Keeping your print register in register

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By Frank Bourlon columnist

Ensuring excellent print register is more important than ever, especially in today's competitive environment.

Poor register can result in print jobs having higher- than-normal newsprint waste or even requiring a newspaper to reprint the job to satisfy the customer.

Poor print register can be caused by an operator's attitude but in many cases it is beyond his or her control.

Possible culprits: The printing unit

driveline can create inconsistent print register throughout the press run. Slack in the unit-to-unit couplings or worn shaft keys, keyways or drive shaft splines play a major part in contributing to poor print register.

Fortunately, it's relatively simple for an operator to test these mechanical components to determine if they need adjustment. All that's needed is a soft bump with a rubber mallet, or a guide inspection of the coupling and shafts for unexpected movement.

Poor print register can also come from too much slack in the ring gear and pinion in the unit. The back lash of these gears should be no more than .004 to .005-inch. If there is slack between any of the blanket or plate cylinder gears, this will cause print register issues. In addition, the keys and keyways in the blanket and plate cylinders can be loose and are often overlooked as a possible source of a print register problem.

Worn plate or blanket cylinder eccentrics also cause print register complaints. The blanket cylinders wear and settle as they are used on a daily basis. The blanket eccentrics can be inspected by prying upward on the cylinder while feeling for movement between the frame of the press unit and the eccentric.

To test for worn bearings, an operator can feel for movement between the cylinder shaft and the eccentric; to test for worn plate cylinders, lift their shafts upward.

Don't forget plate lockups. These devices are a very common cause of print misregistration.

The plate lockups should freely move and should be clean so that the plate can rest against the edge of the lockup and not against any debris. Check for height: If they are too high, plate bends will fail.

Plate cylinder sidelays cause glitches in registration when there is radial slack in the sidelay wheel. This means that there are either too many or too few shims installed behind the sidelay adjustment wheel.

Fixing side movement

To determine how much side movement there is, try to move the plate cylinder sideways using a pry bar, first toward the drive side and then toward the operator side of the press. If it moves, remove some shims.

Worn or improperly set impression linkages will cause inconsistent print register. It is very common to see print register shift whenever the cylinder gaps lose contact with each other during a normal print cycle. The easiest way to inspect linkages is to remove the unit cover, then try to move the linkages with the impression off. If there is any side-to-side movement, replace the linkage and the linkage pins.

When the impression is on, the eccentrics should be resting tight against their stops; otherwise the eccentrics can move whenever the cylinder gaps come out of contact with each other during a normal print cycle.

Another potential problem: Dancer arms on the tension system can become out of parallel with each other, causing the web to move. To check for looseness, take the adjacent stationary arm away from the dancer stop and then try to force the dancer arm up and down. Normally there should be no movement.

This same process applies to the compensators on older Goss Community, Goss Urbanite and Harris presses. The compensator arms must be tight and parallel with each other.

Finally, lead-in roller bearings will cause inconsistent print register problems. To test the bearings, use a rubber mallet to hit what you know is a properly operating lead-in roller. Use the sound you hear for reference. Then hit the rest of the lead-in rollers; if they produce a different sound, or rattle, replace them.

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