

# Pressman's Toolbox: Troubleshooting your DC motor controller

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By Frank Bourlon

Have you ever encountered intermittent speed variations while operating the press?

Maybe your machine takes off too rapidly when the inch button is pressed. Or perhaps the press won't inch at all. Does the press inch but not speed up when you depress the faster button? Does it inch but occasionally stop as you try to increase the press' speed? What do you do when these problems arise?

Normally an electrician is called to resolve the problem.

Unfortunately, in many cases the electrician will tell you that he can't find the problem because the cause is so intermittent that he can't solve it. The result? A recommendation to purchase expensive parts such as a drive motherboard or speed reference board. And when the problem crops up again you'll not only find you paid for an inexperienced electrician, but that you bought parts you didn't need.

Less expensive

Here's a less costly alternative: The next time you find problems with your DC motor controller, replace the device's entire set of plug-in relays.

Is this replacing parts you don't need?

Perhaps, but the cost of these relays, in most cases, is much less expensive than a service charge from a technician or an electrician. Ninety percent of all the DC motor controller problems that I have experienced over the past few years have been caused by either a faulty plug-in relay or contactor.

Relays and contactors are mechanical devices that will fail over time as a result of weak springs, dirty contacts, dirty or worn armatures or even a bad coil.

That means you have a very good chance of resolving the problem by just replacing a set of relays or by repairing a contactor.

Want proof? One time I was called out by a newspaper to resolve a stubborn, intermittent stop that prevented the press from running.

The stop would appear randomly and no more often than once every two weeks. It repaired itself within an hour.

The newspaper had already called a service technician. The tech told the press foreman to call him back in the event the problem occurred again.

In response, the newspaper called me, and I told the foreman to replace the relays.

Problem solved.

Please realize that replacing the plug-in relays is not a cure-all, but swapping them out will reduce the aggravation associated with chasing an intermittent problem.

If the relays have been in the controller more than five years, they should probably be replaced anyway.

Replacement kits

Don't overlook replacing contactors. Essentially, contactors are just larger relays that can control larger loads.

Normally, contactors are used to control the blower motors that cool the large DC drive motors or, alternatively, used to manage the power consumed by the DC motor.

The power to the motor is lost if the contacts inside the contactor become pitted or become coated with carbon.

Although the entire contactor is expensive to replace, contact component replacement kits are available.

The contacts are easily installed. They don't require any special tools, and mechanics can swap them out without any prior experience.

It is well worth your time to keep replacement relays and contacts on hand, whether or not you intend to replace them yourself or rely on a service tech to do it for you.

If you have any questions or comments please feel free to e-mail me.

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