Power Climber® INNOVATING SINCE 1972

Topic of Interest

Motor Circuit Performance

There are three main electrical circuits in a Power Climber hoist as taught in the Electrical Troubleshooting Course for Power Climber hoist technicians; Motor, Brake and Control circuits. The Motor circuit is easy to identify with the troubleshooting techniques learned in the Power Climber service school.

Problems are found to be in the motor circuit through a simple process of elimination. If the hoist does anything at all such as humming or running poorly, you should be able to rule out the control circuit. With the hoist doing something the problem exists in one of the other three main circuits.

Ruling out the brake circuit is easily accomplished by manually releasing the brake. If the hoist operates normally when you are manually releasing the brake you have found the circuit. This would indicate that the brake circuit has some problem.

If the hoist does not return to normal operation when the brake is manually released this would tell you that the problem will be found in the motor circuit.

These simple techniques for troubleshooting can direct you to the problem circuit generally within two minutes.

Motor Circuit Components

The components of the motor circuit are all found within the electrical compartment of the hoist, with the exception of the motor itself. Persons without specific training should not undertake working inside the electrical compartment of a hoist. There are potential hazards present when working around electrical parts that may not be removed simply by unplugging the hoist.

Items found within the motor circuit include:

- Start Capacitor
- Run Capacitor
- Brake Capacitor
- Centrifugal Switch and Centrifugal mechanism
- The separate motor windings of the electric motor
- Specific contacts within the contactors of the hoist

Did You Know?

- Loose wires can be the source of many electrical problems. Whenever you are inside an electrical compartment, make sure that all connections are secure.
- Proper voltage is the best preventative against electrical parts failures.
- Technicians that attend the Power Climber service school learn about the three most common voltages present in the field application of the suspended scaffold operation.
- The most important voltage to verify in the field is called "Run Voltage".
- Special meters are used to determine the actual "Run Voltage" being supplied to a hoist. Without this meter it is possible to predict closely what the voltage may be for any given length of power cord.

Power Climber®
365 Upland Drive
Seattle, WA 98188 USA

Phone: 1-800-560-2546
E-mail: CustomerService@SafeWorks.com
Internet: www.PowerClimber.com

SafeWorks®, LLC

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Tips and Tricks

- Use caution whenever inspection, tests, repair or replacement of electrical parts is undertaken.
- When discharging a capacitor make sure to hold the nonconductive handle of the tool you use.
- Use one of your older tools for discharging a capacitor as this process can create burns or arc spots on the tool used.

For questions or comments, contact Customer Service at 1-800-560-CLIMB (2546) or customerservice@safeworks.com.

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Seattle, WA 98188 USA

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E-mail: CustomerService@SafeWorks.com
Internet: www.PowerClimber.com