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### **Why do rollers shrink?**

Sooner or later all rollers change size, but poor shop practices and poor rollers speed up the process, requiring frequent stopping of the presses to make adjustments. In fact, shrinkage is the leading cause of roller resetting. Running with shrunk rollers leads to ink/water balance problems, color variation, and excessive downtime.

Shrinkage can be caused by excess heat, usually from the settings being too high, from insufficient lubrication, or bad bearings. The heat causes a chemical reaction in the rubber that breaks the long molecule chains (specifically the plasticizers) which give the rubber compound its flexibility and ability to hold its shape. This breakdown occurs naturally as a result of the constant flexing of the rubber during normal operation, which is why even the best rollers won't last forever. But excessive heat speeds up the deterioration process.

### **Set rollers as light as possible!**

Setting rollers with too much pressure is a common mistake, and an expensive one. Pressmen sometimes think that the pressure is what moves the ink and water. It's not. It's the shearing forces generated by the different speeds of rollers with different diameters. More pressure does not help, and it can actually impair the quality of the printing and lead to extra downtime and operating costs.

For even a small increase in the stripe, the pressure on the roller increases by several hundred percent. The pressure puts extra strain on journals, bearings, shafts, and housings, and it causes heat buildup that breaks down the rubber on the rollers. Rollers under high pressure require more energy to move, and thus the electric bill to run the press is significantly higher. Too much pressure can cause ink dams and uneven ink distribution; the heat buildup in the rollers changes the properties of the ink as well. All of these problems come from setting rollers with too much pressure, and all can be solved by setting as light as possible. Running with too much pressure is like trying to drive a car with the brake on.

A printing shop we know tried an experiment. They ran a 2-color press for two months at their typical settings: with lots of pressure and wide stripes. They measured the amount of electricity, ink and fountain solution consumed. Then they reduced the pressure settings by 50% and ran for two more months. The result, a 59% savings in electricity, 27% savings in ink, and 15% savings in fountain solution. And, the quality of the printing was better.