• Air in pump chamber	• Open bleed plug (**#4H**) and purge until steady flow of fluid, then close bleed plug. If pump continues vapor locking remove spring from the discharge check valve to purge vapor. 1/4" plunger pumps may require removal of discharge check valve to completely bleed all air from the pump chamber.
	• Fluid flow blocked by plugged line, closed suction valve, extremely high viscosity or lack of fluid supply	• Provide free flow of fluid to pump suction, fluid level in tank must be above level of bleed plug.
	• Suction or Discharge check valve leaking	• Put pump setting gauge in test position to determine which valve is leaking. Fluid falling then rising in the gauge indicates suction check valve, fluid level remaining constant in gauge indicates discharge check.
	• Chemical filter clogged	• Replace filter element or clean filter.
	• Return Spring broken	• Remove front coverplate (**#6**). Observe pump running. If plunger (**#8**) not fully engaging or following the cam, stop the pump and check for broken spring or sticking plunger. Replace spring (**#9**) or lubricate plunger.
	• Plunger sticking	
	• Stroke limiter set to zero or very short stroke	• With Pump running, adjust stroke limiter (Loosen (2) **#6D** screws and adjust tab **#6B**, to allow a longer pump stroke. Always use a full stroke if possible. Reduce output by timer settings, then use stroke limiter for fine tuning pump output.
Premature seal failure	• Chemical compatibility	• Check the plunger first. If plunger is scored or damaged, replace plunger and seal.
		• If seal still fails, change to different seal material.
	• Abrasive material in chemical	• Install suction filter.
	• Bushing (#4C) worn	• Replace bushing part # SE-MT-1-B.
Chemical leakage	• Damaged or leaking suction line, discharge line or seal failure	• Prior to repair:
		• Turn the speed control to the "ZERO (0)" or "OFF" position.
		• Close Isolation ball valve "B" between pump setting gauge and chemical tank (see Diagram 1 on page 2)
		• Close isolation ball valve "A" between pump and pump setting gauge (see Diagram 1 on page 2)

NOTE: When performing repairs, follow the suggested procedures as described in Pump Repair or Emergency Shut Down section of IOM
NOTE: In the event of an emergency shut down, follow the suggested procedures as described in the Pump Repair or Emergency Shut Down section of IOM
NOTE: Item numbers referenced are in the Suggested Pump Installation and System Setup Diagram and Pump Breakdown of IOM