

Crown Alert - Basic Troubleshooting Guide

Before proceeding, please double check that all cords are plugged in properly!

120 Volt Fuse

The main power supply is 120V AC which originates from the rig power. Check that you have 120V supply. Check the rig supply. It goes through a fuse and powers the buzzer, the Crown Alert solenoid and the 120/24V AC transformer. If you have buzzing or the Crown Saver valve is on (There is a pilot light on the valve when it is on. You should be declutched and brakes on.) or any lights in the drillers remote are on then the drillers remote and the 120V AC power supply and 120V Fuse are okay (the fuse at the bottom).

24 Volt Fuse

The field supply is 24 Volt AC. This powers the Crown Switches, The Drillers Remote and the various relays. The 24V AC is okay if you have any lights on the drillers remote or any pilot lights on the relays. This fuse is located on the transformer. (The black box is on the top right.) If you have 120V going into the transformer but nothing out then your transformer may be defective.

Basic Testing: Be aware: Brake lever can move rapidly and with damaging force when the crown alert valve is activated.

Assuming both 120 Volt AC and 24 Volt AC supplies are good. Caution is advised when testing.

Stop rig operations and check the following:

Unplug Crown Alert panel and then plug in again. Green light should be on in the Driller's remote and no buzzer should be on.

If Green Light not on and the buzzer is on then the problem is probably with the derrick loop. Make sure it is plugged in properly.

If all is okay then R1 and R4 should be on.

To test unit without activating crown switches, unplug the derrick limit switch cord (4 pin) only. Do this when safe as brakes will come on, clutch dumps and buzzer will sound. Green light should go out on drillers control and you should be able to silence buzzer with "Alarm Silence" button. The small pilot light should also be visible on the solenoid valve. The following should be the case after the alarm is silenced: R1 off, R2 on, R3 on, R4 off.

Testing Derrick Switches:

On rigs with one switch then lifting the weight will cause the buzzer to go on (R1 off) and the solenoid valve to go on (R4 off). If something else happens then 90 % of the time the derrick cord is damaged and needs replacing.

On rigs with two switches then the lower switch when activated will cause the buzzer to go on (R1 off). the upper switch when activated will cause the solenoid valve to go on (R4 off). If the reverse happens then they are plugged in wrong in the Crown.

Refer to electrical diagram for more details (located in the Crown Alert Panel):

Relay 1 - Crown Alert Relay (drives buzzer) also "OK light". Operated by lower limit switch or upper on rigs with one switch.

Relay 2 - Alarm Relay (starts buzzer)

Relay 3 - Alarm Silence Relay - will be on when "Alarm Silence" button is pushed.

Relay 4 - Clutch Dump Relay - Drives crown alert solenoid

Relay 5 - BOP Relay - optional

Relay 6 - Brake Relay - optional

Relay 7 - Brake Timer - optional

Possible Problems:

- 24V fuse blown as soon as rig is powered up. Crown saver valve comes on. Derrick cord or option cords may be cut, shorted or crushed. Order new cable.
- 120V Fuse blows when rig powered up. Solenoid cable may be cut, shorted or crushed. Order new cable.
- 120 V going on but nothing happening. Possibly a transformer defect. Order exchange panel. Check supply 120V
- Will not crown save. Contacts may be stuck for bypass. The Ready/Bypass button may be stuck or smashed. Manually unjam or order new button assembly. Worn or smashed limit switches. Order new switch.
- Air problems: Mystery oil, frozen lines or contaminants in air system. Mixed up air lines. Other air component failure (ex: Humphrey relay, S Relay, leaking toggle, shuttles etc.) **Use only air brake antifreeze**

www.crownalert.com

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Note: We stock Rexroth air products and a full line of rig electrical products.