

# Want to lower expenses? Maintain your equipment

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By Frank Bourlon

Looking for ways to decrease your operating expenses on your press? Here are three areas that deserve your immediate attention.

## **Brush your motor**

Inspect the brushes on your DC press main drive motors. Whenever I conduct a press condition evaluation I always inspect the condition of the motor brushes. Brushes are often overlooked because their operating lives are so long. But brushes can become so short they can impact print register by causing press speeds to vary erratically. Additionally, if motor brushes become too short, they can damage the commutator on the motor's armature. And if the commutator is badly damaged, it can easily cost thousands of dollars to repair.

The brush in the picture (below) is one that I discovered during a press audit. The length of this brush is slightly larger than three-eighths of an inch long. As you can see, the wires are showing on the portion of the brush that comes in contact with the motor armature, which in this case damaged the commutator.

The motor brushes should be resealed to the motor commutator whenever new brushes are installed. The operation is done with a brush dressing kit that conforms the new brushes to the curvature of the motor commutator. This operation should only be done by a qualified motor repair expert or electrician. The brushes will spark less when they conform to the commutator. That will eliminate the possibility of flash-over, which can destroy a motor armature.

Brushes should be inspected at least once a year for wear. While you're doing that, check the commutator to see if there is abnormal color, presence of foreign material or abnormal wear. Whenever you find a brush that's half the length it was when new, it's time to replace it.

## **Conserve your air**

Air leaks cause energy consumption and reduce the life of your air compressor. It's easy to understand that the more a compressor runs the sooner a failure will occur. All things wear out. Air compressors can run several hours more than they need to each day because of air leaks. How much energy is consumed? If a 5-hp compressor consumes 20 amps at 240 volts, the power consumption is 4800 watts or 4.8 KVA (power is equal to the voltage times the current). This is the equivalent of powering 48 100-watt light bulbs for one hour. Add that up for an entire year and the cost will be in the hundreds, sometimes thousands, of dollars — depending on the actual size of the air compressor you are using.

## **Improving water flow**

Upgrading your water motor controllers will improve water transfer to the plate cylinder. This photograph (lower right) is of a motor controller replacement for a water motor controller on a Goss Community or Goss Urbanite press unit. It can be installed in the same place as existing variable transformers and rectifiers. This controller also works well on Harris and King presses.

The biggest advantage of these new motor controllers is that they cannot be damaged by setting the sock rollers too tight. Another big advantage of this controller is the IR compensator feature (IR is another name for voltage). This feature helps keep the motor traveling at a consistent speed no matter how much load is placed on the motor (up to the current limit value). A more consistent motor speed means that the water to the plate can be more easily controlled as well.

## **Replace press control relays**

Ninety percent of motor controller problems I encounter are directly related to a bad relay. Recently, I received a call from a newspaper whose press refused to advance as the machine's warning bells rang. What the newspaper needed was a new set of relays, but in a bid to save money, the paper only replaced selected relays.

The problem was ultimately solved, but not until the newspaper replaced the last relay. Bottom line? Don't put old relays back in; replace all of the control relays once a problem begins to surface. And to be on the safe side, replace all of your relays every two years or so. It's a lot less expensive than hiring an electrician to troubleshoot a press problem.

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