

Understanding Stop Circuits

Stop circuits keep you and your equipment safe. Normally, printing presses are equipped with either a parallel circuit or a series circuit. Sometimes the press can be equipped with a combination of both series and parallel circuits, depending on the application.

A series stop circuit is shown in fig 1. The push button switches are normally closed contacts.

Voltage disrupted

Basically, the series circuit is comprised of a straight wire to the stop relay, which also means that the stop relay is energized all of the time. When the stop button is depressed, the voltage to the relay is disrupted and the relay de-energizes, causing the press to stop.

The parallel stop circuit, on the other hand, is designed to keep the stop relay de-energized until a stop is desired (see figure 2).

Here, the push buttons are normally open contacts. When a stop button is pushed the stop relay is energized, which causes the press to stop.

My personal preference is the series stop circuit, although this type of circuit is more difficult to troubleshoot if there is a problem with the push buttons.

I also believe that the series circuit is much safer because if the relay malfunctions or a push button malfunctions the press will stop.

In a parallel circuit, if the coil of the relay of a parallel circuit should fail, depressing the stop will not cause the press to cease operating, creating an unsafe condition.

Web detectors are another important part of the stop circuit, because the detectors reduce newsprint waste and protect the press units from damage due to paper wraps.

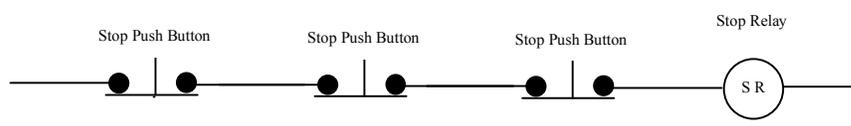
Other protection systems

Web detector circuitry, as in stop circuitry can be engineered either as a series or parallel circuit. Web detectors may or may not be part of the press when it is installed. If your new press doesn't have web detectors, buy them; they are invaluable.

The press motor also has a thermal overload device that can cause the press to stop if it detects dangerous operating conditions. Unfortunately, on most presses there is generally no indicator that lets us know that a thermal overload condition exists, which means that additional troubleshooting will be needed to find this problem. Normally, this is part of a series circuit.

Some presses also have an air-flow switch, which is used to insure that the press' motors are getting adequate ventilation. Normally, this is part of a series circuit as well.

As the presses become more sophisticated, they are equipped with additional devices designed to stop their operations in the event of a problem. If you would like to learn more about stop circuits and their role, please contact me.



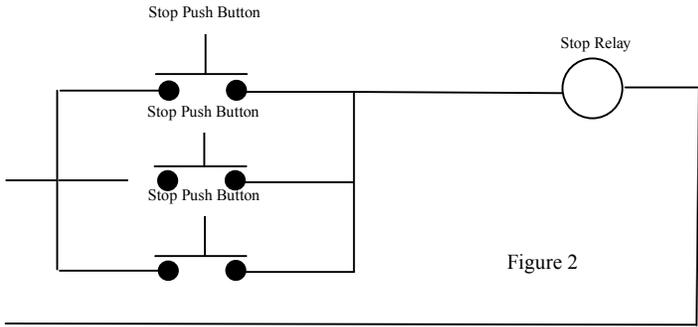


Figure 2