

## TROUBLESHOOTING A 120 VOLT PRO DRAIN CHIEF

Revised 1/21/05

**\*\*\*\*Use caution when troubleshooting a unit because it is a 120-volt AC unit.\*\*\*\***

NOTE: Viking Units manufactured since early 2002 use a circuit board with screw down terminals for the motor connection – the older Drain Chief motors had a connector on the end that plugged into the board. Note the references to OLD DC and NEW DC.

- If you will be troubleshooting a number of units, you may want to have a power strip available for the “overnight” test. You will need a small straight screwdriver, a regular Phillips screwdriver, a voltmeter, an old power cord (two wire or three wire), and some orange wire nuts.

Before you start – is the fuse blown? Replace with a 5 AMP AGC fuse.

1. Remove the four faceplate screws, the faceplate, and the squeeze tube to avoid having any chemical splashed on you. Be careful when removing the squeeze tube that it doesn't whip and splash.

For steps 2-5B, only perform these tests on one unit at a time.

2. Lay the unit on its back with the lid open.
3. Open the unit you are going to test. Turn the potentiometer on the circuit board down to the minimum setting. Depending on the timer in your unit, push or pull a group of tabs on the timer into the “on” position. Rotate the face of the timer **clockwise** until the “on” time pins are almost to the on point, indicated with an arrow in the timer. Plug a unit into an outlet.
4. Rotate the timer to the “on” pins. The motor should come on and run for approximately 4 seconds, then turn off. If, with the potentiometer set at the minimum setting, the motor continues to run, **THE CIRCUIT BOARD IS BAD**. Send it back to be repaired.
5. If the motor does not run at all, rotate the timer face until the “on” group of pins is past the arrow, i.e. to an “off” situation. **OLD DC** - Unplug the motor (white connector at the bottom of the board) from the board. **NEW DC** – Install two 6” wires into the screw down terminals for the motor that are stripped and can be clamped with the probes of your voltmeter. Set your voltmeter up for AC voltage and the correct range for 120 volts. Turn the potentiometer up to 30. Rotate the timer face until the “on” pins are at the arrow again. **OLD DC** - Touch the

outside of the two pins where the motor was plugged in, you should have 120 volts AC present. **NEW DC** – Grip the stripped ends of the wires coming from the screw down terminal with alligator ends on your voltmeter probes – you should have 120 volts AC present.

**IF 120 VOLTS ARE PRESENT, SEE 5A, IF NOT, SEE 5B.**

- 5A. **OLD DC** - The motor may not be bad just yet, the connection through the pluggable terminal may be bad. **TURN THE UNIT OFF AND UNPLUG IT.** Pull the white connector off of the two black motor wires. Strip the wires back ½” and connect them to the black and white leads of an old power cord with a pair of wire nuts. Plug the motor into an outlet. If the motor runs, the connection was bad – call Viking and ask for a VOP DETBRD V03. This will get you a good termination and you can wire nut the motor wires to the new terminal. If the motor does not run, replace it. You will need one of the following:

CMP 2882MOT 000	(Low speed 2882 motor – 4 oz./min.)
CMP 2885MOT 000	(High speed 2885 motor– 18 oz./min.)

- 5B. If there was no power on the motor pins, you need to see if power is getting to the board. Rotate the timer until the unit is off. **OLD DC** - Plug the motor wires back on the white base. **NEW DC** – reconnect the motor wires to the screw down terminals. Look in the top of the red terminal that is plugged on the left side of the circuit board. You can see the metal teeth on the sides of each of the wires; these teeth penetrate the insulation and provide the connection from the wires to the board. These teeth (one from each wire or position) are what you will need to touch with your voltmeter. Rotate the timer back to the on position. Carefully (don’t touch the voltmeter probes together while reading the voltage) touch one of the teeth on one side with and one of the teeth on the other side with the leads from the voltmeter. If you read 120 volts, the circuit board is bad. If you do not read 120 volts, the timer or harness is bad.

BOA DCHIEFB B7A	Drain Chief / Scentnal circuit board
CTD 120DDCT 000	120 volt 24 hour timer
CTD 7DAYTMR 000	120 volt 7 day timer
CHD DCHARN 000	Complete Drain Chief / Scentnal harness
VOD DCRETRO V91	Timer on new carrier (to replace old timer with pull up orange pins which used a different carrier)

Check the harness for signs of wear or a cut wire. See if there is damage where the cable clamp held it. It is rare for a harness to go bad.

6. If you have completed all of the tests and have not found any problems with the unit, you will want to run it for a 24 hour period (more if you like) to verify that the timer keeps time and doesn't lose time or hang on an "on" pin. Assuming that nothing has been unplugged or disconnected because you have not found any defects, turn the potentiometer down to the minimum setting. Pull up or slide in every other pin on the timer so that it will turn on every hour or half hour depending on the timer. Set the correct time at the arrow on the timer, plug the unit in, and leave it overnight. If you have a number of units to test, use a power strip. If the units maintain the correct time when you check them the next day, put a new tube in and you are ready to install. If the time is off, you may want to replace the timer. You might also consider performing this test with a squeeze tube installed and supply tubing connected. You can pump from one container to another, and verify that not only is the unit running, but the tube is okay too.