

Vacuum Pump Troubleshooting

If your Becker vacuum pump is not starting, there can be a few things to check before assuming the vacuum pump is bad.

These include:

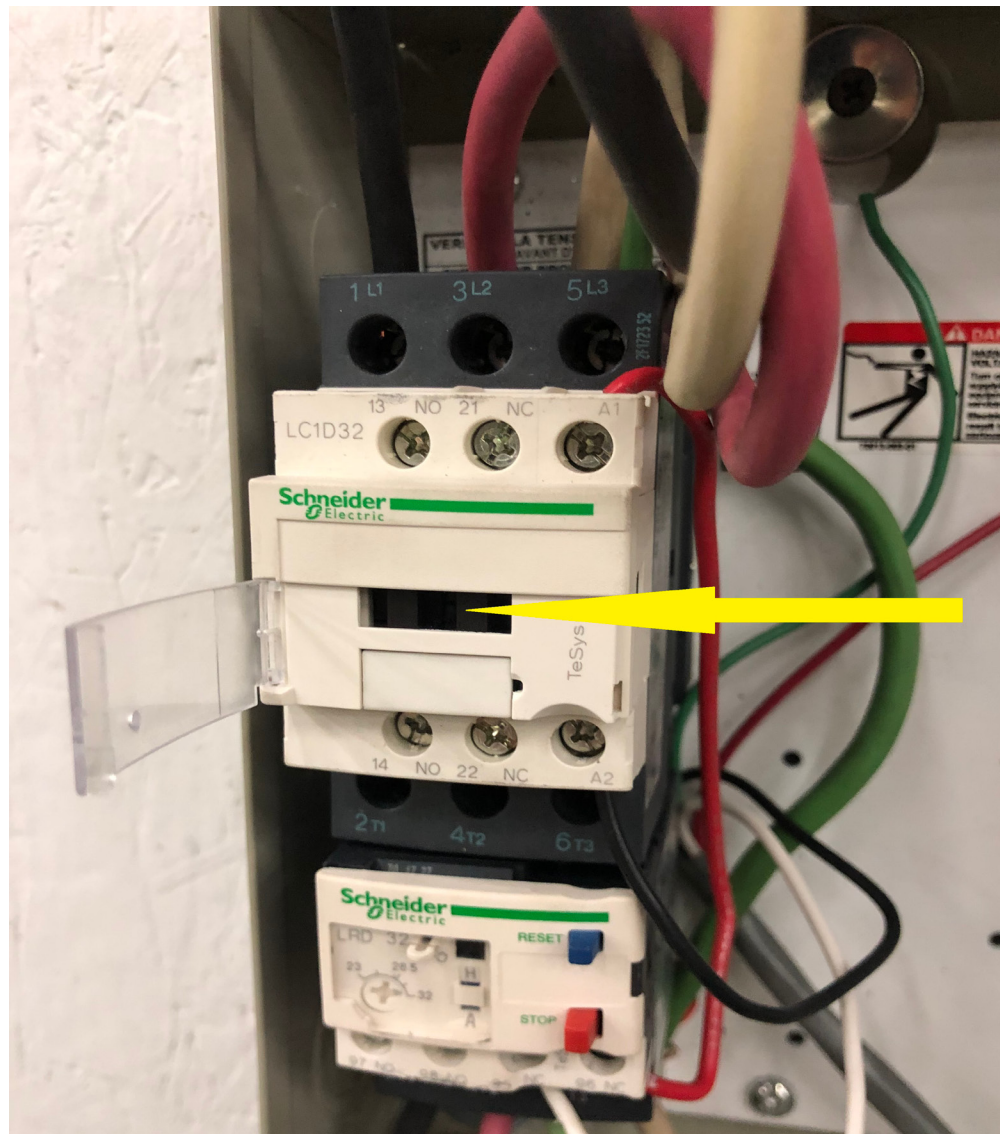
- 1) Main power to the starter box is present
- 2) The starter box is not tripped
- 3) The fuses that control the starter box inside the controller cabinet are not blown
- 4) The cable from the controller cabinet is broken and/or the connector has failed.
- 5) The physical switch is not working

In this document you will find how to address the above issues.

- 1) Main power to the starter box is present.

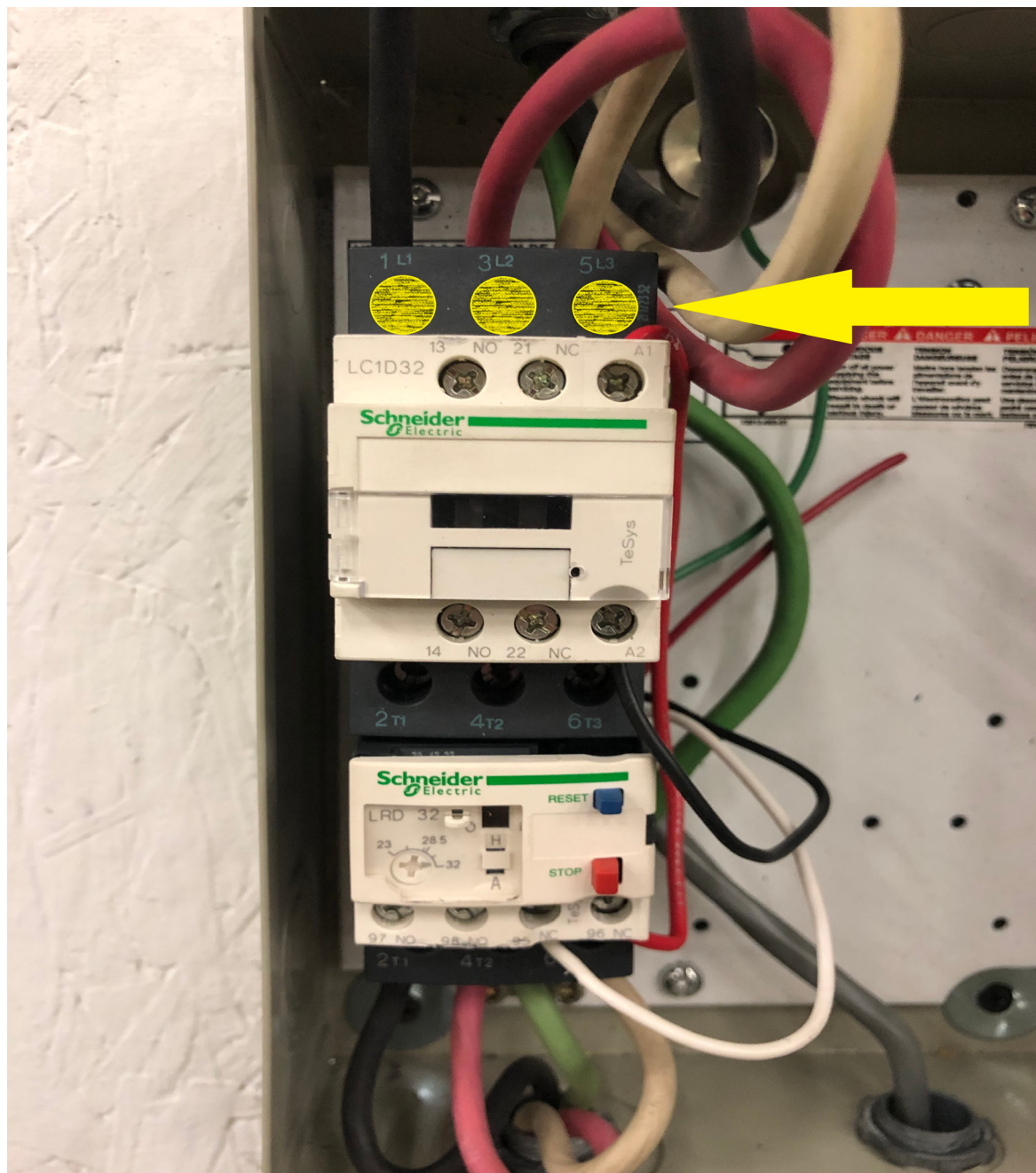
Have the customer confirm that the power to their pump is present. This can be verified in a few ways:

- 1) Bump start the pump by pressing and holding the coil inside the starter down. See below. Use a screwdriver to press in the black coil. The pump should stay on as long as you hold the coil down.



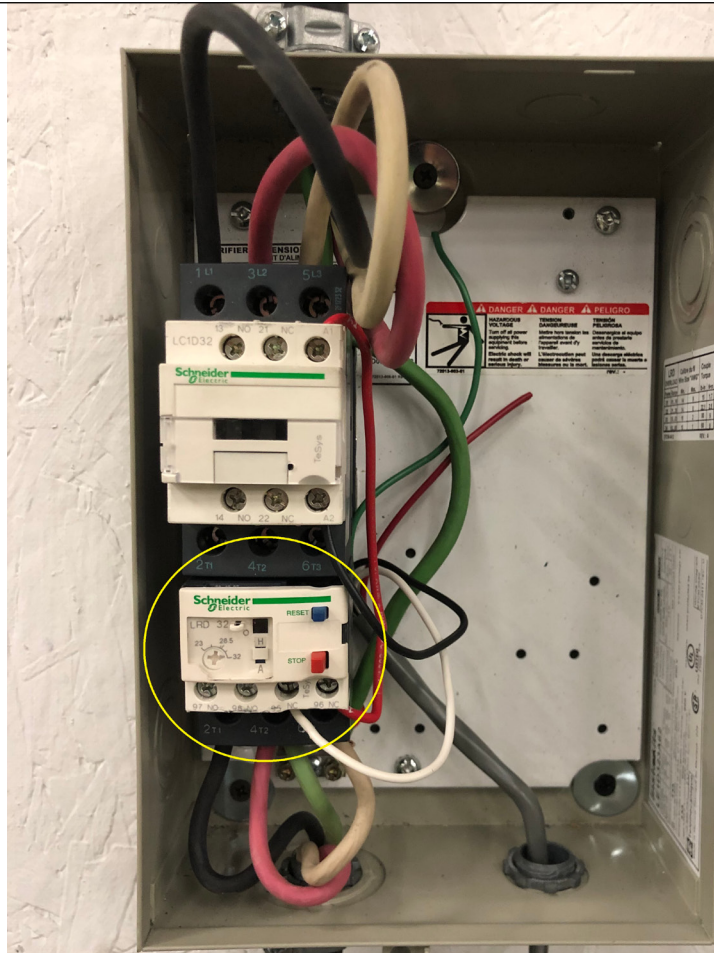
2) The customer can also use a voltmeter to test the voltage at the terminals at the top of the starter. Have the customer put the voltmeter in voltage mode for AC power. The usually looks like V~ (V with a wave). Between any two legs (i.e. L1 and L2) there should be between 208 and 240 volts.

If power is not present, have the customer find their circuit breaker panel and check to make sure the circuit is not tripped. If it is not, they will need to check if they have fuses in-line that have blown or call the power company for an explanation.



2) The Starter box is tripped

Have the customer open their starter box and check the overload relay (LRD32 circled below)
The customer should press "RESET" (blue button) and try again.

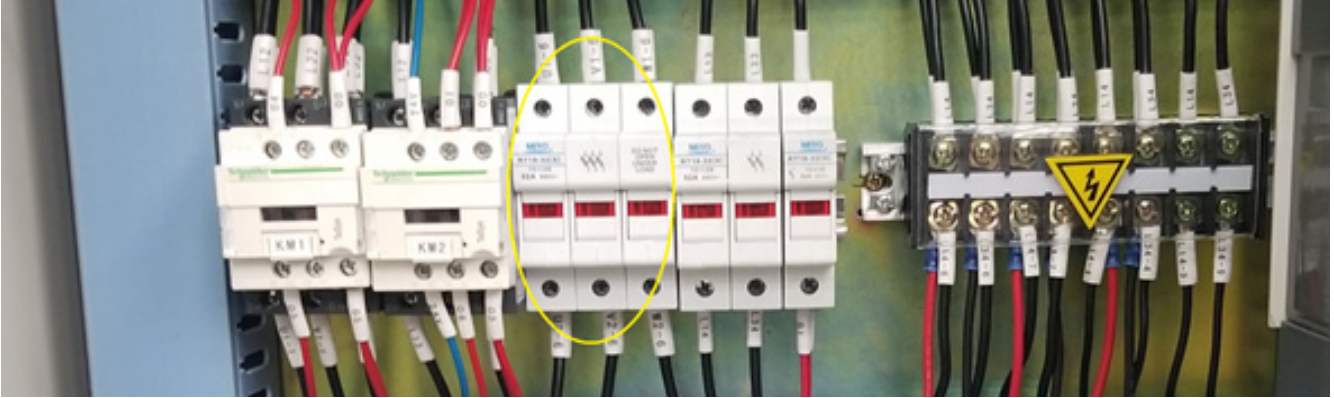


3) The fuses that control the starter box signal are blown

Have the customer open the front of their controller cabinet. The issue can be more clearly seen if the cabinet is ON as the fuse holders will glow RED when bad. The customer can override the front door (should be locked closed by interlock when on) by using a small flat head screwdriver on the interlock will simultaneously pulling on door.



With the door now open and the machine on, look at the fuse holders. Most times, if they are bad, the red window GLOWS. This is indicative of a blown fuse and the fuse will need to be replaced.



Otherwise, a voltmeter will be need to test for continuity on the fuse block.

Have the customer put the voltmeter in continuity mode with one probe in the top screw of the fuse holder and the other probe on the bottom screw. A beep usually indicates that the fuse is good.

4) Cables and Buttons

The issue can also lie in the physical push buttons and/or cables in the circuit.

When the customer turns the vacuum pump ON, there should be an audible "Click" or "Clank" from the starter inside the controller cabinet. This indicates that the starter inside is being pulled in and the ON/OFF signal is being sent to the pump's starter.

The starter/starters inside the HD/Atlas machine is/are located next to the fuses. When the customer presses the Vacuum pump on/off button, this starter (in above picture labelled KM2), should pull in.

If the starter does not pull in, then the ON/OFF switch itself may be bad. Press the button in and out a few times. IF the light does not come on, there are probably bigger issues with the machine. The light coming on indicates power at the switch and it should work to pull the coil in then.

The switch is NO which means no at rest, there is no continuity between the terminals. When the switch is pressed in, the circuit is complete. The switch may need to be replaced.

On HDS machines:

An additional relay is used to start the pumps. Button the on the screen triggers a relay>triggers starter inside cabinet>triggers starter attached to pump>triggers pump

Make sure relay is good. The customer can swap relay with one next to it.

Usually the last two (on the right) in the relay bank. Must check customers wiring diagram to confirm.

Other notes: Other things may be in play. These are just the most common occurrences.

More rare and less likely:

LRD32 overload relays have been fried before. If starter inside starter box attached to pump pulls in but still no vacuum on, check power at top of LRD32. If no power, then issue is somewhere else. If power, the LRD32 is likely bad.

Pump attempts to spin but sounds terrible. Power can be missing from one "leg". Check incoming power. Could also be spinning backwards.